

FINAL CONCEPT PAPER  
SUBCOMMITTEE 6  
MODIFICATION OF CLEAN-UP STANDARDS FOR LOWER-RISK RELEASES  
MARCH 31, 2022

I. EXECUTIVE SUMMARY

This Concept Paper has been prepared by Subcommittee 6 of the working group (“Working Group”) jointly convened by the Department of Energy and Environmental Protection (“DEEP”) and the Department of Economic and Community Development (“DECD”) pursuant to Public Act 20-9. The Subcommittee 6 membership list is provided as *Appendix A*.

Subcommittee 6 was charged with providing recommendations to DEEP and the Working Group for establishing compliance with the Release-Based Cleanup Regulations for lower-risk releases on the following topics:

- Which remedies should be available without approval of the [DEEP] Commissioner, which remedies will continue to require the [DEEP] Commissioner’s approval, which new remedies should be available for certain releases based on risk to human health and the environment, and which remedies may require adjustment based on the concepts developed so far.
- Other adjustments aimed at better aligning clean-up standards with the requirements of Release-based Cleanup may also be considered.

It is worth noting that the review or revision of contaminant-specific current Remediation Standard Regulations (RSRs) numeric cleanup criteria, DEEP-approvable Additional Polluting Substances (APS), and/or Alternative Criteria was NOT a topic of consideration for this or any other release-based program subcommittee.

Subcommittee 6 was further instructed to evaluate how clean-up standards should align with the goals of Public Act 20-9, including “the need for response actions for lower risk, common, or contemporaneous releases that are quick or simple or both.”<sup>1</sup> The title of Subcommittee 6, “Modification of Clean-up Standards for Lower-Risk Releases,” suggested that a focus on lower-risk releases would be most appropriate. The members of Subcommittee 6 did not reach consensus on a comprehensive definition of what it means for a release to be characterized as “lower risk.” Some members argued that anything short of a Significant Environmental Hazard<sup>2</sup> or similarly serious condition should be considered lower risk. Other members argued that, outside of the SEH categories, there are low, medium, and high, risk releases<sup>3</sup> and the high risk releases are outside the purview of this subcommittee. Ultimately, the members agreed to focus efforts on the lowest-risk releases and work up toward higher-risk releases. Consequently, the members agreed that full consensus on the definition of “lower risk” was not necessary to fulfill the Subcommittee’s charge.

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<sup>1</sup> The full text of Subcommittee 6’s charge is available at: <https://portal.ct.gov/DEEP/Remediation--Site-Clean-Up/Comprehensive-Evaluation-and-Transformation/Release-Based-Cleanup-Program-Topical-Subcommittees>.

<sup>2</sup> See Conn. Gen. Stat. § 22a-6u.

<sup>3</sup> There are no definitions for these categories, we note that– these are subjective determinations and are NOT related to the low/medium/high Tiering categories proposed by Subcommittee 4 and which may be performed up to one year following discovery of a release. Also, it is important to note that “risk” itself is undefined. – In the context of our discussions it has been discussed principally relative to potential exposure pathways and potential threat/impact to receptors rather than toxicological-based exposure/impact to receptors (humans or the environment).

As set forth in detail below, Subcommittee 6 recommends that the following four concepts be more fully developed and considered for inclusion in the Release-Based Cleanup Regulations that will be promulgated under Public Act 20-9 (the “Release-Based Cleanup Regulations”):

- Category 1: Closure for some of the lowest-risk contemporaneous releases without laboratory sample analytical data, and therefore, no comparison to default or site-specific numeric standards for allowable concentrations of substances in soil and groundwater.
- Category 2: Closure with limited post-remediation laboratory sample analytical data for comparison to default or site-specific numeric standards for allowable concentrations of regulated compounds in environmental media when a “trained professional” determines that the release has been adequately characterized and adequately addressed.<sup>4</sup>
- Category 3: Retention of existing self-implementing options that exist today under the RSRs and creation of additional pathways for flexible compliance to provide efficient resolution of lower-risk releases.
- Category 4: An ad hoc team should be convened to discuss whether a site-specific, MCP Method 3-style Risk Assessment framework could/should be adapted for use in Connecticut.

