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N00207.AR.000098

NAS JACKSONVILLE FL

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Document Tracking Number 07JAX0074

October 24, 2007

Project Number 112GN3966

Commander, Southeast  
Naval Facilities Engineering Command  
ATTN: Anthony Robinson, Code OPAEVR  
Remedial Project Manager  
2155 Eagle Drive  
North Charleston, South Carolina 29406

Reference: CLEAN Contract Number N62467-94-D-0888  
Contract Task Order Number 0162

Subject: Response to Comments  
Draft-Final Remedial Investigation/Feasibility Study, Revision 1  
Potential Source of Contamination (PSC) 47  
Naval Air Station Jacksonville  
Jacksonville, Florida

Dear Mr. Robinson:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this letter responding to the comments on the Draft-Final Remedial Investigation/Feasibility Study (RI/FS), Revisions 0 and 1 for PSC 47 from the various Naval Air Station (NAS) Jacksonville Partnering Team members. Revision 0 of the PSC 47 RI/FS was submitted on June 14, 2004 under Contract Task Order (CTO) 162 and Revision 1 was submitted on May 23, 2007. The questions and/or comments that have been received by TtNUS from the NAS Jacksonville Partnering Team members are addressed below.

### **Southern Division, Naval Facilities Engineering Command**

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#### **Steve Beverly Comments for Revision 1**

- 1. Page 9-2 - Sections 9.1.2 & 9.1.2.1 - These sections accurately describe/define what ARARs are [i.e., "cleanup standards, standards of control and other substantive requirements...," or use of wording "environmental protection requirements" ???]. Nor what ARARs must be based upon [e.g., state "facility siting law"]. We should strictly adhere to NCP definitions and not create our own. These sections appear to overlap Section 9.1.2.1 and they can be merged. Also do not believe the last paragraph accurately reflects what either CERCLA Section 121 says nor NCP's remedy selection criteria [i.e., threshold, balancing, modifying] nor is it even needed here. Recommend you delete it and merge sections 9.1.2 and 9.1.2.1 especially the 2 TBC sections. Attached ARARs guidance has better wording which can be used to start off combined section [before definitions]. Also, we need to be careful speaking to "considering" both ARARS and TBCs when making a remedial selection. ARARS must be adhered to unless waived IAW CERCLA while TBC need only be considered and discounted if need be.**



Response: Sections 9.1.2 and 9.1.2.1 will be merged and a new opening paragraph will be inserted. TBCs will be clearly separated from ARARs so the reader doesn't interpret them as requiring to be complied with.

- 2. All ARAR Tables - I'll separately forward recent email I sent to all branch heads on need to better define our ARAR listings. Please have contractor scrub your ARARs listing especially "potential" ARARs citations - e.g., unless PSC 47 has wildlife, streams or flood plains on site or its likely one or more of your analyzed remedial alternatives Could cause adverse impacts to those resources I question need to cite to those particular protection related authorities.**

Response: ARAR tables will be "scrubbed" to eliminate any requirements that do not potentially affect this site at this time.

- 3. Page 9-10 - Section 9.2.2 - we do not have to "comply with TBCs" to the "extent practicable" or otherwise nor is that the compliance standard for ARARs - please correct.**

Response: Compliance to TBCs was removed.

- 4 Page 9-11 - Section 9.3 - we need to be careful mixing ARAR and TBC references or associated obligations into one sentence making it sound like TBCs must be complied with. At minimum, use words "that must either be complied with, or..."**

Response: Reference to ARARs and TBCs will be separated into two different sentences.

- 5. Page 9-11 - Section 9.3.1 - GRA duplicative description seems to conflict with one used in Section 9.3 which seems more accurate to me. Why do we need both?? Why not cut to the chase and just say which soil and GW specific GRAs were evaluated?**

Response: First paragraph of Section 9.3.1 will be deleted.

- 6. Page 9-12 - Section 9.3.2 - again, we need to be careful mixing ARAR and TBC discussions into one sentence As they lead to misstatements. We already describe what an actions specific ARAR is, why do we have to re-describe it here?? [and mix it with TBCs?]**

Response: First sentence of Section 9.3.2 was deleted to avoid misstatement and mixing of ARARs and TBCs.

- 7. ARAR Table 9-5 - not sure why are we talking about RCRA and CAA in context of on-site or off-site TSDf? We are not creating any permitted treatment or disposal units on or off-base that I can tell. Your status Block and evaluation blocks do not seem to match up to me. Please scrub need for some of these ARARs looking at EPA guidance [to be provided] among others.**

Response: A reference to the CAA is potentially applicable for off-site treatment (not on-site) of soils that would be thermally treated. Reference to on-site/off-site TSDf was removed from the Status block which makes the evaluation block correspond correctly. ARARs were scrubbed.

- 8. Table 10-1 - delete all references to use of "deed" restrictions. We do not have authority to deed restrict active base properties. Re-phrase to just speak to institutional controls and engineering controls.**

Response: Table 10-1 will be modified to remove references to "deed" restrictions.



9. **Page 10-7 - Section 10.2.2.1 - let's not wing how we describe what "LUCs" are - please use definition out of Navy "LUC Principles" Guidance. LUCs DO NOT include site inspections, that is a LUC maintenance measure. Also, LUCs are "implemented, maintained and enforced" not "formulated" through LUC RD. Delete reference below under implementability to possible use of "deed restrictions."**

Response: The text will be modified in accordance with Navy LUC Principles Guidance.

