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NAS WHITING FIELD
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LETTER REGARDING UNIVERSITY OF FLORIDA RESPONSE TO U S NAVY COMMENTS
ON DRAFT RISK ASSESSMENT RE-EVALUATION OF SOILS AT SITES 9-18 NAS WHITING
FIELD FL
5/16/2008
UNIVERSITY OF FLORIDA

May 16, 2008

Ligia Mora-Applegate
Bureau of Waste Cleanup
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Response to Comments for Soils at Sites 9, 10, 11, 12, 13, 14, 15, 16, 17, and 18
Naval Air Station Whiting Field

Dear Ms. Mora-Applegate:

At your request we have reviewed the *Response to FDEP Comments on the Final Risk Assessment Re-evaluation of Soils for Sites 9, 10, 11, 12, 13, 14, 15, 16, 17, and 18 Naval Air Station (NAS) Whiting Field, Milton, Florida*. This document was prepared by Tetra Tech and is dated April 18, 2008. We have partially duplicated responses from Tetra Tech followed by an additional response:

Tetra Tech Response to Comment #1: *As stated in the introduction of your comment letter, leachability will be addressed in a separate report (Site 40 – Base-wide Groundwater at NAS Whiting Field) and, therefore, was not dealt with in this risk assessment re-evaluation...*

Follow up Response #1: The response is satisfactory. However, we have not seen the cited leaching assessment and therefore cannot determine whether leaching has been adequately addressed.

Tetra Tech Response to Comment #2: *Please refer to the RI/FS General Information Report (ABB-ES, 1998) for further information on the site-specific background data study.*

Follow up Response #2: The methodology for the above-referenced background document was criticized in a prior review letter dated June 7, 2000. Responses to these concerns were written in a letter from the Department of the Navy on October 26, 2000. This letter stated that the background calculations would be repeated with a revised methodology. To our knowledge, background values have not been recalculated and the issues remain unresolved. Therefore, it is unclear if antimony, chromium, and silver are below site-specific background.

Tetra Tech Response to Comment #3: *Agreed. However, the risk assessments were performed before Chapter 62-780, F.A.C. was finalized. If the final version had been available, the April 2005 guidance would have been used to prepare the risk*

assessments presented in the RIs for the subject sites. Along the same lines, the re-evaluation was conducted prior to the new numbers being finalized. In order to incorporate the new numbers the entire analysis would need to be re-done. There is currently not funding for this task. In summary, the conclusions of the human health risk assessments would not change significantly.

Follow up Response #3: The response is satisfactory. We agree that revising the human health risk assessment to include current FDEP default CTLs would not significantly change the conclusions of the human health risk assessments.

Tetra Tech Response to Comment #4: Comment noted. Also see response to Comment No.10 (Site 10).

Follow up Response #4: The response is satisfactory. Also, see follow up response #10.

Tetra Tech Response to Comment #5: Given the current and expected future use of Sites 9-18 (an active military facility that will remain active for the foreseeable future – see Section 2.1.2.1), the most likely potentially exposed population is the trespasser. The possibility of future use as recreation space for these sites is minimal. Given this, an exposure frequency for trespassers of 200 days per year is excessive; a more realistic exposure frequency for trespassers is the 45 days/year value used in the risk assessment for these sites...

Follow up Response #5: As stated in the original comment, although 45 d/y may be an appropriate exposure frequency for trespassers, it is low for recreational users. If the possibility of future use as a recreation space exists, the recreational scenario should remain in the assessment with a more probable exposure frequency of 200 d/y. Otherwise, a recreational use scenario should be removed and an institutional control put in place to prevent future re-use under this scenario.

Tetra Tech Response to Comment #6: Acute effects-based SCTLs were developed by FDEP for 8 chemicals – barium, cadmium, copper, cyanide, fluoride, nickel, phenol, and vanadium. An examination of the specific non-cancer hazards at each site, where applicable, was conducted to determine the changes to the risk assessment (if any) of using acute SCTLs...In summary, the effect of using the acute SCTLs is a decrease in risk ratios in every case, and a decrease to below 1.0 in many cases.