## II. ASSUMPTIONS\*

### a. Approach

Subcommittee 6 began its work by assuming that the basic statutory framework that exists today will remain in place in some form, either alongside or integrated into the Release-Based Cleanup Regulations to be promulgated under Public Act 20-9. In particular, we assume that the SEH statute (Conn. Gen. Stat. § 22a-6u) will either remain, or the concepts will be integrated elsewhere into the statutory scheme. We also assume that some categories of releases will present such a serious threat to human health and/or the environment that specific regulatory requirements will be triggered. Since we are uncertain as to whether this category will match the present SEH statute, we use the term “Immediate Risk” to distinguish it from the SEH category already defined by statute.

We also assumed that the basic regulatory concepts in place today would be integrated into the Release-Based Cleanup Regulations. In particular, we assumed that the basic framework of the RSRs would remain in place, and that existing tools and flexibility provided by the RSRs would continue. In other words, the suggestions provided in this Concept Paper are meant to improve and supplement the existing tools, not replace them. Similarly, Subcommittee 6 is aware of the regulations promulgated under Conn. Gen. Stat. § 22a-450 and effective March 4, 2022 (“Spill Regulations,” R.C.S.A. § 22a-450-1 et seq.)<sup>5</sup>. The recommendations related to contemporaneous releases build upon the new Spill Regulations and assume that the core concepts contained in the Spill Regulations will carry through to the new Release-Based Cleanup Regulations.

Although there is not consensus among the subcommittee members, we assume that some class of professional other than LEPs may be authorized to respond to some types of spills, similar to the way “properly trained personnel” are presently authorized by the Spill Regulations. Since we are uncertain as to whether the non-LEP professionals will be exactly the same as the “properly trained professionals” defined in the Spill Regulations, we refer to such people as “Trained Professionals.” The issues around and criteria for

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<sup>4</sup> General comment – Varying “remediation” terminology and definitions in PA20-9 and related concept papers are inconsistent and create confusion. A distinction should be created between remediation, mitigation, removal, addressed, closed etc. This needs to get elevated to the Working Group and defined

<sup>5</sup> Working Group should address whether releases reported under the new regulations will require closure under the Release-Based Cleanup Regulations once in effect

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professional judgment, experience, and accountability will have to be defined for non-LEPs. The regulations need to ensure that closure by non-LEPs creates the same certainty of closure by LEPs and is a requirement for the Release-Based Cleanup Regulations to succeed.

We further assumed that the Release-Based Cleanup Regulations will be generally consistent with the assumptions and recommendations developed during the Working Group's earlier phase of discussion. The work of Subcommittee 6 builds off of the concepts developed by each of the first five subcommittees:

- Subcommittee 1: Discovery of Historic Releases. When the concept of a discovery of a historical release is discussed in this Concept Paper, it is assumed that it will be "discovered" as defined/discussed by Subcommittee 1.
- Subcommittee 2: Reporting of Historic Releases. It is assumed that not all newly discovered historical releases must be reported, and that there will be some releases that need to be remediated but do not need to be reported. Additionally, it is assumed that the new Release-Based Cleanup Regulations will include "reportable concentration" criteria that will dictate whether releases must be reported and/or addressed.
- Subcommittee 3: Characterization. It is assumed that some level of characterization will be required to determine that a release has occurred and determine whether or not it is eligible for one of the modifications set forth in this Concept Paper. It is also assumed that the characterization requirements discussed by Subcommittee 3 will be modified for certain lower-risk releases as set forth in this Concept Paper.
- Subcommittee 4: Immediate Removal Actions. It is assumed that some releases can be removed quickly and with modified sampling requirements. The concepts developed in this Concept Paper will need to be integrated with the concepts in the Subcommittee 4 Concept Paper.
- Subcommittee 5: Tiers. The Tiers Concept Paper assumed that releases would be assigned to a tier after some period of time (approximately one year) had elapsed. Subcommittee 6 assumes that releases addressed in a manner described in this Concept Paper may be addressed before the tiering deadline occurs, and as such may or may not be assigned to a tier.

As discussed in further detail below, Subcommittee 6 also recognizes that two additional subcommittees have been convened during this phase of the regulatory discussion: Subcommittee 7: LEP-implemented, Risk-Based Alternate Cleanup Standards and Subcommittee 8: Clean-up Completion Documentation, Verifications, and Audit Frequency and Timeframes. Given the task assigned to Subcommittee 7, Subcommittee 6 has not focused its discussion on LEP-implemented tools. Similarly, given the task assigned to Subcommittee 8, Subcommittee 6 has not focused on the closure documentation that should be associated with the tools being recommended. We recommend that the Concept Papers of the three second-phase subcommittees be integrated with the first phase concept paper by a drafting team similar to the procedure used for the first five subcommittee concept papers.

b. Specific Assumptions

- A release (contemporaneous or historical) has been discovered.
- Discovery of historical releases has been defined by Subcommittee 1.
- Non-LEP "Trained Professionals" will have some level of responsibility similar to "properly trained personnel" under the Spill Regulations, but the specific requirements, responsibilities, and accountability mechanisms are not yet defined and may require regulatory changes.

