



VERMONT

**State of Vermont
Department of Environmental Conservation
Waste Management & Prevention Division
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AGENCY OF NATURAL RESOURCES

**Investigation and Remediation of Contaminated Properties Rule (I-Rule)
Responsiveness Summary and Changes to Rule in Response to Comments
June 19, 2017**

The public comment period for the proposed Investigation and Remediation of Contaminated Properties Rule began on March 1, 2017 and ended on April 19, 2017. During that period, the Agency of Natural Resources held two public meetings, one in Montpelier on April 5, 2017 and one in Waterbury on April 6, 2017 to take comments on the proposed Rule. Numerous comments were received in both meetings, and many written comments were also received via email. Many of the comments were duplicative, so both individual and summarized comments, as well as the Agency's responses and revisions to the Rule are provided below.

GENERAL COMMENTS:

1. **Comment received:** Rule is too specific and overly prescriptive to managed contaminated properties. Many of the sections of the rule ought to refer to guidance and procedures to enhance flexibility and avoid having any prospective changes be encumbered by the rulemaking process.

Agency response: The Agency feels that in order to meet our statutory requirements for the appropriate investigation and remediation of properties on the State's Hazardous Sites List, a certain level of specificity is required. However, it was our intent to allow for flexibility within the Rule, when appropriate. There are some documents referenced in the Rule; but other guidance documents will be referenced in our Sampling and Analysis Guidance document which will be available on our website.

2. **Comment received:** Several comments were received requesting an additional public comment period following current Rule revisions.

Agency response: It is the impression of the Agency that this request is focused on the two issues on which the majority of comments were received, which were the Development Soils process as well as the use of Vermont Department of Health risk based values. We have worked on modifications to these sections to respond to these comments. While we did not feel it necessary to put the draft I-rule out for an additional formal public comment period, we did hold a meeting on May 31, 2017 with any interested stakeholders to answer questions and listen to concerns regarding development soils.

3. **Comment received:** Will future Phase I ESA's exclude RECS that could be impacted by PAHs, As, and Pb due to physical location in urban area?

Agency response: The Agency does not regulate ASTM Phase I standards, so we are unable to address this comment.

4. **Comment received:** Requests that the I-Rule be evaluated for consistency with the specific State Planning Goals outlined in 23 VSA Section 4302(c) (Vermont State Planning Goals), which include:

1. *To plan development so as to maintain the historic settlement pattern of compact village and urban centers separated by rural countryside.*



- A. *Intensive residential development should be encouraged primarily in areas related to community centers, and strip development along highways should be discouraged.*
- B. *Economic growth should be encouraged in locally designated growth areas, employed to revitalize existing village and urban centers, or both, and should be encouraged in growth centers designated under chapter 76A of this title.*
- C. *Public investments, including the construction or expansion of infrastructure, should reinforce the general character and planned growth patterns of the area.*
- D. *Development should be undertaken in accordance with smart growth principles as defined in subdivision 2791(13) of this title.*

Strongly encourages that this evaluation be conducted through coordinated, comprehensive public engagement process that includes direct outreach to private development community, non-profit housing providers, municipalities, RPCs, and Reg. Economic Development Corporations.

Agency response: *The correct reference should be 24 V.S.A. 4302(c)(1). The referenced section relates to the goals of 24 V.S.A. Chapter 117 (Regional and Municipal Planning) and is not applicable to the Investigation and Remediation of Contaminated Sites Rule. However, the proposed rule increases the level of public participation in the site remediation process and, when selecting the appropriate remedy, looks at community acceptance to ensure that the referenced values are considered in the selection of the remedy. This type of development is promoted through the brownfields program and the development soils section in the Rule.*

5. **Comment received:** Several comments were received requesting that response timeframes from the VTDEC be included (such as 30 days to respond to work plan, SI reports, CAPs, etc.).
Agency response: *The SMS understands that our review time of deliverables is a key component of the successful implementation of site investigations and cleanup work. However, we are unable to include specific review timeframes in the I-Rule due to limited resources. The Agency requests that if a project schedule is dependent on a specific review timeframe by the SMS, that the consultant or RP let the SMS know as soon as this project schedule has been determined.*
6. **Comment received:** Requirements for reports, work plans, corrective action plans more fleshed out than in previous guidance docs; inconsistency in what consultants submit; will SMS not accept sub-par deliverables?
Agency response: *The Agency will be holding consultants accountable for submitting deliverables which meet the standards outlined in the I-Rule. Work not fulfilling the requirements set forth in the rule will be rejected and returned for revisions.*
7. **Comment received:** Is an anthropogenic release really a release? Need to work out how investigation/cleanup into releases which may be anthropogenic are handled (ie. Looking beyond property boundary, extent of contamination)- cover in Development soils section?
Agency response: *The Agency has developed a Development Soils Fact Sheet which will address these issues and how to manage and investigate development soils. An anthropogenic release is considered a release. The degree and extent of the site investigation will vary depending on the source of the release.*

DEVELOPMENT SOILS/BACKGROUND STUDY

8. **Comment received:** A substantial number of comments were received regarding the use of development soils. These comments often overlapped with comments on the Background Study. The sentiment of most of the comments are reflected in the following quotes:

"Development soils section is unduly burdensome. Runs counter to State's and City's smart growth and environmental goals, and does not fulfill the intention of Act 52. Unless DEC advances the dual objectives of Act 52, these public investments will increasingly go towards managing soils, if the projects that stimulate the public benefits occur at all."

"Urban areas are more likely to contain contaminated soil and the added consideration and expense proposed in the draft Rule could prevent development or redevelopment in centers, make it cost prohibitive or economically unfeasible and could lead to more development outside our centers. The Rule is stricter than our neighbors, will make development more expensive with little environmental benefit. Non-profits such as housing trusts will be negatively impacted in their efforts to rehabilitate buildings, which will hinder the development of quality, affordable housing in our centers and perpetuate the current housing crisis."

"Costs of soil excavation and disposal has caused the costs of projects to balloon to the point where money to make improvements runs out before improvements are made. This pushes development to greenfield sites which is bad for Vermont's health. Regulators need to take holistic approach and take the full picture into account. VTs standards are orders of magnitude more strict than those of neighboring states."

"The "development soils" section of the I-Rule should be augmented to allow for greater flexibility to relocate and manage soils offsite or between similar properties. Being forced to perform extensive and costly due diligence on both an "origin" and potential "receiving" site for development soils is economically infeasible for smaller projects and therefore the only remaining option currently available is disposal at a landfill."

Many comments also requested clarification on how the urban and rural background study concentrations would be applied at properties and development projects. The public is also concerned with the burdensome process of disposing of development soils at a receiving site.

Agency response: *The Agency recognized that the development soils process for identification and disposal needed clarification in the Rule. An informational fact sheet on Development soils which details how development soils may be managed has been developed. Language was added for clarification in the rule as shown below.*

•§ 35-512. DEVELOPMENT SOILS.

Development Property.

•(a) A person who applies to manage development soils under this section shall have completed a site investigation pursuant to Subchapter 3 of this rule prior to the excavation of the development soils. In addition to the requirements contained in Subchapter 3, a work plan shall be submitted for approval which includes the following:

▪(1) Soil sample collection methods, which shall consist of one of the following methods:

- (A) Discrete sampling methodology in a grid pattern. The sampling grid must be appropriately scaled in order to cover the entire proposed area of excavation, and sample points must be collocated co-located in areas of concern; or**
- (B) Application of Incremental Sampling Methodology consistent with the Interstate Technology and Regulatory Council's (ITRC) Incremental Sampling Methodology (February 2012); or**
- (C) The Other soil characterization methods, as approved by the Secretary**

(2) If soil is proposed to be disposed of in accordance with §35-512(b)(3)(receiving site), the number and location of soil samples that will be analyzed using Synthetic Precipitation Leaching Procedure (EPA Method 1312) (SPLP). The number of locations shall be based on the volume of soils planned for management and there shall be minimum one sample for every 200 tons of soil. Samples shall be taken from the soils most likely to leach contaminants and from the most impacted soil locations based on laboratory analysis, field screening, and visual and olfactory evidence; and,

▪

•(b) Disposal of Development Soils. Upon a determination by the Secretary, in writing, that the soils proposed for management are development soils, those soils may be disposed at:

- (1) A categorical solid waste facility that is permitted to receive development soils;
- (2) A solid waste facility for use as alternate daily cover; or
- (3) An approved receiving site that meets the requirements of subsection (c) of this section.

•(c) Receiving site.

