From: Andersen, Jessica L CTR NAVFAC SW
To: Andersen, Jessica L CTR NAVFAC SW
Subject: EPA comments on shipshielding TCRA WP
Date: Friday, August 03, 2012 8:18:30
Attachments: EPA comments on Draft WP TCRA Shipshielding Range 5-7-12.docx

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-----Original Message-----
From: John Chesnutt [mailto:Chesnutt.John@epamail.epa.gov]
Sent: Monday, May 07, 2012 20:50
To: Urizar, Lara L CIV NAVFAC SW, PACO
Cc: Amy Brownell; Craig Cooper; Karla Brasaemle; Forman, Keith S CIV NAVFACHQ, BRAC PMO; Leslie.Lundgren@CH2M.com; Kito, Melanie R CIV NAVFAC SW; Rmiya@dtsc.ca.gov; Ross Steenson; tlow@waterboards.ca.gov
Subject: EPA comments on shipshielding TCRA WP

Lara, Attached please find EPA's comments on the Draft WP. I did my best to provide comments on time in Craig's absence. There's some fairly detailed comments here. It's possible Craig may not have had as many concerns had he reviewed the document. And it's possible he may have additional comments upon his return later this week.

John Chesnutt
415-972-3005

-----"Urizar, Lara L CIV NAVFAC SW, PACO" <lara.urizar@navy.mil> wrote: -----
To: <Rmiya@dtsc.ca.gov>, "Ross Steenson" <RSteenson@waterboards.ca.gov>, <KBrasaemle@TechLawInc.com>, "Amy Brownell" <Amy.Brownell@sfdph.org>, Craig Cooper/R9/USEPA/US@EPA, John Chesnutt/R9/USEPA/US@EPA, <tlow@waterboards.ca.gov>
From: "Urizar, Lara L CIV NAVFAC SW, PACO" <lara.urizar@navy.mil>
Date: 05/07/2012 10:32AM
Cc: "Kito, Melanie R CIV NAVFAC SW" <melanie.kito@navy.mil>, "Forman, Keith S CIV NAVFACHQ, BRAC PMO" <keith.s.forman@navy.mil>, <Leslie.Lundgren@CH2M.com>
Subject: RE: Accelerated review of shipshielding TCRA WP

Good morning,
This is just a friendly reminder that we are requesting comments by COB today on the Ship Shielding TCRA Work Plan in order to get into the field early (because the onsite rad lab will be shutting down). Thanks!

Lara Urizar
619-532-0960

-----Original Message-----
From: John Chesnutt [mailto:Chesnutt.John@epamail.epa.gov]
Sent: Wednesday, April 25, 2012 16:42
To: Forman, Keith S CIV NAVFACHQ, BRAC PMO; Kito, Melanie R CIV NAVFAC SW; Urizar, Lara L CIV NAVFAC SW, PACO
Cc: Rmiya@dtsc.ca.gov; Ross Steenson; KBrasaemle@TechLawInc.com; Amy Brownell; Leslie.Lundgren@CH2M.com; Craig Cooper
Subject: Accelerated review of shipshielding TCRA WP

Keith, EPA is able to accommodate your expedited review schedule.

And, it turns out that Craig will not return to the office until May 10. Please contact me in his absence if you need anything.

John Chesnutt

415-972-3005

To: Craig Cooper/R9/USEPA/US@EPA, "Ryan Miya" <rmiya@dtsc.ca.gov <mailto:rmiya@dtsc.ca.gov> >, "Ross Steenson" <RSteenson@waterboards.ca.gov <mailto:RSteenson@waterboards.ca.gov> >, "Karla Brasaemle" <kbrasaemle@msn.com <mailto:kbrasaemle@msn.com> >, "Brownell Amy" <Amy.Brownell@sfdph.org <mailto:Amy.Brownell@sfdph.org> >
From: "Forman, Keith S CIV NAVFACHQ, BRAC PMO" <keith.s.forman@navy.mil <mailto:keith.s.forman@navy.mil> >
Date: 04/25/2012 10:24AM
Cc: "Kito, Melanie R CIV NAVFAC SW" <melanie.kito@navy.mil <mailto:melanie.kito@navy.mil> >, "Urizar, Lara L CIV NAVFAC SW, PACO" <lara.urizar@navy.mil <mailto:lara.urizar@navy.mil> >, <Leslie.Lundgren@CH2M.com <mailto:Leslie.Lundgren@CH2M.com> >
Subject: REQUEST FOR ACCELERATED REVIEW OF SHIPSHIELDING TCRA WORK PLAN
Dear BCT and others,

Last week, on April 19, you received your copy of the Draft Work Plan, Time-Critical Removal Action for the Experimental Ship Shielding Range, Parcel E-2.