10. **Pages 10-8 thru 10-10 - cost descriptions of "low" or "moderate" seem weak to me but if EPA's RI/FS guidance says that's Ok for this part then I'm OK with it.**

Response: This is consistent with the EPA's RI/FS guidance.

11. **Table 10-2 - delete reference to use of "deed" restrictions. Reword to speak just to institutional controls and engineering controls.**

Response: Reference to "deed" was deleted and sentence re-worded to speak of institutional and engineering controls.

12. **Page 10-22 -Section-10.5.2.1 - Land use Controls - delete first paragraph. RBCA "process" should not be the focus here [or spoken of in terms of it controlling what LUCs we choose for a CERCLA site]. Instead, this section should simply speak to those specific land and groundwater use controls [ICs and ECs] which would be components of this limited action alternative [e.g., both future use of the site for residential purposes and and any extraction or use of GW at the site for any purpose would be prohibited unless and until all residual soils and groundwater contamination is at levels which would allow for unrestricted uses and unlimited exposures]. If any guidances should be cited to it should be EPA's guidance(s) for LUCs at CERCLA sites [CERCLA says we must follow EPA CERCLA guidances]. Also remove reference to "deed" restrictions and inspections as "part of the LUCs" - inspections are not part of the LUC component for this alternative only the ICs and ECs themselves - inspections would be a LUC maintenance measure to be addressed post-RoD [i.e., post remedy selection] under the LUC RD.**

Response: The first paragraph was deleted. Language referring to RBCA was left in the text, as this is will be a potential site exit strategy that will fit in to the general context of EPA CERCLA guidance. Reference to "deed" was removed and inspections were referenced in the context of the LUC RD.

13. **Page 10-23 - implementability - add the work "such" before "administrative controls."**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

14. **Page 10-27 - Section 10.5.3 - why is this called "removal"?? That is a CERCLA term of art. This reads more like an "Extraction and Treatment" alternative but I'm unclear from reading this section what exactly the proposed components of this alternative would be. You say extracted GW "typically requires treatment and disposal" but do not seem to include those elements under your description of the alternative. Please clarify how you extract contaminated GW and not have a "discharge for treatment" scenario or site treatment system built in. Also costs says "low to moderate" but from what I have seen from other GW extraction systems we have used the costs to run them can be fairly high especially if we are treating GW on-site prior to POTW discharge.**

Response: Addition information as to the treatment and disposal of the extracted groundwater was added. Costs were estimated to be "low to moderate" because no in-situ treatment was anticipated and the volume of groundwater and period of extraction is limited.



15. **Page 11-1 - Evaluation Criteria - please couch these in terms of the 3 categories used under the NCP (Threshold, Balancing and Modifying criteria)**

Response: The nine evaluation criteria were grouped into these three criteria.

16. **Page 11-1 - Compliance with ARARS - substitute the word "ARARs" for "regulations" on line 2 - ARARs are not limited to regulations.**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

17. **Page 11-2 - Compliance with ARARS - delete entire paragraph speaking to "fund-financed" response actions - not applicable to what we are doing.**

Response: The paragraph will be deleted.

18. **Page 11-9 - Section 11.2.2.1 - recommend you delete reference to water sprinkling and air monitoring as being "ECs." Use of the term "temporary exposure controls" might be more appropriate if they need a title at all. ECs are typically physical controls [i.e., gates, fences, signs, guard houses, caps, etc...] intended to preclude or limit access to a site or on-site contamination. On-site treatment systems are also sometimes also identified as ECs but I have never seen water sprinkling or air monitoring considered as ECs. Not sure we want to expand that universe otherwise, other personnel safety related processes could begin to be included as EC components of our remedies.**

Response: The text will be modified to temporary exposure controls.

19. **Page 11-12 - Component 3 - this component needs substantial rewrite. LUCs component section should be worded to describe those controls [prohibitions] we intend to impose on future land and GW uses in order to protect HH and the environment from residual soil and GW contamination on-site. [e.g., future use of groundwater at the site will be prohibited; any drilling, excavation, or any other activity that would interfere with the cap to be installed or on-site GW monitoring system will also be prohibited etc....] After your LUC descriptors, use of the LUC RD can be discussed and should be couched in words something like the following - These LUCs will be maintained by the Navy until the concentration of hazardous substances in the soil and groundwater at the site are at such levels as to allow for unrestricted use(s) and unlimited exposure(s). Should this particular remedial alternative be selected for implementation, the Navy will develop a LUC Remedial Design (LUC RD) document to address how the LUC component of this alternative will be implemented, maintained, enforced and reported on. The LUC RD [a Primary Document under the FFA] would be submitted to EPA and FDEP for review and concurrence after finalization of the Record of Decision for PSC 47 and in accordance with the SMP schedule of NAS Jacksonville...**

Response: Following was added to Component 3:

"LUCs in the form of institutional and engineering controls will be implemented at PSC 47 to protect human health and the environment from site COCs. Institutional controls that would restrict land use would be implemented. An impermeable cap would be constructed and serve as an engineering control. The objective of these LUCs would be to:

- Prohibit residential or agricultural reuse of the Site unless prior written approval is obtained from the EPA and FDEP. Prohibited residential uses shall include, but are not limited to, any form of housing, child-care facilities, pre-schools, elementary schools, secondary schools, playgrounds, or full-time adult convalescent or nursing care facilities.