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- Releases discussed in this Concept Paper that present an “Immediate Risk” will trigger certain requirements, similar to (but not necessarily identical to) “significant environmental hazards” as set forth in Conn. Gen. Stat. § 22a-6u. The specific definition of “Immediate Risk” and resulting requirements are not yet defined and may require statutory changes.
- DEEP will consider the use of formal site-specific Risk Assessment as an option to demonstrate compliance, potentially similar to MCP Method 3.
- Anthropogenic and background concentrations will be adopted (or allowed to be determined on a site-specific basis) for metals and PAHs, and possibly for other substances.
- While all releases will require characterization, not every release will require remediation.<sup>6</sup>
- Characterization does not just mean comparison of analytical data to default or site-specific numeric standards for allowable concentrations of regulated compounds in soil or groundwater.
- Not every release will require reporting.
- Under certain circumstances, closure may not require complying with the numerical criteria for soil, soil vapor, or groundwater as currently published in 22a-133k 1-3.
- The current self-implementing options provided in the RSRs, including development of alternative numeric criteria, will remain.
- A contemporaneous release that is exempt from reporting in the Spill Regulations will not need to be reported; however, clean-up action may still be required.
- The Spill Regulations apply only to contemporaneous active releases and the conditions and criteria established in the Spill Regulations do not apply to historical releases. In addition, the Spill Regulations only address reporting and not cleanup requirements.
- The exceptions listed in the Spill Regulations will be adopted as part of the new release-based program.
- Closure documentation requirements will be recommended by Subcommittee 8.
- Tiers will be adopted.
- Not all releases will be tiered.
- Releases may not be put into a Tier for up to one year, if at all.
- Releases not addressed in each category below will follow the current RSR framework or alternate compliance method recommendations made by Subcommittee 7. The Site Characterization Guidance Document will have to be re-evaluated/ revised/ rewritten to address the release-based, rather than Site-based focus of the Release-Based Regulations.

### III. RELEASE RESPONSE CATEGORIES

#### 1. CATEGORY 1

No sampling for laboratory analysis is required for comparison to default or site-specific numeric standards for allowable concentrations of regulated compounds in soil or groundwater provided that the following conditions apply:

- a. A release is not an Immediate Risk to human health and the environment;
- b. Release is not to waters of the State based on knowledge;
- c. Release did not reach a storm sewer, sanitary sewer, combined sewer system or catch basin;

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<sup>6</sup> The definition of remediation in PA 20-9 is problematic because it includes characterization in the definition of remediation and requires resolution

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- d. Not a subsurface release from an underground storage tank (UST) system<sup>7</sup>
- e. Released material is a known substance and does not contain the following:
  - i. PCBs;
  - ii. halogenated solvents; or
  - iii. More than 30% of a material identified in Appendix A of the Spill Regulations;
- f. Released material is not a prohibited pesticide or a restricted pesticide released in a manner that does not comply with state or federal law; and
- g. The release is contemporaneous and satisfies one of the following conditions:
  - i. The release is removed or otherwise properly mitigated within two (2) hours of discovery and meets one of the following conditions:
    - A. Release is less than five (5) gallons of oil or petroleum;
    - B. Release is to secondary containment and is less than one hundred (100) pounds and fifteen (15) gallons; or
    - C. Release is less than ten (10) pounds or one-and-a-half (1.5) gallons of a reportable material other than oil or petroleum; or
  - ii. The release is removed or otherwise properly mitigated within a specified timeframe that has yet to be determined (i.e., twenty-four (24) hours) of discovery; the extent of release migration is known, and a precipitation event has not occurred; or
  - iii. The release is removed or otherwise properly mitigated within a number of days (yet to be determined) of discovery and an LEP/Technical Environmental Professional (TEP) per Conn. Gen. Stat. § 22a-6u (10) provides documentation\* confirming the activities were completed in accordance with prevailing guidelines.

