From: Casey, Carolyn
To: Ballew, Mary
Subject: RE: USM
Date: Monday, July 09, 2018 1:28:00 PM

See redline below

From: Ballew, Mary
Sent: Monday, July 09, 2018 12:10 PM
To: Casey, Carolyn
Subject: RE: USM

A particular short form was not protective for children. It did not concern body weight or inhalation rate. In a PCB site, the short form used for the park scenario had too low an exposure frequency and too low a skin surface area for dermal exposure. They did include one scenario with the correct body weights for the age groups included in the scenario. The exposure frequency in that case should be site specific because the park was used as a substitute for having a residential back yard. The short form had a toxicity value that was not supported by HQ. The exposure factors were from the 1990's Exposure Factors Handbook, not the latest EFH; this was not a major problem. There was no inhalation pathway in this short form which was a mistake because they needed to include fugitive emissions from particulates. This was the first short form I looked at and because of the many issues I am cautious about using these forms for anything.

If a facility uses the same RfC and inhalation unit risk as EPA then there is no further need for an adjustment to inhalation rate for children; however, for example, if they used an RfC and then added an additional adjustment for inhalation rate that would be a mistake. The inhalation rate adjustment only comes in when someone uses an old toxicity value such as an inhalation RfD or inhalation slope factor. Essentially that person needs to derive an RfC or inhalation unit risk using the old toxicity value, if the original studies were good enough. EPA has put a lot of effort into deriving new RfCs and inhalation unit risks so there are many more available now than in 1994 when the EPA RfC/RfD guidance was released.

One is allowed to modify age in the risk assessment but the body weight has to be appropriate for the age group chosen. It is usually calculated from the latest version of the Exposure Factors Handbook. The two parameters are linked.

I will review the short form for Cummings Center today. The text that they submitted was confusing and contradictory, so I am not sure what they did for the calculations. I think that when you ran the short form you got similar results, so that is one check. I just need to figure out what they did for the Exposure Point Concentrations they used the max conc and ½ DL where there were NDs so I may have some questions for you. I assume that they want EPA to accept the 12 hour per day exposure scenario because that puts them below a 10^{-6} cancer risk and a HQ below 1?

It does not put them below the HQ of 1 or 10-6, at least for suite 135C.

I will be around until 6 pm tonight. If you want to have a conference call to clarify anything we can.

Thanks,

Mary

From: Casey, Carolyn
Sent: Monday, July 09, 2018 9:12 AM
To: Ballew, Mary <ballew.mary@epa.gov>
Cc: Wainberg, Daniel <Wainberg.Daniel@epa.gov>

Subject: RE: USM

The only reason I brought up inhalation rate and body weight is that you mentioned a few weeks ago that the MassDEP shortforms parameters may not have been protective enough for children. So, based on what you said below, as long as the shortfoms are using the EPA RfC, then they should be protective enough for inhalation for children? Same for the body weight?

Also, do the other parameters that they adjusted look ok and are the equations appropriate?

Refer to questions in July 5th email , below.

Thanks

Carolyn

From: Ballew, Mary

Sent: Thursday, July 05, 2018 11:46 AM

To: Casey, Carolyn <Casey.Carolyn@epa.gov>

Cc: Wainberg, Daniel <Wainberg.Daniel@epa.gov>; Carroll, Courtney tney@epa.gov>; Sugatt, Richard <Sugatt.Rick@epa.gov>

Subject: RE: July 2 submittals

Hi Carolyn—

I would have to look into it, but I think that the expo box is not for site work. The air program may alter breathing rate but we don't need to, as explained in the EPA's 1994 (?) RfD/RfC guidance. The uncertainty factors in the RfC are large enough that there does not need to be adjustments for breathing rate. The mistake is very common. When EPA went from inhalation slope factors and inhalation RfD's to inhalation unit risks and RfCs, that whole methodology was eliminated. The only way you would do that now is if you had an old toxicity value and you wanted to derive a new RfC or inhalation unit risk.

Regarding the other questions, I will take a look at what the facility did and get back to you.

Mary

From: Casey, Carolyn

Sent: Thursday, July 05, 2018 11:25 AM

To: Ballew, Mary <ballew.mary@epa.gov>

Cc: Wainberg, Daniel <Wainberg.Daniel@epa.gov>

Subject: FW: July 2 submittals

Mary, In the attached correspondence, could you please check the exposure parameters and equations used in this modified short form. It is contained as Appendix A, and the parameters and equations are in the blue boxes.