- Restrict future use of the site to non-residential activities involving less than full-time human contact by on-site workers with 8 hour per day (average) exposures to surface and subsurface soils.
- Ensure no construction on or excavation of the contaminated soil without special handling and disposal procedures for the soil. Ensure that removal and disposal of soil with contaminant concentrations greater than FDEP SCTLs for direct residential exposure is approved in writing by the EPA and FDEP prior to the action.
- Maintain the integrity of any existing or future monitoring or remediation system(s)."

**20. Page 11-12 - Component 4 - Do we really intend to sample/monitor under capped soils??? Never heard of punching holes in a cap for such a purpose. Don't think we should commit to that but recommend you talk with Mike Maughon. Think putting cap in place and precluding cap disturbance via LUCs implementation should be sufficient.**

Response: Monitoring of soils via periodic sampling was deleted. Groundwater monitoring will remain; the FDEP regulator requested that we confirm leaching of the capped soils. This requirement would likely be accomplished through the proposed groundwater monitoring program for natural attenuation.

**21. Page 11-12 - Section 11.2.2.2 - Compliance with ARARs and TBCs – delete both title and narrative references stating or implying that we have to "comply" with TBCs. Replace "might" with "should" in last sentence on this page.**

Response: The text was modified to delete reference to TBCs in title and "might" was replaced with "should."

**22. Page 11-14 - Section 11.2.3.1 - again, question need to monitor capped soils. Don't think we should have to do this. Monitoring of uncapped soils to check progress of any prescribed natural attenuation might make sense but I don't see uncapped soil MNA as a component.**

Response: Monitoring of capped soils was eliminated. Monitoring of groundwater is still a component to ensure no leaching of capped soils is occurring.

**23. Page 11-15 - Section 11.2.3.1 - recommend you delete reference to water sprinkling and air monitoring as being "ECs." [see prior comment above] Also don't like use of words "environmental controls" in first sentence as that is not a recognized term. Think you mean to say "exposure controls" since you are trying to preclude exposure of workers to dust etc...**

Response: The text will be modified as stated above.

**24. Page 11-15 - Component 4 - recommend you reword to speak to no monitoring of "uncapped" soils would occur [see prior comment about not monitoring capped soils]**

Response: Component 4 was changed to match Soil Alternative S-2.

**25. Page 11-17 - Compliance with ARARs - delete both title and narrative references stating or implying that we have to "comply" with TBCs. Replace "might" with "should" in 2nd sentence.**

Response: The text was modified to eliminate reference(s) to complying with TBCs.



- 26. Page 11-17 - Long term Effectiveness and Permanence - add "anticipated future industrial site workers" after "current site users" in 2nd line?**

Response: The text will be modified as requested in the Final RI/FS Report (Revision 2).

- 27. Page 11-17 - Reduction of... section - recommend replacing "might" with "should" in next to last line.**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

- 28. Page 11-18 - Short Term Effectiveness - Recommend you delete reference to site capping as having possible adverse impact on surrounding community. If we were creating a landfill I could see potential impacts but here? To me, only off-site transport of contaminated soils would be of possible concern/impact on, folks off-base. Also, recommend you delete reference to water sprinkling and air monitoring as being "ECs." Use of the term like "temporary exposure controls" might be more appropriate if they need a title at all.**

Response: Reference to capping impacting surrounding community was removed along with reference to ECs.

- 29. Page 11-18 - Implementability - you appear to mix GW monitoring into soils alternatives discussion? Also, I'd delete construction permit reference, or at least clarify that you are talking about a "dig" permit from base env dept since on-site CERCLA remedial actions are entitled to a permit exemption otherwise. Add word "maintained" to last line on page after "implemented..."**

Response: Reference to GW monitoring was removed. Clarification to "dig" permit was added to the text. Work "maintained" was added to last sentence.

- 30. Page 11-19 - Component 1 - recommend you make clear at end of 2<sup>nd</sup> paragraph that no cap maintenance of any kind would be required.**

Response: The following sentence was added to illustrate this point. "No cap maintenance of any kind would be required with this component."

- 31. Page 11-22 - Compliance with ARARs and TBCs - delete both title and narrative references stating or implying that we have to "comply" with TBCs. You can add words like "fully take into account" TBCs...**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

- 32. Page 11-22 - Short Term Effectiveness - recommend changing all your "would" usages to "could" i.e. "risks could be adequately mitigated..." Delete reference to dust suppression as an EC.**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

- 33. Page 11-23 - Implementability - see prior comment about no need for permits except possibly from base but we are all Navy.**

Response: The text was modified similar to previous comment.



34. **Page 11-24 - 11.3.1.1 - Think saying NA alternative "cannot be chosen if any waste remains on site" maybe a bit too broad statement [depending upon how one interprets it]. NA Alternative can include NFA scenario under which one could have treated contaminated soils to below CGs for unrestricted future land uses and then have left the residual soils on the site, right? Recommend you delete that statement since it is too open to interpretation and not necessary.**

Response: Statement (last sentence in Section 11.3.1.1) was deleted from the text.