- (1) The receiving site shall meet the siting requirements established in § 35-510(b)(6);
- (2) A person who wishes to apply to manage development soils under this section shall have completed a site investigation pursuant to Subchapter 3 of this rule prior to the excavation of the development soils. In addition to the requirements contained of Subchapter 3 Prior to receiving development soils, a work plan shall be submitted for approval which includes the following:
 - (A) Soil sample collection methods which shall consist of one of the following methods:
 - (i) Discrete sampling methodology in a grid pattern. The sampling grid must be appropriately scaled in order to cover the entire area proposed for excavation and sample points must be collocated in areas of concern; or deposition of development soils and must include information regarding seasonal groundwater elevations determined through subsurface characterization; or
 - (ii) Application of Incremental Sampling Methodology consistent with ITRC Incremental Sampling Methodology (February, 2012) determination of and must include information regarding seasonal groundwater elevations determined through subsurface characterization, including soil borings.
 - (B) The address of the proposed receiving site location and the GIS coordinates of the area where the development soils are proposed to be disposed.
- (A) If the subsurface characterization determines that groundwater may be impacted, the investigation shall discuss site hydrogeology that includes regional and Site specific hydrogeologic information, horizontal and vertical groundwater flow gradients and direction, and an assessment of the potential for preferential pathways and multiple aquifers. Hydraulic conductivity, transmissivity, and other parameters should also be included, as appropriate
- (3) The receiving site shall have concentrations of arsenic, lead, and PAH's that are equal to or greater than the concentrations from the Development Property site undergoing redevelopment.
- (4) Receiving sites that have concentrations of arsenic, lead and PAH's in excess of industrial risk-based standards will be required to conduct a site investigation in accordance with Subchapter 3.
- (5) The receiving site has an approved corrective action/institutional control plan in accordance with § 35-505601 that addresses potential direct contact with development soils by the public, including appropriate capping and establishment of land use restrictions.
- (d) Management of development soils. Urban locations are defined within the Development Area for Background Soil layer located in the ANR Atlas.

9. **Comment received:** There was a request that DEC work with local categorically certified facilities to re-permit them so development soils can be included.

Agency response: The Solid Waste Program did reach out to the current 23 CSWF to notify them of their option to apply to receive development soils. None of the CSWFs were interested in applying to receive development soils.

10. **Comment received:** The due diligence required to get a facility approved needs to focus on soil sampling for PAHs, As, and Pb, and should confirm GW and other sensitive receptors would not be at risk. DEC need to serve as an ally on this process given the implications of the rule that are presented.

Agency response: The Agency has modified the requirements of a receiving site. See response under Comment #8.

VDH AND DERIVATION OF STANDARDS

11. **Comment received:** Many concerns were expressed regarding the risk based soil and air standards provided by VDH. Concerns expressed included a lack of transparency in VDH process, how the risk numbers were derived as well as justification for the derivation process, and why Vermont's standards are more strict than neighboring states and EPA. Also clarification was requested on how standards are to be applied.

Agency response: The environmental media standards included in the Rule will be standards, not screening values. The Agency will use values which are based on a 10^{-6} risk and HQ of 1.0. The Agency will make every effort to regularly update the standards as changes are made to the EPA RSLs. The Agency has clarified in §35-305(b)(11) which values are appropriate. The Agency will be working with VDH to develop a more transparent process for the establishment of environmental media standards.

12. **Comment received:** The rule should expressly allow responsible parties to undertake site-specific risk assessments and establish site-specific remediation criteria sufficient to ensure that health-protective remedial actions are implemented at the site.

Agency response: The option to conduct a site specific risk assessment was added to the Rule in §35-305(b)(12):

A site-specific risk assessment that includes use of chemical and endpoint specific toxicity values and site- specific exposure assumptions may be performed for both current and potential future site uses. A site-specific risk assessment must follow standard USEPA risk assessment methodology.

SUBCHAPTER 1. GENERAL PROVISIONS

13. **Comment received:** 35-102 (b)(1). We believe the requirement to report any amount of a release of a hazardous material is going to be especially burdensome to both the regulated community and to the DEC. We suggest a specific amount be considered as in the previous rule, or include similar language that discharges of less than 2 gallons would need to be reported if the release poses a potential or actual threat to the environment.

Agency response: Reporting requirement will stay the same based on statutory requirements.

SUBCHAPTER 2. 35-201. DEFINITIONS

14. **Comment received:** Analytical detection limit. Need to clarify. See VDH comment on adding "or an alternative approved by the Secretary".

Agency response: The Agency has modified the definition as follows:

(3) "Analytical detection limit" means the minimum concentration of a hazardous material that can be quantified consistently and reliably using methods approved by EPA or another method approved by the Secretary.

15. Comment received: Background. Several comments received regarding amending the definition of "background" to be consistent with Act 52 definition and to include "atmospheric deposition". Can definition be broadened to acknowledge that soils in our infill areas are going to contain remnants of past land uses and practices.

Agency response: *The definition for "background" included in the Rule addresses all contaminants, not just contaminants associated with development soils. The Agency will not modify the definition. The Agency has modified the definition of "development soils" to mimic the statutory definition, which is:*

(14) "Development soil" means unconsolidated mineral and organic matter overlying bedrock that is contaminated solely by polycyclic aromatic hydrocarbons (contains PAHs), arsenic, or lead at concentrations which exceed Vermont Soil Screening Values and are not hazardous waste that:

- (A) exceed the relevant soil screening level for residential soil;
- (B) when managed in accordance with § 35-512 or the Vermont Solid Waste Management Rule:
 - (i) pose no greater risk than the Agency-established soil screening value for the intended reuse of the property; and
 - (ii) pose no unreasonable risk to human health through a dermal, inhalation, or ingestion exposure pathway;
- (C) do not leach compounds at concentrations that exceed groundwater enforcement standards; and
- (D) do not result in an exceedance of Vermont groundwater enforcement standards.

16. Comment received: Brownfields. Suggest considering replacing the word "potential" with perceived.

Agency response: *The definition has been modified:*

(7) "Brownfield" means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence, or potential perceived presence of, a hazardous material.

17. Comment received: Development Soils. Proposed to amend definition as follows:

"Development soil" means unconsolidated mineral and organic matter overlying bedrock that is contaminated solely by polycyclic aromatic hydrocarbons (PAHs), arsenic, or lead at concentrations which exceed their respective statewide background concentration listed in §35-APX-A1 Table 1

Agency response: *No change is necessary since the Agency is not requiring the cleanup of materials that are below the background standard. Definition will remain the same.*

18. Comment received: Direct Contact. Proposed to amend definition as follows:

"Direct contact" means the ability of a human to have direct contact with contaminants or naturally occurring compounds in environmental media including soils, groundwater, surface water, sediment and air via incidental ingestion, dermal contact, inhalation of vapors, or fugitive dust.

Agency response: *The Agency modified the definition to include the proposed additions.*

(15) "Direct contact" means the ability of a human to have direct contact with contaminants or naturally occurring compounds in environmental media including soils, and groundwater, surface water, sediment and air via incidental ingestion, dermal contact, inhalation of vapors, or fugitive dust.

19. Comment received: Engineered Control. Suggest removing the clause "that permanently renders" with removes or reduces exposure to.

Agency response: *The Agency modified the definition.*

(16) "Engineered control" means any physical barrier, system, technology, or method that permanently

~~renders removes or reduces exposure to~~ a hazardous material in environmentally isolated or inaccessible to sensitive receptors.

20. **Comment received:** Environmental Media. Suggest including soil gas.

Agency response: *The Agency's position is that soil gas is considered air. "Soil gas" is the volatilization of the contaminant off of the media it impacted (soil or groundwater) and is a method to determine potential impact to indoor air or that soil/groundwater are impacted. We will keep definition as is.*

21. **Comment received:** Environmental Professional. Suggest you use a different term than Environmental Professional. Use of Phase I ESA ASTM 1527 terms like EP can imply legally that there is some sort of liability protection that doesn't actually exist.

Agency response: *This definition will remain.*

22. **Comment received:** Hazardous Material. Suggest leaving petroleum out of the definition.

Agency response: *This definition was taken from statute (see 10 V.S.A. § 6616). The definition will not be changed.*

23. **Comment received:** Non-hazardous waste contaminated soil. Comment on adding the wording, "their respective environmental media standard soil".

Agency response: *There is only one media standard for soil, so we will leave as is.*

24. **Comment received:** Recognized Environmental Condition-not the same definition provided in the ASTM E1527-13. Request the definition is the same or use a different term.

Agency response: *The current definition will stay. The ASTM definition is almost identical, with the exception of one statement, "De minimis conditions are not recognized environmental conditions". This statement is not appropriate to include in the I-Rule because "de minimis" conditions are not included elsewhere in the document.*

25. **Comment received:** Sensitive Receptor. Comment to add language to include "means any possible human receptor".

Agency response: *The Agency finds the existing definition effectively describes "sensitive receptor" and does not require additional clarification.*

26. **Comment received:** Site. Several comments requesting the definition of "site" be amended so as not to limit the "site" boundaries to a potentially narrow swath of contaminated land within a parcel or parcel being redeveloped as one cohesive construction project. Need to clarify what is considered site boundary as it relates to development soils.

