

M00263.AR.000460
MCRD PARRIS ISLAND
5090.3a

LETTER OF TRANSMITTAL AND U S EPA REGION IV COMMENTS ON DRAFT REMEDIAL
INVESTIGATION WORK PLAN FOR SITE 27 EQUIPMENT PARADE DECK MCRD PARRIS
ISLAND SC
4/23/2007
U S EPA REGION IV



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303-8960

April 23, 2007

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

4WD-FFB

Commander, Southern Division
Naval Facilities Engineering Command Southeast
OPCEVR (IPT-Central)
Attn: Mr. Arthur F. Sanford
Remedial Project Manager, MCRD Parris Island
2155 Eagle Drive
North Charleston, S.C. 29406

And

Commanding General
Marine Corps Recruit Depot
Attn: Timothy J. Harrington, NREAO
P.O. Box 5028
Parris Island, SC 29905-9001

SUBJ: EPA Review of the Draft (D1) Equipment Parade Deck – Site 27 RI Work Plan, Marine Corps Recruit Depot Parris Island, South Carolina.

Dear Sirs:

The U.S. Environmental Protection Agency (EPA) has completed its review of the above referenced document. EPA understands the Navy / Marine Corps Recruit Depot (MCRD) is on a tight timeline to finalize this document. EPA has strived to structure these comments in a way that facilitates resolution in a timely manner. If you have any questions that would help you to resolve these comments more quickly, please do not hesitate to call me at (404) 562-9969.

Sincerely,

A handwritten signature in cursive script that reads "Lila Llamas".

Lila Llamas
Senior RPM

cc: Dave Scaturo, SCDHEC
Don Hargrove, SCDHEC
Mark Sladic, TiNUS

**EPA COMMENTS ON THE EQUIPMENT PARADE DECK – SITE 27
REMEDIAL INVESTIGATION WORK PLAN, REVISION 0
FEBRUARY 2007**

**MARINE CORPS RECRUIT DEPOT
PARRIS ISLAND, SOUTH CAROLINA**

I. GENERAL COMMENTS

1. These comments are written based on the following, derived from Partnering Team decisions:

- Sites 9 and 16 will have soils excavated under the CERCLA Remedial process, as opposed to Removal Process, based on current levels exceeding Preliminary Remediation Goals (PRGs) used as soil screening levels (SSLs) and referenced in previous investigation and scoping documents.
- EPA has not agreed that the current sampling is sufficient to completely delineate Sites 9 and 16 soils.
- EPA has agreed to defer the delineation portion of this investigation for Sites 9 and 16 soils until the Site 9, 16, 27, and 55 Remedial Action Work Plan (RAWP), provided agreement can be reached on all issues necessary to produce the Remedial Investigation (RI) Report, Feasibility Study (FS), Proposed Plan (PP), and Record of Decision (ROD).
- The Navy/MCRD has agreed to submit as part of the forthcoming RAWP for Sites 9, 16, 27, and 55, a plan for just-in-time delineation and confirmation sampling at Sites 9 and 16, to be conducted just prior to, during and immediately after excavation.

If the Navy/MCRD does not agree that these statements are accurate, then a majority of these comments are no longer accurate and will need to be revised by EPA. Please notify EPA immediately if this is the case, so that resolution can be sought and the comments redrafted.

2. The Title of the document indicates this is only for Site 27, however, the text of the document implies this is also for Sites 9, 16, and 55 as well, to a limited degree. If the intent is for this to cover investigations at all four sites, given the deferral of Site 9 and 16 Soils investigation (see above) please so state and modify the document title to reflect that clearly. Remove/clarify all confusing language and references throughout the document.
3. This work is being planned for under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) "remedial" action process and document requirements. The CERCLA "removal" process is different. In order to avoid confusion, please refer to soil actions as "excavations" rather than removals.

