NJDEP Technical Guidance Document Review Form

Document: ***Attainment of Remediation Standards and Site-Specific Criteria (Version 3.0)***

Comment Period START: April 26, 2024
Comment Period END: May 17, 2024

Send all Comments to: greg.neumann@dep.nj.gov

NJDEP Committee Chairpersons	**Greg Neumann**

Comment #	Page	Section	Subsection	COMMENTS	NJDEP RESPONSES
1	--	--	--	General comment - conduct a global search and review all uses of must and shall to ensure they have a citation to support them. OR change to should/may	A global search was conducted. Text was revised to address comment.
2	--	--	--	The Change Log for change number 8 page number should be 9.	Change log revised to address comment.
3	--	--	--	There are a few instances where “ground water” is only one word. To be consistent with the TRSR it should be ground water.	Document revised to address comment.

4	7	3.0	--	Suggest global edit. First uses the term "95% Upper Confidence Level of the Mean". It would be more appropriate term to use the terminology "95% upper confidence **limit on** the mean". Suggest using the following acronym (UCLM) to simply the use of this term throughout the document.	The terminology used in this guidance, "of the mean," is consistent with the way EPA utilizes the term in USEPA ProUCL Version 5.2 Technical Guidance; no revision needed.
5	7	3.0	--	Fourth Paragraph on page 7, words are capitalized that shouldn't be, such as "and", "for", "the", etc.	Document revised to address comment.
6	7	3.0	--	Paragraph 10 refers to the “75%-10x compliance option". This compliance option is referred to as either “75%-10x” or “75 percent/10x” in subsequent sections. CCNJ/SRIN recommend that a single format should be chosen and used throughout the document for consistency.	Document revised to address comment. The term 75%/10X selected. Section 12.5 title revised and compliance averaging changed to compliance option.
7	9	--	--	Table 4-1: The NJDEP publishes Interim specific ground water quality criterion. Suggested that this also be referenced in Table 4-1.	No revision needed. The interim specific groundwater quality criterion are developed in accordance with N.J.A.C. 7:9C and are therefore incorporated by reference.
8	9	Table 4-1	--	N.J.A.C is missing a period. Also, the Vapor Intrusion title is in quotes, unlike the others. Not sure why.	Document revised to address comment.
9	10	4.0	--	Suggested edit. Change "depends upon the intended future use" to "depends upon the current and reasonably anticipated future use". Doing so would be more consistent with language used in other guidance documents (e.g., Tech Guidance for ARS).	Document revised to address comment.
10	10	4.0	--	Suggested edit. Change "that are being remediated" to "that are being assessed". While we believe the use of the term remediated here is consistent with the general use of remediate to describe all aspects of the program, this change may help improve the readers understanding.	Document revised to address comment.

11	10	4.0	--	Suggest eliminating the use of the word "additional" from the 7th line of the second paragraph since a site may be being evaluated which has never undergone any remedial action. If the intent is to use the term "remediation" to represent the site investigation/remediation process generally, consider clarifying.	Document revised to address comment.
12	10	4.0	--	Language says "...including but not limited to, additional delineation sampling and/or remedial actions." Additional sampling may be warranted for other reasons besides "delineation". For example, additional sampling may be conducted to help support the development of ARS or remedial design. Suggest eliminating the word "delineation" here or expand the sentence to clarify.	No revision necessary; existing text is accurate. Text already states "including but not limited to".
13	10	4.0	--	Suggest changing language in the last line of the 2nd paragraph "a remediation" to "the investigation/remediation process".	No revision necessary; existing text is accurate.
14	10	4.0	--	Suggest that the last sentence of the 2nd paragraph be followed with reason(s) as to why compliance determinations should be performed following each phase.	No revision necessary; existing text is accurate.
15	10	5.0	5.1	Suggest modifying the 1st sentence of the 2nd paragraph to say, "the evaluation of concentrations relative to the most conservative applicable remediation standards and/or screening criteria is done on a point-by-point basis during the site investigation."	No revision necessary; existing text is accurate.

16	10	5.0	5.2	Suggest modifying/simplifying the 1st sentence of the 2nd paragraph to "The goal of the remedial investigation should be to adequately characterize the nature and extent of contamination as necessary to determine the need for, and potential extent of, remedial action" to be consistent with the regulatory definition.	No revision necessary; existing text is accurate
17	11	5.0	5.2	Suggest modifying the first sentence to say, "As with the site investigation, in general, the evaluation of concentrations relative to the most conservative applicable remediation standards and screening criteria is done on a point-by-point basis during the remedial investigation."	No revision necessary; existing text is accurate.
18	11	5.0	5.2	In paragraph 4 on page 11, I suggest removing the parentheses from the section titles or removing the capital letters. I suggest not capitalizing Attainment as used in this paragraph to be consistent with the rest of the document.	Document revised to address comment.
19	11	5.0	5.2	Suggest modifying "if contamination is determined" to "if chemical concentrations are determined"	Document revised to address comment. Text revised to "if contaminant concentrations are determined"
20	11	5.0	5.2	Suggest changing "complete horizontal and vertical delineation using single point compliance" to "complete horizontal and vertical delineation to the applicable remediation standards and screening criteria on a point-by-point basis,"	No revision necessary; existing text is accurate.