35. **Page 11-24 - Compliance with ARARs and TBCs - delete both title and narrative references stating or implying that we have to "comply" with TBCs. You can add words like "fully take into consideration as appropriate all " TBCs...**

Response: Reference to complying with TBCs was removed.

36. **Page 11-24 - Long term... - words "leave PSC 47 open to unrestricted use" seem awkward here in GW only context. Think it preferable to say something more like "would not allow for unrestricted future use of site groundwater..."**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

37. **Page 11-25 - Short Term Effectiveness - think you should say "Because no on-site remedial activities would be undertaken, the implementation of..." and say " or result in potential adverse impacts..."**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

38. **Page 11-25 - Implementability - recommend you say because "no on-site remedial activities would be undertaken."**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

39. **Page 11-26 - Component 2 - Monitoring - delete last paragraph in this section - Five Year Reviews are NOT a component or subcomponent of any remedy [or remedy alternative].**

Response: Last paragraph was deleted.

40. **Page 11-26 - Component 3: LUCs - this component needs substantial rewrite - see comment above for Page 11-12**

Response: This component was rewritten in accordance with comment # 12.

41. **Page 11-27 - Compliance with ARARs and TBCs - delete both title and narrative references stating or implying that we have to "comply" with TBCs. You can add words like "fully take into consideration as appropriate all " TBCs...**

Response: Deleted reference that TBCs would be "complied" with.

42. **Page 11-29 - Section 11.3.3.2 - substitute "cleanup goals" for "PRGs" on 5th line?**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

43. **Page 11-31 - Compliance with ARARs and TBCs - delete both title and narrative references stating or implying that we have to "comply" with TBCs. You can add words like "fully take into consideration as appropriate all " TBCs...**



Response: Reference to complying with TBCs was removed and stated that they will only be considered in a separate sentence.

- 44. Page 11-35 - Compliance with ARARs and TBCs - delete both title and narrative references stating or implying that we have to "comply" with TBCs. You can add words like "fully take into consideration as appropriate all " TBCs...**

Response: Reference to complying with TBCs was removed and stated that they will only be considered in a separate sentence.

- 45. Page 11-35 - Section 11.4.2 - substitute "cleanup goals" for "PRGs" on last line**

Response: The text will be modified in the Final RI/FS.

- 46. Page 11-36 - Implementability - recommend maybe adding "but not as readily as some other alternatives" after "could be implemented" ?? Bench/pilot testing and other factors makes this one sound like it would be more difficult to complete.**

Response: The text will be modified to add the above comment.

### **Naval Air Station Jacksonville, Facilities and Environmental Department**

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#### **Jane Beason Comments on Revision 0**

- 1. On page 3-5, please change hazardous waste code F017 to D017.**

Response: The text will be modified in Revision 1.

#### **Bill Raspert Comments on Revision 1**

- 1. Page vi--third paragraph, last line include the statement that the NAS Jacksonville RCRA operating permit specifies cleanup in conjunction with a CERCLA program**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

- 2. Page 1-1, fifth paragraph of section 1.2 -1-third line please change the word disposal to release**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

- 3. Page 2-1 second paragraph, line 7- add and "housing" after small businesses**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

- 4. Page 2-1 third paragraph aircraft model designators are not needed (P-3 rather than P-3C etc)**

Response: Aircraft model designators were removed.

- 5. Page 2-6 –first paragraph possibly add the date of construction for building 536**

Response: The date of construction will be added the first paragraph.



6. **Figure 2-12- Legend box the groundwater flow direction arrow lists 17ft. above mean sea level Is this meant to show ground water elevation at the point of the arrow in the deep zone?**

Response: Legend text for Figure 2-12 will be modified in the Final RI/FS Report (Revision 2).

7. **Page 3-1, second paragraph line 9 please explain concentration of “believed to be based on regulatory standards”; is this an ARAR?**

Response: The words “believed to be” were deleted.

8. **Page 3-3 – 2nd paragraph please explain what regulatory criteria is being discussed with sampling “exceeding laboratory reporting limits but were less than regulatory criteria”. From the paragraph it appears that all sampling were below a “certain criteria” but above residential SCTL. Was the criteria the industrial SCTL?**

Response: Reference to residential criteria was added to the text for clarification.

9. **Page 3-5 number one, D017 discusses residue sludges from industrial painting; the D017 characteristic refers to Silvex**

Response: The characteristic for DO17 was changed to Silvex.

10. **Page 3-9 first paragraph the second line please indicate the pesticide shop is 937 or 536; to help the reader**

Response: Building 536 was added for clarification.

11. **Page 3-11, second paragraph fourth line please change “fully” to “further”**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

12. **Figure 4-5 is en titled to soil sample location map yet the legend provides a number of excavation areas proposed. Please re-title or remove parts of the legend/drawings.**

Response: Note in legend clearly states the excavation areas represent a 1999 soil removal event.

13. **Page 5-3, first paragraph second line please indicate when the Partnering Team made the decision between using a residential FDEP SCTL. I don't understand how the dryness of the drainage ditch affected the Partnering team decision (see last sentence of paragraph).**

Response: This is documented by the approval of the RI/FS Work Plan for PSC 47 (TINUS, 2000). The dryness of the ditch was used to eliminate the need for comparison against sediment criteria.

