

MORASH, MELANIE

From: MORASH, MELANIE
Sent: Wednesday, April 20, 2016 11:49 AM
To: J. Wesley Hawthorne
Cc: 'Lundgren, Leslie'; Barker, Shau-Luen (ShauLuen.Barker@philips.com); Nancy-Jeanne LeFevre; Cynthia Woo; Lawrence McGuire; Lora Battaglia; Rose Condit; Sabrina Morales; Wenqian Dou; Elizabeth Brown; Heather O'Cleirigh; Joseph Innamorati; Linda Niemeyer; Michele Yuen; Morgan Gilhuly; Peter Bennett; Peter Scaramella; Rebecca Mora; Shaun Moore; Todd Maiden; Wendy Feng; DIAZ, ALEJANDRO; Estrada, Thelma; Harris-Bishop, Rusty; Lyons, John; Maldonado, Lewis; MORASH, MELANIE; Parker, Heather; Plate, Mathew; Shaffer, Caleb; Stralka, Daniel; Yogi, David
Subject: EPA Approval - Revised Residential Mitigation Plan - RES 84/85

Good morning, Wes,

Thank you for considering EPA's comments on this residential mitigation plan and revising the document accordingly.

This e-mail conveys EPA's approval of this residential mitigation plan for RES 84/85. Please let me know whether your group's preference is to re-execute the access agreement with the property owner. If so, please let me know and we will mail out another access agreement to the owner, accordingly.

As we discussed, please submit revised mitigation plans for the remaining residences as soon as possible, prioritizing RES 134/137.

CB&I – please arrange for this mitigation plan to be translated into Chinese. Once the updated mitigation plan is translated into Chinese, EPA will transmit the updated English and Chinese versions to the property owner.

Regards,

Melanie Morash

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California Site Cleanup Section I, Superfund Division

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From: J. Wesley Hawthorne [<mailto:hawthornej@locustec.com>]

Sent: Friday, April 15, 2016 4:50 PM

To: MORASH, MELANIE <morash.melanie@epa.gov>

Cc: 'Lundgren, Leslie' <Leslie.Lundgren@Cbifederaleservices.com>; Barker, Shau-Luen (ShauLuen.Barker@philips.com) <ShauLuen.Barker@philips.com>; Nancy-Jeanne LeFevre <LeFevren@locustec.com>

Subject: RE: EPA Comments - Triple Site - Response to Locus' Technical Comments on Building Visits, Mitigation Plan, O&M Plan, QAPP - VI Mitigation Work - Please respond within seven (7) calendar days

Melanie:

The attached mitigation plan for RES084/085 has been revised per the comments below. I will send the other two documents separately because they are large files. Please route as appropriate for your team.

J. Wesley Hawthorne, PE, PG

Senior Vice President

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From: MORASH, MELANIE [<mailto:morash.melanie@epa.gov>]

Sent: Friday, April 08, 2016 12:10 PM

To: J. Wesley Hawthorne <hawthornej@locustec.com>

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Subject: EPA Comments - Triple Site - Response to Locus' Technical Comments on Building Visits, Mitigation Plan, O&M Plan, QAPP - VI Mitigation Work - Please respond within seven (7) calendar days

Good afternoon, Wes,

Thank you for providing your letter, dated March 18, 2016, responding to EPA's comments on the recently submitted mitigation plans and related documentation.

EPA concurs with your recommendation that future site visits with your mitigation installer and EPA representatives occur prior to the submittal of mitigation plans to EPA, and prior to the signing of mitigation access agreements by property owners. However, we will need to be flexible as regards interactions with property owners. Some owners may require that we prepare a "draft" plan for their review, prior to their willingness to sign an access agreement that allows us further access to their property to develop the mitigation plan.

EPA concurs with certain of your responses but requests that you consider the following set of comments and provide **updated plans and documents to EPA within seven (7) calendar days.**

Please also provide text for an occupant information sheet (see comments, below) within thirty (30) calendar days of final approval of the mitigation system plans and our graphics designer can draft a fact sheet for the group to review.

In general, EPA does not feel that the revisions discussed in these comments would necessitate re-execution of access agreements with property owners. For example, the "Potential Alternatives (If Necessary)" paragraph in the plan for RES 84/85 provides flexibility in allowing amendments to the plan if the proposed approaches do not meet acceptability criteria and require modification.