21	11	5.0	5.2	Suggest adding a clarification statement that the remedial investigation does not need to include actual clean zone sampling data to demonstrate contaminant delineation to the applicable remediation standards, such sampling data are required to demonstrate attainment of the applicable remediation standards and screening criteria at the conclusion of the remedial action report and prior to the Department issuing a remedial action permit **for that media**, if applicable, and the LSRP issuing the Response Action Outcome (RAO).	No revision necessary; existing text is accurate. It is evident that Remedial Action Permits are media specific.
22	11	5.0	5.2	Our understanding is that averaging should always involve an applicable functional area. The boundaries of an AOC should not be used to define the extent of the area over which average concentrations are to be estimated. Suggest eliminating "area(s) of concern or" in the 2nd sentence of the 4th paragraph.	The attainment methods presented in this guidance represent remedial actions directly tied to an AOC and the extent of contamination related to that AOC. To provide clarity, "functional" areas" has been removed from sentence.
23	11	5.0	5.2	Suggest changing "functional area(s) where averaging is being applied" to "functional area(s) over which average concentrations are being calculated"	The attainment methods presented in this guidance represent remedial actions directly tied to an AOC and the extent of contamination related to that AOC. To provide clarity, "functional" areas" has been removed from sentence..
24	12	5.0	5.3	Suggest inserting "still" in between "may be" on the 2nd line of the first paragraph.	No revision necessary; existing text is accurate.
25	12	5.0	5.3	Global suggestion. Rounding is noted in several places throughout the document. For efficiency, perhaps consider just presenting this in one or Section place, noting that rounding is always applicable as long as it is performed in accordance with the methodology in Appendix B.	No revision necessary; existing format/text is accurate.

26	12	6.0	6.1	Instead of "soil Ingestion-Dermal Exposure Pathway and soil Inhalation Exposure Pathway" Ingestion-Dermal Exposure Pathway for Soil and Inhalation Exposure Pathway for Soil.	No revision necessary; existing text is accurate
27	13	6.0	6.1.2.2	Capitalize E in exposure (title), remove parenthesis after 7, capitalize "I" in Inhalation	Document revised to address comment.
28	16	6.0	6.7.3	Same as above (Comment #21) - Suggest adding a clarification statement that the remedial investigation does not need to include actual clean zone sampling data to demonstrate contaminant delineation to the applicable remediation standards, such sampling data are required to demonstrate attainment of the applicable remediation standards and screening criteria at the conclusion of the remedial action report and prior to the Department issuing a remedial action permit for that media, if applicable, and the LSRP issuing the Response Action Outcome (RAO).	See response to comment 21 above.
29	Change Log	6.0	6.7.4.1	DEP's Change Log states "Paragraph referencing ISM removed as this methodology is no longer referenced in the Department's Technical Guidance for Site Investigation of Soil, Remedial Investigation of Soil, and Remedial Action Verification Sampling." However, the posted DEP Technical Guidance SI/RI/RA dated March 2015 Ver. 1.0 in section 5.4.1 on page 22 and 23 states that "However, the Interstate Technology and Regulatory Council's (ITRC) Incremental Sampling Methodology Team has developed a modified approach, called Incremental Sampling Methodology (ISM). This sampling approach may be acceptable in certain situations." in the Composite Sampling bullet. CCNJ/SRIN request that DEP please provide the technical justification for this change.	No revision necessary; existing text is accurate.Reference to ISM in the Attainment Guidance was directly related to ISM being referenced in the Soil SI/RI/RA Guidance. The Soil SI/RI/RA Guidance no longer contains this methodolgy.

30	18	6.0	6.7.4.1	The version of the Department's Technical Guidance for Site Investigation of Soil, Remedial Investigation of Soil, and Remedial Action Verification Sampling (Version 1.2, March 2015) that is posted on the CSRR website does still reference ITRC's Incremental Sampling Methodology in Section 5.4.1 (pages 22 and 23). Is the Soil SI/RI/RA guidance in the process of being updated in conjunction with the Attainment/Compliance guidance?	No revision necessary; existing text is accurate.Reference to ISM in the Attainment Guidance was directly related to ISM being referenced in the Soil SI/RI/RA Guidance. The Soil SI/RI/RA Guidance no longer contains this methodolgy
31	18	6.0	6.7.4.1	Suggest noting that averages are to be calculated within applicable functional areas.	No revision necessary; existing text is accurate. The 3rd paragraph of this section directs the reader to "see section 12.0" which describes the use of functional areas.
32	18	6.0	6.7.4.1	Suggest noting that arithmetic mean could be used but only under certain conditions (e.g., similar to what is noted below with regards to MtGW).	Document revised to address comment.
33	18	6.0	6.7.4.1	Global suggestion. The correct terminology would be 95% UCL **on** the mean. After introducing this in the introduction of the document, consider using UCLM as an acronym throughout.	No revision necessary; the existing text is accurate. The terminology used in this guidance, "of the mean," is consistent with the way EPA utilizes the term in USEPA ProUCL Version 5.2 Technical Guidance; no revision needed.
34	18	6.0	6.7.4.1	Section should note/clarify that for lead, the exposure concentration should always be a central tendency estimate (e.g., arithmetic mean or spatially weighted average). Using a UCLM or 75%/10x would not be appropriate because the lead soil remediation standards are based on blood lead modeling (i.e., IEUBK and ALM) which use central tendency estimates of exposure not high end or reasonable maximum estimates of exposure.	No revision necessary; the existing text is accurate. While the Department acknowledges the use of the IEUBK model to develop the SRS for lead, the use of this model does not require any modifications to the use of the attainment methodologies contained in this guidance.