14. **Page 5-23, 3<sup>rd</sup>, paragraph last line in parenthesis indicate “no industrial or leachability exceedences were reported and the reader is referred to Fig 5-3; yet Figure 5-3 is entitled “Exceedances of Leachability”SCTL” Please clarify**

Response: The text was modified to direct the reader to Figure 5-1 and not Fig 5-3.

15. **Page 5-23 first paragraph third line does the exceedence of SCTL exceed the industrial criteria?**

Response: The paragraph goes on to explain which samples also exceed industrial criteria.



**16. Table 5-2 The bold numbers show exceedances of residential SCTL, should the title reflect this?**

Response: No, the table shows all exceedances to SCTLs, but it just happens that only residential SCTLs were exceeded.

**17. Page 5-30 first paragraph first line: do the TCL pesticide compounds that they exceed the industrial criteria**

Response: Third line of same paragraph states that 7 of the 10 TCL pesticide compounds also exceed industrial criteria.

**18. Table 5-3 General comment- I would suggest for this table and others, that the shading be a lighter shade as it is difficult to see the decimal point**

Response: Shading or font will be adjusted to make it easier to read.

**19. Table 5-3 Why is this soil samples shaded where it value is below all standards but a GW level? Also why are two samples show ug/l where soil normally is shown as mg/kg**

Response: This table shows soil samples that had SPLP analysis run. This gives results in both mg/kg and µg/L. Shaded samples in µg/L exceed GW GCTLs. Notes at bottom of table describe this.

**20. Page 5-64 second paragraph please indicate for one drawing if any of the sample has SB36 shown.**

Response: A reference was added to direct the reader to Figure 5-8.

**21. Page 5-64 second paragraph - should a discussion be included concerning the different values that were found at the same sampling points depending on whether the sample was collected and analyzed by a mobile or fix base laboratory? In addition, should the reader be informed as to which sample method, fixed or mobile is more accurate for the site?**

Response: A paragraph will be added to 5.3.2 describing the differences in data collection methods and results. It will include a discussion of screening level data produced by the mobile laboratory vs fixed base laboratory results. Placing the discussion in this section will better address this question for the presentation of results.

**22. Page5-77 last line of page please indicate whether this is industrial residential GCTL's**

Response: Not applicable to groundwater, there are no industrial or residential GCTLs.

**23. Page 5-88 last sentence of page should you have an explanation why MW31D was not sample for VOC and SVOC?**

Response: An explanation that this well was installed to delineate arsenic contamination vertically was added to the text.

**24. Page 5-113 first paragraph 9<sup>th</sup> line please add a micrograms per liter after 2100 also should not the value 21,000?**

Response: The correct value is 2100 micrograms per liter and the text will be modified in the Final RI/FS Report (Revision 2) to reflect the units.



**25. Page 5-113 second paragraph Is there any explanation why the significant differences in values in a four month time frame**

Response: This paragraph is simply only presenting the results. This difference is brought up again in the groundwater discussion section (Section 5.4.2) and generally discussed but not explained, as it is unclear why it has occurred.

**26. Page 5-123 second paragraph first line please move “former” in front of location to in front of pesticide mixing tank, as written appears that the tank was moved.**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

**27. Page five -- 123 second paragraph 9<sup>th</sup> line please change “were disposed” to “released”**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

**28. Page 5-123 –Section 5.4.1- 1st paragraph, last line change drainage swell to drainage swale**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

**29. Page 5-125 first paragraph seconds to the last sentence- given that there is a confining layer and a downward vertical gradient can this be inferred that there is a horizontal movement of the contaminant?**

Response: Yes, a short statement was added to the end of this paragraph to state this inferred conclusion.

**30. Page 6-9 second paragraph you cite OU-3, is this reference correct?**

Response: Yes, this is a reference to data collected on the base to show there are significant deviations from what is predicted through standard text book calculations.

**31. Page 7-4 is a table included that lists the COPCs that were selected**

Response: Table 7-26 is a summary of the COPCs selected.

**32. Pages 7-7 – Table 7-1 last line the 10 footnote states is a value for Endrin**

Response: The 10 footnote states the SPLP analysis is required for a value. Endrin is footnote 8.

**33. Table 7-3 is footnote 5 placed with the proper up heading (background value)?**

Response: Yes, background values are calculated by multiplying 2 times the mean so footnote 5 is correct.

**34. Tables 7-4 why is it background value of arsenic shown as NA?**

Response: The NAS JAX background value for arsenic (1.48 mg/kg) was added.

**35. Table 7-7 why is the filtered sample of minimum concentration higher than the total sample for arsenic**

Response: The filtered samples were only collected on wells with high arsenic concentrations while total arsenic samples were collected on all wells. Therefore, this results in the minimum concentration being lower for total arsenic samples collected on “clean” wells.



**36. Page 7-30 is a reasonable to expect a future on-site residential when the location is industrial – and will be under land use controls**

Response: It's included for completeness as there is always the possibility that the base could want to build housing there.

**37. Table 7-10 and 7-20- given that the installation has its own water treatment plant is it reasonable to expect groundwater ingestion?**

Response: It was included for completeness as a potential pathway.

**38. Page 7-69, Land Use- second sentence is incorrect; the site is used for grounds maintenance contractor, pesticide storage ,and for pesticide training**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

**39. Fig 9-3 and 9-4– Does not show depth of excavation for Area 5.**

Response: They are not intended to show the depths of the excavations, but to show the areal extent soil SCTL exceedances.