4. The Equipment Parade Deck – Site 27 Remedial Investigation Work Plan, Revision 0 dated February 2007 (RI Work Plan) indicates that sufficient information exists to support a “removal” action at Site 9 – Paint Waste Storage Area and Site 16 – Pesticide Rinsate Disposal Area. It was not clearly indicated in the RI Work Plan how the proposed real-time excavation action will be conducted within the context of the remedial action. Additionally, the age of the soil data (collected in 1988 and 1995) along with the limited suite of analysis performed for three of the six soil samples collected at the sites lends an uncertainty to the quality of the soil data. The current soil data sets for Sites 9 and 16 do not meet the data requirements necessary to support an excavation action in the CERCLA remedial program or the removal program. Data Quality Objectives (DQOs) and final Remedial Action Objectives (RAOs) will need to be defined and a sampling and analysis plan (SAP) will need to be developed to fill the data needs to facilitate an excavation, even if it is to be deferred until submittal of the RAWP. Revise the RI Work Plan to address these issues.
5. The RI Work Plan does not contain a conceptual site model (CSM) that adequately describes the conceptual understanding of the environmental and contaminant conditions at the Equipment Parade Deck site. The CSM should be the basis for selecting sample locations and should drive the DQOs for the investigation. Revise the RI Work Plan to present a CSM which describes, in both narrative and graphical form, the anticipated/known sources of contamination, release mechanisms, contaminant migration pathways, receptors and points of exposure for the site to the degree possible at this time. Additionally, the CSM will likely need modifying after the first round of temporary wells and sampling, in order to support selection of locations for permanent monitoring wells.

II. SPECIFIC COMMENTS

1. Section 1.1, Scope and Objective, Page 1-2

The second paragraph in Section 1.1 (Page 1-2) of the RI Work Plan indicates that as a result of previous investigations at these sites, several objectives have been developed to support the remedial investigation (RI) and a “removal” action. Since the details of the “removal” action were not discussed in the RI Work Plan, it is assumed that it will be addressed in the RAWP for these sites (refer to General Comment No. 1 for additional discussion). Please change “removal” to “excavation”.

2. Section 1.1, Scope and Objective, Page 1-2

The extent of groundwater contamination on Site 27 from Site 55 COCs and plume must be determined. Modify the first bullet to add “, 27,” after 9. It needs to be determined whether any releases at Site 27 have impacted groundwater (see TW-41S and TW42I in Table 3-1). Modify the second bullet to add “and/or Site 27” after “Site 16” and add “, and if so, to what extent.” After this bullet, add another bullet that states, “Determine the

sources of groundwater contamination at any/all of these sites." As a last bullet, add a note that determining the extent of soil contamination associated with Sites 9 and 16 will be deferred until the RAWP for these sites. Use language similar to that in the third bullet of General Comment #1 above.

3. **Section 2.1, Description and History, Page 2-1, Site 27**

The text in the first paragraph in Section 2.1 (Page 2-1) indicates the location of the former PCB transformer storage area. However, EPA understood that the exact location is unknown. Please revise the next to last sentence to read as follows, "Additionally, transformers containing PCB oils were stored in approximately the northeastern portion of the Equipment Parade Deck, however, the exact location is not known."

4. **Section 2.1, Description and History, Page 2-1, Site 9**

The text in the second paragraph in Section 2.1 (Page 2-1) indicates that in 1984, 6 inches of soil were removed at Site 9, the Former Paint Waste Storage Area, and the area was subsequently covered with a concrete cap. The text does not clearly indicate if the purpose of the concrete cap was to limit exposure to contaminated soil (i.e., remaining contamination greater than industrial screening levels), to prevent erosion of the remaining soil or to prevent infiltration of rainfall. For clarity and completeness, revise the RI Work Plan to address this issue. Also, add a discussion/description of pipes and drains in the Site area which may have contributed to Site 55 groundwater contamination.