*Category 1 Examples*

- Small surface releases
- Releases to secondary containment
- Transformer release (non-PCB)
- Release to soil that has not impacted groundwater
- No. 6 heating oil release
- A release above a Spill Regulations threshold to an impervious surface that has been addressed through removal action
- A release that has been addressed within the required timeframe through removal action in secondary containment that does not exceed secondary containment size and secondary containment has not failed
- A known quantity of a release to shallow soil that can be delineated either by physical parameters and/or field screening parameters
- Known quantity of a release that has been immediately addressed and removal action documented

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<sup>7</sup> An underground storage tank (UST) system is a tank (or a combination of tanks) and connected underground piping having at least 10 percent of their combined volume underground. The tank system includes the tank, underground connected piping, underground ancillary equipment, and any containment system. The federal UST regulations apply only to UST systems storing either petroleum or certain hazardous substances.

## 2. CATEGORY 2

Limited<sup>8</sup> Sampling for laboratory analysis for comparison to default or site-specific numeric standards for allowable concentrations of regulated compounds in soil or groundwater required provided that following conditions apply:

- a. Through multiple lines of evidence<sup>9</sup> the release has been adequately characterized and addressed.
- b. Release is documented\* by a trained professional\* which indicates the release has been addressed.
- c. The release is not to waters of the State/sensitive receptors and characterization determines they have not been impacted.
- d. Released volume is not more than one hundred (100) cubic yards of soil contaminated solely by a release of petroleum products, alternative fuel, or other oil; and not more than twenty (20) cubic yards of soil contaminated by a release of hazardous material or a mixture of oil or waste oil and hazardous material.
- e. The release is newly discovered (contemporaneous and potential historical releases) and satisfies one of the following conditions:
  - i. A release has occurred and has been mitigated through excavation within one hundred twenty-seven (127) days of discovery or
  - ii. A release has occurred and compliance has been demonstrated through other means besides excavation including but not to limited exemptions/alternatives in the RSRs, if the compliance is approved by a trained professional\*
  - iii. Additional sampling will not change the proposed remedy and the remedy will eliminate risk to human health or the environment.

### *Category 2(e)i Examples*

- A leak on a valve of an asphalt truck and asphalt sprayed on the ground, impacted soils were removed.
- Limited quantity of No. 6 fuel oil release to the ground. No human health or environmental receptors are impacted. Spill is contained and less than 100 cubic yards of soil is removed and release is removed to visual extent and limited soil sampling is conducted to confirm remediation was successful.
- Lead-impacted soil surrounding the building was encountered during site characterization. Concentrations exceeded the DEC but less than the SEH threshold. Soil was excavated/disposed properly, and confirmatory soil sampling confirmed that all impacted soil was removed.
- Five (5) gallons of a substance is released and it hardens and does not migrate.

### *Category 2(e)ii Examples*

- Limited sampling identifies historical fill impacted by exceedances of PAHs at a commercial property beneath a parking lot. The paved surface is used to render the soil inaccessible and a NAUL is filed for the Site.

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<sup>8</sup> Site characterization would determine the amount of sampling for soil and/or groundwater under this category and would be the basis for reduce compliance sampling

<sup>9</sup> Based on the recommendation of Subcommittee 3, a guidance document for multiple lines of evidence for release characterization is needed

### 3. CATEGORY 3

Alternatives to full compliance with the 2021 RSRs as currently written

The alternatives below are suggested LEP pathways for lower-risk releases that should be integrated into Subcommittee 7.

- a. Applies to contemporaneous and historical releases.
- b. Allows use of LEP options – existing and new.