**40. Table 10-1 Re-title to indicate for soil – see Table 10-2**

Response: Table 10-1 will be modified in the Final RI/FS Report (Revision 2).

**41. Page 10-21, 10.5.1 4<sup>th</sup> sentence change walking away to status quo- discussion prior is that there is no movement of the plume**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

**42. Page 10-22 – last paragraph, second sentence- delete deed restrictions**

Response: Reference to deed deleted from text.

**43. Page 10-22 – last paragraph, forth sentence- change to dewatering, irrigation, heating/cooling and industrial purposes unless EPA/FDEP approval**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

**44. Page 10-23, 1st paragraph, 2<sup>nd</sup> sentence- add “ecological”**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

**45. Page 10-29- Conclusion- please discuss sources removal**

Response: Source removal is discussed on the previous page under “Effectiveness.”

**46. (Note a discussion at our July Partnering meeting on well testing and disposal of recovered “arsenic”)**

Response: Not sure what discussion this is referring to how this should be incorporated into the RI/FS.



**47. Page 11-12 Component 4, 2<sup>nd</sup> paragraph, add end point after “annually” i.e. until meets unrestrictive use...**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

**48. ; same comment for last sentence of next paragraph**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

**49. Page 11-17, 1<sup>st</sup>, 3<sup>rd</sup> line, add “industrial use” after current**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

**50. Page 11-26**

Response: No comment provided to respond to.

**51. Page 12-3; 3<sup>rd</sup> paragraph Is Subtitle “D” correct?**

Response: This was assuming the wastes for disposal would require a Subtitle D landfill as a “worst case” scenario.

**United States Environmental Protection Agency**

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**Pete Dao**

No official written comments to Draft RI/FS for PSC 47.

**Florida Department of Environmental Protection**

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**Jim Cason Comments on Revision 0**

- 1. The site groundwater contaminants are basically pesticides and petroleum constituents. Please provide an assessment regarding whether or not we have adequately delineated their extent, both vertically and laterally. I wonder, given that the groundwater gradient is northwest, do we need additional groundwater information northwest of, and between monitoring wells 26 and 27 (Figure 5-8) and north and northwest of 14D (Figures 5-9 and 5-10)?**

Response: Vertical profiling efforts during the screening process included collecting groundwater samples at three depth intervals. During that effort we collected samples as deep as 40 to 50 feet BLS. Below this depth, a clayey sand/sandy clay exists. Weathered limestone is present below this layer. This unit was found to act as an aquitard. There is no reason to believe that the groundwater contamination has migrated below this unit. Although there is a downward gradient, and as defined by the monitoring well network, the pesticide contamination is predominantly confined to the shallow wells. The only exceptions in the groundwater samples collected were MW-13 and MW-17, where low levels of pesticides were detected at depth. VOCs were only detected at depth in MW17. Both MW-13 and MW-17 have adequate control in each direction, with the possible exception to the east of MW-17. However, since the groundwater flow is not in that direction, it is unlikely that the contamination will be migrating to the east.



The area between MW-25, MW-26 and MW-27 is heavily wooded and would require clearing to allow a drilling rig access. The team agreed during the investigation to use a well on the other side of the wooded area as a downgradient location. MW-14D is a well that was sampled for VOCs and pesticides during the groundwater investigation and contains no GCTL exceedances for the COCs. It is providing a downgradient monitoring point for the southern groundwater contaminant plume. TtNUS does not understand why an additional well located further downgradient is necessary.

**2. With respect to soil, have we designated the site boundaries too conservatively? Should we not sample beyond the presently designated boundaries?**

Response: The current site boundaries are predominantly located adjacent to recreational ball fields and across Child Street is the golf course. Pesticides are routinely applied to these areas for insect control. The team agreed during investigation activities that soil sampling from these areas would represent anthropogenic values rather than be indicative of soil contamination. Additionally, during the Preliminary Assessment and other earlier investigations, the consultants identified the areas likely to be contaminated based on interviews with past and present on-site employees and knowledge of site operations. The investigations leading up to and including the RI focused on these areas and extended outward as required. The RI included sampling at approximately 50 foot intervals all along the perceived boundary.

**3. Given the typical “hot spot” nature of soil contamination on similar pesticide sites, has our sample regime adequately assessed the site soil? I tend to think it has not, but please explain why it is adequate, if the Navy believes it to be so.**

Response: The team chose during the RI to collect additional samples along the perimeter of the property understanding that previous site/process knowledge had identified the likely locations of contamination. Additionally, TtNUS collected four soil samples in the interior portion of PSC 47 behind Building 937 and south of Building 536 to ensure that there was no unidentified contamination in these larger unpaved portions of the property. TtNUS did not sample beneath the building slabs. Unbiased grid sampling was not used at this site because it was believed that continuing the investigation around known sources was adequate.

**4. Have we obtained enough subsurface soil data?**

Response: There are a few subsurface soil sample locations where the previous sampling did not provide control. During the planning portion of the investigation, the team agreed that the pesticide contamination in the soil resulted from surface application of pesticide compounds. Therefore, during the RI, an assumption was made that if no surface soil contamination was detected, it could be assumed that subsurface soil contamination was not present. Therefore, the surface soil sampling locations were used to provide a horizontal control for the subsurface soil.