35	18	6.0	6.7.4.1	75%/10x approach is just a simplified (alternative) approach for demonstrating that the UCL on the mean would be less than or equal to the remediation standard. Consider adding this approach to the bulleted list of compliance options in this section of the guidance document.	No revision necessary; the existing text is accurate The 75%/10x methodology is not related to the UCL. The 75%/10x option is not included in Section 6.7.4.1. as this section covers attainment relative to the Remedial Investigation phase, and 75%/10x is only applied after the remedial action has been implemented.
36	18	6.0	6.7.4.1	Suggest revising "If compliance averaging is used for appropriate ingestion-dermal and/or inhalation exposure pathway contaminants and the average contaminant concentration of each contaminant is less than or equal to its applicable direct contact exposure pathway soil remediation standard..." to "If compliance averaging is used for appropriate ingestion-dermal and/or inhalation exposure pathway contaminants and the average contaminant concentration of each contaminant **across the applicable functional area** is less than or equal to its applicable direct contact exposure pathway soil remediation standard".	No revision necessary; existing text is accurate. The 3rd paragraph of this section directs the reader to "see section 12.0" which describes the use of functional areas.
37	18	6.0	6.7.4.1	Suggest revising "If the average concentration of any contaminant exceeds its applicable direct contact soil remediation standard," to "If the average concentration of any contaminant **across the applicable functional area** exceeds its applicable direct contact soil remediation standard,"	No revision necessary; existing text is accurate. The 3rd paragraph of this section directs the reader to "see section 12.0" which describes the use of functional areas.
38	18	6.0	6.7.4.1	This comment applies to all paragraphs removing the references to incremental sampling methodology (ISM). It should be clarified in this document and/or the Technical Guidance for Site Investigation of Soil, Remedial Investigation of Soil, and Remedial Action Verification Sampling whether the use of ISM is acceptable to the NJDEP in appropriate scenarios.	No revision necessary; existing text is accurate.Reference to ISM in the Attainment Guidance was directly related to ISM being referenced in the Soil SI/RI/RA Guidance. The Soil SI/RI/RA Guidance no longer contains this methodolgy.

39	19,20,22	6.0	6.7.4.2	Suggest changing bullet # 2 in 6.7.4.2, 6.7.5.1, and 6.7.5.2 to match bullet # 2 as changed in 6.7.4.1.	Document revised to address comment. See response 32 above.
40	19	6.0	6.7.4.2	Suggest noting that averages are to be calculated within applicable functional areas.	No revision necessary; existing text is accurate. The 3rd paragraph of this section directs the reader to "see section 12.0" which describes the use of functional areas.
41	19	6.0	6.7.4.2	Global suggestion. The correct terminology would be 95% UCL **on** the mean. After introducing this in the introduction of the document, consider using UCLM as an acronym throughout.	No revision necessary; the existing text is accurate. The terminology used in this guidance, "of the mean," is consistent with the way EPA utilizes the term in USEPA ProUCL Version 5.2 Technical Guidance; no revision needed.
42	19	6.0	6.7.4.2	75%/10x approach is just a simplified (alternative) approach for demonstrating that the UCL on the mean would be less than or equal to the remediation standard. Consider adding this approach to the bulleted list of compliance options above.	No revision necessary; the existing text is accurate The 75%/10x methodology is not related to the UCL. The 75%/10x option is not included in Section 6.7.4.1. as this section covers attainment relative to the Remedial Investigation phase, and 75%/10x is only applied after the remedial action has been implemented.
43	19	6.0	6.7.4.2	DEP did not incorporate the changes that were made in the second bullet under Section 6.7.4.1 (i.e. text deleted to make sentence concise); this needs to be corrected in Section 6.7.4.2 for consistency.	Document revised to address comment. Bullets related to Section 6.7.4.1 and 6.7.4.2 have been revised for consistency.
44	19	6.0	6.7.4.2	The word "Similarly" should be removed from the start of the second paragraph.	Document revised to address comment.
45	19	6.0	6.7.4.2	Formatting. A return is missing after the third paragraph.	No revision necessary; existing format is accurate
46	19	6.0	6.7.4.2	See Comment 30.	See response to Comment 30 above.
47	20	6.0	6.7.4.2	Please correct ground to Ground at the top of the page. This was a typo in the original.	Document revised to address comment.

48	20	6.0	6.7.5.1	Suggest simplifying this guidance to note that these compliance options are available at any stage... for example, there is no reason why 75%/10x would be an appropriate means for demonstrating that the "mean concentration" is less than or equal to a remediation standard following remediation action and NOT appropriate before remedial action is performed.	No revision necessary; existing text is accurate. The attainment methodologies are not available for use at any stage, as full delineation is needed to utilize arithmetic mean, 95%UCL, and spatially weighed averaging. Full delineation is typically associated with the completion of an RI. The 75%/10x methodology is only applied after a remedial action has been performed.
49	20	6.0	6.7.5.1	Suggest noting that averages are to be calculated within applicable functional areas.	No revision necessary; existing text is accurate. See response to comment 31 above.
50	20	6.0	6.7.5.1	DEP did not incorporate the changes that were made in the second bullet under Section 6.7.4.1 (i.e. text deleted to make sentence concise); this needs to be corrected in Section 6.7.5.1 for consistency.	Document revised to address comment. Bullets related to Section 6.7.4.1 and 6.7.5.1 have been revised for consistency.
51	20	6.0	6.7.5.1	See Comment 30.	See response to Comment 30 above.
52	21	6.0	6.7.5.1	Suggest revising "compliance averaging is used for appropriate ingestion-dermal and/or inhalation exposure pathway contaminants and the average contaminant concentration of each contaminant is" to "compliance averaging is used for appropriate ingestion-dermal and/or inhalation exposure pathway contaminants and the average contaminant concentration of each contaminant **across the applicable functional area** is"	No revision necessary; existing text is accurate. See response to comment 31 above.
53	22	6.0	6.7.5.2	Suggest simplifying the guidance... the methods proposed for estimating if average concentrations across functional areas are equal to or less than remediation standards (or criteria) should be the same at each stage of the process.	No revision necessary; existing text is accurate. See response to Comment 48 above.