Agency response: *The Agency's definition of "site", which is "the area where a release is known or suspected to have occurred, including the extent of contamination resulting from the release. A site is not limited by legal property boundaries" has been amended to "A site MAY not be limited by legal property boundaries".*

(38) "Site" means the area where a release is known or suspected to have occurred, including the extent of contamination resulting from the release. A site ~~is~~ may not be limited by legal property boundaries.

27. **Comment received:** Vapor Intrusion-add the word "into" a building.

Agency response: *The Agency has modified the definition.*

(47) "Vapor intrusion" means the migration of volatile chemicals from contaminated environmental media~~s~~ into a building, subsurface conduit or structure.

28. **Comment received:** Consider adding a definition for "contaminated".

Agency response: *The Agency has included the following definition:*

(12) "Contaminated" means the presence of any hazardous material, as defined herein in soil, groundwater, soil gas, air, sediment, surface water, construction or excavation debris, or any other material at a concentration that has the potential to adversely affect human health or the environment. "Contaminated" does not include naturally occurring substances at naturally occurring or background levels.

29. **Comment received:** Consider adding a definition for "Development Site".

Agency response: *The Agency does not think a definition is necessary. We will insure that terminology is consistent throughout the document to avoid confusion.*

SUBCHAPTER 3. SITE INVESTIGATION

30. **Comment received:** 35-301 (b), please define what "in writing" means in practice.

Agency response: *The Agency will respond by either email or through postal service.*

31. **Comment received:** 35-302 (b)(5) the requirement to provide boring logs, well logs, etc., is too onerous. As written, logs from past investigations need to be included in each report. These should be included by reference only.

Agency response: *Boring logs and monitoring well logs must be submitted with the report in which they are initially introduced; subsequent reports may reference previous reports in which the logs were submitted. The Agency has clarified in the Rule.*

§35-302(b)(5) Geology. A brief description of regional and site-specific soils and bedrock. Boring logs, well logs and groundwater confining layers shall be included, if available, and have not been previously submitted to the Secretary. If applicable, values for soil bulk density, porosity, fraction organic content, pH and reduction-oxidation potential, shall be included. If available include geologic maps, fracture trace maps, geophysical data, and cross sections;

32. **Comment received:** 35-302(b)(9) Recommend the following change:

Potential exposure pathways from all potentially impacted media including direct contact, ingestion, vapor intrusion, and any other identified exposure pathway.

Agency response: *The Agency has modified the definition as follows:*

§35-302(b)(9) Potential exposure pathways from all potentially impacted media including direct contact, ingestion, vapor intrusion, and any other identified exposure pathway.

33. **Comment received:** 35-305(b)(11): Change the following:

Contaminated media characterization. Medium-specific analytical results must be tabulated and compared to the applicable environmental media standard presented in Appendix A or as otherwise indicated, in the following manner:
Summary of comments submitted:

Contamination in soil: When a **single contaminant** is found in soil above detection limits, that for a residential scenario results must be compared to VDH #s (10-6 and HQ of 1.0), if available, and if not available, EPA RSLs (10-6 and HQ of 1.0). For a worker scenario, they propose that the contaminant concentration be compared to EPA Composite Worker Soil Screening Level (10-6 and HQ of 1.0). Note: the "Composite Worker Soil Screening Level" appears to mimic EPA's "Industrial Soil" RSL level. When **multiple contaminants** are found in soil above detection limits for either a residential or worker scenario, for carcinogenic compounds, the recommendation is to estimate the cumulative risk using this

formula: $Cumulative(Total)Risk_{soil,j} = \sum_{i=1}^n (SiteConcentration_i)(1x10^{-6})/(ScreeningLevel_i)$ and compare to a 10-6 risk.

Contamination in soil gas and indoor air: Updated worker indoor air values were included based on a 10-hour day, 250 days per year, for 30 years. The proposed process for evaluating indoor air data is the same as described for soil.

Groundwater, Drinking water, surface water, sediment. The changes include comparing surface water to drinking water standards if the surface water has been approved as a source of a potable water supply; and to compare sediment concentrations to soil levels if consideration of human exposure is warranted.

Agency response: *The proposed process of applying standards is a significant change from what was included in the draft rule. The Agency will use standards based on 10⁻⁶ risk and a hazard quotient of 1.0. Surface water concentrations will only be compared to drinking water standards if the surface water is a drinking water source. The section has been modified as follows:*

- §35-305(b)(11) Contaminated media characterization. Analytical results must be tabulated and compared to the applicable environmental media standard located in Appendix A and the following, unless a site specific risk assessment was conducted pursuant to 35-505(b)(12) or a site specific background study was performed in accordance with Appendix B:
 - (A) Soil. Soil samples must be compared to EPA Regional Screening Levels target cancer risk 1E-06 or Hazard Quotient of 1.0 for single contaminant detected that is regulated and from the release. If multiple regulated contaminants are detected from the release and are above respective RSL then samples must be compared to Vermont Department of Health Risk Based Screening Concentrations, if available. See Appendix A.
 - (A) Soil. Soil sample results must be compared to the Soil Screening Values for the appropriate residential or industrial scenario. The Vermont Screening Levels (VSL) are for residential scenarios. In the absence of a VSL, the EPA Regional Screening Value must be used. For industrial scenarios, the industrial EPA Regional Screening Value must be used. The VT DEC Background Soil Concentration values are to be used when the Background value for benzo(a)pyrene (TEQ) or arsenic is greater than the VSL.
 - (B) Groundwater. Sample results must be compared to the Vermont Groundwater Quality Standards (Vermont Groundwater Enforcement Standard or Health Advisory).
 - (B)(C) Drinking water. Sample results must be compared to the applicable Vermont Health Advisory, Vermont Action Levels, or EPA Maximum Contaminant Levels (MCLs).
 - (D) Surface water. Sample results must be compared to the Vermont Water Quality Standards; and if applicable, compared to the respective Vermont Health Advisory, Vermont Action Levels, or EPA Maximum Contaminant Levels (MCLs).
 - (E) Sediment. Sample results must be compared to the Threshold Effect Concentration (TEC) and Probable Effects Concentration (PEC) for sediments.
 - (F) Soil gas and indoor air. Soil gas and indoor air must be compared to:
 - (i) the most recent EPA Vapor Intrusion Screening Value, EPA Regional Screening Levels, or
 - (ii) the Vermont Department of Health Risk Based Residential and Industrial Air Screening Level where available. See Appendix A.
 - (E)(G) Any site-specific health advisory, Soil Screening Value, developed by the Vermont Department of Health when a standard does not exist for a hazardous material.

34. **Comment received:** 35-305(b)(20)(E) Add the following language: Calculations. All calculations, such as contaminant mass or volume, travel and migration time, natural attenuation, and groundwater gradients. If computer modeling is

conducted, a reference to the model used, the data inputs, and data output package must be included. If a quantitative human health risk assessment is conducted, the full risk assessment report, including summary tables and print outs of calculating spreadsheets, must be included.

Agency response: *The Agency has included this language as a separate line item, (F), with the exception of "and print outs", and instead will include, "electronic copies of calculating spreadsheets". The Agency does not accept paper copies of reports, unless specifically requested by the Secretary.*

§35-305(b)(21)(F) If a quantitative human health risk assessment is conducted, the full risk assessment report, including summary tables and electronic copies of calculating spreadsheets, must be included.

§ 35-303. Site Investigation Work Plan

35. **Comment received:** 35-303 (b)-Site Investigation Work Plan: This is more comprehensive than the ISI we are used to, which used to be a "yes or no" question about whether there were standards exceedances. Will the PCF pay for this comprehensive complete delineation in the first round of investigation? Should you try to fully delineate the site, when you don't have lab data yet, and don't even know yet whether there are standards exceedances in the source area?

Agency response: *The Rule does not address what is PCF eligible. Requirements in the proposed Rule are requiring a higher level of thoroughness from environmental consultants than in the past. This section outlines the Objectives of the SI – what data the consultant is gathering to ensure that objectives are met. The expectation is not that the site be fully delineated prior to receipt of lab data; rather it is to determine what lab data is needed based on the specific site objectives.*

36. **Comment received:** 35-303 (c) and 35-304. Please include an indication of what is an acceptable amount of time for the review of the work plan. We would recommend that if no comments are received within 60 days on a submitted WP, then the WP is acceptable as proposed and the PRP can proceed.