5. **Section 2.1, Description and History, Page 2-1, Site 16**

The third paragraph in Section 2.1 (Page 2-1) discusses Site 16, the Former Pesticide Rinsate Disposal Area, and provides an estimate on the approximate amount of pesticide rinsate that was disposed of at the site. The text in this section does not clearly indicate if the rinsate solution originating from the pest control spray containers and equipment consisted only of water, or solutions of solvents and/or other volatiles (e.g., petroleum hydrocarbons). Additionally, the liquid material used in the pesticide formulation is not discussed. Revise this section of the RI Work Plan to address these issues. Also, add a discussion/description of pipes and drains in the Site area which may have contributed to Site 55 groundwater contamination.

6. **Section 2.1, Description and History, Page 2-2, Site 55**

The first paragraph on Page 2-2 references buildings 401 and 405. It should also reference building 852 to the north and the concrete pads to the southeast. For each of these buildings/locations, please describe their historical activities, as well as associated spills or releases. Be sure to include any drains, or pipes which could be potential preferential pathways for site contaminants. Revise the RI Work Plan to address this issue.

7. **Section 2.1, Description and History, Page 2-2, Site 55**

The first paragraph on Page 2-2 indicates that an underground sewer line is located approximately 70 feet to the northeast of Site 55, Fiber Optic Vault. The trend of the sewer line was not discussed. Also, its location was not depicted in any of the RI Work Plan figures. Since the sewer line is a potential preferential pathway for groundwater contamination, the relative location and trend of the sewer line, as well as other drains, or pipes mentioned in the preceding comments, should be discussed in the text and depicted in a figure. Revise the RI Work Plan to address this issue.

8. **Section 2.2.1, Site 27, Page 2-3**

Section 2.1 describes the former PCB transformer storage area to be located in the northeast portion of Site 27, the Equipment Parade Deck. However, according to Figure 2-2, the area investigated is not fully in the northeast corner of the parade deck. Please explain.

9. **Section 2.2.1, Site 27, Page 2-3**

Section 2.2.1 discusses the soil sampling results from the former transformer storage area of Site 27. Soil sampling results indicated that the transformer storage area "has not impacted the soil with polychlorinated biphenyls (PCBs)." However, concentrations of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides and metals were greater than human health and ecological screening criteria. Additionally, arsenic levels in one soil sample exceeded the Region 9 industrial use Preliminary Remediation Goal (PRG). An unknown amount of hazardous materials were handled at Site 27 which may include waste petroleum products and metals, and the exact location of the PCB transformer storage area is not known. The RI Work Plan indicates that the vertical and horizontal extent of soil contamination at Site 27, Equipment Parade Deck, will be determined. However, it is not clearly indicated if the remaining 1-acre area of Site 27 has already been investigated, nor are there any soil samples proposed for the remaining Site 27 area. Therefore, it is not known if it has previously been determined that the remaining areas do not require additional investigation. Revise the RI Work Plan to address this issue. The required changes may be wide-spread throughout this document.

Also revise the first sentence of the second paragraph of Section 2.2.1 to add "in the limited area sampled" to the end of the sentence. Also, in the middle of the second paragraph "4,4'-DDE is duplicated. Should one of them be "DDD"?"

10. **Section 2.2.2, Site 9, Page 2-3**

The third paragraph in Section 2.2.2, second sentence, indicates groundwater samples collected at Site 9, Paint Waste Storage Area, were analyzed for VOCs and inorganic constituents (fractions that are associated with paint-type wastes). The text does not clarify which inorganic fractions were analyzed. Additionally, Appendix A.4, Soil and

Groundwater Figure for Sites 9 and 16, Table 6-1, Summary of Groundwater Samples Collected, Site 9 – Paint Waste Storage Area, indicates the two Site 9 groundwater samples were analyzed for target compound list (TCL) VOCs, target analyte list (TAL), metals (total) and cyanide. One of the two groundwater samples included additional tin and Appendix IX VOC analyses. For clarity, revise Section 2.2.2 to address the discrepancy in the reported laboratory analyses of Site 9 groundwater samples.