1. Are the parameters reasonable?
2. Are the equations correct?
3. Where would the body weight and inhalation rate come in, if at all?

   Form this website (https://www.epa.gov/expobox/exposure-assessment-tools-routes-inhalation), it states "Estimating exposure from inhalation requires information on the concentrations of contaminants in the air and the timeframe over which inhalation exposure occurs. To calculate an inhaled dose, inhalation rates and receptor body weights might also be needed." So do we need them or not?

Note they previously said they would use residential forms which perhaps made more sense than using the forms for adult teacher/commercial scenario, but if the parameters reasonable and are site specific this may be even more appropriate.

Thanks
Carolyn

From: Craig Ziady [mailto:craig@cummings.com]
Sent: Monday, July 02, 2018 4:45 PM
To: Casey, Carolyn <Casey.Carolyn@epa.gov>; bhoskins@fslassociates.com; Steve Drohosky <sjd@cummings.com>
Cc: Zucker, Audrey <Zucker.Audrey@epa.gov>; Wainberg, Daniel <Wainberg.Daniel@epa.gov>; Murphy, Jim <Murphy.Jim@epa.gov>
Subject: RE: July 2 submittals

Carolyn – Please find enclosed further revised versions of the letters from the LSP to the General Manager of Cummings Center. These will be forwarded by Mr. Drohosky to the individual day care owners.

We will submit a revised schedule shortly.

Thank you.

Craig J. Ziady
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From: Casey, Carolyn [mailto:Casey.Carolyn@epa.gov]
Sent: Friday, June 22, 2018 8:29 AM
To: Craig Ziady; bhoskins@fslassociates.com; Steve Drohosky
Cc: Zucker, Audrey; Wainberg, Daniel; Murphy, Jim
Subject: FW: disapproval, conference call follow-up and RTC

Craig and all, thank you for being on the conference call on Tuesday. As a follow-up, please see the attached disapproval letter for the schedule. Also, as a reminder, EPA needs the draft letters to the suite managers/parents by July 2, 2018. We anticipate that the letter will to ready to distribute within a week of the draft submittals to EPA. Please see the email below, as a reminder on upcoming submittals and deadlines (all extended to July 2 as the June 30th is a Saturday). Please note that one date was changed in the email below from 2019 to 2018 to correct a previously noted error.

Also attached are the response to comments on the progress report submitted in your 5/29/18 email.

Thank you,
Carolyn

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casey.carolyn@epa.gov

From: Casey, Carolyn
Sent: Friday, June 08, 2018 2:03 PM
To: 'Craig Ziady' <craig@cummings.com>
Cc: bhoskins@fslassociates.com; Steve Drohosky <sjd@cummings.com>; Wainberg, Daniel <Wainberg.Daniel@epa.gov>; Zucker, Audrey <Zucker.Audrey@epa.gov>; Gregory Flaherty <gxf@cummings.com>
Subject: RE: clarification on submittals

Craig, I think we all agree the back and forth email is not productive. Let's schedule a call, but I don't want plans for a conference call to slow things down.
To clarify we need the following.

1. We need an evaluation of the data (which may be submitted as a revised progress report or a standalone document) similar to the attached and in accordance with the approved Written Proposal (refer to Section 8 text, cut and pasted below). This evaluation of the data needs to be completed prior to developing and distributing the individual letters to the schools/day care facilities. Refer to my email dated May 16, 2018 (attached for your convenience). At least an evaluation of the data using the Shortforms needs to be completed and submitted to EPA ASAP and no later than June 30, 2018, so that the letters to the schools/day care facilities accurately reflect the results and provide appropriate conclusions. A Critical Exposure Pathway Evaluation also needs to be completed as appropriate and in accordance with the MCP.
2. We need the draft letter to the schools/day care facilities revised and tailored for each individual school/daycare facility as requested in email dated May 30, 2018, and included in the email chain below. The revised draft should be submitted to EPA for approval on or before June 30, 2018.
3. We need a revised schedule. I will be providing a formal disapproval of the schedule submitted in email from you dated May 29, 2018, based primarily on the date for human health risk assessment completion date of February 2019. In my formal disapproval, I will be requesting your submission of a revised schedule by July 15, 2018.