Agency response: *The Agency understands that our review time of deliverables is a key component of the successful implementation of site investigations and cleanup work. However, we are unable to include specific review timeframes in the I-Rule due to limited resources. The Agency requests that if a project schedule is dependent on a specific review timeframe by the SMS, that the consultant or RP let the SMS know as soon as this project schedule has been determined. The SMS will make every effort to meet this schedule. A "default" approval of the workplan if the Agency has not provided comments within a certain timeframe will not be included and should not be assumed.*

37. **Comment received:** Several comments on needing to define QA/QC plan requirements in §35-303(d)(10)

Agency response: *The Agency will provide additional detail and will reference guidance documents and other requirements in the Sampling and Analysis guidance document. This document will be available on our website. Specific QA/QC plan requirements will vary based on a number of factors, including the complexity of the site, stakeholders involved, etc.*

38. **Comment received:** There appears to be an omission of costs from the required content within the work plan. Was this intentional?

Agency response: *The Agency revised to include a requirement that costs be included in the SI workplan section. The Rule is amended as follows:*

§35-303(d)(13) Estimated costs, if requested by the Secretary.

§ 35-305. Site Investigation Report

39. **Comment received:** 35-305 (b) (2) and also (7) - In the past these investigations have focused on the spill only, and we have worn blinders to site-wide issues or compliance. Will the PCF pay for additional costs for items like town hall

and historical interview research about history, and comprehensive site compliance inspections? Will the comprehensive compliance inspection prevent people from reporting spills, for fear of being fully inspected?

Agency response: *The Rule does not address PCF eligible costs. The requirements in the draft Rule are more comprehensive than what has been required in the past.*

40. **Comment received:** 35-305 (b) (8) Edit to say “(including Phase I Environmental Site Assessments *if publicly funded/available, or if permission is specifically granted by the Phase I ESA User*).” Unless prepared for a Brownfields investigation using public funding, Phase I ESAs are prepared for a private commercial property transaction, to inform the purchaser or bank about environmental risks they may face by purchasing a property. They are not public documents and the DEC cannot require them to be disclosed. Since there is no environmental media testing performed during a Phase I, there are no reportable standards exceedances in these reports, and findings/RECs are simply a matter of opinion.

Agency response: *The Agency is requesting that if Phase I ESA's exist for a site that they be provided to us. If a potentially responsible party does not want to provide these reports, it must be documented in the Site Investigation Report.*

41. **Comment received:** 35-305(11)-the contaminated media characterization is complex and onerous. We believe these overly prescriptive analyses unnecessarily add to the cost of remediation, interfere with professional judgement, and preclude flexibility in contamination remediation efforts.

Agency response: *The Agency does not believe it is onerous or complex to provide data in tables that are compared to their applicable standards. No change will be made.*

42. **Comment received:** Section 35-305(b)(11)(A) – This section is confusing and may be subject to several interpretations. It implies that the VT DOH levels do not apply to single contaminants but do apply when multiple contaminants are above EPA RSLs. It could also require comparison of industrial site soils to VT DOH screening values, which are now applied to just residential properties.

Agency response: *The Agency has clarified in §35-305(b)(11) how to apply the standards. See response under comment #33.*

43. **Comment received:** If only one compound is present in soil, is it allowable to use EPA number rather than VDH number?

Agency response: *The Agency has clarified in §35-305(b)(11) how to apply the standards. See response under Comment #42.*

44. **Comment received:** Clarify when to use VDH indoor air value and when to use EPA indoor air value. How do you apply numbers?

Agency response: *The Agency has clarified in §35-305(b)(11) how to apply the standards. See response under Comment #42.*

45. **Comment received:** Section 35-305(b)(11)(C) and (F) – The use of the word “or” implies that the Environmental Professional responsible for preparing the Site Investigation Report should determine which standard is appropriate when evaluating drinking water and soil gas and indoor air results. Is that what is intended?

Agency response: *Yes, the Environmental Professional is responsible for determining the appropriate standard to apply. This should be contemplated by the Environmental Professional earlier at the workplan stage to ensure that the lab will achieve the appropriate detection limits for the applicable standard.*

46. **Comment received:** 35-305(b)(13). Define modeling requirements for determining groundwater contamination extent in §35-305(b)(13).

Agency response: *The Agency expects that modeling is recommended by the environmental professional, and included in the SI work plan to be approved by the Agency.*

47. **Comment received:** 35-305 (b)(14), please provide specifics on reporting and usability documentation. Also, consider revising the text to read: “Only data that meets quality assurance quality control (QA/QC) criteria specified in the QA/QC Plan will be accepted”.

Agency response: *The Agency expects that Environmental Professionals are able to determine whether the data is usable or not and make a recommendation to the Agency on its usability. The Agency has revised the language as follows:*

§35-305(b)(16) QA/QC sample results. At a minimum, a trip blank, a method blank and a duplicate sample will be required. If field analytical methods are approved in the work plan, the Secretary may require that a subset of samples be analyzed at a fixed base laboratory. Additional QA/QC samples (e.g. field blanks) may be required by the Secretary depending on the complexity of the investigation or sampling methods used. Any deviations from QA/QC procedures or acceptable limits must be identified and discussed. Only data that meets quality assurance quality control (QA/QC) criteria specified in the QA/QC Plan will be accepted.

48. **Comment received:** Land use history description required in the Conceptual Site Model (CSM) (pg 10) and §35-305(7) SI report are more properly part of Phase 1 ESAs; this could be unpaid work for the consultant since Phase 1 ESAs are not eligible for PCF reimbursement.

Agency response: *The Agency acknowledges that the Rule is requesting a greater level of effort and thoroughness from the consultant than in the past. The Rule does not address PCF reimbursement issues.*

49. **Comment received:** This section requires that a “Vicinity Map” be created only with the use of the Agency of Natural Resource online Natural Resource Atlas. We argue that the Natural Resource Atlas is not the most accurate mapping application and does not have the capability to display complex symbology or information, or easily add annotations. Therefore, we request a revision to this section to allow the use of other acceptable mapping media.

Agency response: *The Agency will accept vicinity maps if it provides additional information than what is on the Natural Resource Atlas; however, the appropriate Atlas layers must also be included. The use of an alternative map to the ANR Atlas map must be pre-approved by the Secretary. The Agency included the following language:*

§35-305(b)(13)(A) Vicinity map (or sensitive receptor map). Prepared using the Vermont Agency of Natural Resources online Natural Resource Atlas, Waste Management Theme as a base map including property boundary lines, surrounding land use, buildings, street names, sensitive receptors identified in § 35-302(b)(8), surface water bodies, chemical storage or process areas, waste storage and disposal areas, floor drains, drywells and hazardous materials within 1,000 feet of the site. Alternative base maps may be used if pre-approved by the Secretary.

SUBCHAPTER 4. RESPONSE ACTIONS; RELEASES OF HEATING FUELS

50. **Comment received:** 35-402(c) -states, “[if] a drinking water supply is located anywhere on the property or an offsite property within 200 feet of the release, a sample must be collected from the water source for appropriate laboratory analysis.” This requirement is vague. Clarify when a sample should be collected, i.e. upon discovery of contamination, on a weekly basis, after clean up, etc.

Agency response: *The section specifies that this requirement strictly relates to the investigation of a release of heating oil; that a sample from a drinking water source within 200 feet must be collected; and that following receipt of lab*

data, a report must be submitted which includes recommendations for any further work. The Environmental Professional is expected to be able to determine when a sample should be collected.

51. **Comment received:** Sections 35-403, 405, 406 – These sections address reporting requirements specific to releases of heating fuels. While the reporting requirements for other types of chemical releases require the certification of an Environmental Professional, these sections do not have the same requirement. Is there some justification for this?

Agency response: Section 35-104 (General Provisions) specifies that an Environmental Professional (EP) must complete these reports; however, section 35-405 was inadvertently left out of 35-104. The Agency will include this reference. Sections 35-403 was included in 35-104 and 35-406 is not applicable to an EP signature. The Section has been amended as follows:

§ 35-104. SIGNATORIES

All deliverables required by § 35-102(c)(3) (emergency response; limited site investigation); § 35-303 (site investigation work plan), § 35-305 (site investigation report); § 35-503 (evaluation of corrective action options); § 35-403(response actions; releases of heating fuels; investigation and soil removal report); § 35-405 (additional site investigation); § 35-407(a) (response actions; releases of heating fuels; additional site characterization report); § 35-503 (evaluation of corrective action alternatives); § 35-505 (corrective action plan); § 35-507 (corrective action construction completion report); and § 35-509(b) (long term monitoring report) must be prepared, signed, and certified by an Environmental Professional. Reports must be signed with the following certification:

"I certify under penalty of perjury that I am an Environmental Professional and that all content contained within this deliverable is to the best of my knowledge true and correct."