11. Section 2.2.2, Site 9, Page 2-3

The text in the third paragraph in Section 2.2.2 discusses that groundwater analytical results indicated past paint storage activities had not impacted groundwater at Site 9. As such, groundwater was not recommended for further investigation at Site 9. It is not clear why the Site 9 surface soil samples were analyzed for SVOC constituents, but the groundwater samples were not. The text in the first paragraph on Page 2-4 discusses the analytical soil results and indicates that except for minor exceedances of the SVOC benzo(a)pyrene and the inorganics arsenic and lead, all detected concentrations were less than the United States Environmental Protection Agency (EPA) Region 9 industrial use soil PRGs. However, Site 9 groundwater samples were not submitted for SVOC analysis. The source of the benzo(a)pyrene exceedances in soil is not known. It is also not known whether past paint storage activities involved materials consisting of benzo(a)pyrene (e.g., waste oils, diesel). Revise the RI Work Plan to discuss the adequacy of the characterization of groundwater contamination if no groundwater SVOC analytical data are available.

12. Section 2.2.3, Site 16, Page 2-4

The second paragraph in Section 2.2.3 indicates the soil samples were only submitted for a limited number of analyses and included priority pollutant pesticides, arsenic, cadmium, chromium and lead. It is not clearly presented in the text why the full suite of analyses (i.e., TCL organics and TAL inorganics) was not performed. The absence of this analytical data results in uncertainty regarding the adequacy of the characterization of the soil contamination at Site 16. Revise the RI Work Plan to address this issue.

13. Section 2.2.3, Site 16, Page 2-5

The last sentence in Section 2.2.3 (Page 2-5) indicates a summary of the contaminants detected in soil and groundwater at Sites 9 and 16 is presented in Appendix A, Analytical Data. The 1988 soil test results for Site 16 were not presented in Appendix A in Table format, nor were they indicated on the associated Figures. Revise the RI Work Plan to provide the 1988 soil test results for Site 16.

14. Section 2.2.4, Site 55, Page 2-6

The chart of 2002 Groundwater data from DPT Borings does not include a column for FDP13. Please include it and indicate the presence of free product. Please include and

reference in this RI Work Plan, Figure 3-1 from the Site 55 SI/CS Report and/or overlay the FDP locations onto this RI Work Plan Figure 2-2.

15. Section 2.2.4, Site 55, Page 2-7

The second paragraph under Site 55 July 2003 Groundwater Investigation indicates that free product was found in MW-06 in 2002. It then goes on to state that free product was not found in 2003. However, MW-06 was not sampled in the 2003 sampling event. Please revise the RI Work Plan to clarify this.

16. Section 2.5.1, Statement of Problem, Page 2-11

The text in Section 2.5.1 makes several references to Sections 2.4.2, 2.4.3, and 2.4.4. However, these sections were not found in the RI Work Plan. Revise this section of the RI Work Plan to clarify this issue.

17. Section 2.5.1, Statement of Problem, Page 2-11

Revise Item #1 to add “, as well as the source of any groundwater contamination which may be revealed at Sites 9, 16, or 27.” to the end of the sentence.

18. Section 2.5.1, Statement of Problem, Page 2-11

Revise Item #2 to read as follows: “The nature of groundwater contamination has been determined for Site 55; however, the extent of the contamination has not been determined.” Add a new Item #3 which reads as follows: “The nature of groundwater contamination at Site 9 has been determined, except for SVOCs. The nature of groundwater contamination at Sites 16 and 27 has not been determined. The nature of groundwater contamination at Site 9 (for SVOCs), Site 16 and Site 27 must be determined. If the groundwater is found to be contaminated, the horizontal and vertical extent of groundwater contamination must be determined.” Renumber the remaining Items.

19. Section 2.5.1, Statement of Problem, Page 2-11

Revise the current Item #4 to read as follows: “The nature of soil contamination at Site 27 has been determined for a limited area; however, the extent has not been determined. The horizontal and vertical extent of soil contamination at Site 27 must be determined.” Modify this even further if it is found that the remainder of Site 27 needs to be characterized. EPA believes it does, based on the limited data provided thus far in the RI Work Plan. (See comments on Section 2.2.1, Site 27, Page 2-3.)