The cover letter accompanying the work plan requested the standard 30-day turnaround time, ending May 19.

Now it looks like, when we examine the project schedule for this TCRA, that we will need to use the on-site rad lab and get all the analysis done by August 31, 2012. So...I am asking for an expedited review -- 14 days to be exact -- and hope you can meet the new deadline of May 7. If we cannot accelerate the schedule by these 16 critical days, then the Navy encounters major cost growth associated with using off-site labs to complete the project.

I'm hoping to get your quick concurrence on this because:

1) This is the most straight-forward investigate/dig/haul TCRA we have ever done at HPNS
2) The work plan is not complex and contains no surprises or different approaches we are proposing
3) You completely understand our tight budget situation and the need to make the best of these circumstances

Please email Keith/Melanie/Lara at your earliest convenience if you can meet the May 7 deadline and support this accelerated schedule. If you've got some major problems with this, please call me at 619.532.0913.

Thanks in advance,
KF

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May 7, 2012

EPA Review of the Draft Work Plan for the Time-Critical Removal Action for the Experimental Ship Shielding Range, Parcel E-2, Hunters Point Naval Shipyard, San Francisco, California, April 2012

GENERAL COMMENTS

1. No information regarding the details of the change to the release criterion for cobalt-60 (^{60}Co) is provided in the Draft Work Plan for the Time-Critical Removal Action for the Experimental Ship Shielding Range, Parcel E-2 (Draft WP). Previous gamma walkover survey (GWS) results indicated eight survey units located within the vicinity of the Experimental Ship Shielding Range (Shielding Range) contained activity levels of ^{60}Co that exceeded the residential release criterion of 0.0361 picocuries per gram (pCi/g). In addition, three of the eight survey units contained activity levels of ^{60}Co that exceeded the outdoor worker release criterion of 0.060 pCi/g. According to the text of the Draft WP, the release criteria for ^{60}Co was "recently revised" to 0.252 pCi/g. However, no information regarding the details of this increase in the release criterion is provided. It is unclear if the new value replaces both the residential and outdoor worker release criteria. In addition, it is unknown whether this increase in the release criterion has been accepted by the stakeholders (e.g., Regulatory Agencies) or how any difference between this criterion and the cleanup level in the Record of Decision (ROD) will be addressed. Please revise the Draft WP to include justification and explanation of the adjusted release criteria or include a reference to a document supporting the increase. In addition, please explain why this revised value is higher than the criterion in the Draft Parcel E-2 ROD. Please also ensure the survey units which still exceed the revised release criteria are clearly shown on a figure.

2. Section 4.1 (Radiological Health and Safety) of the Draft WP does not specify which project personnel are responsible for reviewing and tracking dosimetry data for project personnel. It is noted that Appendix A (Draft Radiation Protection Plan), Section 3.18 (Credentialing of Staff) on page 3-14 states that an American Board of Health Physics Certified Health Physicist is assigned within Shaw to support the project as necessary, and page 7 of 8 of SOP T-RA-008 in Appendix A indicates the Project Radiation Safety (PRSO) is responsible for reviewing dosimetry data. However, neither Appendix A nor Section 4.1 of the Draft WP states how the PRSO is qualified to administer the dosimetry program or whether a CHP will oversee the dosimetry program for this TCRA. The Draft WP Section 4 and Appendix A should be revised to more clearly define which personnel are responsible for reviewing project personnel dosimetry data, and how those personnel are qualified for performing such duties to ensure compliance with the Draft WP and regulatory (10 CFR 20) radiological worker protection requirements.

3. Section 4.3.3 (Remedial Action Support Survey) describes the GWS of soil for conducting the remedial action support surveys, but does not reference the relevant sections of the Sampling and Analysis Plan (SAP) in Appendix B which describe the procedures for conducting the remedial action support survey. Additionally, Section

4.3.3 of the Draft WP does not describe what constitutes an investigation level which would trigger the requirement to conduct the static survey, and further, Section 17.4 (Remedial Action Support Survey Sampling) of the SAP in Appendix B does not describe the use of investigation levels or static surveys. Please revise Section 4.3.3 of the Draft WP and Section 17.4 of the SAP to provide consistent and complete information about how the remedial action support surveys will be conducted.

4. Section 4.3.4 (Final Conditions Survey) on page 4-6 states that at the completion of the Shielding Range removal activities, a systematic final conditions survey will be conducted in accordance with guidance provided in the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), but does not provide details about this survey. MARSSIM contains very specific requirements for producing data which have statistical confidence limits associated with the results and as such, are sufficiently defensible for making either free-release or remedial status decisions. As such, the final conditions survey plan should be generated and submitted for regulatory agency review prior to implementation of such a survey/plan to ensure regulatory agency concurrence with the results and final site status decisions.

