

Response to Comments
Draft Remedial Investigation Addendum Report for Site 21
St. Juliens Creek Annex
Chesapeake, Virginia

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Comments from VDEQ, provided 3 May 3 2010.
RPM Comments

Technical Comments:

1. **Comment:** Table 4-5, N/A explanation – since the attenuation factor for SV01 and SV03 was not calculated, the site-wide average attenuation factor is biased low; this should be discussed in the uncertainty section.

Response: The empirical AFs for constituents detected at less than 100 times the reporting limit have been added to Table 4-5 with a note indicating that those AFs may not accurately represent site conditions. Additionally the following changes to the text have been made to take into account the potential range of AFs at Building 1556:

- In the sixth sentence of Section 4.8.4, “filtered” has been removed.
 - The seventh sentence of Section 4.8.4 has been revised as follows, “The empirical AFs for Building 1556 ranged from 0.0003 to 0.03.”
 - The following text has been added as the eighth sentence of Section 4.8.4, “The empirical AFs for Building 1556 ranged from 0.0003 to 0.03. However, because the subslab vapor concentrations at SJS21-SV01 and SJS21-SV03 were relatively low, the empirical AF for SJS21-SV02 (0.0003) is considered to be most representative of actual site conditions.”
 - The AF for Building 1556 in the eleventh sentence of section 4.8.4 has been changed to 0.03
 - In the last sentence of Section 4.8.4 “...minimum of two orders of magnitude...” has been changed to “...minimum of one to two orders of magnitude...”
 - The third sentence of the second paragraph of Section 5.4 has been changed to “The empirical AF at Building 1556 is no greater than 0.03, but more likely closer to 0.0003, and the empirical AF at Building 47 is no greater than 0.001.”
 - In the fourth and fifth sentences of the second paragraph of Section 5.4 “...minimum of two orders of magnitude...” has been changed to “...minimum of one to two orders of magnitude...”
2. **Comment:** Section 6.1 – is there an elevator sump that may be a preferential pathway?

Response: There is an elevator and associated pit located in the southern portion of Building 1556 that connects the first and second stories of the building. The closest available depth to groundwater data, which was collected in the monitoring well located within the building, averages 6.8 feet below the slab; this is below the elevator pit, for which a building drawing (EFD Drawing No. 324374, June 5, 1992) indicates a pit depth of 4 feet and identifies a waterproof layer on all sides of the pit. Groundwater infiltration was not observed during the most recent elevator inspection, according to the head of Inspections and Certifications at NAVFAC MIDLANT. The highest groundwater COC concentration in close proximity to the elevator was collected at temporary monitoring well location TW103: cis-1,2-DCE at 9 µg/L. Therefore, based on the deeper water table and lower COC groundwater concentrations in the area, in conjunction with the construction details and inspection results, the elevator pit is not believed to be a significant preferential pathway. The following sentence has been added as the tenth sentence of the first paragraph of Section 6.1 to acknowledge the presence of the elevator and pit, "An elevator, including a subslab pit and shaft connecting the first and second floors, is located on the south end of the building but is not believed to present a significant preferential pathway for vapor intrusion because the pit is above the water table and a waterproof layer is present on all sides of the pit." Inclusion of this area in future vapor intrusion related activities will be considered during development of the monitoring plan.

3. **Comment:** Figure 6-1 – include drains, expansion joints, sumps, and outdoor air infiltration in the CSM.

Response: Additional building characteristics (e.g., locations of restrooms with floor drains, cracks and expansion joints in the slab) have been added to Figure 6-1.

4. **Comment:** Figure 6-2 – clarify that the fans are non-functioning, and include outdoor infiltration in CSM.

Response: Additional building characteristics (e.g., non-functioning fans) have been added to Figure 6-2.

5. **Comment:** Section 7.2, last two paragraphs – based on the decision tree the next box is, "Establish monitoring program to confirm site conditions haven't changed to allow for vapor intrusion and re-evaluate after the remedy" followed by, "Implement land use controls to eliminate residential pathway and re-evaluate after the remedy" therefore, it is inappropriate to use the term "NFA" – please rephrase these paragraphs.