20. Section 2.5.1, Statement of Problem, Page 2-11

Revise the current Item #5 to read as follows: “The nature of soil contamination at Sites 9 and 16 was determined in the SI/CS. The extent of contamination has not been

determined. However, sufficient evidence exists to indicate the necessity of soil excavation. Based on a request from the Navy/MCRD, the Partnering Team has agreed to defer the investigation of the extent of soils contamination at Sites 9 and 16, until the RAWP, provided necessary agreements can be reached in the documents which come before the RAWP. Within the RAWP a plan will be submitted which describes the process for conducting just-in-time delineation for soils excavation.”

21. Section 2.5.2, Decisions, Page 2-12

In Decision #1, if it is found that drains or pipes are a source for contamination, describe how this statement allows for addressing that scenario. For Decision #4, clarify if the “equipment storage pad” refers to just a small portion of the paved area at Site 27, or the entire paved area at Site 27.

22. Section 2.5.4, Conceptual Site Model and Risk Assessment, Page 2-13

The text in Section 2.5.4 indicates that there is little or no ecological habitat on site that would require an ecological risk assessment (ERA). The text further indicates the erosion of contaminated surface soil would not impact the pond. As such, the RI Work Plan concludes that an ecological risk assessment will not be included in the RI. The RI, not the RI Work Plan, is the appropriate phase of the remedial response process for determining the relative significance of ecological risk posed by a site or facility. Therefore, to meet the requirements of the RI for a federal facility, an ERA must be performed in accordance with the EPA (1997) document entitled Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments. This document presents eight steps which may be used in evaluating risks to ecological receptors at hazardous waste sites. At a minimum, as defined in the EPA guidance (1997 and 2001), a Screening Level Ecological Risk Assessment (SLERA), Steps 1 and 2 of the eight -step process, is required to be conducted to support a scientific management decision point (SMDP). The SMDP may provide a basis for no further action, remedial action, or further evaluation in the form of a more detailed ecological risk analysis. The detailed ecological risk analysis is referred to as the baseline level ERA (BERA), which consists of steps 3 through 8 of the eight-step ERA process. At a minimum the RI Work Plan must include the performance of a SLERA to address this issue. Please revise. Also, please include a figure which shows the proximity of Sites 9, 16, 27, and 55 to surface water bodies.

23. Table 2-1, Site 55 – Fiber Optic Vault Groundwater – July 2003

The “Notes” section of Table 2-1 indicates that the table references the EPA Region 9 PRGs, November 2000 and the National Primary Drinking Water Standards, EPA, March 2001. However, there is a more recent EPA Region 9 PRG reference dated October 2004 and a more recent publication of the National Primary Drinking Water Standards, dated Summer 2002. Verify that the most recent references and screening criteria including ecological criteria are utilized and revise the table as appropriate.

24. **Section 3.0, Investigation Scoping, Page 3-1**

Clarify in the first paragraph of Section 3.0 that field investigation activities will be conducted in a phased approach. This is specifically mentioned in Section 3.2, Investigation Summary, at the bottom Page 3-1. However, this should also be stated up front, in Section 3.0. Revise the text in Section 3.0 accordingly. Also include a discussion of the deferred scope for soils at Sites 9 and 16.

25. **Section 3.1, Investigation Rationale, Page 3-1**

Add a bullet to address Groundwater Flow Direction investigation rationale.

26. **Section 3.1, Investigation Rationale, Page 3-1**

Plume Extent: Section 3.1 indicates the deeper aquifer zone had detected minimal contaminant concentrations and only the shallow intermediate depth aquifer zones will be investigated where previous data indicate contamination or to verify that the edge of the plume has been reached. Because downward hydraulic gradients exist at the site as indicated in Section 2.4, Hydrogeology (Page 2-10), a deep aquifer zone sample should be collected and analyzed to confirm that downward migration has not occurred. Revise the RI Work Plan to address this issue.

27. **Section 3.1, Investigation Rationale, Page 3-1**

Releases to Groundwater: Modify the statement to read as follows: "... (Building 401), next to the concrete pads, and near sites 9, 16, and 27 to determine...".