8.0 RISK ASSESSMENT AND ENVIRONMENTAL INDICATORS ANALYSIS

8.1 Risk Assessment

After the completion of sampling events for each specific investigation, a risk characterization will be performed as needed using the laboratory analysis data. The risk assessment will be in accordance with the necessary provisions of the MCP (310 CMR 40.0900) and currently accepted standards for assessments of this nature using Method 3 risk assessment protocols. Each indoor sampling building location will be evaluated separately as its own exposure point using the protocols for unrestricted use (i.e., residential or child day care).
All detected compounds in the indoor air samples will be initially carried throughout the risk assessment to determine the most conservative total Site risk; however compounds may be removed from the assessment if their detection is shown not to be due to vapor intrusion. Exposure point concentrations for each compound shall be based on the maximum detected concentrations between the various seasonal sampling events. For each individual compound, the carcinogenic and noncancer
risks will be determined using the most current information available from the risk

characterization databases available from the EPA and/or the MassDEP. Initial risk-based target levels are based on carcinogenic and noncancer risks (where available) for each compound from the EPA Regional Screening Level Resident Air Supporting Table (May 2016) and the MassDEP Final Vapor Intrusion Guidance, MassDEP Policy WSC# 16-435, October 2016. Compounds that have available noncancer
information but do not have carcinogenic information will be presumed to have been previously established as noncarcinogenic compounds. A compound that has no existing available information as to carcinogenic or noncancer risks will be evaluated the same as a similar compound that has available information (e.g., 1,3,5-trimethylbenzene shall be evaluated as 1,2,4-trimethylbenzene) unless it is considered to be prevalent in the environment, in which case said compound will not be carried throughout the risk characterization (e.g., ethanol and ethyl acetate). Exposure factors to be used will be those created by MassDEP in the MCP Method 3 Risk Assessment for Residents Exposed to Chemicals in Indoor Air Shortform (i.e., residential exposures will be evaluated assuming an exposure period of 24 hours per day, 365 days per year). Carcinogenic risks will be calculated for the young child (ages 1-7) and the child/adult (ages 8-30). Noncancer risks will be calculated for the young child (ages 1-7). The individual carcinogenic and noncancer risks for all compounds in each sampling location will be summed into a total risk for that particular location.

Thank you,
Carolyn

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From: Craig Ziady [mailto:craig@cummings.com]
Sent: Wednesday, June 06, 2018 5:37 PM
To: Casey, Carolyn <Casey.Carolyn@epa.gov>
Cc: bhoskins@fslassociates.com; Steve Drohosky <sjd@cummings.com>; Wainberg, Daniel <Wainberg.Daniel@epa.gov>; Zucker, Audrey <Zucker.Audrey@epa.gov>
Subject: RE: sampling results letter

Carolyn – Thanks for your email. For obvious reasons, it is frustrating to read that EPA "did not necessarily need a response to comments" when a prior email in the very same thread notified us that EPA would not respond to our May 8 proposed letter to daycare owners *until we responded to your May 16 comments*. In that same email, we were asked specifically when EPA "can expect . . . responses" to your comments. We spent hours preparing responses to the comments because EPA expressly asked for them. It is neither productive, efficient, nor fair for us to have expended that time and money on a task EPA requested, only to have EPA, upon receipt of the responses, disavow the request.

Even more problematic is our apparent disagreement on vapor intrusion in general. Although we cannot quite discern if EPA's disagreement is grounded in the science or the text of the report, the parties' apparently contradictory opinions present as a showstopper. Would EPA prefer that we rewrite the conclusion as, "there is no evidence of significant vapor intrusion in the sampled building areas"? Such a statement is readily defensible based on the data we have collected thus far. We have successfully demonstrated that significant vapor intrusion (both from the physical aspect and in combination with risk assessment screening) is not occurring based on the evaluation process in MassDEP's vapor intrusion policy. If EPA disagrees with this conclusion, then a further discussion is warranted, so we can understand the factual bases for EPA's conclusion. Until such discussion takes place (if it is necessary) and the issue is resolved, I respectfully submit that there is no value in rewriting, revising, and resubmitting the schedule, the proposed letters, or the progress report.
If you believe that a conference call would be helpful to discuss these issues further, please let me know.
Thanks
Craig

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From: Casey, Carolyn [mailto:Casey.Carolyn@epa.gov]
Sent: Wednesday, May 30, 2018 4:43 PM
To: Craig Ziady
Cc: bhoskins@fslassociates.com; Steve Drohosky; Wainberg, Daniel; Zucker, Audrey
Subject: FW: sampling results letter