5. Sections 4.3.3 (Remedial Action Support Survey) and 5.8 (Initial Radiological Surface Surveys) of the Draft WP generally describe the purpose of conducting the remedial action support and surface surveys, but do not reference the applicable sections in Appendix A (Draft Radiation Protection Plan) or Appendix B (SAP) which provide the details of how they will be implemented or quality control (QC) criteria for such data collection. For clarity and completeness, it is recommended the main sections of the Draft WP reference the appropriate sections of Appendix A and/or Appendix B that contain the implementing criteria and procedures for conducting these surveys.

6. Section 4.3.5 (Personnel Surveys) describes the use of personnel surveys for monitoring project personnel leaving radiological areas; however, this section does not provide a reference to the specific Standard Operating Procedure(s) (SOP) in Appendix A, Draft Radiation Protection Plan, that would be used to conduct these surveys and does not state which sections of the SAP in Appendix B include the QC criteria for use of such instrumentation. For completeness and clarity, this section should reference the locations where this information is located.

7. Section 5.10, Pre-Excavation Waste Characterization Sampling, states one four-point composite will be collected from each 500-cubic yard chemical sampling unit and analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), Title 22 metals, total extractable petroleum hydrocarbons (TPH-extractable), total purgeable petroleum hydrocarbons (TPH-purgeable), and pesticides, but the Draft WP does not discuss how these results will be used or if the sample results will be compared to any regulatory values to determine if exceedances or "hot spots" exist. The Draft WP does not address how a significant concentration of hazardous constituents (i.e., non-radiological) will be managed. Although the focus of the TCRA is to remove radionuclides of concern (ROC), the Draft WP should also discuss how hazardous soil will be handled. Please revise the Draft WP to describe how the pre-excavation soil

sample results will be utilized and provide a plan for managing chemically contaminated soil.

8. Section 5.9, Identification and Removal of Radioactive Material and Soil, of the Draft WP states that areas containing radioactive material will be excavated until the gamma activity reading is no longer elevated or a depth of 12 inches is reached, but it is unclear why a depth of 12 inches was selected. The WP does not provide justification for the selection of a 12-inch excavation depth. The text should state whether this depth is considered to be protective of human health and the environment. Additionally, subsequent text, such as that presented in Section 5-12, Excavation of Experimental Ship Shielding, states the entire Shielding Range will be excavated to 12 inches (or 1 foot) bgs. The text infers that regardless of field screening results, the radiological contaminated areas will be excavated to 12 inches bgs. This text contradicts the following statement from Section 5.9, "Soil removal will continue until the source of the elevated gamma activity reading is removed or a depth of 12 inches is reached." It is unclear whether a 12-inch excavation depth has been predetermined for the Shielding Range or if the gamma activity readings will determine excavation limits. Please revise the Draft WP to clarify whether the removal of the top 12 inches of contaminated soil is sufficient to protect human and ecological receptors. Additionally, please clarify whether the Shielding Range will be excavated to a maximum depth of 12 inches bgs or whether field screening will be utilized to determine the excavation depth. It should be noted similar issues are discussed in Section 5.6, Topographic Surveying, and Appendix B, Sampling and Analysis, Worksheets #11 and #17; please revise all relevant text.

9. Section 5.9 describes the use of radiological surface surveys to identify areas suspected of containing radioactive materials, but this section does not discuss the fact that the GWS can only be used to identify radionuclides with sufficient gamma emissions to be detectable using the walkover survey instruments. This is notable information given that one of the radionuclides of concern, Strontium-90 (^{90}Sr), is strictly a beta-emitter, as is its daughter, Yittrium-90 (^{90}Y) and therefore will not be detected using a gamma detection system. Additionally, the detection of Radium-226 (^{226}Ra) in soils using survey instrumentation may be tenuous at best since the gamma emissions from ^{226}Ra are of low abundance and therefore result in elevated detection limits. Since the purpose of the TCRA is only to identify and address removal of ^{60}Co that exceeds the radiological release criteria in Table 1, the proposed surveys appear to be sufficient. However, the Draft WP should explain clearly that the proposed radiological surveys are not intended or designed to detect all of the ROCs. Please revise the Draft WP to state how use of the GWS and static measurements are appropriate and sufficient for identifying ^{60}Co radiological contamination at the Experimental Ship Shielding Range in accordance with the Radiological Removal Action Objective (RRAO) for this TCRA.

10. Section 5.12, Excavation of Experimental Ship Shielding Range, states that approximately 50 keel blocks located within the Shielding Range will be removed by another contractor, but no additional information is provided and the contractor is not specified in Attachment 5, Outside Organizations, located in Appendix E. The details of the removal process for the keel blocks and where they will be transported to are not provided, so it is

unclear if they will remain within the work zone for this TCRA (i.e., the Panhandle Area). Please revise the Draft WP to specify the contractor who will do this work and clarify whether these keel blocks will be moved outside the Panhandle Area.