**5. For the record, there was no Feasibility Study section(s) or information in the document.**

Response: The NAS Jacksonville Partnering Team provides the RI and Risk Assessments ahead of the FS to allow for the regulators and other team members to provide comments regarding the completeness of the investigation. This allows the team to agree that the contamination is delineated adequately prior to preparing the FS. If the RI requires additional efforts, the RI portion may be re-issued in draft form without the FS. Once the RI portion is considered acceptable to the partnering team members, the FS will be prepared to address the defined contamination.



**David Grabka Comments on Revision 1**

- 1. On page 3-2, Section 3.3, third paragraph, first bullet, it says that the groundwater flow direction was determined in the RFI to be northeasterly. All the figures showing groundwater flow direction in chapter 2 show groundwater flowing to the northwest. Please verify the flow direction in the RFI.**

Response: The first bullet states the flow direction incorrectly as it should be northwesterly (as illustrated in the RFI and RI).

- 2. On page 3-3, Section 3.3, last bullet, it says that the human health risks were acceptable based on USEPA standards (less than 1E-04). The specific human health risk should be identified as risk of cancer. Also, it should state that carcinogenic human health risks were not acceptable based on FDEP criteria (greater than 1E-06).**

Response: The text is related to work that was done in 1997 by another contractor. It is not known if FDEP provided oversight of the risk assessment or findings. However, site risks have been re-evaluated using current methodologies and reference current EPA and FDEP guidance for HHRA and acceptable risks in Section 7.0.

- 3. On page 4-8, Section 4.2.1.3, second to last line of the section, the deep groundwater sample should be identified as being from 32 to 36 ft bls.**

Response: The text will be modified in the Final RI/FS Report (Revision 2).

- 4. I could not reconcile the Phase I and II soil sampling discussions in Sections 4.2.1.1, 4.2.2.1 and 5.3.1 with the Figure 4-2. Figure 4-2 indicates most surface soil samples were collected from 0 to 1 ft bls, while the text indicates that most surface soil samples were collect from 0 to 6 inches bls.**

Response: Surface soil samples were collected from 0 to 6 inches bls in most cases. However, some areas are covered with approximately 6 inches of either asphalt or gravel. In these locations, samples were collected from 6 inches to 1 foot bls and surface soil samples were indicated as 0 to 1 foot bls on Figure 4-2. Clarification of this has been added to the text.

- 5. On page 5-3, Section 5.3.1.1, beginning of first sentence, I believe it should read "Fifty-nin (59) surface soil samples..." Also, it says that surface samples were collected from 0-2 ft bls, which contradicts what is said in Section 5.3.1 and 4.2.1.1.**

Response: The text should read "Fifty-nine" and was modified. The text was changed to state that surface soil samples were collected from 0 to 1 foot bls so that Sections 5.3.1 and 4.2.1.1 correspond to each other.

- 6. On page 5-4, in Section 5.3.1.1.1, second paragraph, arsenic and benzo(a)pyrene equivalents are discussed as being pesticides.**

Response: These will be removed from this section because benzo(a)pyrene equivalents and arsenic are discussed in Sections 5.3.1.1.2 and 5.3.1.1.4, respectively.

- 7. Why a deep, saturated soil sample (SB32) was collected from a depth of 47 to 48 ft bls and that sample analyzed for organophosphate pesticides should be explained.**

Response: The sample was collected as the result of a partnering team discussion regarding results from a nearby well screened at this interval. The text will be modified.



8. **On page 7-5, second paragraph, it says that surface soil is defined as soil collected from 0 to 1 ft bls and subsurface soil is defined as soil collected from depths greater than 1 ft bls. FDEP defines surface soil as soil collected between 0 and 2 ft bls and subsurface soil as soil collected from depths greater than 2 ft bls.**

Response: These depths were used because these were the depths that the DQO process finalized and were approved by the partnering team. The data collected during Phase I and Phase II and then ultimately Phase III followed these criteria, which are now outdated.

9. **On page 7-33, second paragraph, it says that the average concentration in groundwater was used as the EPC for evaluating exposures to groundwater. FDEP does not allow for the averaging of groundwater concentrations to determine exposure point concentrations.**

Response: The maximum concentration for groundwater will be used as the EPC. All calculations using the previous EPC values will be recalculated with maximum values.

10. **On page 7-74, Table 7-22, top of the table where it calculates Remedial Goal Options for Soil for the Occupation Worker, FDEP's industrial/commercial SCTLs should be used in that table.**

Response: Table 7-22 will be modified to indicate if the SCTL is for industrial or residential exposure, as appropriate.

11. **On page 7-76, Table 7-23, in the part of the table for the Adult Resident, the FDEP GCTL for dieldrin is incorrectly written as .005 µg/L where on the same page it is correctly written as .002 µg/L.**

Response: The dieldrin GCTL value was corrected in Table 7-23.

12. **Please determine whether COCs or COPCs are being discussed on pages 7-77 and 7-78.**

Response: COPCs are being discussed and this will be clarified in the Final RI/FS Report (Revision 2).

13. **In Tables 9-2 and 9-4 that list the state ARARs and TBCs, the following should be added:**

- (a) **FAC Chapter 62-730, Florida Hazardous Waste Rules**
- (b) **FAC Chapter 62-780, Contaminated Site Cleanup Criteria**
- (c) **Guidance for the Selection of Analytical Methods and for the Evaluation of Practical Quantitation Limits**
- (d) **Section 376.30701, Florida Statutes, Pollutant Discharge Prevention and Removal**

Response: The above listed ARARs were added to Tables 9-2 and 9-4.

