Air Force Response to "EPA Comments on Third Five-Year Review Report for Fairchild AFB, Washington. Draft Revision 1, June 2013…"
(July 15, 2013 letter from EPA to Marc Connally at Fairchild AFB)

Executive Summary
We assume all changes and comments related to Section 8 through Section 10 will be reflected in the final Executive Summary. In addition, please note the report indicates a USAF due date of August 12, 2013 that would trigger the next review for August 2018. EPA's due date is actually September 25, 2013. If EPA and USAF are able to meet the August deadline, then the next report will reflect the August deadline. Otherwise the next report will reflect the September deadline.

Response: We agree that AF and EPA's signature dates may differ. As the lead agency at Fairchild, the AF's Five-Year Review signature date will precede and be independent of the date of EPA's concurrence.

Main Text

1) Section 2.2 – Several USAF RTC's addressed the redline/strikeout request to provide more background information on Operable Unit (OU)-5 by referring to a blanket statement that "*USAF does not concur that discussion of OUs without a [Record of Decision] ROD (beyond the information found in the Introduction and Table 1-1) is appropriate or required for a five-year review.*" First, the basis for excluding background discussion is incorrect. There is an Interim ROD in place for OU-5, and once remedial actions are implement, this OU will be included in the next five year review, regardless of whether or not there is a final ROD. The reason OU-5 is not evaluated in this five year review is because remedial actions have not yet started. We also disagree that background information related to OU-5 is irrelevant to this five-year review. Basic background information (beyond Table 1-1 and Introduction) is needed, at a minimum, to understand how "orphan" trichloroethylene (TCE) plumes are being addressed at the site relative to the sites contained within OU-2 and OU-3. USAF should include the language (or similar) recommended by EPA as Section 2.2.4. With respect to pre-ROD OUs, the recommended language is not required, but we advise including some introduction to these OUs because they provide additional context and may eliminate some of the confusion related to specific sites and media that are being addressed.

   Response: Thank you for clarifying the rationale for the request to include OU-5 in Section 2.2.4. AF concurs that the reason OU-5 is not evaluated in this five-year review as remedial action has not started. As requested, AF has included the exact Section 2.2.4 language that EPA Region 10 recommended. Thus, a new Section 2.2.4 appears in the Table of Contents and reads as follows:

   2.2.4 OU-5 Interim ROD – Site SS-39

   The OU-5 Interim ROD was signed in August 2011 to address Site SS-39 (the "orphan" TCE plumes). OU-5, Site SS-39, represents the combination of sites with detected chlorinated hydrocarbons dissolved in the groundwater found along the flight line. Site

SS-39's groundwater contamination was initially identified in 1985 as a result of three separate investigations at PS-10, IS-1 and PS-3. Field investigations and sampling were conducted at sites PS-10, IS-1, and PS-3 beginning in 1991 and continuing through 1995, at which time the "ophan" trichloroethylene (TCE) plumes were consolidated into Site SS-39. Soil contamination at these three sites has been addressed under the OU-2 and OU-3 RODs. The selected remedy for OU-5 (discussed in Section 3.6) has not been constructed, although the conceptual site model (CSM) has been updated and pilot studies have been conducted in support of the remedial design. The Final ROD for SS-39 will be used to establish this site as OU-6.

2) Section 3.3.1, Figure 3-1c – Given the proximity of the two SCAFCO wells located on Figure 3-1c, USAF should follow-up on the status of these wells to ensure that they are both abandoned an not currently being used as a water supply source. In the event, these are active water supply wells, they should be sampled and USAF should notify the property authorities to eliminate this potential exposure pathway. This needs to be provided as a recommendation to be addressed as part of the land use controls evaluation.

Response: Recommendation has been added to Section 9.1.2 to investigate the status of these wells, and if found to exist and be in active use as water supply wells, AF will contact the land owners and arrange for possible sampling. If sampling results from the active water supply wells are above MCLs, AF will further evaluate additional action options such as land use controls, as appropriate, in conjunction with the ROD Amendment.

3) Section 5.2.1, Issue 4 – Site PS-2 (SS018), page 5-5 – The last two bullets are almost identical, but the 3rd bullet is more correct. Delete the 2nd bullet and retain the 3rd bullet.

Response: Deletion made as requested.

4) Section 6.2, page 6-1 – Did USAF receive any comments following the public notice provided on October 29, 2012? Please document whether USAF did or did not receive comments and if comments were received what they pertained to.