54	22	6.0	6.7.5.2	DEP did not incorporate the changes that were made in the second bullet under Section 6.7.4.1 (i.e. text deleted to make sentence concise); this needs to be corrected in Section 6.7.5.2 for consistency.	Document revised to address comment. Bullets related to Section 6.7.4.1 and 6.7.5.1 have been revised for consistency.
55	23	6.0	6.7.5.2	See Comment 30.	See response to Comment 30 above.
56	23	6.0	6.7.5.2	Suggest revising "compliance averaging is used, and the average contaminant concentration of each contaminant is less than or equal to its applicable SRSMGW" to "compliance averaging is used, and the average contaminant concentration of each contaminant **across the applicable functional area** is less than or equal to its applicable SRSMGW"	No revision necessary; existing text is accurate. See response to Comment 31 above.
57	23	6.0	6.7.5.2	The word "Similarly" should be removed from the start of the second paragraph.	Document revised to address comment:
58	27	7.0	7.3.4	At the end of the third paragaph, a statement should be added that any GW impacts associated with historic fill only require a Virtual CEA and no GW RAP.	Document revised to reflect comments.
59	27	7.0	7.3.4	The reference in the fourth paragraph should be (N.J.A.C. 7:26C-7.9(f)).	Document revised to address comment. A hyphen was added between C and 7.

60	27	7.0	7.3.4	2nd and 3rd full paragraphs: Saying "site monitoring well network" is too restrictive, better to say something like "delineated plume boundary". The requirement for compliance per N.J.A.C. 7:26C-7.9(f) is for the number of samples collected to be representative of the entire horizontal and vertical extent" of the ground water classification exception area. As a matter of policy, the delineated plume boundary is used if the CEA is not yet established - sometimes plumes are remediated before a CEA has a chance to be established. Also, not all CEAs make it to the GW RAP phase, so sometimes an inadequate monitoring well network exists and there is reliance on temporary well points for confirmatory sampling. Using a phrase like "within the delineated plume boundary" will allow greater flexibility and be more in line with the rule.	Document revised to reflect comments. Text was revised to clarify several points within this section.
61	27	7.0	7.3.4	Paragraph 3: change language from "...taken far enough apart to account for seasonal fluctuations." to "...such that the time between sampling events accounts for seasonal fluctuations in the ground water table and the number of ground water samples collected is representative of the entire horizontal and vertical extent of the ground water classification exception area" to be consistent with the text in N.J.A.C. 7:26C7.9(f).	Document revised to reflect comments. Text was revised to clarify several points within this section.
62	27	7.0	7.3.4	Formatting (N.J.A.C. 7:26C7.9(f))	Document revised to address comment. A hyphen was added between C and 7.

63	30	9.0	--	Edit the following for clarity: "Requirements for investigations of extractable petroleum hydrocarbons (EPH) are found in the Department guidance document Department “Evaluation of Extractable Petroleum Hydrocarbons in Soil Technical Guidance” document." Proposed edit: "Requirements for investigations of extractable petroleum hydrocarbons (EPH) are found in the Department guidance document titled “Evaluation of Extractable Petroleum Hydrocarbons In Soil Technical Guidance (link) in effect….”.	Document revised to address comment. The word "Department" has been deleted immediately preceding the EPH document for clarity.
64	30	11.0	--	Addition of screening levels since the rest of the paragraph is discussing the various media involved in the evaluation of this pathway.	No revision necessary; existing test is accurate.
65	31	12.0	12.1	Regarding the text "The data to be selected are to include those required to delineate the AOC encompassed by the functional area." Comment -- the AOC may not be encompassed by a single FA, and delineation may cross the FA boundaries. Suggested text: "The data to be selected are to include those required to delineate the AOC."	Document revised to address comment.Text revised to change functional area to functional area(s) at the end of the 4th sentence.

66	32	12.0	12.1.1	The sizes of these "default" functional areas are based upon exposure assumptions. For example, the 0.5 acre functional area for inhalation exposure pathway for the residential exposure scenario is used because 0.5 acres is the assumed source area size used in deriving the inhalation-based SRS. While the 0.25 acre assumption for the ingestion/dermal pathway is not used in the derivation of the ingestion/dermal-based SRS, it is implied that the receptor's exposure may occur over half of the assumed site (e.g., front yard vs. back yard).Instead of requiring the use of default areas which may not be appropriate to the activity patterns for a given receptor at a given site, why not explain the basis and then provide the option to the PRCR and LSRP to use default functional areas or site-specific functional areas which are more consistent with the activity patterns of receptors under current and reasonably anticipated future use of the site? Doing so would ensure that decisions regarding the need for remedial action would be based on less generic and arbitrary exposure areas thereby reducing uncertainty and improving the overall decisions made. Recognize that this may warrant development of ARS which reflect alternative assumptions (e.g., source area size).	No revision necessary; existing test is accurate.This comment is addressed with the newly added section 12.1.5 titled Functional Area Size Development with an Alternate Remediation Standard.
67	32	12.0	12.1.1.2	A space is needed between 2.0 and acres.	Document revised to address comment.
68	32, 33, 37	Footnotes	--	Footnotes 1, 2 and 3 – Recommend removing “(cap)” after “engineering control” because other engineering controls, such as a fence, may also be relevant.	Document revised to address comment. Changed "(cap)" to "(e.g., cap)"

69	35	12.0	12.1.3	As an option, the guidance should provide for an approach which does not segregate the data by vertical zones and instead uses the maximum concentrations observed at each sampling point (e.g., soil boring) regardless of depth. If the outcome of this more conservative approach attains the SRS then segregating the data by vertical zone and calculating averages separately would not result in a worse outcome. Allowing for this alternative and more conservative approach would simplify the guidance and provide a means for making the process more efficient.	This section of the document that specifies the use of two vertical zones (surface/sub-surface) was not revised. Comments on this section are outside the scope of the peer review. The Department may consider this topic in a future revision.
70	36	12.0	12.1.3.2	Fix spacing between paragraphs before Figure 4 or make one paragraph.	Document revised to address comment.
71	36	12.0	12.1.3.2	The above approach (Comment #59- now comment 66) should be also provided for as an option for evaluating direct contact exposure.	No revision necessary; existing test is accurate. See response to Comment 66 as the reference to Comment 59 was a typographical error.
72	36	12.0	12.1.3.2	Episodic rainfall events result in short term water table fluctuations as well as longer term water level increases. This section and other guidance documents fail to account for changes in the vadose zone over time. This section of the guidance would be an opportunity to provide clarification on this issue / how to incorporate such situations.	No revision necessary; existing test is accurate. The Attainment Committee acknowledges the comment, however, that type of technical clarification is beyond the scope of the Attainment Guidance.