Response: NAVFAC agrees that LUCs and monitoring should be implemented and maintained throughout the interim remedial action, which is defined by the time period until which the groundwater cleanup levels are met. However, based on the results of this investigation, following achievement of the cleanup levels (i.e., groundwater MCLs) NAVFAC believes NFA is warranted at that point. Although the decision tree indicated that the vapor intrusion pathway should be re-evaluated after the remedy, the decision tree was developed based on the assumption there would be current risk outside of the acceptable ELCR range. Because there is no current risk outside of the acceptable ELCR range and the groundwater remedial action will ultimately reduce contaminant

concentrations and associated risk levels, no further action following the groundwater remedial action is warranted. Changes will be made to further clarify this position.

Typographical Comments:

1. **Comment:** Figure 2-7 – add “limit” after “detection” in legend.
Response: The suggested change has been made.
2. **Comment:** Section 3, third paragraph, fifth line – change “or the collection” to “and the collection.”
Response: The suggested change has been made.
3. **Comment:** Section 3, third paragraph, last sentence – remove “however.”
Response: The suggested change has been made.
4. **Comment:** Section 3, fourth paragraph, first sentence – remove second “and.”
Response: The suggested change has been made.
5. **Comment:** Section 3.1.2, first line – add “locations” after “sample.”
Response: The suggested change has been made.
6. **Comment:** Section 3.1.3, last bullet, third sentence – remove “were.”
Response: The suggested change has been made.
7. **Comment:** Section 4.2, first line AND Section 4.3.1, first line – change “was compared” to “were compared.”
Response: The suggested change has been made.
8. **Comment:** Section 4.8.3 – should cis-1,2-DCE be capitalized at the beginning of a sentence?
Response: Yes, cis-1,2-DCE should be capitalized at the beginning of a sentence; The suggested change has been made.
9. **Comment:** Figure 4-1 AND Figure 4-2, legend – use either “location” or “locations” not both.
Response: Figures 4-1 and 4-2 have been revised to use “location” only.
10. **Comment:** Figure 4-2 – is there a D qualified result on this figure?
Response: There is no D-qualified result on this figure; the D-qualifier note in legend has been removed.

11. **Comment:** Section 6.1, first line – define acronyms “FISC” and “ILS.”
Response: The acronyms “FISC” and “ILS” are first defined in the third paragraph of Section 2.1, therefore, they have not been defined in Section 6.1, as suggested.
12. **Comment:** Section 7.1, first paragraph, fourth sentence – change “he” to “The.”
Response: The suggested change has been made.
13. **Comment:** Section 7.1, second paragraph, last sentence – change “here” to “There.”
Response: The suggested change has been made.
14. **Comment:** Section 7.2, second sentence – monitoring is warranted as documented in decision tree, please change “may be” to “is.”
Response: The suggested change has been made.
15. **Comment:** Attachment G, Page 1, fourth line from bottom – positively is misspelled.
Response: The spelling error has been corrected.
16. **Comment:** Attachment G, Page 2, first and second lines – averaging and interpretation are misspelled.
Response: The spelling errors have been corrected.
17. **Comment:** Attachment G, Page 2, Phase II, second paragraph – positively, averaging and interpretation are misspelled.
Response: The spelling errors have been corrected.
18. **Comment:** Attachment G, Page 3, first full paragraph, second sentence – change “is presented” to “are presented.”
Response: The suggested change has been made.
19. **Comment:** Attachment G, Page 3, large middle paragraph, middle line – insert space between “positively” and “pressurized.”
Response: The suggested change has been made.
20. **Comment:** Attachment G, Page 3, large middle paragraph – averaging and interpretation are misspelled.
Response: The spelling errors have been corrected.
21. **Comment:** Attachment G, Page 3, third paragraph from bottom – change “were overlain” to “was overlain.”
Response: The suggested change has been made.

22. **Comment:** Attachment G, Page 4, second full paragraph – averaging and interpretation are misspelled.

Response: The spelling errors have been corrected.

23. **Comment:** Attachment G, Page 4, last paragraph, second sentence – change “is presented” to “are presented.”

Response: The suggested change has been made.

24. **Comment:** Attachment G, figures – depict the power outages on all figures.

Response: The power outages during Phase I have been depicted on Figures G-1 and G-2.

Comments from VDEQ, provided May 6, 2010.

Risk Assessor Comments

1. **Comment:** During the site visit on 4/15 a small enclosed office space was observed within Building 47. Please explain why subslab/indoor air was not sampled in this office. This location should be considered for the monitoring program.