52. **Comment received:** Are post excavation soil sidewall and base samples required? §35-402(a)

Agency response: The Agency has modified the section as follows:

§35-402(a) Soil removal. Following approval from the Secretary, a PRP shall remove impacted soil in the area where a release of heating oil occurred until VOC field screening instrument readings are below 10 ppmv. Post excavation soil samples must be collected to document removal of contamination or to characterize soil contamination remaining in place. If removal of soil is not possible due to physical constraints, the PRP shall:

(a)

(A)(1) Collect and analyze a soil sample of soils remaining in place from the area determined to be the most contaminated by field measurements; and

(1)(2) If groundwater is encountered, collect and analyze a groundwater sample from the excavation area.

53. **Comment received:** 35-405 (a) (1) (C) edit to add at end "or until refusal".

Agency response: The Agency has modified this section as follows:

§35-405(1)(C) Soil samples shall be collected for analysis. Samples shall be collected for laboratory analysis from the water table if non-detect, or from the location of the highest VOC field screening instrument result. If the water table is not encountered and soil contamination above 10 ppm is present, the boring shall be advanced 5 feet beyond the depth of non-detect readings as measured with a VOC field screening instrument, or until refusal.

54. **Comment received:** 35-405 (a)(1)(C)-states, that soil samples collected for analysis shall be advanced 5 feet beyond the depth of non-detect readings as measured with a VOC field screening instrument. Advancing sample analysis 5 additional feet seems excessive.

Agency response: The Agency does not agree with this comment. This section is located in Subchapter 4, Response Actions; Release of Heating Fuels. If a release of heating fuel has not been fully addressed under 35-402 – 403, an

additional level of investigation will be necessary, including what is stated in 35-405_(e)(C), "Soil samples shall be collected for analysis. Samples shall be collected for laboratory analysis from the water table if non-detect, or from the location of the highest VOC field screening instrument result. If the water table is not encountered and soil contamination above 10 ppm is present, the boring shall be advanced 5 feet beyond the depth of non-detect readings as measured with a VOC field screening instrument, or until refusal." This is necessary to appropriately characterize the contamination at the site. No change will be made.

55. **Comment received:** UST grave groundwater samples are not likely representative of actual groundwater concentration and could be biased high due to turbidity. Monitor wells provide more reliable data and are a safer method to collect GW samples.

Agency response: *In general, the Agency agrees with this comment. However, this requirement is specific to the release of heating oil; not a full site investigation. The Agency believes that this requirement is adequate for its intended purpose, which is to confirm that a release to groundwater has occurred from a heating oil tank.*

SUBCHAPTER 5. CORRECTIVE ACTION

56. **Comment received:** 35-501. Warrants general review and edit for clarification. As written, it is unclear whether any of or all the conditions listed under that subchapter are required to meet the exemption from corrective action.

Agency response: *This section lists which conditions warrant an exemption from the need to conduct corrective action. This section does not warrant further clarification.*

57. **Comment received:** §35-501. This section should include an exemption for sites regulated under EPA jurisdiction for PCB investigation and remediation in accordance with 40 CFR 761, unless EPA waives jurisdiction to DEC. The reference to waste management of waste containing PCBs in §35-505(a)(5)(C)(ii) should be updated to reflect this.

Agency response: *If EPA is leading a PCB investigation or remediation, this does not mean the site is exempt from State Corrective Action requirements. Additional State requirements may be applicable once EPA is finished or may be concurrent with EPA requirements. It would not be accurate to include this as an "exemption".*

58. **Comment received:** §35-501(5) Include this language in (A):

(A) that there are no exceedances of any applicable Vermont Action Level, US EPA or State of Vermont Maximum Contaminant Level, or Vermont Health Advisory (in that order) at drinking water sources, vapor intrusion is not occurring and there are no other impacts that may present a threat to human health;

Agency response: *The Agency will include this revised language, with the exception of "in that order". The Section will be modified as follows:*

§35-501(5)(A) that there are no exceedances of any applicable Vermont Groundwater Quality Standards (Vermont Groundwater Enforcement Standards or Vermont Health Advisory) at drinking water sources, vapor intrusion or is not occurring and there are no other impacts that may present a threat to human health or the environment;

59. **Comment received:** §35-503(b) Include this language in (1):

The site investigation report demonstrates that there are no impacts to drinking water sources, vapor intrusion is not occurring, and there are no other impacts that present a threat to human health;

Agency response: *The Agency will revise this section as follows:*

§35-503(b)(1) The site investigation report demonstrates that there are no impacts to drinking water sources, vapor intrusion, or is not occurring, and there are no other impacts that present a threat to human health;

60. **Comment received:** §35-503(b) –requests that the Secretary include an exemption to an Evaluation of Corrective Action Alternatives, for development sites with specific engineering objectives.

Agency response: This exemption is covered under 35-503(b)(3), (4), and (5). An Evaluation of Corrective Action Alternatives would not be required if the approved remedy is excavation and disposal.

61. **Comment received:** Section 35-501 – The first phrase “contamination will not migrate from the property” is something that cannot definitively be applied for every circumstance given the unpredictability of nature, meaning that the exemption could rarely or never apply. It is similar to requiring lightning to never strike the site. Please consider something like “a demonstration that chemicals will not migrate at concentrations exceeding standards, given the current data that is available” or other defined but discretionary language.

Agency response: The Agency has revised this section as follows:

~~§35-501(5)(C) the a demonstration that contamination will not migrate from the property at concentrations exceeding standards, given the current data that is available, and concentrations are stable or declining;~~

§ 35-505. Corrective Action Plan

62. **Comment received:** 35-505(5)(C)(iv)&(v) are confusing and appear inconsistent (*Waste Management Plan-purge water*). It suggests that contaminated purge water may be returned to the ground, but uncontaminated purge water cannot be returned to the ground without permission from the Secretary. We suggest reworking these subsections to be more protective of the environment.

Agency response: Section 35-505(5)(C)(iv) refers to petroleum contaminated purge water and Section 35-505(a)(5)(C)(v) refers to non-petroleum, non-hazardous waste purge water. It does not refer to “uncontaminated” purge water. No change will be made.

63. **Comment received:** 35-505 (10) Makes very little sense to have a QA/QC plan for a CAP. Lab data are mostly already gathered and field investigations are complete at this stage. QA/QC plan is typically the pre-planning prior to sampling. Move to Site Investigation requirements?

Agency response: The Agency agrees that QA/QC plan is usually included in the pre-planning stages, but occasionally a QA/QC plan will be necessary during the CAP stage such as for confirmation sampling.

64. **Comment received:** 35-505 (5) (C) ii – The TSCA and Hazardous Waste discussion doesn’t seem right, or is very awkwardly worded. Maybe just refer the reader to TSCA regulations, and not put all these details in writing? Second sentence makes it seem like it must be disposed of as a hazardous waste no matter what, if there are PCBs, which isn’t true. First sentence it makes it seem like TSCA only applies to PCBs less than 50 ppm? PCB disposal typically uses the term “PCB remediation waste,” not hazardous waste.

Agency response: The Agency has modified the language in this section as follows:

~~§35-505(5)(C)(ii) If the waste contains polychlorinated biphenyls (PCBs), it shall be managed in accordance with the Toxic Substance Control Act (TSCA), provided the PCBs are not present at concentrations in excess of 50 parts per million (ppm). The waste also must be managed as a hazardous waste in accordance with the Vermont Hazardous Waste Management Regulations- (VT01 hazardous waste code). If PCBs are present at concentrations below 50 ppm, the waste is not a hazardous waste regulated by the VHWMRs but may still may be managed by require management under TSCA-~~

§ 35-510. Non-Hazardous Waste Contaminated Soil

65. **Comment received:** §35-510(a) – Several comments in regards to off-site stockpiling not allowed. This section indicates that off-site stockpiling of contaminated soil is prohibited; however, if the soil is classified as solid waste, then it is our understanding that this material is under the jurisdiction of the Solid Waste Division, and it should be allowable to stockpile material in accordance with an insignificant waste management event (“IWMEA”) permit. We suggest that a reference to the Solid Waste Division IWMEA procedure be included under this section.

Agency response: The Rule states that off-site stockpiling of contaminated soil is prohibited. However, the Agency will be including provisions for the temporary off-site stockpiling of contaminated soil, including requirements to adhere to certain siting criteria, reporting requirements, and timeframes, subject to approval from the Secretary. If soil is classified as a solid waste and the site is being managed by Sites Management Section, then the soil will be managed through an approved CAP and an IWMEA will not be necessary. The Agency has amended the Rule as follows:

§35-510(c) Additional on-site treatment options for non-hazardous contaminated soil must be approved by the Secretary.

§35-510(f) Off-site management.

① Non-hazardous contaminated soil may be treated or disposed at the following locations:

- (A) An in-state or out of state solid waste disposal facility;
- (B) An in-state or out of state treatment facility; and
- (C) As provided in § 35-512 for development soils.