Follow up Response #6: The response is satisfactory. The default SCTLs used in this report (Chapter 62-777, F.A.C., 1999) are below current acute SCTLs.

Tetra Tech Response to Comment #7: Comment noted.

Follow up Response #7: The response is satisfactory.

Tetra Tech Response to Comment #8: Comment noted.

Follow up Response #8: The response is satisfactory.

Tetra Tech Response to Comment #9: Comment noted. A ROD documenting No Further Action for surface and subsurface soil at Site 9 was approved in 2005.

Follow up Response #9: The response is satisfactory. However, soil contaminant concentrations below three feet below ground surface remain unknown. Excavation and construction activities may still be of concern for this site.

Tetra Tech Response to Comment #10: *As described in the response to General Comment No. 5, the most appropriate exposure scenario for Site 10 is the trespasser. The trespasser is generally considered to be an adolescent, not a child who may exhibit pica behavior (i.e., the ingestion of large amounts of soil). As a consequence, the barium acute effects-based SCTL is not an appropriate comparison SCTL for Site 10. In addition, the appropriate exposure duration for this scenario at Site 10 is 45 days/year, not 200 days/year. Thus, non-apportioned SCTLs for TRPH and cPAHs would remain 31,000 mg/kg and 0.8 mg/kg, respectively. Apportioned SCTLs for TRPH and cPAHs would be as follows...*

Follow up Response #10:

- A. As stated in Follow up Response #5, the recreational scenario should be removed from consideration if it is not an appropriate re-use scenario. Since acute values were not considered, an institutional control is necessary to prevent re-use under scenarios where a child may be present (i.e. resident, park, schools, etc.).
- B. The derivation of TRPH cleanup target levels differs from methods used for other chemicals. Therefore, TRPH criteria should not be apportioned.
- C. It is understood that the unapportioned risk ratio for cPAHs in soil is already greater than 1.0; however, apportionment is necessary in the derivation of alternative CTLs per Chapter 62-780, F.A.C.

Tetra Tech Response to Comment #11: *Agreed. A ROD documenting Non-residential/Recreational LUCs (including a digging/excavation prohibition) for surface and subsurface soil at Site 10 was approved in 2007.*

Follow up Response #11: The response is satisfactory.

Tetra Tech Response to Comment #12: *A site-specific recreational SCTL was not developed for dieldrin at Site 11 because the surface soil exposure point concentration – 0.1 mg/kg – was less than the Level 2 (industrial) SCTL for dieldrin – 0.3 mg/kg (see Table 5-6). Therefore, a Level 3 (recreational) evaluation was not required for surface soil...*

Follow up Response #12: Commercial/industrial SCTLs are not necessarily protective for a recreational use scenario. If Site 11 passed a commercial/industrial SCTL, its use should be restricted to this purpose through institutional controls and not include recreational use. If recreational use at this site is envisioned, soil contamination should be evaluated with an SCTL based specifically on this scenario.

Tetra Tech Response to Comment #13: *...The lead concentration of 93.1 mg/kg in surface soil results in less than 1 percent of future on-site child residents having a blood lead level greater than 10 µg/dL. This result does not exceed the USEPA goal of no*

more than 5 percent of children exceeding a 10µg/dL blood lead level. Therefore, soil lead concentrations at Site 12 are safe for adolescent trespassers.

Follow up Response #13: The response is satisfactory.

Tetra Tech Response to Comment #14: *Based on the responses to No. 12 and No. 13 above addressing risk re-evaluation calculations, the Navy believes the previously selected Non-residential/Recreational LUCs documented in the approved ROD should be adequate for Site 11.*

Follow up Response #14: The response is satisfactory. We agree that future use of Site 11 should be restricted to non-residential and non-recreational re-use scenarios.

Tetra Tech Response to Comment #15: *Comment noted. The recommended TRV is not likely to change the results of the evaluation.*

Follow up Response #15: We agree that the recommended TRV is not likely to change the results of the evaluation, which conclude that heptachlor concentrations at Site 11 are a potential risk to the robin.