Response: During the UFP-SAP process, the team decided that based on the size and construction of Building 47, two sample locations would be sufficient for the investigation. The sample locations were selected to address the area of the building with the highest frequency of access (the break room; sample location SJS21-SV07) and to the area of the building within the footprint of the known CVOC groundwater plume in the northern portion of the building (sample location SJS21-SV06) (Figure 4-2). However, during partnering discussion the team requested an additional sample be collected to address the southern portion of the building within the footprint of the known groundwater CVOC plume (sample location SJS21-SV08). Therefore, the office referenced in this comment was not included in the sampling plan selected by the team but will be considered during development of the monitoring plan.

2. **Comment:** Section 4.8.4 – Please specify exactly where in the EPA document referenced in this section EPA endorses calculating an empirical attenuation factor only when the subslab vapor concentration is over 100 times the minimum subslab vapor reporting limits.

Response: Page 9 of the USEPA (2008) AF database document states, “...the empirical attenuation factor is most likely to represent the attenuation due to vapor intrusion when the indoor air concentration from vapor intrusion is substantially greater than the background indoor air concentration, which is most likely to occur when subsurface vapor concentrations are high.” The 100-times rule of thumb is not specifically stated in the USEPA document, but was selected for use in the evaluation based on professional judgment taking into consideration empirical subslab-to-indoor air AFs at other sites. Therefore, the third sentence of Section 4.8.4 has been changed to “Empirical AFs for locations where the constituents had relatively high subslab soil gas concentrations (e.g., greater than 100 times the minimum subslab reporting limits, based on professional

judgment considering review of empirical subslab-to-indoor air AFs at other sites) were considered most representative of site conditions in this evaluation.”

Comments from USEPA, provided 16 July 2010.

RPM Comments

1. **Comment:** Section 3, the first paragraph states that a VI investigation was planned for several sites including buildings 13 and 54 however, according to Figure 2-3 these two buildings have been demolished. Please address.

Response: Sections of Building 54 and Building 13 were demolished several years ago, but portions of both buildings remain, as depicted in Figure 2-3. Building 13 was never included in the VI investigation because it is unoccupied and a land use control will prevent a change in use, as indicated in the first paragraph of Section 3. Building 54 was originally planned to be included in the VI investigation but removed from the investigation when the building occupants were relocated to another building, as discussed in the first paragraph of Section 3. No changes to the text or figure are proposed.

2. **Comment:** Section 4.1.2, Subslab Vapor Project Action Limits. It is not appropriate to apply an attenuation factor (AF) to the Regional Screening Levels (RSLs). AF should only be applied to the actual sub-slab concentrations and the resulting concentration should then be compared to RSLs. This comment also pertains to Table 4-1.

Response: The PALs were established by the team through the UFP-SAP process. Because no RSL for subslab vapor exists, the USEPA’s default subslab vapor-to-indoor air AF of 0.1 was applied to the indoor air RSLs in order to establish a value for comparison to the subslab vapor data. Application of the AF to the subslab vapor data instead of to the air RSLs would not change the results of the evaluation. Therefore, no changes to the document are proposed.

3. **Comment:** To address the uncertainty of risk for the hypothetical new buildings EPA recommends that the proposed land use controls that prevent construction of additional structures include a requirement that any new building erected on the site incorporate an appropriate vapor barrier or mitigation system to ensure that the vapors will not enter the buildings.

Response: Controls will be put in place to prevent construction of new buildings at the site without additional vapor intrusion evaluation and/or implementation of mitigation measures until the groundwater remedial action is completed. The controls will be incorporated into the LUC RD for groundwater. The following revisions have been made to Section 7.2 of the text:

- The 5th sentence of the 1st paragraph has been changed to “LUCs to maintain the current industrial building use and prevent activities that would compromise the integrity of the building foundations during implementation of the interim remedial action should be incorporated into the LUC RD for shallow groundwater.”

- The 3rd sentence of the 2nd paragraph has been changed to “Therefore, LUCs to control a change in land use during implementation of the interim remedial action to address unacceptable risks associated with future potable use of shallow groundwater should be incorporated into the LUC RD for shallow groundwater.”
- The 4th sentence of the 2nd paragraph has been changed to “If a change in land use is proposed during the implementation of the interim remedial action, further evaluation of the vapor intrusion pathway should be conducted and/or mitigation measures should be implemented.”
- The 7th sentence of the 3rd paragraph has been changed to “Therefore, LUCs to prevent residential development of the site are recommended during implementation of the interim remedial action without further vapor intrusion evaluation and/or implementation of mitigation measures should be incorporated into the LUC RD for shallow groundwater.”