Crysler, Ruby

From: Wight, Brian <brian.wight@aecom.com>
Sent: Sunday, December 18, 2016 8:19 AM
To: Crysler, Ruby
Cc: KNIGHT, COLE D GS-11 USAF AMC 22 CES/CEAN (cole.knight@us.af.mil); Mark D. Wichman (mark.d.wichman@usace.army.mil); Jacqueline Grunau (JGrunau@kdheks.gov); Krause, Michael; Julie Spencer; Bergantzel, Vanessa; Mike L. Schofield (mlschofield@gsi-net.com)
Subject: RE: McConnell AFB PBR: RTC: SS544 (SWMU 207) Draft RFI Report

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Ruby,
URS/GSI's responses to EPA's clarifications comments are below for your review and approval. Upon your approval of these comments, we will issue the final report.

- **Item 5:** The section references a 35 micrograms per liter tap water RSL for hexavalent chromium. This value is set at a $1x10^{-4}$ cancer risk level, which is unacceptable for this site, given the presence of multiple other contaminants of concern. Data should be screened against the 0.035 micrograms per liter RSL value. The response to should be revised accordingly. Since detected concentrations exceed the RSL, hexavalent chromium should be retained as a COPC at the site.
  - The report text, which currently cites the 0.035 µg/L Tapwater RSL, will remain unchanged, and a conclusion highlighting the exceedance of an RSL and a recommendation to include analysis of hexavalent and total chromium in future monitoring will be added to the Executive Summary and to Section 7.0.
- **Items 5 and 10 E:** The responses state that Section 2.3 will be revised to note the change in monitoring wells sampled. It is still unclear whether Section 2.3 will be revised to discuss the basis for the replacement well locations or the historical groundwater analyses for hexavalent chromium at SWMU 207. Please clarify. These aspects of the response should be included in the report.
  - Section 2.3 will be expanded to clearly explain all specific deviations between the Work Plan and the RFI. With regards to hexavalent chromium sampling, the text to be added states:
    "Work Plan: Monitoring Wells: MW-181, SWMU207-MW51, -44
    RFI Investigation: Monitoring Wells: MW-181, SWMU207-MW51, -54, -55D
    A sample was collected from MW-44S for hexavalent chromium analysis, but was received beyond the required 24 hour hold time, as documented by Lab Report J68637-1 in **Appendix I**. In lieu of resampling MW-44S, hexavalent chromium analysis was performed at well MW-54, and, subsequently an additional sample was added at well location MW-55D."
- **Item 14:** The EPA noted that information on Figures 3-1 and 3-10 in the report indicated that the boring logs for MW-178 and MW-179 were inadvertently reversed until 2015. The EPA commented that additional discussion is warranted in this report as to whether historical analytical results or water level measurements for MW-178 and MW-179 may have been reversed as well. URS' response states that correcting the reporting is up to Boeing's contactors. The RFI report should indicate whether this mix-up potentially affects any data interpretation at SWMU 207.
  - The following text will be added to Section 3.4.2:
    "During the RFI field activities, it was determined that the co-located wells MW-178 and MW-179 have been inadvertently interchanged in during past reporting activities. The corrected logs for these well are presented in **Appendix A**, and are depicted in the cross sections in **Section 3.0**. Due

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to the high degree of hydraulic interconnectivity between the Upper Transmissive Materials and the Lower Paleochannel (see **Figure 3-2**), it is not expected this will have an impact on the usability of historical data."