73	36	12.0	12.1.3.2	Consider adding a sentence acknowledging that past versions of the Guidance required two zones for the MGW pathway, and averaging conducted using the previous approach and included in a prior RAW or RAO remains acceptable / is not a site re-opener condition.	No revision necessary; existing test is accurate. This issue is addressed in Section 1 with the "phase in" language.
74	36	12.0	12.1.3.2	This is a significant change from the previous document and appears to indicate that the two feet above the groundwater table is no longer treated as a separate zone to account for groundwater fluctuations. How does the NJDEP define the top of the water table / how much flexibility is allowed for the use of professional judgment in establishing the top of the water table? is it depth at any point in time or an average over some time period?	The Department defines the top of the water table as the top of the seasonal high water table as discussed in guidance and as determined by the LSRP.
75	36	12.0	12.1.3.2	CCNJ/SRIN support DEP in allowing the use of a single vertical zone for migration to groundwater pathway.	The Attainment Committee acknowledges the comment.
76	36	12.0	12.1.3.2	Clarify IF the single vertical zone includes saturated portions of the vadose zone (i.e. capillary fringe) above the water table.	Yes, the single vertical zone would include the capillary fringe above the water table.

77	37	12.0	12.1.4.2	Include a statement that the size of the functional area should still be consistent with the assumptions used in the calculation of the DAF.	No revision necessary; existing text is accurate. This issue is addressed in the last two bullets of Section 12.1.1.3.
78	37	12.0	12.2	Revise the sentence on UCL to be the upper confidence **limit on the mean**	The terminology used in this guidance, "of the mean," is consistent with the way EPA utilizes the term in USEPA ProUCL Version 5.2 Technical Guidance; no revision needed.
79	37, 38, 40	12.0	12.2, 12.3, and 12.4	12.2, 12.3, 12.4 - Instead of submitting Form I as a stand-alone, consider instead requiring submittal of the NJ Reduced lab report with the report (if the data was completed in prior phase/submitted in a prior report) in order to maintain continuity and reliability of complete laboratory reports. Asking LSRPs to excerpt pages from laboratory reports without QA/QC information for context may result in inappropriate use of data.	The Attainment Committee believes the submission of laboratory data summary sheet(s) is appropriate. Reduced lab deliverables are already a required submission. The reliability of analytical data, and related QA/QC deliverable, to support a remedial action is to be determined by the LSRP pursuant to N.J.A.C. 7:26E Appendix A.
80	38,39,41	12.0	12.2	The designation Form I is used in the fourth paragraph to indicate an example of the Analytical Results Summary Form. The term is not used in the Technical Requirements for Site Remediation or elsewhere, that I know of. I suggest defining Form I or replacing it with Analytical Results Summary Form in the few places used in this document.	Document revised to address comment. Text revised to clarify the submission of the Analytical Results Summary Form as specified in N.J.A.C 7:26E - Appendix A, II Reduced Deliverable Requirements at (b)1, (c)1, (d)1, and (e)1.

81	38	12.0	12.2	The guidance states that "For non-detect (ND) values, enter ½ of the Reporting Limit (RL) concentration for the specific analyte as reported in the laboratory analytical data package." The current guidance states that "For non-detect (ND) values, enter zero (0) as the value." CCNJ/SRIN request that DEP please provide the technical justification for this change. We also ask that DEP explain why the RL was used instead of the MDL; for example, if an analyte is ND, the RL is 1, and the MDL is 0.25, this document would require that a value of 0.5 be used.	Please see response attached below titled Rationale for Selection of 1/2 Reporting Limit to Replace ND Values.
82	38	12.0	12.2	The guidance states that "For non-detect (ND) values, enter ½ of the Reporting Limit (RL) concentration for the specific analyte as reported in the laboratory analytical data package." The current guidance states that "For non-detect (ND) values, enter zero (0) as the value." CCNJ/SRIN request that DEP please provide the technical justification for this change. We also ask that DEP explain why the RL was used instead of the MDL; for example, if an analyte is ND, the RL is 1, and the MDL is 0.25, this document would require that a value of 0.5 be used.	Please see response attached below titled Rationale for Selection of 1/2 Reporting Limit to Replace ND Values
83	38	12.0	12.2	The guidance states that “Data from AOCs that are not of regulatory concern also would not be included.” Sampling for an AOC that is not of regulatory concern sometimes provides delineation data for AOCs that are of regulatory concern. CCNJ/SRIN request that DEP please provide the technical justification for excluding delineation data from a sampling point that is advanced for, and associated with, another AOC.	Document revised to address comment.The last sentence of the last paragragh has been removed from this section.