Regardless, if the Responsible Parties feel that any specific changes necessitate a re-execution of the access agreement, please work with the appropriate property owners to update the agreement accordingly once these plans have been revised and re-submitted to property owners for review.

In the event that you feel that the access agreements must be updated and "re-signed" by property owners, please provide to EPA a draft of a cover letter that could be used to transmit these updated plans and access agreements to the property owners for their review and approval.

EPA's responses to your comments are as follows:

General Comments

1. The purpose of the site visit on February 26, 2016, was to provide an opportunity for vapor intrusion specialists from both Philips and EPA to gather additional building-specific information in order to fine-tune the system design; therefore, additional comments on the plans after the site visit are likely and should be expected.
2. EPA solicited multiple experts to evaluate the mitigation plans given the highly sensitive receptors such as infants, small children and women of child-bearing age. Previously, EPA only conditionally approved the Mitigation Plan. Most of the comments EPA subsequently provided were in the form of requesting greater detail to be provided in the Mitigation Plan, or noting supplemental information that should be included in the plans as a result of good professional judgement and the site visit on February 26, 2016.

February 26, 2016 Site Walk

1. Response To Comment (RTC) No. 1, Page 2
EPA disagrees that potential surface water intrusion can be adequately addressed by only sealing the concrete barrier. Sealing, in general, is typically the last resort when addressing water intrusion and may not be effective. Please identify a back-up plan or approach for addressing water intrusion in case sealing the concrete barrier fails. A detailed drawing should be included, showing how sealing is to be implemented to ensure that the approach will provide an adequate guard against water intrusion. Details must be provided to show how sealing the concrete barrier will be implemented. Include specifics for a back-up plan, such as sloping the dirt in the crawlspace in the area of concern to collect any water on the membrane in an installed sump. The water in the sump would only collect water from the top of the membrane and would be sealed to the membrane to ensure the membrane can be depressurized, in case water intrusion occurs. Additionally, the details about the concrete-barrier sealing will be required in the O&M Plan for ongoing inspection at the site.
2. RTC No. 2, Page 3
Please provide a list of the potential alternative approaches, such as crawlspace ventilation, crawlspace pressurization or other alternatives, in the event a barrier cannot be installed. There is a possibility that a small portion of the crawlspace will be unable to be covered by the membrane, for various reasons that cannot be anticipated ahead of time. Alternative approaches need to be considered prior to implementation. Alternative approaches include trenching the loose edge of the membrane into

the soils several inches to provide a seal, then ventilating the area of the crawlspace where the membrane could not be placed. The applicable ventilation rate should also be considered. Generally a ventilation rate around 0.6-0.7 air exchanges per hour is adequate. If ventilation is chosen, then typical gas fired flues (i.e. water heater, furnace, etc.) should be tested to see if they are backdrafting when the system is initiated. The mitigation-system installer should have a number of solutions for dirt-floor crawlspaces where a barrier cannot be installed.

3. RTC No. 3, Page 3

Comment acknowledged and accepted.

4. RTC N. 4, Page 3

EPA would prefer that you provide a diagnostic testing work plan, if one becomes necessary, to EPA for review and approval prior to implementation. Alternatively, such a work plan can be incorporated into the draft mitigation plan that is first provided to EPA for review and approval. This plan should provide a rationale as to how the contractor selects testing locations, how the contractor applies vacuum to those locations, how the contractor installs sub-slab pressure differential monitoring points and what data the contractor is collecting and how it is to be used.

5. RTC No. 5, Page 3

As noted in EPA's original comment, mitigating the building from the center of the building is preferable, and as noted in the EPA comment, "...depends on the materials under the slab." Generally, sub-slab materials (other than washed gravel) can limit suction fields; therefore, mitigating from the center minimizes the number of suction points (and is preferable).

EPA guidance does not prohibit the interior riser pipe configuration and only recommends keeping the fan out of the livable space. Trying to mitigate with only riser pipes on the exterior may limit the overall effectiveness of the mitigation system. It is preferable to consider all options for mitigation rather than to consider only approaching from the exterior of the building.

6. RTC No. 6, Page 4

See Comment to RTC No. 5 above.