② Non-hazardous contaminated soil may be temporarily stockpiled at an offsite location providing pre-approval is granted by the Secretary, and the following criteria are met:

- (A) Excavated and stockpiled soils must be completely contained or encapsulated within a polyethylene plastic liner, which must be a minimum thickness of 6 mils or another containment method determined by the Secretary to be equally protective.
- (B) The integrity of the polyethylene liner must be maintained.
- (C) No additional soil may be added to the existing soil stockpile, unless approved by the Secretary.
- (D) The location of the polyencapsulated soil must be in an area where:
 - (i) there are no water supplies within a minimum 300-foot radius. This limit may need to be extended if water supplies are shown to be hydraulically downgradient;
 - (ii) There are no sensitive environments including a stream, river, lake, pond, state or federally listed threatened or endangered species or habitat, wetland, floodplain, Class I or II groundwater, residence, property boundary, or other similar areas, within 100 feet of the stockpile location;
 - (iii) The stockpile location is not within zone one or two of a groundwater source protection area;
- (E) Public access to the location where polyencapsulated soils are stockpiled must be prohibited through posting no trespassing and other means;
- (F) If the landowner of the property where polyencapsulated soils are stockpiled is different from soil generator, written approval for the soil stockpile that also grants access for the Secretary, has been obtained before stockpiling begins;
- (G) The location where polyencapsulated soils are stockpiled must be depicted on the site map;
- (H) Failure to adequately maintain polyencapsulated soil piles will result in a new release subject to investigation and corrective action;
- (I) Soils may only be temporarily stockpiled for up to 90 days, or under an alternate schedule approved by the Secretary; and
- (J) Temporary stockpiling may not occur between December 1st and April 1st.

66. **Comment received:** 35-510. We disagree with the prohibition of off-site stockpiling of contaminated soil, and suggests clarifying what “off-site” means. Is it possible to add language to allow for stockpiling soil off-site provided it is at a site owned by the PRP? Also, in addition to requiring written approval from the Secretary, written notification of local municipalities seems burdensome and unnecessary. Further, prohibiting the management of contaminated soil on previously uncontaminated areas seems unnecessary, particularly if they are managed property. This prohibition precludes the development of systems to appropriately managed contaminated soil on site.

Agency response: The Agency will be including provisions for the temporary off-site stockpiling of contaminated soil, including requirements to adhere to certain siting criteria, reporting requirements, and timeframes, subject to approval from the Secretary. See response to comment #65.

67. **Comment received:** §35-510(d) – This section indicates that, "...management of contaminated soil in a previously uncontaminated area is prohibited..." We request that the Secretary revise this statement to exclude development soils from this requirement.

Agency response: The Agency has modified the criteria for onsite management of contaminated soil to allow for management within the area of contamination on the site. This section has been modified in the following manner:

§35-510(e) On-site soil management. Management of contaminated soil in a previously uncontaminated area is prohibited. Non-hazardous contaminated soil may be managed on the property where the release occurred and within the area of contamination, provided all the following have been demonstrated:

⊖

- (1) The proposed management area meets the siting criteria of subsection (b)(6) of this section;
- (2) Management will occur above the seasonal high water table;
- (3) An engineered soil cap must be installed following the management to eliminate contact risk. The engineered soil cap must be:
 - (A) If not covered by an impervious surface, a minimum of 18" thick; or
 - (B) If covered by an impervious surface, 6" thick of fill or sub-base material under the impervious surface.
 - (C) Alternate cap thicknesses may be utilized, providing additional institutional controls are placed on the property to ensure protection of human health and the environment, and pre-approval is granted by the Secretary.

68. **Comment received:** 35-510 (d)(4), placing indicator fabric at the bottom of excavation is impractical and unnecessary.

Agency response: The Agency will amend this statement to reflect the intent, which is to mark the location between contaminated and uncontaminated soil in the subsurface. This section has been modified in the following manner:

- §35-510(e)(4) The engineered soil cap must be clearly marked with a material that distinguishes the divide between the non-hazardous contaminated soils and the clean backfill, both at the top and the bottom of the excavation;

69. **Comment received:** 35-510 (d)(3). Numerous comments were received on the requirements for engineered barriers being too stringent. The prescribed 18" for pervious and 6" for impervious should be the starting point and evaluated based on 1) acceptable ongoing monitoring, and 2) concentrations left in place. The costs and practical implementability of these measures as described are both unnecessary and will have the unwanted result of greenspace development. Discretion should be allowed for development soils for thinner cap thickness coupled with OM. I-Rule also specified that indicator fabric had to be placed at the top and the bottom of any excavation, which creates confusion.

Agency response: The Agency included additional language which indicates that any deviation from the prescribed cap thickness will require justification that the proposed cap will be protective of human health and the environment, and will require additional land use restrictions. In addition, the Agency will clarify that indicator fabric must be placed to clearly mark the divide between contaminated and uncontaminated soil, but not necessarily entombed in the indicator fabric. Included language to allow for alternate cap thicknesses with additional institutional controls; see response to comment #67.

70. **Comment received:** §35-510(b) and §35-510(d)(3) – These sections suggest that there are only two methods for the on-site treatment of non-hazardous soil (polyencapsulation treatment for petroleum soils, and burying soil with engineered cap). However, there are multiple treatment options for soils which could occur on-site including soil recycling options, bio-treatment options and phytoremediation. We request that the Secretary include a statement

that other on-site soil treatment options may be allowable as approved by the Secretary for non-hazardous contaminated soil.

Agency response: *The Agency has amended the rule to indicate that additional methods of soil treatment can be utilized and must be included in a CAP for approval from the Secretary. See response to Comment #65.*

71. **Comment received:** §35-510(e) – This section suggests that there are only two methods for the off-site disposal of non-hazardous soil (disposal at a solid waste landfill or at a development soil receiving site). We request that this section be revised to include that soils of this nature would be allowed to be disposed of at an in-state or out of state treatment or recycling facility such as ESMI, at a minimum.

Agency response: *The Agency will include language which says “treatment”. See response to Comment #65.*

72. **Comment received:** 35-512 (1). note that these are not the same analyses or methods required by landfills or ESMI, so other analyses will be needed to cover your bases for all possible disposal locations.

Agency response: *The Rule only covers Agency requirements; additional analyses may be required by disposal facilities.*

73. **Comment received:** There was a request that the option for a “presumptive remedy”, which was part of an earlier draft I-Rule version, be put back in the I-Rule.

Agency response: *The Agency replaced the concept of the “presumptive remedy” with “Exemptions from Corrective Action”.*

Corrective Action Completion Report

74. **Comment received:** Section 35-507(b) – There is no requirement that an Environmental Professional or Professional Engineer certify a Corrective Action Construction Completion Report, although similar certification is required for most other reporting requirements in the I-Rule. Please confirm that is the intent of the regulation.

Agency response: *This requirement is covered in 35-507(b)(17) and 35-104:*

§35-507(b)(17) A certification that the activities were performed in accordance with the Corrective Action Plan.

§35-104 All deliverables required by §35-102(c)(3) (emergency response; limited site investigation); §35-303 (site investigation work plan), §35-305 (site investigation report); § 35-503 (evaluation of corrective action options); § 35-403(response actions; releases of heating fuels; investigation and soil removal report); 35-405 (Additional Site Investigation);§35-407(a) (response actions; releases of heating fuels; additional site characterization report); § 35-505 (corrective action plan); § 35-507 (corrective action construction completion report); and § 35-509(b) (long term monitoring report) must be prepared, signed, and certified by an Environmental Professional. Reports must be signed with the following certification:

“I certify under penalty of perjury that I am an Environmental Professional and that all content contained within this deliverable is to the best of my knowledge true and correct.”

Long Term Monitoring

75. **Comment received:** 35-509(b)(1)(2). Please clarify to whom these results should be sent within the Agency and what other actions a PRP may be expected to undertake to mitigate potential risks.

Agency response: *The Agency does not find this to be necessary and it will not be included. Results must continue to be submitted to the SMS Project Manager.*

76. **Comment received:** 35-509 (e) (8), edit “Detection limits shall be below the environmental media standards” to “Laboratory reporting limits shall be below the environmental media standards, if scientifically possible by modern

laboratory science, and if there is no matrix interference.” Or say something like “*all reasonable attempts shall be made to get reporting limits below environmental media standards.*” (Some of the standards, particularly from the VT DOH, do not take into account what is actually achievable by laboratories).

Agency response: *The Agency does not find this to be necessary. If there are circumstances in which the laboratory is unable to achieve detection limits below the environmental media standard, this must be fully explained in the appropriate report.*

77. **Comment received:** Note that there is a difference between detection limits and laboratory reporting limits. Data below reporting limits but above the detection limit (j-flagged data) are not acceptable by EPA Region 1 – will they be allowed by the VT DEC?