84	38	12.0	12.3	Revise the sentence on UCL to state it is the upper confidence limit **on** the mean	The terminology used in this guidance, "of the mean," is consistent with the way EPA utilizes the term in USEPA ProUCL Version 5.2 Technical Guidance; no revision needed.
85	39	12.0	12.3	Per: "For non-detect (ND) values, enter ½ of the RL concentration for the specific analyte as reported in the laboratory analytical data package." Since ProUCL incorporates the handling of ND using Kaplan Meier, this language should be modified to note that the user should provide ProUCL with the sampling results as noted in its guidance (i.e., detected concentrations and the full RL tagged with 1's and 0's, respectively, to communicate to the program which is which).	No revision necessary; existing text is accurate. Section A1.0 of the guidance notes how data should be input into the ProUCL program. The full reporting limit should not be input for non-detects as this guidance specifies the use of 1/2 of the laboratory Reporting Limit (see Rational provided below). It should also be noted that the ProUCL Version 5.2.0 Technical Guide does not recommend usage of the full reporting limit. Section 1.11.2 of the ProUCL guidance states "ProUCL 5.2 (and all previous versions) does not make distinctions between method detection limits (MDLs), adjusted MDLs, sample quantitation limits (SQLs), reporting limits (RLs), or DLs."
86	39	12.0	12.3	Similar to Comment #58 above, the AOC may not be encompassed by a single FA, and delineation may cross the FA boundaries. This issue should be addressed / language should be modified in the document to state that the data to be selected for the FA are to include those required to delineate the AOC.	Document revised to address comment. Functional area changed to functional area(s) at the end of the 4th sentence.
87	39	12.0	12.3	Consider adding a sentence acknowledging that past versions of the Guidance allowed for use of MDL for ND, and averaging conducting using the previous approach and included in a prior RAW or RAO remains acceptable / is not a re-opener.	No revision necessary; existing text is accurate. This issue is addressed in Section 1 with the "phase in" language.

88	39	12.0	12.3	The guidance states that "For non-detect (ND) values, enter ½ of the Reporting Limit (RL) concentration for the specific analyte as reported in the laboratory analytical data package." The current Attainment guidance states that "For non-detect (ND) values, enter zero (0) as the value, for use of ProUCL." CCNJ/SRIN request that DEP please provide the technical justification for this change. We also ask that DEP explain why the RL was used instead of the MDL; for example, if an analyte is ND, the RL is 1, and the MDL is 0.25, this document would require that a value of 0.5 be used.	Please see response attached below titled Rationale for Selection of 1/2 Reporting Limit to Replace ND Values.
89	39	12.0	12.3	The guidance states that “If more than one potential UCL is identified by the algorithm used, the lower value should be used in the evaluation.” CCNJ/SRIN request that DEP please provide clarification and the technical justification for not using the software recommended or suggested UCL. For example, in Appendix A, Figure 2A, the example UCL statistics suggest that the UCL to use is the 95% KM (t) UCL of 136.5; does this guidance require use of the 95% KM (z) UCL of 131.7?	Text revised to address comment. This sentence was meant to refer to instances where the ProUCL program outputs more than one "Suggested UCL to Use". It was not meant to infer that UCLs not suggested by the program should be used. For clarity, the text will be revised to state "If more than one suggested UCL is provided by the algorithm used, the lower value should be used in the evaluation.”
90	40	12.0	12.4	"If multiple samples exist within a single vertical zone (e.g., 2 feet through 12 feet bgs), the greatest concentration within that zone should be used in the analysis." Should this say, "if multiple samples within a boring exist within a single vertical zone…”?	Document revised to address comment:

91	40	12.0	12.4	Per: "The spatial analysis must be performed within each of the vertical zones within which contaminant concentrations exceed the applicable remediation standard." As noted earlier, the guidance should provide for an approach which does not segregate the data by vertical zones and instead uses the maximum concentrations observed at each sampling point (e.g., soil boring) regardless of depth. If the outcome of such an approach attains the SRS then segregating the data by vertical zone and calculating averages separately would not result in a worse outcome. Allowing for this alternative and more conservative approach would simplify the guidance and provide a means for making the process more efficient.	This section of the document that specifies the use of two vertical zones (surface/sub-surface) was not revised. Comments on this section are outside the scope of the peer review. The Department may consider this topic in a future revision.
92	40	12.0	12.4	Please clarify shape of Functional Area for SWA. It is not referenced here (specifically excluded), but in the 2 sets of example figures it is handled differently. In the 12.4 section figures (pg. 42, Figures 6/7), the FA seems to be clipped to the site boundary as defined by the roads (with some minor exclusions around the corners) and in Appendix A (pg. 59/61, Figures 4/5) the area is clipped to an approximate square. There is no defined methodology or DEP expectation for determining the shape of the FA for SWA as the guidance currently stands.	The Attainment guidance adequately addresses the development of functional areas (see Section 12.1). The figures on page 42, which were contained in the first version of the Attainment Guidance, are from a technical paper and are used to illustrate the general concepts of functional area boundaries, sample points and related polygons. The figures contained on pgs. 59/61 are again, for illustrative purposes, and are meant to convey the appropriate data deliverables (figures/tables, etc.) to accompany SWA submissions. A footnote has been added for clarification.

93	41	12.0	12.4	The guidance states that "For non-detect (ND) values, enter ½ of the Reporting Limit (RL) concentration for the specific analyte as reported in the laboratory analytical data package." The current Attainment guidance states that "For non-detect (ND) values, enter zero (0) as the value, for use of spatial weighted average." CCNJ/SRIN request that DEP please provide the technical justification for this change. We also ask that DEP explain why the RL was used instead of the MDL; for example, if an analyte is ND, the RL is 1, and the MDL is 0.25, this document would require that a value of 0.5 be used.	Please see response attached below titled Rationale for Selection of 1/2 Reporting Limit to Replace ND Values.
94	42	12.0	12.4	Figure 6 - The figure here does not show that contamination has been delineated horizontally before reaching the property boundary. The polygons to the south east of the site exceed the 8 mg/kg proposed standard yet SWA is still being applied. This is an incorrect example of how to employ SWA since horizontal single point compliance has not been obtained.	Figures 5-9, which was contained in the first version of the Attainment Guidance, are from a technical paper and are used to illustrate the general concepts of functional area boundaries, sample points and related polygons. A footnote has been added to these tables for clarification.
95	--	12.0	12.4	The Change Log for this change is pertinent to the first paragraph, not the fifth.	Change log will be revised to address comment.