Mitigation Plan for RES 84/85

1. RTC No. 1, Page 4

It is standard practice to use consistent terminology to avoid confusion by the public and stakeholders. EPA recommends that you choose whichever term will be used and be consistent in all future documentation. Or, in the introductory paragraph, please include a sentence explaining that the Implementation Plan corresponds to the Mitigation Plan.

2. RTC No. 2, Page 4

EPA feels that if the membrane is aggressively sealed, then a manometer is warranted. It remains important for anyone to visually see whether the system is operational and how much vacuum is being applied by the fan. At a minimum, a U-tube manometer should be conspicuously located for easy visualization. If the vacuum level is low, a magnahelic gauge can be used instead of the U-tube manometer.

3. RTC No. 3, Page 4

Collecting performance check samples and performing O&M inspections at the same time documents that the results correspond to the conditions observed in the field.

4. RTC No. 4, Page 5

Comment acknowledged and accepted.

5. RTC No. 5, Page 5
Please provide applicable standard operating procedures (SOPs) with the revised O&M Plan and/or the QAPP.
6. RTC No. 6, Page 5
The response only addresses the inclusion of the contact information. Please also include the placard information in the revised O&M Plan.
7. RTC Nos. 7 and 8, Pages 5 and 6
No additional comments. Comments acknowledged and accepted.
8. RTC No. 9, Page 6
As noted previously, it is standard practice to use consistent terms to avoid confusion. EPA recommends that you choose between using the term “utility conduit” or “utility pathway,” and remain consistent in all further documentation.
9. RTC No. 10, Page 6
No additional comment.
10. RTC No. 11, Page 6
Comment noted.
11. RTC No. 12, Page 6
Comment noted and concur with suggested revision.
12. RTC No. 13, Page 7
EPA recommends that the plan should be updated with the specifications for sealing the membrane at the seams, to the foundation, and at support posts.
13. RTC No. 14, Page 7
EPA recommends that the plan should be updated with the specifications for low VOC-containing sealants.
14. RTC Nos. 15-16, Page 7
Comments acknowledged and accepted.
15. RTC No. 17, Page 7
If the membrane is so aggressively sealed, then EPA believes that a manometer is warranted. It remains important for anyone to visually see whether the system is operational and how much vacuum is being applied by the fan. At a minimum, a U-tube manometer should be conspicuously located for easy visualization. If the vacuum level is low, a magnahelic gauge can be used instead of the U-tube manometer.
16. RTC No. 18, Page 8
Comment acknowledged and accepted.
17. RTC No. 19, Page 8
Upon further evaluation, EPA is concerned that building owners have no understanding of the implications of having the alarm on the rear of the building near the fan (and potentially not being heard). EPA recommends that the owner be informed that the alarm needs to be in the crawlspace, and ask for concurrence.
18. RTC No. 20, Page 8
If the membrane is so aggressively sealed, then EPA believes that a manometer is warranted. It remains important for anyone to visually see whether the system is operational and how much vacuum is being applied by the fan. At a minimum, a U-tube manometer should be conspicuously located for easy visualization. If the vacuum level is low, a magnahelic gauge can be used instead of the U-tube manometer. Tubing from the

vacuum side of the fan can easily be run through the crawlspace to anywhere in the building. This would allow for a single tubing run to supply vacuum for a U-tube manometer or a scaled magnahelic gauge, and the alarm and these items could be located in a conspicuous location and be near an existing 110V outlet, which is needed for the alarm.

19. RTC Nos. 21 through 24, Pages 9 and 10
Comment acknowledged and accepted.
20. RTC No. 25, Page 10
Please refer to EPA comment to RTC No. 18 and No. 19 in this section, above
21. RTC No. 26, Page 10
Please refer to EPA comment to RTC No. 2 in this section, above
22. RTC Nos. 27 through 30, Pages 10 and 11
Comment acknowledged and accepted.
23. RTC No. 31, Page 11
No additional comments.