Response: No comments were received following the October 2012 RAB. Text added to Section 6.2 to document this and also to note that public notice of the third five-year review process was published in the local newspaper on 20 June 2013.

5) Section 6.3.2.2 (Site FT-1 – Former Fire Training Area) and Section 6.3.3.2 (Site FT-2 – Old Fire Training Area) – There is a need to assess for the presence of perfluorinated compounds (PFCs) on former fire training areas that may have used these compounds since the 1970s. EPA accepts USAF plans for assessing PFCs using a programmatic approach (see RTC to EPA Supplemental Comments). However, we request that AFCEC prioritize those sites that are currently within OUs and that document this planned response in the recommendations (Section 9.2.2 and 9.3.2, respectively) for this five-year review.

Response: At Fairchild AFB, USAF has already prioritized the two Fire Training Areas (FT-1 and FT-2) that are currently within the OUs reviewed in this Third Five-Year Review: these two sites are a priority for the Air Force. Because Air Force will be tracking progress at

all PFC investigations program-wide, a Fairchild-specific recommendation was not added to Section 9.

6) Section 6.3.4.2, page 6-17 – USAF includes a screening-level vapor intrusion (VI) assessment for Site WW-1 using groundwater concentrations in monitoring well (MW-120), which is appropriate. However, the off-site plume also contains elevated concentrations of vinyl chloride, which present additional VI risks. USAF should include this contaminant in the VI pathway analysis and re-evaluate the cumulative risks for residential and commercial/industrial land use related to both TCE and vinyl chloride. This may change the future protectiveness based on the potential presence of a newly identified pathway. (See comment # 20)

   Response: Additional VI evaluations performed for vinyl chloride at Site WW-1. As described in the revised text in Section 6.3.4.2 and shown in the revised Table 6-17, the increased lifetime cancer risk and non-cancer hazard quotient for vinyl chloride (and the combined risks for vinyl chloride and TCE) indicate no unacceptable human health risks from potential VI at Site WW-1 for either future residential or commercial/industrial land use scenarios.

7) Section 7.1.1 and Section 7.1.4, Section 8.1 and Table 8-1, Issue #2, Section 9.1 and Table 9-1. – In USAF RTCs to EPA Supplemental Comments, USAF has not addressed EPA's concerns regarding the off-site plume at Craig Road Landfill (CRL), OU-1, specifically: whether the off-site plume boundary is stable and that natural attenuation is demonstrably occurring. This cannot be demonstrated by what is currently being sampled or monitored and we disagree that the Basewide Conceptual Site Model (CSM), cross-section A-A' sufficiently updates the CSM at the CRL and downgradient. Additional long term monitoring of existing wells will not suffice to fill data gaps that are needed to characterize and bound the downgradient plume. Addressing the question of plume extent and stability will require additional monitoring wells (potentially both upgradient and downgradient of MW-118). We agree that revisiting pre-GETS hydrogeology is beyond the scope of a typical five-year review but we do not agree that this information is irrelevant to understanding if/how groundwater contamination has reached both MW-141 and MW-118. This pre-GETS understanding may help determine where additional wells should be located and how contamination may have arrived off-site. This characterization shall occur before completion of the ROD Amendment planned for OU-1. The following changes are needed to this five-year review:

   a. Revise Issue #2 in Table 8-1 as follows: "TCE concentrations in two off-site monitoring wells located downgradient of CRL are above the MCL. Data gaps remain as to plume stability and that natural attenuation is demonstrably occurring."

   b. Revise Recommendation #2 in Table 9-1 as follows: "Additional monitoring wells are needed to characterize the extent and stability of the downgradient plume and to evaluate the feasibility of natural attenuation as a remedy before a ROD Amendment is completed".

   c. Add sentence to Item #2 in Section 9.1.1 – "Addressing the question of plume extent and stability will require additional monitoring wells (potentially both upgradient and downgradient of MW-118). Additional hydrogeologic characterization for both pre-

GETs and post-GETs may be necessary to evaluate the remedy related to the off-site plume."

d. Section 10.1 - Change Protectiveness Statement final sentence as follows: "For the remedy to remain protective in the long-term, additional characterization of the off-site TCE plume should be conducted to evaluate plume stability and demonstrate natural attenuation, and off-site LUCs should be enhanced and strengthened to prevent potential exposure to contaminated groundwater"