- **Item 25:** Current TCE action levels for indoor air are partly based on developmental health effects that result from less-than-lifetime exposures. For TCE, the critical exposure period of concern for potential heart defects is one day. As such, unless the TCE concentration in indoor air can be demonstrated to be below EPA Region 7 Action Levels for TCE in Air (see attached document), delaying vapor intrusion investigation or mitigation roughly 27 months is unacceptable. The response to part b (below) further discussions calculation of TCE concentrations using the appropriate site conceptual model and exposure scenario.
    - See response to Item 26 below.
- **Item 26:** Modification of the VISL Calculator to reflect attenuation through fine-grained vadose zone soils (attenuation factor 0.0005), a commercial exposure scenario (8-hour shift), and a site-specific groundwater temperature (18°C) is consistent with Agency vapor intrusion guidance (EPA, 2015) and the site conceptual model. However, as noted above, an exceedance of the TCE action level indicates a potential imminent threat to human health. Because the target cancer risks and target hazard indices are based on chronic or lifetime exposures, these values are not appropriate for determining protective TCE concentrations in groundwater, subslab soil vapor, or indoor air. Rather, measured or calculated TCE concentrations in indoor air should be compared to the appropriate EPA Region 7 Action Levels for TCE in Air (see attached). Note that these Action Levels will need to be recalculated for work shifts other than 8-hours.
  Additionally, if generic VISLs are applied, the report should "verify that site-specific conditions reflect the conditions and assumptions of the generic model underlying the VISLs" (EPA, 2015; see Section 6.5.2, p. 107). In particular the report should document shift lengths, any groundwater use within the building, "significant openings" in the building foundation (e.g., sump, earthen floor), any preferential pathways for vapor migration, and whether groundwater or source material is within 5 feet of the building. For MW-179 and other proximate wells, their screens are set more than 50 feet below the groundwater surface. Although groundwater contamination at this depth is not expected to pose a vapor intrusion concern, the absence of shallow groundwater or soil vapor data below the Control Tower is a data gap. Additional lines of evidence are needed to demonstrate the presence or absence of a vapor intrusion concern.
    - Using the same input parameters to the VISL calculator as previously described in our comment response (8-hour shift commercial scenario with an attenuation factor of 0.0005), the indoor air concentration calculated is 3.71 $\mu g/m^3$, which is below the referenced November 2016 USEPA TCE Commercial Action Level of 6 $\mu g/m^3$.
      The assumptions utilized in the VISL calculator have been confirmed to accurately represent site conditions. During drilling in the area of the Control Tower, dry soil conditions were encountered to the depth of the building foundation (first moisture encountered was 26 feet bgs at well MW-178, 24 feet bgs at well SWMU207-MW49S, and 29 feet bgs at well SWMU207-MW35). Building construction has been confirmed to include a concrete floor, absence of a basement, and that personnel in the building work in 8-hour shifts. Groundwater is not utilized in the area of the Control Tower.
- **Item 27:** To assess future risk, in the absence of an enforceable institutional control (for example, a Kansas EUC) with long-term restrictions on building development and occupation, vapor intrusion assessment is warranted for both onsite and offsite portions of the SWMU 207 shallow subsurface contamination plume. "Both current and reasonably likely future risks need to be considered in order to demonstrate that a site does not present an unacceptable risk to human health and the environment" (EPA, 1991). EPA agrees that downgradient contamination plumes from sources outside the SWMU 207 boundary would not be included in the SWMU 207 Baseline Risk Assessment.
    - Evaluation of the indoor air exposure pathway at the SWMU 207 site will be included in the Baseline Risk Assessment.

Thanks

Brian Wight, PE
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From: Crysler, Ruby [mailto:Crysler.Ruby@epa.gov]
Sent: Friday, November 18, 2016 3:43 PM
To: Wight, Brian; KNIGHT, COLE D GS-11 USAF AMC 22 CES/CEAN (cole.knight@us.af.mil); Mark D. Wichman (mark.d.wichman@usace.army.mil); Jacqueline Grunau (JGrunau@kdheks.gov)
Subject: RE: McConnell AFB PBR: RTC: SS544 (SWMU 207) Draft RFI Report

From: Crysler, Ruby
Sent: Friday, November 18, 2016 3:32 PM
To: 'Wight, Brian' <brian.wight@aecom.com>; 'KNIGHT, COLE D GS-11 USAF AMC 22 CES/CEAN (cole.knight@us.af.mil)' <cole.knight@us.af.mil>; 'Mark D. Wichman (mark.d.wichman@usace.army.mil)' <mark.d.wichman@usace.army.mil>; 'Jacqueline Grunau (JGrunau@kdheks.gov)' <JGrunau@kdheks.gov>; Kidwell, JessicaL <Kidwell.JessicaL@epa.gov>
Subject: RE: McConnell AFB PBR: RTC: SS544 (SWMU 207) Draft RFI Report
I found additional hexavalent chromium results for groundwater collected during the 2012 investigation. Disregard comments on the first portion of Item 5. However, results still need to be screened against the RSL set at $1x10^{-6}$, not $1x10^{-4}$.

Ruby Crysler
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From: Crysler, Ruby
Sent: Friday, November 18, 2016 3:28 PM
To: Wight, Brian <brian.wight@aecom.com>; KNIGHT, COLE D GS-11 USAF AMC 22 CES/CEAN (cole.knight@us.af.mil) <cole.knight@us.af.mil>; Mark D. Wichman (mark.d.wichman@usace.army.mil) <mark.d.wichman@usace.army.mil>; Jacqueline Grunau (JGrunau@kdheks.gov) <JGrunau@kdheks.gov>; Kidwell, JessicaL <Kidwell.JessicaL@epa.gov>
Subject: FW: McConnell AFB PBR: RTC: SS544 (SWMU 207) Draft RFI Report
Brian,
The response to comments are approved with exception to the following:

- **Item 5:** The response indicates hexavalent chromium sampling was completed during the 2012 data gaps investigation. The response further states that the highest concentration detected in 2012 was 2.46 ug/L at well SMWU207-MW40. Review of the Applied Speciation laboratory report shows the following.