Agency response: *When reviewing sampling data, the Agency is looking for concentrations that are below standards, but not necessarily below detection limits. No change to the Rule will be made.*

SUBCHAPTER 6. INSTITUTIONAL CONTROLS

Notice to the Land Record

78. **Comment received:** 35-602-Note that a Notice to the Land Records is only acceptable if permission is granted by the current property owner, who is not necessarily the responsible party. Part (d) just says it's to be filed by the PRP.

Agency response: *Landowner acceptance is not required in order to place a notice on a land record. The Secretary is able to place a notice on the land record without landowner acceptance.*

Deed Restriction/Environmental Easement

79. **Comment received:** 35-603. Commenter disagrees with the use of deed restrictions and easements to achieve the objective (to prevent hazardous material exposure). The preparation and filing of a DR is expensive and troublesome, and unnecessarily diverts money away from corrective action. Suggests reducing the filing to the deed restriction itself and not include “all exhibits” associated with the project.

Agency response: *The Agency will not be changing its requirement for a deed restriction.*

80. **Comment received:** VT DEC should consider using an alternative to a deed restriction for sites that do not require prescriptive operations and maintenance (i.e. residual impacted soil and groundwater, isolated under a clean cap). Perhaps activity and use limitations (AULs) could be considered. The AUL could serve as a formal notice and also require operation, maintenance, and inspection of the isolation barrier, without placing a formal deed restriction on the property.

Agency response: *Currently, the Agency does not have a process in place to use AULs. However, sites that do not require prescriptive operations and maintenance plan are not required to obtain a deed restriction. These sites are only required to place a notice on the land record.*

SUBCHAPTER 7. SITE CLOSURE

81. **Comment received:** §35-701(e)(1) – This section suggests that the Secretary may reopen a SMAC designation if “previous remedial activities... are found to have been inadequate.” Does this indicate that sites where environmental media met the standards at the time of closure may be reopened if standards become more strict in the future? What would be the trigger for reopening a SMAC under this instance?

Agency response: *The Agency has the ability to reopen sites based on future changes in standards.*

82. Comment received: 35-701 Include the following:

(b)(4): No hazardous materials associated with the Site are present in drinking water supplies at concentrations in excess of an applicable Vermont Action Level, US EPA or State of Vermont Maximum Contaminant Level, or Vermont Health Advisory (in that order) ~~Vermont Primary Groundwater Enforcement Standards~~.

(b)(9): Migration of hazardous materials from soil to groundwater is not occurring at a concentration which will result in an exceedance of the any Vermont Primary Groundwater Quality Enforcement Standards.

Agency response: *The Agency modified the language in 35-701(b)(4) but has left the current language in 35-701(b)(9) to be consistent with the current draft of the Groundwater Rule.*

~~§35-701(b)(4) No hazardous materials associated with the Site are present in drinking water supplies at concentrations in excess of Vermont Primary Groundwater Quality Standards (Vermont Groundwater Enforcement Standards- or Vermont Health Advisory).~~

SUBCHAPTER 8. REQUESTS FOR REIMBURSEMENT FROM MUNICIPAL WATER LINE EXTENSIONS FROM THE PCF OR ECF.

83. Comment received: §35-801(d)(3)(D) – Under the Groundwater management plan section, groundwater may be discharged directly to a water body in accordance with a National Pollutant Discharge Elimination System (“NPDES”) permit, under specific conditions and as approved by the Wastewater Division. VHB requests a revision to this section to reflect that possibility.

Agency response: *The Agency finds this comment to be correct. No changes are needed to this section as it applies to reimbursement from municipal water lines.*

APPENDICES

84. Comment received: Appendix A-Standards. Specify which EPA RSLs will be used in Rule.

Agency response: *The Agency will use the most recently updated version which is currently the May 2016 values.*

85. EDITS TO TABLE 1 – (1) Use EPA Regional Screening Table values for Resident and for Worker (use RST Composite Worker) from Summary Table based on TR=10-6 and HQ=0.1. (2) Edit header of RSL block “(1) US EPA Regional Screening Levels (TR=1E-06, HQ=0.1)” (3) Edit footnote “(1) Values listed are reflective of the Resident Soil and Combined Worker Soil Screening Levels presented in the US EPA Regional Screening Level Summary Table dated Month/Year that provides values corresponding to either a one-in-one-million (10-6) risk level for carcinogens or Hazard Quotient of 0.1 for non-carcinogens. A HQ of 0.1 is employed as simultaneous exposure to more than one chemical in soil and/or exposure to the same chemical, or other chemicals, in other environmental media could result in a Hazard Index in excess of 1. (4) Add footnote to VTDEC Background block that background is statewide background only for arsenic, lead and PAHs established as required by Act 52. Otherwise looks like will be adding values which contradicts 35-APX-B1(a) Establishment of Site-Specific Background Levels. Edit Column Header. Edit Footnote. Change “Industrial” to “Composite Worker” (5) -Determine if values from RST will be hardwired to a specific iteration or if will add provision to compare to most current iteration – add footnote to reflect.

Agency response: *The Agency has added clarifications to the tables, where appropriate.*

86. Comment received: Please update VDH B(a)P RB-RSC value of 0.076 mg/kg which was provided to DEC on February 2, 2017.

Agency response: *The Agency has revised the value.*

87. Comment received: Vapor Intrusion - Screening Values for Soil Gas and for Groundwater for use in assessment of Vapor Intrusion– (1) edit header – change Industrial to “Worker” to be consistent with RST Indoor Air receptor (2) edit footnote (2) “Vapor intrusion screening values for soil gas and groundwater were derived based on Target Indoor Air Values. Target Indoor Air Values were derived from either the 1991....the higher of the two values was used as the

Target Indoor Air Value." ADD the target cancer risk and hazard quotient used in the development of the soil gas and groundwater screening values (3) for groundwater, note if derivation based on MCL (i.e., truncated at MCL) or on risk-based value (4) edit footnote (4) with updated VDH worker assumptions.

Agency response: *The Agency has revised the values and assumptions based on review of updated groundwater temperatures and attenuation factors.*

88. **Comment received:** Sediment Screening Values for protection of aquatic biota and public health – ADD note re comparison values for public health

Agency response: *The Rule refers to the sediment values provided by the Watershed Division. Comparison to public health values will be used if the sediment is accessible to the public, the correct values for comparison will be submitted in the work plan.*

89. **Comment received:** Add Separate Subsections with EMS for Waters Listed in 35-305(b)(11)-Reiterate values to be used, in what hierarchy and the source of each. Media should be listed in same order as in 35-305(b)(11)

Agency response: *The Agency has included clarification in the text of the Rule. The Agency does not find it to be necessary to provide significant clarification within the tables.*

90. **Comment received:** Surface Water – Screening values for protection of aquatic biota and public health – ADD note comparison values for public health

Agency response: *The Agency compares surface water concentrations to surface water quality standards, rather than drinking water standards. If a surface water is a drinking water source, then it will be compared to the drinking water standards as well.*

91. **Comment received:** Appendix A - Suggest that you don't include current EPA RSLs in the table, and just refer people to find the most current ones online. They change so often that this table will be out of date within a few months, but consultants and State PMs still refer to it accidentally, as has been the case with the 2012 IRCP.

Agency response: *The Agency will not change language based on this comment. The Agency will update the standards as often as necessary.*

92. **Comment received:** Appendix B item (a) states that establishment of background concentrations may be conducted to take the place of "an adopted environmental media standard". In Section (e) it states that "...the Secretary shall approve or deny the proposed groundwater concentrations or may establish alternative background groundwater concentrations...." Does Appendix B apply only to groundwater or can it be used to establish background concentrations for other "environmental media standards" such as soil, soil gas and indoor air quality?

Agency response: *The Agency revised the text to remove the implication that this section only applies to groundwater as follows:*

~~§35-APX-B1(e) Site specific standard. Following submission of the proposed background groundwater quality report#concentrations to the Secretary, the Secretary shall approve or deny the proposed background groundwater concentrations or may establish alternative background groundwater concentrations based on the background groundwater quality report.request.~~

93. **Comment received:** TI Waivers – Need to clarify that this doesn't only apply to groundwater.

Agency response: *The Agency has revised the text in Appendix C to remove the implication that this section only applies to groundwater.*

§35-APX-C1(b)(3) The Secretary determines that remediation has taken place to reduce in concentration hazardous materials in groundwater environmental media and the plume has been controlled to the extent practical based on an evaluation of reliable and innovative technologies;

94. **Comment received:** TI waiver: When a groundwater plume goes offsite (Appendix C; (b)(3)): is this intended to also apply to plumes which go off property? Can you get a waiver from doing continue monitoring?