Response: Table 8-1, Issue #2 currently reads, "TCE concentrations in an off-site monitoring well (MW-118) located downgradient of CRL are decreasing but remain above the MCL." This is a factual statement and AF does not believe that the requested additional detail belongs in the 5YR but rather should appear in the forthcoming *Treatability Study Report*, which will discuss trends and the current status of the off-site plume boundary in more detail as support leading up to the detailed assessment in the future ROD amendment for CRL. "Understanding if/how groundwater contamination has reached both MW-141 and MW-118" is a challenge dating back to the RI/FS phase of OU1, since these wells have been impacted since the time of the ROD signing. As no land use changes have occurred nor is exposure occurring, there is no change to the protectiveness. AF will continue to monitor the impacts downgradient of CRL. AF does not necessarily concur that MW-141 is downgradient from the CRL operations. AF does not agree that plume stability or natural attenuation require more detailed data collection at MW-141, as concentrations since 2000 are shown in Figure 6-1c: the trend in MW-141 over the last 10 years is essentially a flat line downward, which suggests plume stability at/near MW-141, logically attributed to natural attenuation measured via concentrations of TCE. Off-site LUCs are already being enhanced downgradient of CRL as proposed in Recommendation #2 of Table 9-1 and a ROD Amendment will memorialize the CRL remedy revisions.

8) Section 7.1.4 – The Technical Assessment Summary for Section 7.1.4 states that "long-term protectiveness requires that LUCs be enhanced as discussed in Section 9.1". Section 10.1 also refers to LUCs. However, there is no discussion of LUCs in Section 9.1, nor is the issue of LUCs presented in Table 8-1. The same issue that is presented as Issue #3 in Table 8-2 is required in Table 8-1 with one change – that "may" should be replaced with "will". The new issue must also be reflected in Table 9-1 and Section 9.1.1.

   Response: Text was added to Section 9.1.1 concerning evaluation and enhancement of off-base LUCs and Issue #3 in Table 8-2 was edited as requested.

9) Section 7.2.2 and Section 7.2.4 – In Section 7.2.2, page 7-6 there is likely to be a new potential exposure pathway based on the VI screening to include vinyl chloride. Therefore, the 6th sentence on page 7-7 in Section 7.2.4 is likely to be changed to state that a new potential pathway (VI) may require additional evaluation and potentially impact future protectiveness.

   Response: Please see response to Comment 6 above: additional text was added to the five-year review. Given these results, no changes are needed to Section 7.2 with regard to VI.

10) Section 7.4.1, page 7-11: EPA supplemental comment #2 under Section 7.4.1, TCE Toxicity was not adequately addressed although the USAF RTC stated that text would be changed. Specifically: 1st full sentence is still very confusing and appears to be inconsistent with Table

D-1 and potentially incorrect (e.g., it is incorrect that carcinogenic oral toxicity values became less conservative). Please review and fix.

Response: Text revised in Section 7.4.1 to correct the identified inconsistencies.

11) Section 8.1, Table 8-1 – Issue #1 – Rephrase to state that source treatment via ISCO and SVE was pilot tested <u>and subsequently implemented</u>. Then incorporate content from Issue # 3 into the recommendations for this issue (see comment #13, below).

Response: The reason adding the phrase "and subsequently implemented" is not accepted in Table 8-1 is because SVE is only marginally useful in part of the CRL and ISCO may or may not be retained pending the *Treatability Study Report* findings for the proposed ROD Amendment. To AF, "pilot tested" in this sentence is equivalent to "temporarily implemented" which is the correct meaning AF is trying to convey. AF does not wish to convey that ISCO and SVE have been permanently implemented until the *Treatability Study Report* is finalized.

12) Section 8.1, Table 8-1 – Issue #2. See Comment #7

Response: Please see response to Comment 7.

13) Section 8.1, Table 8-1 – Issue #3. We agree that this is not an issue that affects current or future protectiveness, hence it should be removed as an issue in Table 8-1. However, it is a recommendation to address the remedial optimization (source reduction) techniques that were evaluated and ultimately implemented at CRL (see Issue #1). Delete issue #3 in Table 8-1 but incorporate the substance of this "issue" and associated recommendations into Recommendation # 1.

Response: The reason AF leaves Issue #3 in Table 8-1 is because at present, a step of the CERCLA process is required (i.e., the Proposed Plan and ROD Amendment) to operate the SVE and/or ISCO remedies. This is not a "protectiveness" issue alone but because operations of the ISCO remedy would relate to a change in the existing containment remedy, we believe this does rise to the level of "Issue" to ensure that it is given the priority needed to ensure the remedy does remain protective.