Craig, This is in response to the questions you raise in your email to Audrey below regarding the letter to school/daycare facilities.
We did not necessarily need a response to comments. What we needed were EPA's comments addressed by making the appropriate corrections, explanations and/or clarifications in a revised progress report. Although we don't typically find the need to review and comment on progress reports, we are using these reports to summarize data and provide documentation to schools/daycare-facilities and parents about vapor intrusion and any potential risk; therefore, the progress reports should contain accurate information, and the progress report and letters should provide consistent information and conclusions.
Are there any plans to at least run MassDEP RA Shortforms (if appropriate for this site) for each suite so that any potential for risk, or lack thereof, can be communicated in these letters as well?
We are not in agreement with your statement in the letter to the school/daycare facilities that "there is no evidence of potential vapor intrusion in the sampled building areas." I appreciate the effort in the response to comments to provide an individual assessment for each suite. A similar and complete individual assessment should be provided in each letter to the manager of each suite.
The letters to each school/daycare facilities should include a complete laboratory report with

their individual results and also include a summary table of the results. A generic letter will not suffice since the results and conclusions will differ for each suite.
Please resubmit the proposed schedule and include a date to resubmit the letters and a revised progress report. Please let me know if you would like to discuss any of the issue in this email.
Thanks,
Carolyn

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From: Craig Ziady [mailto:craig@cummings.com]
Sent: Tuesday, May 22, 2018 3:29 PM
To: Zucker, Audrey <Zucker.Audrey@epa.gov>; Casey, Carolyn <Casey.Carolyn@epa.gov>
Cc: Wainberg, Daniel <Wainberg.Daniel@epa.gov>; Gregory Flaherty <gxf@cummings.com>; Bruce Hoskins <bhoskins@fslassociates.com>; Steve Drohosky <sjd@cummings.com>
Subject: RE: sampling results letter

Hi Audrey – Thanks for your note. I had not realized that Bruce was not copied on Carolyn's comments. We have just spoken about them, and we will have a response for you shortly. I'm not sure I understand, however, why the comments on the proposed letter to Mr. Drohosky need to be delayed pending a response to Carolyn's comments. We continue to believe it is important to communicate with our clients about the testing sooner rather than later. Also, the idea that Carolyn's comments are "draft" comments and that some more fulsome comments may still be forthcoming – likely after we have responded to the draft comments – does not present as terribly efficient. We are working hard to be responsive to your requests at the same time we are continuing to advance the significant field activities of the Consent Order – all while keeping our clients apprised of ongoing activities. In this regard, I am working on finalizing a proposed timetable for ecological site activities, and will have that to you today or tomorrow, I believe, under separate cover.
If you have any questions in the meantime, please let me know.
Thank you.
Craig

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From: Zucker, Audrey [mailto:Zucker.Audrey@epa.gov]
Sent: Tuesday, May 22, 2018 12:20 PM

To: Casey, Carolyn; Craig Ziady
Cc: Wainberg, Daniel; Gregory Flaherty
Subject: RE: sampling results letter

Craig – Just to be clear, with respect to the draft letter to the day care centers that you provided to us on May 8th, we will provide you with comments after you have addressed the issues in Carolyn's May 16 email below.

Please let me know when we can expect your responses to Carolyn's email. Thanks.

(fyi--Carolyn has been out of the office unexpectedly. So, I just wanted to make sure that you understood that we do plan to comment on your May 8 draft letter.)

Audrey

From: Casey, Carolyn
Sent: Wednesday, May 16, 2018 8:30 AM
To: Craig Ziady <craig@cummings.com>
Cc: Zucker, Audrey <Zucker.Audrey@epa.gov>; Wainberg, Daniel <Wainberg.Daniel@epa.gov>; Gregory Flaherty <gxf@cummings.com>
Subject: RE: sampling results letter

For each suite, the sample results should be provided along with the letter and include an appropriate evaluation of the data. We are still in disagreement with the conclusion that no vapor intrusion is occurring. We should resolve this prior to providing that information to the suite managers/parents.

I also have comments on the progress report and until they are addressed, it would not be appropriate to share the data. Draft comments attached.

From: Craig Ziady [mailto:craig@cummings.com]
Sent: Tuesday, May 15, 2018 1:22 PM
To: Casey, Carolyn <Casey.Carolyn@epa.gov>
Cc: Zucker, Audrey <Zucker.Audrey@epa.gov>; Wainberg, Daniel <Wainberg.Daniel@epa.gov>; Gregory Flaherty <gxf@cummings.com>
Subject: sampling results letter

Hi Carolyn – Now that the April 2018 Progress Report is complete, we would like to finalize the letter to the clients in whose premises the indoor air testing occurred. You had requested an opportunity to review this letter, and we provided a draft on May 8 during our meeting. Could you please confirm ASAP whether you have any comments.

Thank you.

Craig

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