Agency response: *It is possible that a TI waiver could be applied to contaminant plumes which extend beyond the property boundary. As stated in the TI waiver Appendix, “A TI waiver does not waive the requirements to delineate the nature and extent of the release of pollutants, to remediate continuing sources of pollution, or to address potential risks to receptors.” Continued groundwater monitoring would likely be a method of managing the site and the risk to receptors, as well as an institutional control plan.*

95. **Comment received:** If a contaminant plume goes off property, could you apply for TI waiver and would this go against GW Rule and Reclass requirement?

Agency response: *A TI waiver may be applied for regardless of the property boundaries. A GW reclass or other acceptable LUR would still be needed.*

96. **Comment received:** Appendix B. Changed definition of background to: “Background” means naturally occurring constituents where the concentration detected in the environmental medium sampled is attributable to natural occurrence and not influenced by site related or other anthropogenic activities.

Agency response: *The Agency will keep the definition of “background” as is in the Definitions section. Urban and Rural background values have been added to Appendix A. A definition for “background” does not exist in Appendix B.*

97. **Comment received:** Vapor Intrusion comments:

Recent work by ITRC for petroleum vapor intrusion (October 2014) and USEPA (June 2015) indicates that the attenuation of petroleum VOCs between source and the receptor is strongly assisted by bioattenuation such at, regardless of the concentration in groundwater or soil source, if there is adequate vertical distance, there is no VI risk. For dissolved phase, this separation is 5 feet; for NAPL, it is 15 to 18 feet. Sites which have this vertical separation are routinely screened out from further consideration

The proposed rule utilizes outdated soil gas-to-indoor air attenuation factors for assessing vapor intrusion into buildings, which do not reflect the current state of knowledge to evaluate this exposure pathway. The proposed rule should instead utilize attenuation factors that are reflective of the current state of knowledge.

The proposed rule does not discuss how vapor intrusion screening values for groundwater are to be used to assess sites.

The proposed rule assumes a groundwater temperature of 25°C (77°F) in the development of its vapor intrusion screening values – a temperature that would be appropriate for groundwater in Florida but not for Vermont. The screening values should be revised to reflect groundwater temperatures reflective of conditions in New England. Alternatively, the rule should include a provision to allow responsible parties to make such modifications accounting for site-specific groundwater temperature.

The proposed rule relies on a novel, unscientific approach for calculating the risk-based air screening level for PCE. The proposed approach is not based on sound science and does not reflect the approach used by US EPA and other states.

The proposed rule does not specify how vapor intrusion should be investigated at sites and fails to present any discussion or references.

The iRule Appendix A2 Table 2 includes the Indoor Air and Soil Gas Screening Values but the iRule does not include the requirements related to the collection of site data or how to use the Screening Levels/Values to evaluate site data. Therefore, if there are exceedances of the Screening Levels/Values will the DEC have the authority to require site action?

Agency response: *The Agency has revised attenuation factors and groundwater temps, as appropriate. The process for investigating vapor intrusion will be referenced in the sampling and analysis document, which will be available on the Agency's website. The DEC does have the authority to require site action when there are exceedances of the Screening Levels/Values; which is an indication of a release.*

In addition to the Rule revisions based on public comment, the Agency has revised the Rule content based on internal discussions that are not reflected above. These revisions are presented by Rule section below. Minor grammatical revisions have been omitted.

§ 35-201. DEFINITIONS

(5) “Area of contamination” means a defined area on the site where hazardous waste is present and environmental media standards are exceeded due to the release.

(10) “Compliance Point” means

- (A) any point of present use of groundwater, including use as a public water source or as a source of water for potable water supplies;
- (B) the boundary of a Class I, Class II, or Class IV groundwater area;
- (C) zone two of a public water source protection area;
- (D) any point at the boundary of the property where the activity is defined located; and
any point established in the Groundwater Protection Rule and Strategy, § 12-605. an approved corrective action plan established to evaluate a release’s impact on a sensitive receptor.

(17) “Environmental media” means components of the natural environment including air, water, soil, and soil bedrock.

(22) “Hazardous material”

- (A) means all petroleum and toxic, corrosive, or other chemicals and related sludge included in any of the following:
 - (i) any substance defined in section 101(14) of the federal Comprehensive Environmental Response, Compensation and Liability (CERCLA) Act of 1980;
 - (ii) petroleum, including crude oil or any fraction thereof; or
 - (iii) hazardous wastes as defined by the Vermont Hazardous Waste Management Regulations; or
 - (iv) a chemical or substance that, when released, poses a risk to human health or other living organisms and that is listed by this rule.

§ 35-305. SITE INVESTIGATION REPORT

(b)(14) Discussion. The discussion shall include a descriptive analysis of how the data gathered further refines the CSM, how the CSM has been updated, and how the site investigation work plan objectives in § 35-303(b) have been met. The discussion shall also establish that the data collected are suitable to determine the existing and future exposure to sensitive receptors and, the need for further characterization. Only data that meets quality assurance quality control (QA/QC) criteria will be accepted. A discussion of data which doesn't meet QA/QC criteria must be included. The report shall evaluate if the data demonstrates that groundwater contamination is confined to the same property where the release occurred and if not, if it will recede to the property boundary within five years the timeline established in the Vermont Groundwater Protection Rule and Strategy.

§ 35-503. EVALUATION OF CORRECTIVE ACTION ALTERNATIVES

(b)(2) For impacted groundwater, the site investigation report demonstrates that the groundwater contamination is confined to the property where the release occurred on or will recede to the property boundary within five years the timeline established in the Vermont Groundwater Protection Rule and Strategy;

§ 35-505. CORRECTIVE ACTION PLAN

(5)(C)(iv) Petroleum contaminated purge water from groundwater monitoring wells and equipment decontamination water may be returned to the ground within the area of contamination where it was extracted from.

(5)(C)(v) Non-petroleum, non-hazardous waste contaminated purge water may be returned to the ground within the area of contamination where it was extracted from, if approved by the Secretary.

§ 35-510. NON-HAZARDOUS WASTE CONTAMINATED SOIL

(b)(10) Soil piles must remain polyencapsulated and in good condition. Failure to adequately maintain polyencapsulated soil piles will result in a new release subject to investigation and corrective action.

§ 35-511. SITE GENERATED HAZARDOUS Waste Soils WASTES

(a) Site generated hazardous waste soils must be managed in accordance with the Vermont Hazardous Waste Management Rules unless managed in an area of contamination under the approval of the Secretary.

§ 35-603. DEED RESTRICTION/ENVIRONMENTAL EASEMENT

(b)(4) When groundwater contamination remains, or is projected to remain at the Site above the Vermont Groundwater Enforcement Standards at a compliance point beyond five years in accordance with the timeline established in the Vermont Groundwater Protection Rule and Strategy.

§ 35-604. LAND USE RESTRICTIONS WITHIN A CERTIFICATE OF COMPLETION

(a) Purpose. The Secretary may establish land use restrictions within a certificate of completion upon closure of a site enrolled in BRELLA pursuant 10 V.S.A. Chapter 159. The purpose of these restrictions is to ensure the ongoing effectiveness of response actions taken at the site.

(b) Applicability. The Secretary may restrict future uses of a property as a part of a certificate of completion in any of the following situations:

- (1) When long term maintenance or monitoring of the corrective action or property use restrictions are required;
- (2) When active remedial infrastructure must remain in place in order to prevent contamination from posing a risk to human health or the environment;
- (3) When a Technical Impracticality (TI) Waiver has been granted by the Secretary in accordance with Appendix E; or
- (4) When groundwater contamination remains or is projected to remain at the Site above the Vermont Groundwater Enforcement Standards at a compliance point in accordance with the timeline established in the Vermont Groundwater Protection Rule and Strategy.

(c) Minimum Elements. At a minimum, a certificate shall be issued to include the following items:

- (1) A legal description of the site property;
- (2) A description of the release, corrective action, and statement of the need for a land use restrictions on the property;
- (3) Access to Agency of Natural Resources personnel to access the site at all reasonable times to inspect compliance with the land use restrictions identified herein, as well as to assess the need for, planning, or implementing additional response actions at or near the site.
- (4) Restrictions on future uses of the property or portions of the property to prevent receptors from being exposed to any residual contamination that remains on the property and to ensure the effectiveness of any corrective action;
- (5) A map of where restricted areas are located on the property in recordable form, unless the restrictions apply to the property without restriction.

(a)(d) Recording. The PRP shall record a certificate of completion and all supporting documentation and exhibits with the land records of the municipality or municipalities in which the site is located. Such recording shall be made within one week of the date of issuance of the certificate of completion. Within one week of the date of recording, the PRP shall provide a copy of the recorded and stamped certificate of completion and all recorded documents with the Agency, which includes the book and page number of where those documents were recorded.

§ 35-701. SITE MANAGEMENT ACTIVITY COMPLETE

(d)(2) SMAC letters must include a copy of the site map showing properly decommissioned historical monitoring points, original source area(s), and the approximate extents of residual contamination.