Hexavalent Chromium Results for Tetra Tech
Contact: Mark Sievers
Project: SWMU207 (# T98781.0116)

Date: December 27, 2012
Report Generated by: Ben Wozniak
Applied Speciation and Consulting, LLC

Sample Results

Sample ID	Date Collected	Date Analyzed	Cr(VI) Dilution	Cr(VI)
SWMU207-RFI-MW35	11/29/2012	12/17/2012	2	0.440
SWMU207-RFI-MW32	11/29/2012	12/17/2012	2	0.112
SWMU207-RFI-MW39	11/29/2012	12/17/2012	2	0.051
SWMU207-RFI-DUP2	11/29/2012	12/17/2012	2	0.051
SWMU207-RFI-MW27	11/29/2012	12/17/2012	2	0.405
SWMU207-RFI-MW37	11/30/2012	12/17/2012	2	0.983
SWMU207-RFI-MW31	11/30/2012	12/17/2012	2	0.434
SWMU207-RFI-MW28	11/30/2012	12/17/2012	2	0.082
SWMU207-RFI-MW2B	11/30/2012	12/17/2012	2	0.200
SWMU207-RFI-MW38	12/3/2012	12/17/2012	2	0.424
SMWU207-RFI-MW2A	12/3/2012	12/17/2012	2	0.039
SMWU207-RFI-MW34	12/3/2012	12/17/2012	2	0.521
SWMU207-RFI-MW36	12/6/2012	12/17/2012	2	0.752
SWMU207-RFI-MW36D	12/6/2012	12/17/2012	2	0.031
SWMU207-RFI-GEB2	12/6/2012	12/17/2012	2	< 0.005 U

All results are reported in µg/L and reflect the applied dilution

U = Sample concentration is less than the estimated Method Detection Limit (eMDL)

J = Sample concentration is between the eMDL and the Reporting Limit (RL)

It is unclear where the concentrations identified in the response were derived from. See above data. Hexavalent chromium was not detected in soil samples. Also, the section references a 35 micrograms per liter tap water RSL for hexavalent chromium. This value is set at a $1x10^{-4}$ cancer risk level, which is unacceptable for this site, given the presence of multiple other contaminants of concern. Data should be screened against the 0.035 micrograms per liter RSL value. The response to should be revised accordingly. Since detected concentrations exceed the RSL, hexavalent chromium should be retained as a COPC at the site.

- **Items 5 and 10 E:** The responses state that Section 2.3 will be revised to note the change in monitoring wells sampled. It is still unclear whether Section 2.3 will be revised to discuss the basis for the replacement well locations or the historical groundwater analyses for hexavalent chromium at SWMU 207. Please clarify. These aspects of the response should be included in the report.
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- **Item 28:** The response is acceptable, and the proposed improvement to the graphs is appreciated.

Please review the comments and let me know if you have any questions.

Thank you.

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From: Wight, Brian [mailto:brian.wight@aecom.com]
Sent: Wednesday, October 05, 2016 1:46 PM
To: Crysler, Ruby <Crysler.Ruby@epa.gov>
Cc: Jacqueline Grunau (jgrunau@kdheks.gov) <jgrunau@kdheks.gov>; Mark D. Wichman (mark.d.wichman@usace.army.mil) <mark.d.wichman@usace.army.mil>; Sansom, Andrea NWO <Andrea.Sansom@usace.army.mil>; KNIGHT, COLE D GS-11 USAF AMC 22 CES/CEAN (cole.knight@us.af.mil) <cole.knight@us.af.mil>; BLAIR, SHELDON M CTR USAF AMC 22 CES/CEIE <sheldon.blair.ctr@us.af.mil>; Krause, Michael <michael.krause@aecom.com>; Mike L. Schofield (mlschofield@gsi-net.com) <mlschofield@gsi-net.com>; Bergantzel,

Vanessa <Vanessa.Bergantzel@aecom.com>; Julie Spencer <jaspencer@gsi-net.com>
Subject: McConnell AFB PBR: RTC: SS544 (SWMU 207) Draft RFI Report
Ruby,
URS/GSI responses to EPA's comments on the SS544 (SWMU 207) Draft RFI report are attached for your review and approval. If possible, please provide your approval on or before 14 October 2016. If this is not possible, please let us know when your approval may be received.
Thanks

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