#### *Category 3 Examples of Potential Alternatives/Exemptions*

- A. The use of a multiplication factor for the Groundwater Protection Criteria (GWPC) that would allow compliance with RSRs, if:
  - i. It can be demonstrated that groundwater concentrations are fully delineated and are in a diminishing state; and
  - ii. An EUR is in place prohibiting groundwater use (long term monitoring sites that do not currently comply with GWPC). This would require adding “Prohibiting groundwater use” as a use limitation on the EUR forms.
- B. Sampling two quarters at the high and low groundwater table to show compliance instead of the four quarters of groundwater sampling required in the current RSRs.
- C. The use of a Site-specific Risk Assessment to demonstrate compliance.
- D. Additional options for land use restrictions that will allow sites to come to closure.
- E. The development of an asphalt-related PAHs exemption for certain sites (similar to the current pesticide exemption):
  - i. Historical fill provisions<sup>10</sup>
  - ii. Incidental sources
  - iii. Presence of PAHs in soil as a result of past site development (i.e., paving) should be exempt unless there was a change in use of the property that created a new exposure pathway (i.e., property use changed from a K-Mart to a community garden)
  - iv. Polluted fill exemption
  - v. Alternative criteria for industrial/commercial, past and current use
  - vi. Use of alternative sampling analysis
- F. DEC applicability to be changed to a depth less than 15 feet below grade for properties where the exposure potential decreases with depth, with the following considerations:
  - i. The most-stringent DEC is applicable to a depth of 4 feet below grade
  - ii. The exposure potential would be based upon depth
  - iii. Type of release mechanisms
  - iv. Land use or additional types of land use beyond residential and industrial/commercial (i.e., agricultural, recreational, urban)
  - v. Multiplication factors based on land use and exposure potential/depth (0-4, 4-8, and 8-15 feet below grade)
  - vi. Seasonal low/high water table
- G. Consider additional soil categories similar to MCP (S-1, S-2, S-3) which would be based upon the potential for exposure. For example, if a property is zoned commercial/industrial:

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<sup>10</sup> Historical fill is being evaluated by others

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- a. And site utilization is limited strictly to commercial/industrial use; or
  - b. Property is not zoned commercial/industrial, but site utilization is commercial/industrial and a Deed Notice (or maybe a NAUL) is in place limiting use to strictly commercial/industrial
- H. Revisit alternative clean up options and/or criteria for historical release portion of the release-based regulations after development (i.e.: early exits)
- I. Immediate response action as a method of achieving closure (eliminates the need to generate soil and/or groundwater analytical data)

4. *CATEGORY 4*

Use of a Risk Assessment – considered by others or may be an Ad Hoc committee

IV. DOCUMENTATION DISCUSSIONS

- Championed by Subcommittee 8
- Where does the documentation ultimately live?
- How are the release and clean up actions recorded? Form? Report?
- What elements need to be in the form or report?
- Where does it go? Recorded on site or submitted to DEEP, who signs (TEP, LEP)?
- Sign offs, NFAs
- Residential release considerations
- Training

V. OTHER CONSIDERATIONS

- Historical Releases Ad Hoc committee

## Appendix A

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### Subcommittee 6 Membership List

## Subcommittee 6: Modification of Clean-up Standards for Lower-Risk Releases

<b>Name</b>	<b>Company</b>	<b>Representing</b>
<b>Jeff Ryer</b>	Ryer Associates Commercial RE	Commercial Real Estate Brokers
<b>Michael Jastremski</b>	Housatonic Valley Association	Environmental Advocates
<b>John Ellis</b>	The United Illuminating Co.	Licensed Environmental Professional
<b>Emilee Scott *</b>	Robinson & Cole, LLP	Environmental Transaction Attorney
<b>George Gurney</b>	Weston Solutions	Licensed Environmental Professional
<b>Sam Haydock *</b>	BL Companies	Licensed Environmental Professional
<b>Adam Fox</b>	Department of Transportation	Other State Agencies
<b>David Williams</b>	Avangrid	Licensed Environmental Professional
<b>W. Scott Burrus</b>	Sovereign Consulting, Inc.	Licensed Environmental Professional
<b>William Graves</b>	Environmental Services	Other interested members of the public
<b>Atul Mohan Salhotra</b>	RAM Group, Inc.	Licensed Environmental Professional
<b>Matthew E. Hackman</b>	Matthew E Hackman PE CHMM Inc	Licensed Environmental Professional
<b>Amy Velasquez</b>	Regional Water Authority	Municipal Representatives
<b>Tim Whiting</b>	Ramboll US	Licensed Environmental Professional
<b>Marilee Gonzalez *</b>	Fuss & O'Neil, Inc.	Licensed Environmental Professional
<b>Malcolm Beeler</b>	Weston & Sampson	Licensed Environmental Professional
<b>David Lis</b>	Ramboll US	Licensed Environmental Professional
<b>Michael Miller</b>	Wiggin and Dana LLP	Environmental Transaction Attorney
<b>Kevin Neary</b>	DEEP	DEEP Resource – lead
<b>Allessandra Alling</b>	DEEP	DEEP Resource
<b>Sarah McQuade</b>	DEEP	DEEP Resource
<b>Normandy Avery</b>	DEEP	DEEP Resource

\* Subcommittee Chairs