96	44	12.0	12.4	Why is the statement that "the 95% UCL compliance option is not applicable as this option requires a minimum of 10 samples" not included in the third bullet point? If 9 samples are collected from a 2-acre functional area, the 95% UCL option would not be applicable. Additionally, the investigator has the option to collect more samples than the minimum number required for a functional area, so the statement should for each of the bullet points be changed to "Note that the use of the 95% UCL compliance option is not appropriate unless the required minimum of 10 samples are collected from the functional area."	Document revised to reflect comment. A sentence has been added to each bullet that indicates if more than 10 samples are present in a FA then the 95%UCL method may be used. Also, see Comment 22.
97	44	12.0	12.4.1	12.4.1 – Consider development of a similar section/example for historically applied pesticides or creating an allowance in this section for HAP.	No revision necessary; the text is accurate.The issue of functional area size, with regards to pesticides, is already addressed in the Historically Applied Pesticide Technical Guidance -February 2022 Version 3.1
98	44	12.0	12.4.1	Paragraph 2 -- incorrectly states that the residential SRS are "based on" the ingestion-dermal OR inhalation pathway since both pathways are applicable standards. Recommend revising to "if remediation to the Residential SRS is selected, then 0.25 acre sized Functional Areas would be appropriate if the contaminant exceeds the Residential SRS for the ingestion-dermal pathway, or 0.5 acre sized Functional Areas if the contaminant exceeds the Residential SRS for the inhalation pathway.	Document revised to address comment.
99	44	12.0	12.4.1	Bullets and figure descriptions following paragraph 2 use "1/4" or "1/2", whereas remainder of document uses "0.25" or "0.5" to describe acre size. Suggest that the decimal approach be utilized throughout the document.	Document revised to address comment.

100	44	12.0	12.4.1	CCNJ/SRIN request that DEP address sample thickness. If a historic fill layer is 2-ft thick, can the entire 2-ft thick zone be collected in one sample, not including VOCs (vs. one 6-in interval that may or may not represent the most impacted)? What if the historic fill layer is 3-ft thick? We also request that DEP provide more details on how to handle a situation where there is site-wide historic fill and sampling is complete. Can spatially weighted averaging then be used to remediate historic fill? For example, looking at Figure 10 and assuming that one sample is extremely elevated for arsenic; if polygons are created, can it then be “removed” and replaced with clean fill values? Alternatively, as the spatially weighted averaging considers “removing” that contaminant from the AOC/site, what if this exceedance was under a building or parking lot? Could one remediate only this polygon using institutional and engineering controls (e.g. cap and deed notice) instead of removal? Is the application of spatially weighted averaging an option for historic fill if the appropriate number of samples are collected (and representatively distributed as indicated in the guidance)?	Characterization sampling techniques for historic fill are contained in the Historic Fill Material Technical Guidance. Yes, SWA can be used to remediate historic fill in a manner consistent with this section.
101	45	12.0	12.5	Please clarify if remediation must be conducted across the entire AOC to employ this option. I have seen proposal for 75/10x where remediation occurred in half the AOC and then 75/10x applied for resulting post-ex results AND initial investigations samples where remediation didn't occur.	This guidance clearly states that using the 75/10x procedure can only be applied after a "remedial action has been conducted." This procedure is intended to apply to post-remediation samples at an AOC where a remediation was implemented to address the entire AOC. No revisions to text are necessary.

102	45	12.0	12.5	Section should note that 1/2 the RL should be used for this procedure for NDs to be consistent with the other methods noted in this guidance.	This procedure does not employ the replacement of NDs in it's application. No revisions to text are necessary.
103	45	12.0	12.5	What is the technical basis for limiting this to only after remedial action as been conducted? Why would it not be appropriate to allow this simplified approach to be used before remediation is performed? Recommend modifying the guidance to allow for the use of 75%/10x on data whether it reflects remediation conditions or pre-remediation conditions provided that the applicable data has been collected.	The decision to limit this methodology to its use after a remedial action has been conducted is consistent with Pennsylvania DEP's Technical Manual where this methodology originated.
104	46	12.0	12.5	The abbreviations for the Soil Remediation Standards referenced in the last paragraph should be updated to be consistent with the current names for these standards and references to these standards in other rules and guidance published by the Deparment. The Residential Direct Contact Soil Remediation Standard (RDCSRS) is no longer used. The Department does not use an appreviation for the two residential standards (inhalation and dermal contact) either collectively or individually in the Remediation Standards at N.J.A.C. 7:26D or in the various guidance documents that reference these standards. The Department's May 2021 *Soil and Soil Leachate Remediation Standards for the Migration to Ground Water Exposure Pathway* document uses the abbreviation "SRS-MGW" for Soil Remediation Standards for the Migration to Ground Water pathway which should be used in place of MGWSRS. The abbreviation MGWSRS is used multiple times throughout the draft Attainment/Compliance guidance. If the abbreviation MGWSRS is to remain in the Attainment/Compliance guidance, it should be noted that this is not defined until Example #2 in Appendix A (Page 62)	Document revised to address comment. Reference to the RDCSRS and MGW-SRS will be modifed as follows “residential soil remediation standards for the ingestion-dermal and inhalation exposure pathways and SRS-MGW”