28. **Section 3.2, Investigative Summary, Page 3-1**

Please modify the next to last sentence on page 3-1 to read as follows: "... will be provided by the Navy/MCRD at the appropriate time, and will be reviewed and approved by EPA and DHEC prior to proceeding."

29. **Section 3.2.1, Nature and Extent Sampling Activities for Groundwater – Sites 9/16, Site 27 and Site 55, Page 3-2**

Section 3.2.1 indicates that the intermediate monitoring wells will be screened on top of the clay unit found earlier at approximately 24 to 25 feet below the ground surface (bgs). Due to the variability in the depth at which the clay unit may occur, revise the RI Work Plan to indicate how the top of the clay unit will be determined in the field.

30. **Section 3.2.1, Nature and Extent Sampling Activities for Groundwater – Sites 9/16, Site 27 and Site 55, Page 3-2**

The second paragraph identifies the number of samples to be taken. After addressing all comments, correct these numbers if they have changed.

31. **Section 3.2.1, Nature and Extent Sampling Activities for Groundwater – Sites 9/16, Site 27 and Site 55, Page 3-2**

Modify the last sentence in this Section to read, "... for review and approval before proceeding."

32. **Section 3.2.2, Sampling Activities for Soil at Site 27, Page 3-2**

The text in Section 3.3.2 indicates the vertical extent of the investigation will be determined at each location by visual observation of soil staining, odor and/or photoionization detector (PID) readings indicating the presence of VOCs. The text further indicates that the samples which exhibited the most likelihood of contamination (visual, PID, etc.) will be submitted to a fixed-base laboratory for PCBs, pesticides and metals analyses. It is not clearly presented in the RI Work Plan why VOC and SVOC analysis are not conducted since the likelihood of contamination as defined by the criteria used in this section (visual, PID, etc.) may indicate VOC and/or SVOC contamination. Also, Section 2.2.1, Site 27, indicates that soil data collected in 1995 and 1999 indicates VOCs and SVOC in exceedance of human health and/or ecological screening criteria. Revise the RI Work Plan to provide additional justification and rationale for why VOC and SVOC analyses for soil at Site 27 are not warranted. If it is agreed that they are warranted, modify this Section and Table 3-1.

33. **Section 3.2.2, Sampling Activities for Soil at Site 27, Page 3-3**

The current data set regarding Site 27 soils presented in the RI Work Plan does not meet the data requirements for a remedial investigation. Either data which clears the remainder of the Site 27 acreage is missing or this is a data gap that needs to be filled by this RI. Revise the RI Work Plan to address this issue. If it is determined that composite samples just off each side of the Site 27 paved area would be beneficial, add a brief discussion of the composite approach to be proposed. (See Table 3-1 comments below.) If it is determined that additional samples are needed across Site 27, modify this Section and Table 3-1, Table 5-1, and Figure 5-1. (See comments regarding Table 3-1, Table 5-1 and Figure 5-1 for suggested sampling if this is determined to be a data gap.)

34. **Section 3.2.2, Sampling Activities for Soil at Site 27, Page 3-3**

The last sentence in Section 3.2.2 indicates that no additional soil sampling activities are anticipated at this time for Sites 9/16 and 55. Add a sentence here that states that investigation of the extent of soil contamination at Sites 9 and 16 is being deferred and will be addressed in a Remedial Action Work Plan. Revise the RI Work Plan to address this issue.

35. **Section 3.3, Project Schedule, Page 3-3**

EPA will attempt to meet the 30 day review request, however, it is dependent upon the availability of contractors. EPA suggests this might be accomplished most efficiently through a face to face meeting, if notice can be given far enough in advance to accommodate other schedules.