O&M Plan for RES 84/85

1. RTC Nos. 1 through 4, Pages 11 and 12
Comment acknowledged and accepted.
2. RTC No. 5, Page 12
Please refer to EPA response to RTC No. 2 in the preceding section. It remains important for anyone to visually see whether the system is operational and how much vacuum is being applied by the fan. At a minimum, a U-tube manometer should be conspicuously located for easy visualization. If the vacuum level is low, a magnahelic gauge can be used instead of the manometer. EPA appreciates that the O&M Plan will be revised to include specifications for the membrane seals.
3. RTC No. 6, Page 12
Comment acknowledged and accepted.
4. RTC No. 7, Page 12
Comment acknowledged and accepted.
5. RTC No. 8, Page 13
EPA disagrees with this RTC. Please refer to EPA comments to RTC No. 17 and No. 19 in the previous section
6. RTC No. 9, Page 13
EPA disagrees with this RTC. The standard practice described in the RTC applies to indoor air sampling, not sub-slab or effluent sampling.
7. RTC No. 10, Page 13
Comment acknowledged and accepted.
8. RTC No. 11, Page 13
EPA remains concerned that a property owner may not know to request a Fact Sheet similar to the sample occupant information sheet for this type of information. This approach has been used at other similar sites where mitigated homes were rentals and the tenants routinely changed.

EPA will convene a meeting in the near future with the Responsible Parties, and then a subsequent meeting with the RP group and City officials, to discuss implementing a set of Institutional Controls (ICs), that will ensure the conveyance of a building's mitigation plan, O&M plan, and occupant information sheet, etc. to future property owners (such as in the form of a deed restriction on a mitigated property).

Please provide text for an occupant information sheet within thirty (30) calendar days of final approval of the mitigation system plan and our graphics designer can draft a fact sheet for the group to review.

EPA-Specific Comments on RTCs for O&M Plan (some comments applicable to QAPP) for RES084/085:

1. RTC Nos. 1 through 3, Page 14
Please refer to EPA's responses in the previous sections.
2. RTC No. 4, Page 14
Please refer to EPA's responses in the previous sections. EPA remains concerned that the owners would not know to request a HASP.
3. RTC No. 5 and 6, Page 15
Same comment as above.

EPA Comments on General RTC for QAPP for RES084/085:

1. RTC No. 1, Page 16
Please refer to EPA's responses in the previous sections.

EPA Comments on Specific Comments to RTCs for QAPP for RES084/085:

1. RTC No. 1, Page 16
Comment acknowledged and accepted.
2. RTC No. 2, Page 16
Comment acknowledged and accepted.
3. RTC No. 3, Page 16
Please refer to EPA's responses in the previous sections.
4. RTC No. 4, Page 16
No additional comment.
5. RTC No. 5, Page 16
EPA disagrees with this RTC that building-specific mitigation goals are acceptable. EPA has already provided extensive comments regarding this item. The goal of mitigation should be set at $0.48 \mu\text{g}/\text{m}^3$, a health-protective and target-based concentration, but allowing for evaluation within the context of the risk protective range for TCE of $0.48 - 2 \mu\text{g}/\text{m}^3$.
6. RTC No. 6, Page 17
EPA disagrees with this RTC. Once two different opposing vacuum levels reach the same level, they will be at equilibrium and there is no way for one vacuum to overrule the other vacuum. Additionally, the canisters are in inches of mercury and the fans will be in inches of water. A crawlspace system fan will be pulling around 0.5 inches of water which is roughly equivalent to 0.035 inches of Mercury, so the canister can be allowed to reach equilibrium with the fan. For a typical SSD system, there may be

3.5 inches of water vacuum pulled by the fan, but this is approximately 0.26 inches of mercury, which would be hard to see on the gauge connected to the fan.

7. RTC No. 7, Page 17

EPA disagrees with this RTC. It is preferable to collect duplicate samples side-by-side instead of one after the other. A T-split could be evaluated when collecting duplicate samples. Alternatively, a large Tedlar bag could be used in which to collect gas, and then down fill to both canisters from the single Tedlar bag, which truly represents a duplicate.

8. RTC Nos. 8 through 12, Pages 18 and 19
No additional comment.

Regards,

Melanie Morash

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Sent: Friday, March 18, 2016 2:59 PM

To: MORASH, MELANIE <morash.melanie@epa.gov>

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Subject: RE: EPA Comments - Triple Site - Technical Comments on Building Visits, Mitigation Plan, O&M Plan, QAPP - VI Mitigation Work - Revise & re-submit by Friday, March 18th

Melanie:

Attached is a letter summarizing proposed changes and comments on the mitigation plan, O&M Plan and QAPP in response to the EPA comments below. Please let me know if EPA has any further comments on these topics, and then we will revise and resubmit the plans accordingly.

J. Wesley Hawthorne, PE, PG

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