14. **On pages 9-10 and 9-11, in the table listing the PRGs for groundwater, the GCTL for dieldrin should be .002 µg/L. Also, pursuant to FAC Rule 62-780.680(1)(c), groundwater that has contaminant concentrations that do not exceed the less stringent of the risk-based groundwater CTLs in FAC Chapter 62-777; the background concentrations; or the best achievable detection limits (Practical Quantitation Limits); is not considered contaminated. Therefore, for certain contaminants like aldrin, dieldrin and alpha-BHC, the laboratories Practical Quantitation Limit may be substituted as a PRG for the risk-based GCTL. Some of the other COCs identified in groundwater may also have PQLs above risk-based GCTLs.**

Response: The GCTL value for dieldrin was corrected.



For groundwater samples, the PQL values for aldrin, dieldrin, alpha-BHC, and beta-BHC were less stringent than their respective GCTLs. For soil samples, the PQL values for alpha-BHC and beta-BHC were less stringent than their respective SCTL. Using the PQL value for certain COCs does reduce the overall number of exceedances (soil and groundwater) for the site. The use of PQL values will be most useful on perimeter sample locations that only had reported exceedances of the above referenced COCs at values below their respective CTLs. Figures showing the extent of pesticide contaminated soil and groundwater (Figures 9-1 through 9-5) will be revised.

The problem with substituting PQL values for PRG values is that PQL values fluctuate between laboratories used with more fluctuation in soils than groundwater. Therefore, the PRG values will remain as the SCTL or GCTL, but with a footnote that the laboratory PQL value should be used if it is less stringent than the CTL.

- 15. In Table 9-6, please add FAC Chapters 62-777, 62-780 and 62-520. Please remove FAC Chapter 62-736 as that rule has been repealed. Signage requirements are now located in FAC Rule 62-730.225(3).**

Response: These three ARARs were added and FAC Chapter 62-736 was removed.

- 16. On page 10-7, Section 10.2.2.1, in the discussion of Implementability, it says that “Resources are readily available for the preparation of deed restrictions.” As this site will remain in Navy ownership, deed restrictions are not the appropriate mechanism for implementing land use controls. Rather, land use controls at operating military bases are usually implemented using the Base Master Plan and other administrative controls to keep prohibited activities from occurring on sites with land use controls.**

Response: The text will be modified to remove mention of “deed” restrictions as they are not applicable. Reference to the LUC RD is provided which will provide details on that actual implementation of the LUCs.

- 17. There is something missing from the discussion on page 10-8 and 10-9 on capping. A cap used for an impervious cover system would require periodic certification by a Professional Engineer that it remained impermeable. However, a cap only used to prevent direct contact with contaminated soil beneath the cap may only require a visual inspection to determine that it still remained.**

Response: Section 10.3.2 (Containment) was revised to state that a cap could be used to prevent direct exposure and that an impermeable cap could be used to prevent leaching or erosion of the contaminated soil. Periodic certification of the cap will be addressed in the LUC RD for PSC 47.

- 18. On page 10-15, top paragraph, the discussion on the determination of whether excavated soil would require disposal as RCRA-hazardous is flawed. Only if concentrations of contaminants of “listed RCRA waste” exceed FDEP industrial SCTLs or the soil is determined to be characteristically hazardous should the excavated soil be managed and disposed as RCRA-hazardous.**

Response: The base and partnering team made the decision (August 21-22, 2007) to potentially dispose of pesticide contaminated soil as RCRA-hazardous event, though the soil at PSC 47 is a non-listed waste. The soil was determined to be non-listed because it had not been spilled or disposed off at the site in a manor that was not consistent with its use or application. Therefore, the team decided to be conservative because of potential exposure and leachability risks.

The minutes from the partnering meeting state, “If detections come back above commercial/ industrial SCTLs, soils will be considered hazardous waste and disposed of as such. If the pesticide has a



D code, it will be compared to SCTL and characteristic to determine if hazardous waste or not. If the pesticide or other constituent at the site has a hazardous waste code associated with it, the total concentration will be compared to the SCTL.”

- 19. In the Section 10.5.2.1 on Land Use Controls, the Risk-Based Correction Action Risk Management Options of FAC Chapter 62-780 are described. Please note that previous discussion with EPA regarding the use of only permanent groundwater restrictions to manage groundwater contamination with concentrations above federal MCLs has not been allowed.**

Response: Comment is noted. The Navy wishes to keep RBCA Management Options on the table for future evaluations should EPA later agree to approve use of Chapter 62-780 provisions.

- 20. On page 11-9, Section 11.2.2.1, Component 2, third bullet, see comment (18) above.**

Response: See response to comment (18).

If you have any questions regarding this correspondence or if I can be of assistance, please contact me at (904) 636-6125.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Mark A. Peterson'.

Mark A. Peterson, P.G.  
Task Order Manager

- c: Mr. Tim Curtin, NAS Jacksonville  
Mr. Steve Beverly, NAVFAC SE  
Mr. David Grabka, FDEP  
Mr. Pete Dao, USEPA  
Mr. Mark Perry, TtNUS  
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