Tetra Tech Response to Comment #16: *Agreed. A ROD documenting No Action for surface and subsurface soil at Site 12 was approved in 2005.*

Follow up Response #16: The response is satisfactory.

Tetra Tech Response to Comment #17: *Comment noted. A ROD documenting Non-residential/Recreational LUCs (including a digging/excavation prohibition) for surface and subsurface soil at Site 13 was approved in 2006.*

Follow up Response #17: The response is satisfactory. We agree that future use of Site 13 should be restricted to non-residential and non-recreational re-use scenarios.

Tetra Tech Response to Comment #18: *Comment noted. Please note that the risk re-evaluation did note that the subsurface soil dataset was limited. A ROD documenting No Further Action for surface and subsurface soil at Site 14 was approved in 2006.*

Follow up Response #18: The response is satisfactory.

Tetra Tech Response to Comment #19: *As described in the response to General Comment No. 5, the most appropriate exposure scenario for Site 15 is the trespasser. As such, the appropriate exposure duration for this scenario at Site 15 is 45 days/year; not 200 days/year. Thus, the recreational SCTL for Aroclor-1242 would remain 6.2 mg/kg.*

Follow up Response #19: Although 6.2 mg/kg Aroclor-1242 may be an appropriate SCTL for the trespasser, we disagree that it is protective of human health under the recreational scenario. As stated in Follow up Response #5, if the possibility of future use as a recreation space exists, the recreational scenario should remain in the assessment with a more probable exposure frequency of 200 d/y. Otherwise, this scenario should be removed and precluded by institutional controls.

Tetra Tech Response to Comment #20: *Comment noted. Please note that the risk re-evaluation did note that the subsurface soil dataset was limited. A ROD documenting Non-residential/Recreational LUCs (including a digging/excavation prohibition) for surface and subsurface soil at Site 15 was approved in 2006.*

Follow up Response #20: The response is satisfactory. We agree that future use of Site 15 should be restricted to non-residential and non-recreational re-use scenarios.

Tetra Tech Response to Comment #21: *Comment noted. A ROD documenting Non-residential/Recreational LUCs (including a digging/excavation prohibition) for surface and subsurface soil at Site 15 was approved in 2006.*

Follow up Response #21: The response is satisfactory.

Tetra Tech Response to Comment #22: *On pages 10-8 and 10-9 of the risk assessment for Site 16 surface soil and subsurface soil, it says "No COCs were identified in the Level 2 evaluation; consequently, a Level 3 [recreational] evaluation was not required." As such, no alternate recreational SCTLs were developed for either surface soil or subsurface soil at Site 16. References to the development of recreational SCTLs at Site 16 (e.g., page 10-11, 3rd paragraph, 2nd line) were made in error.*

Follow up Response #22: Per the follow-up response to Comment 12, commercial/industrial SCTLs are not necessarily protective for a recreational use scenario. If Site 16 passed a Level 2 [commercial/industrial] SCTL, its use should be restricted to this purpose through institutional controls and not include recreational use. If recreational use at this site is envisioned, soil contamination should be evaluated with an SCTL based specifically on this scenario.

Tetra Tech Response to Comment #23: *Agreed. Soils exceeding industrial SCTLs were removed during the IRA in 2002. A ROD documenting Non-residential/Recreational LUCs as the selected remedy for surface and subsurface soil at Site 16 is currently being proposed.*

Follow up Response #23: The response is satisfactory. We agree that future use of Site 16 should be restricted to non-residential and non-recreational re-use scenarios.

Tetra Tech Response to Comment #24: *Silver was eliminated as a COC based on the site-specific background data. Please see the RI/FS General Information Report (ABB-ES, 1998) for further information on the site-specific background study.*

Follow up Response #24: The methodology for the above-referenced background document was criticized in a prior review letter dated June 7, 2000. Responses to these concerns were submitted in a letter from the Department of the Navy on October 26, 2000. This letter stated that the background calculations would be repeated with a revised methodology. To our knowledge, background values have not been recalculated and the issues remain unresolved. Therefore, it is unclear if silver is below site-specific background.