14) Section 8.1, Table 8-1 – Add new issue as follows: "Current off-base LUCs to prevent the use of contaminated groundwater will need to be supplemented. However no off-base exposures are occurring."

Response: New Issue #5 has been added to Table 8-1, which caused another issue to be added to the ES on page ES-4. Recommendation #2 in Table 9-1 already prescribes LUC the action to address Issue #5 in Table 8-1.

15) Section 8.2, Table 8-2, Issue #3 – Delete may and replace with will. Add a line explaining why LUCs need to be supplemented.

Response: Issue #3 in Table 8-1 has had "will" used in place of "may" and the rationale for LUC supplementation will appear in the forthcoming ESD.

16) Section 9.1, Table 9-1, Recommendation #1 – See Comment # 13 – Suggest replacing 2nd sentence in Recommendation #1 (move this to the discussion) and replace with the contents of Recommendation #3. Delete recommendation #3.

Response: The USAF believes the requested revisions would lose sight of the interim steps needed towards a successful ROD Amendment so left the recommendations as previously stated.

17) Section 9.1, Table 9-1, Issue #2 –See Comment # 7b. Move LUC recommendations to separate row, associated with new issue (See Comment #14). Discussion for recommendation # 2 should state that downgradient areas cannot be adequately assessed with respect to plume stability and MNA without additional wells to provide necessary characterization to bound the plume and providing additional hydrogeologic characterization, both pre- and post-GETS, as necessary to improve the CSM. Characterization must occur before completion of ROD Amendment.

Response: See response to Comment 7.

18) Section 9.1, Table 9-1 – Add new recommendation #3 to deal with strengthening LUCs. Provide additional discussion on how this will be accomplished (i.e., what is meant by "enhanced").

Response: See response to Comment 14. Additional text added to Section 9.1.1 concerning enhancement of off-site LUCs.

19) Section 9.2, Table 9-2, Issue #2 – Change text as follows: "Evaluate TCE and vinyl chloride trends at MW-120 and nearby wells to determine if monitored natural attenuation (MNA) is demonstrably occurring or whether other active remedies may be required."

Response: Table 9-2 Issue #2 has been edited to add vinyl chloride: natural attenuation in not only MW-120 but also nearby wells is already discussed.

20) Section 9.2, Table 9-2 – USAF RTC to EPA Supplemental Comments (ICs and Vapor Intrusion) states that based on supplemental screening tables, USAF does not find any unacceptable VI levels that presently require further evaluation or institutional controls (ICs). Based on results of re-screening to include the vinyl chloride, it may be necessary to provide supplemental language under recommendations to further evaluate VI for any building within the zone of influence now, and language in a Institutional Controls Implementation and Assurance Plan (ICIAP) that requires characterization of off-base plume migration, coordination with local agencies, and prompt notification to regulators if land use changes or new development occurs in these areas, so that additional VI evaluations can be performed, as necessary.

Response: Please see response to Comment 6 above. Given these results, no additional recommendations area needed with regard to VI. As explained by USAF to EPA previously, the USAF does not prepare or implement ICIAPs; the USAF operates under internal Land Use Control Implementation Plans (LUCIPs) and all substantive LUC language will appear in the forthcoming ESD, which will involve FFA partner review.

21) Section 10.1 – Add language as recommended in Comment # 7d

Response: See response to Comment 7.

22) Section 10.2 – If potential VI pathway exists, based on results of VI screening using vinyl chloride, change final sentence to state: "…., off-base LUCs should be enhanced to prevent potential exposure to contaminated groundwater via ingestion or vapor intrusion and remedy should be evaluated with respect to MNA of off-site plume".

Response: Please see response to Comment 6 above. Given these results, no changes are needed to Section 10.2.

23) Section 10.3 – Per Section 4.3.6.2, Section 7.3.1.1, Section 8.3 and Table 8-3, message is inconsistent with final protectiveness statement. At Site PS-10, USAF is looking at potentially impacted TCE-contaminated soil to see if concentrations are above MTCA. Long-term protectiveness of soil will be assessed after review of Building 1060 soil. Table 8-3 states that this affects the protectiveness in the future. Therefore, text in Section 10.3 should say the following: "…. For the remedy to remain protective in the long term, future evaluation of residual TCE-contaminated soil under Building 1060 requires further characterization to evaluate its potential contribution to contaminated groundwater".

Response: The USAF does not concur that the requested revision is necessary or required in this Third Five-Year Review due to the cutoff date of September 2012. Potential soil contamination at Site PS-10 will be addressed in the next Five-Year Review as indicated in Section 9.3.