105	46	12.0	12.6	The guidance states that "...Appendix A contains examples of the data deliverables (tables, figures, data sheets, etc.) that should be submitted with the remedial phase report where these methods are utilized. The requested data deliverables should be readily available, as they are necessary for the calculation of the compliance averaging methods." The example data deliverables in Appendix A, Figure 1 and Table 1 do not provide RL and MDL values. The example data in Appendix A, Table 2 do not provide sample names. The example tables in Appendix A, Figure 3 and Table 3 do not provide RL and MDL values. The example data in Appendix A, Figures 4 through 7 do not provide sample data, including RL and MDL values. The example data in Appendix A, Tables 4 through 7 do not identify when the RL or MDL has been used. All of these items are needed for the calculation of the compliance average and subsequent validation of those calculations. CCNJ/SRIN request that DEP update the example data deliverables in Appendix A, Figure 1 and Table 1 to include RL and MDL values to clearly state how DEP would like to receive the data deliverables.	The tables and figures presented in Appendix A are for illustrative purposes and are meant to provide examples of the supplementary figures and tables that should accompany reports where compliance averaging is utilized. These figures and tables were obtained from DEP Case Study training slides and used here for consistency. The individual tables and figures in this appendix are not intended to meet all of the general reporting requirements outlined in N.J.A.C. 7:26E-1.6. Table 2 is also meant to contain only the information input into the ProUCL program which does not include sample names.The 95% UCL tables were revised and ND values were replaced with 1/2 of the RL values.
106	50	Appendix A	--	The units of ppm and mg/kg are used interchangeably. CCNJ/SRIN recommend that a single format should be chosen and used throughout the document for consistency.	Text will be revised to be consistent.

107	51	Appendix A	Figure 1	The added examples are a great idea. However, the areas on this figure do not designate the AOC(s) where the sampling took place. Also, the spatially weighted averaging examples include brief information on pass/fail of the compliance averaging. I suggest adding this each example for consistency and added teaching benefit.	The examples provided are hypothetical in nature and applying an AOC name to each example is not necessary. The pass/fail terminology is simply being used to indicate if the final calculated value is above/below the standard. Revisions to text are not needed.
108	53,54,55,56	Appendix A	--	Tables 4, 5. 6 and 7 have the units of "sq/ft" for the polygon area. This should be corrected to "sq ft"	Text revised to address comment. Sq/Ft used throughout document.
109	53,54,55,56	Appendix A	ProUCL	I ran one set of the ProUCL numbers to check the result. It was a match. Please consider noting with these worksheets that some of the information/output was omitted for illustrational/brevity purposes. It may be helpful to the users of the document.	Document revised to address comment. The text in Section A1.0 will be revised to include a sentence indicating that the ProUCL screenshots were modified and only represent a portion of the ProUCL worksheets.
110	77	Appendix C	--	The guidance states that “Non-detect (ND) values should be replaced with ½ of the laboratory derived Reporting Limit (RL) concentration for the specific analyte(s) in data sets where averaging methodologies (arithmetic mean, 95% UCL, and Spatially Weighted Averaging) are being selected to attain compliance with soil remediation standards (SRS).” The current guidance states that "For non-detect (ND) values, enter zero (0) as the value." CCNJ/SRIN request that DEP please provide the technical justification for this change.	Please see response attached below titled Rationale for Selection of 1/2 Reporting Limit to Replace ND Values.

111	77	Appendix C	--	ND laboratory data is typically reported as undetected at the MDL (MDL U) or less than the MDL (<MDL). Data summary data tables also reported ND values in reference to the MDL. Using the RL for averaging methodologies instead of the MDL represents a change in how data is handled, and would require the investigator to create new data tables specifically for compliance averaging. Additionally, historical RL and Analytical Results Summary Tables may not be readily available for legacy sites. The requirement to use ½ the RL for compliance averaging may require costly file reviews and/or preclude compliance averaging when performing order of magnitude evaluations. CCNJ/SRIN request that DEP consider acceptance of a narrative description of historical laboratory data in lieu of updating historical tables.	Please see response attached below titled Rationale for Selection of 1/2 Reporting Limit to Replace ND Values. The issue of using historic data, and its relevance to support present day decision making, is site-specific and beyond the scope of this guidance document.

Rationale for Selection of ½ Reporting Limit to Replace ND values

The selection of a value to represent Non-Detects (ND) is a subject that has been debated for decades. It is generally recognized that an “appropriate” value falls between the laboratory Method Detection Limit (MDL) and Reporting Limit (RL) ; e.g., Currie, L.A., “Limits for Qualitative Decision and Quantitative Determination”, Anal. Chem., 40:586 (1968). In typical data sets, the MDL is the more conservative value (lowest concentration) with the RL being less conservative. The Attainment Committee spent a significant amount of time discussing the merits of the using either the RL or MDL which requires an understanding of how these values are defined/derived, along with the complexities of various parameters that influence the development of RLs and MDLs including laboratory quality assurance/quality control parameters, laboratory analytical equipment calibration and sensitivity, calibration curves, statistics, confidence levels, etc. After considerable discussion amongst the Attainment Committee members and CSRR management, a consensus-based decision was reached to use ½ of the RLs as derived by the laboratory on a sample-specific basis. The decision to use ½ of the laboratory RL represents a “reasonable value” between the MDL and RL, incorporates important and timely site-specific and instrument-specific information by the nature in which it is derived, represents a value that is generated by laboratories following specific protocols, and can easily be identified by investigators through the evaluation of laboratory sample summary sheets. An objective of the Committee was to identify a reasonable and consistent proxy value for ND across all of the compliance averaging methods. It is not believed that use of ½ of the RL in specific and limited cases of compliance averaging represents a burden to Investigators, particularly relative to Versions 1.0 and 2.0 of the guidance document, which variously recommended zero (arithmetic mean), the MDL (95%-UCL) and the RL (spatially-weighted averaging) as proxies for NDs.