Tetra Tech Response to Comment #25: *Comment noted. While the described assumptions are possible, based on site-specific data and conditions it is not likely that*

hexavalent chromium is prevalent at Site 16. The use of the recommended screening level would not likely change the results of the evaluation.

Follow up Response #25: As stated in the original comment, in the absence of speciation data or data presenting soil conditions favorable to the formation of trivalent chromium, the conservative method is to assume chromium concentrations consist of hexavalent chromium. We disagree that using the recommended screening level for chromium (0.4 mg/kg) would not likely change the results of the evaluation. Under the preferred screening level, chromium would be retained as a COPEC.

Tetra Tech Response to Comment #26: *As described in the response to General Comment No. 5, the most appropriate exposure scenario for Site 18 is the trespasser. As such, the appropriate exposure duration for this scenario a Site 15 is 45 days/year; not 200 days/year. Thus, the recreational SCTL for TRPH would remain 31,000 mg/kg.*

Follow up Response #26: Although 31,000 mg/kg TRPH may be an appropriate SCTL for the trespasser, we disagree that it is protective of human health under the recreational scenario. As stated in Follow up Response #5, if the possibility of future use as a recreation space exists, the recreational scenario should remain in the assessment with a more probable exposure frequency of 200 d/y. Otherwise, this scenario could be removed and an institutional control put in place to prevent future re-use under a recreational scenario.

Tetra Tech Response to Comment #27: *Agreed. A ROD documenting Non-residential/Recreational LUCs (including a digging/excavation prohibition) for surface and subsurface soil at Site 17 was approved in 2006.*

Follow up Response #27: The response is satisfactory.

Tetra Tech Response to Comment #28: *According to Table 12-7 of the risk assessment, the maximum TRPH concentration in surface soil at Site 18 is 23,500 mg/kg. This is less than the recreational SCTL of 31,000 mg/kg. Therefore, TRPH is not a COC for the recreational scenario.*

Follow up Response #28: As stated in Follow up Response #26, although 31,000 mg/kg TRPH may be an appropriate SCTL for the trespasser, we disagree that it is protective of human health under the recreational scenario. If the possibility of future use as a recreation space exists, derivation of a recreational SCTL should utilize a more probable exposure frequency of 200 d/y. Therefore, it is unclear if TRPH is of concern for the recreational scenario.

Tetra Tech Response to Comment #29: *Agreed. A ROD documenting Non-residential/Recreational LUCs (including a digging/excavation prohibition) for surface and subsurface soil at Site 18 was approved in 2006.*

Follow up Response #29: The response is satisfactory.

Tetra Tech Response to Comment #30: *An HI value should not be reported to more significant figures than the least number of significant figures associated with the exposure and toxicity factors used to determine the HI value. In other words, there can be no more mathematical precision in an HI value than that associated with the input to*

that value. Since EPA's IRIS (Integrated Risk Information System data base reports toxicity values (reference doses) to only one significant figure, HI values are to be reported with no more precision than one significant figure. An HI value of 1.4 mathematically cannot be distinguished from a value of 1.0 if input to both values is reported to one significant figure. Therefore, the statement "The HI for industrial workers was approximately equal to 1 indicating adverse, non-carcinogenic effects are not anticipated fro industrial workers" is true and TRPH is not a concern for the industrial scenario.

Follow up Response #30: We agree that individual hazard quotients are associated with the significance of the toxicity factors and it is appropriate to round them to one significant figure. However, the Florida Department of Environmental Protection utilizes the hazard index of 1 as a threshold value. If the sum of the hazard quotients exceeds this value, then the contaminants present on site are of concern. It is not appropriate to round the hazard index.

Please let us know if you have any questions regarding this review.

Sincerely,



Stephen M. Roberts, Ph.D.



Leah D. Stuchal, Ph.D.