36. Table 3-1

Please answer the following regarding specific samples:

- TW-24S - How does this differ from MW1?
- TW-25I - How does this differ from MW7I?
- TW-28S and 29I - Why do we need these if 30/31 were in an elevated area? How are they different from MW-17 and 18I?
- TW-30S - How is this different from MW-19?
- TW-35S and 36I - Should we add to the rationale, "and/or Site9" ?
- TW-37S and 38I - Should we add to the rationale, "and/or Site9" ?
- TW- 41S and 42I - Should we move these east to align more downgradient of the NW corner of the pad? Also should we add PCBs to the analytes list?
- Additional wells. Do we need some TWs WestSW of the FOV between contours 9.5 and 9.0?
- For all Site 27 soil samples, should we add VOCs and SVOCs to the analyte list?
- Should we add and/or move samples to cover more of the remainder of Site 27?
- Should we add a composite sample just off of and along each side of the Site 27 paved area?

37. Section 4.4, Permanent Monitoring Well Installation, Page 4-3

The text in Section 3.2 indicates that the Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (EISOPQAM) procedures will be followed during the field investigation activities. However, Section 4.4 (Page 4-3) of the RI Work Plan states that the permanent monitoring wells will be constructed with PVC screen and riser. EISOPQAM Section 6.6.2 states that stainless steel materials are the preferred choice where the analytical program is designed to analyze for organic compounds. Furthermore, in the next paragraph, the RI Work Plan specifies the sand and screen slot size that will be used to complete the wells. EISOPQAM Section 6.6.3 indicates that the filter pack (and screen size) materials should be based on the results of a sieve analysis. Both of these approaches are not compliant with the EISOPQAM. Revise the RI Work Plan to address these issues.

38. Section 4.4, Permanent Monitoring Well Installation, Page 4-4

It is not clear in the second paragraph on Page 4-4 if the RI Work Plan stabilization parameters (pH, temp, turbidity) refer to well development (which is mentioned in the first sentence) or well purging activities (which is not discussed at all in this paragraph). Also, conductivity is not included as a stabilization parameter. Revise the RI Work Plan to address this issue.

39. Section 4.4, Permanent Monitoring Well Installation, Page 4-4

The third paragraph on Page 4-4 contains a discussion on how the slug tests will be conducted. However, how the slug tests will be analyzed was not indicated in the text. Revise the RI Work Plan to address this issue.

40. Section 4.7, Permanent Monitoring Well Installation, Page 4-5

Modify these numbers of samples and location information if it is determined a change is needed based on other comments. Also describe the composite sampling approach if it is to be used along the edges of the Site 27 paved area.

41. Section 5.2.1, Soil Sampling, Page 5-1

In Section 5.2.1, the RI Work Plan states that all soil sampling methodologies will comply with the Master FSP and TtNUS SOPs. However, it is not clear if these comply with the EISOPQAM procedures – especially with regard to “quartering” the samples (EISOPQAM Section 5.13.8) and the use of Teflon, stainless steel, or glass sampling tools (EISOPQAM Section 5.13.7). Revise the RI Work Plan to address this issue.

42. Section 5.2.1, Soil Sampling, Page 5-1

Describe the composite sampling procedures to be used along the edges of the Site 27 paved area, if this is determined to be used.

43. Section 5.3.2, Sample Nomenclature, Page 5-2

Provide nomenclature for the composite samples if they are to be used.

44. Table 5-1

- Add PCBs to TW-41S and 42I if appropriate (see previous comments Table 3-1).
- Add VOCs and SVOCs to all Site 27 soil samples if determined to be needed.
- Add composite samples if determined to be needed.
- Add any additional samples as determined to be necessary based on previous comments.

45. Figure 2-2, Site Layout and Previous Investigation Locations Map, Sites 9, 16, 27 and 55, and Figure 5-1, Proposed Sampling Location Map, Sites 9, 16, 27 and 55

The shallow, intermediate and deep aquifer zone monitoring wells depicted in Figure 2-2 are not included in Figure 5-1. For clarity and completeness in determining the extent of groundwater contamination, all shallow, intermediate and deep aquifer zone monitoring wells available should be indicated on an additional Figure, Figure 5-2, Comprehensive Well Location Map.

46. **Figure 7-1**

Remove "Koroma-" from my name.

47. **Figure 7-2**

Please provide an updated schedule with the draft final document.