11. It is unclear how the top 6-inch layer of coarse soil, placed on top of the second 20-mil liner of the radiological screening pads, will be maintained in place. Based on Worksheet #17 (Sampling Design and Rationale) located in Appendix B, excavated soil will be placed on the radiological screening pad and spread out in lifts not to exceed 6 inches for radiological screening. Radiologically contaminated material identified during surveys or by sample analysis will be placed in storage containers pending disposal. As such, it is unclear how the 6-inch layer of coarse soil will be maintained as the material placed on the radiological screening pad is removed and placed in storage containers pending disposal. Please revise the Draft WP to clarify how the top 6-inch layer of coarse soil, placed on top of the second 20-mil liner of the radiological screening pad, will be maintained in place.

12. Design drawings for the decontamination pad, soil stockpile pad, and radiological screening pads have not been provided. Please revise the Draft WP to include design drawings for all design components.

13. SOP T-RA-006, Radiation Protection Procedure, Radiological Controls Portable Instrument Procedure for Determining the Detection Limits, in Appendix A identifies how to calculate the Minimum Detectable Activity (MDA) and/or Minimum Detectable Concentrations (MDC) for the radiological survey instrumentation; however, neither the SOPs in Appendix A nor the Appendix B SAP contain any tables listing the achievable detection limits (MDAs or MDCs) for the proposed radiological survey instrumentation to demonstrate that proposed survey techniques are sufficient for identifying radiological contamination. According to the Uniform Federal Policy for Quality Assurance Project Plan Manual (UFP-QAPP Manual), Worksheet #15 should include the achievable detection limits. While Worksheet #15 in Appendix B does contain the release criteria and achievable laboratory detection limits for soil and water sampling, radiological survey instrumentation detection limit(s) and action levels that would indicate contamination is present (e.g., background plus three standard deviations) are not included. Please revise the Draft WP and/or appendices as appropriate to list the action level(s) that will be used to indicate the presence of radiological contamination in soils for the remedial action surveys and the achievable detection limits for survey instrumentation used for the remedial action support surveys and surface surveys.

14. The SAP in Appendix B indicates that laboratory SOPs will be provided in the Final SAP; however, laboratory SOPs should be submitted for regulatory review and approval to ensure the adequacy of the analytical methods. In addition, review of the laboratory SOPs is necessary to evaluate the information presented in SAP Worksheets (e.g., Worksheet #19). Please ensure all applicable laboratory SOPs for sample preparation and analysis are provided for Regulatory Agency review before the Final WP is issued.

15. Worksheets #3 and #4 are missing key personnel. For example, the field technical manager or field technical staff should receive a copy of the SAP and be included in Worksheet #3 and/or #4. Dennis Gilbert, Shaw Data Manager, is included in Worksheet #5 but not Worksheet #3 or #4. Lastly, Erika Starman, Off-Site Laboratory Project Manager for TestAmerica, is not listed in Worksheet #4 but the project manager for the other off-site laboratory (ALS Laboratory) is included. Since these roles involve responsibilities related to adherence with the SAP, they should be included in the distribution list and/or project personnel sign-off sheet. Please revise Worksheets #3 and #4 to include all key roles and personnel.

16. The SAP does not indicate that EPA will be notified of any significant corrective action or changes to the SAP or provide the timing for this notification. Please revise the SAP to provide this information.

17. There are several inconsistencies within SAP Worksheet #14, Summary of Project Tasks. The sampling techniques are not global and therefore could be potentially confusing. For example, the glove types cited in the various media sampling methods are not consistent; unused sampling gloves, appropriate personal protective equipment (PPE), and chemical-resistant disposable gloves are all referenced. In addition, the sample preparation and storage procedures are not consistent; some reference the usage of ice and others simply state "label, package, and prepare the samples for shipment to the laboratory." Please revise the worksheet to include comprehensive and specific sampling techniques/methods that use similar language and provide sufficient detail.

18. Worksheet #14 indicates that manual integrations for chromatographic analyses will be reviewed by the laboratory to ensure they "are justified and properly documented" but does not indicate that supporting information for manual integrations (i.e., chromatograms before and after manual integration as well as brief explanation for the manual integration) will be included in the data package deliverables and reviewed during data validation. Please revise the SAP to include this information.

19. Worksheets #14 and #19 provide conflicting information regarding the holding time for soil samples obtained using the EnCore® device for TPH-purgeable and VOC analyses. The holding time information provided in Worksheet #14 states that soil samples will be shipped to the laboratory within 48 hours for preservation or freezing, after which the sample can be held up to 14 days for analysis. Worksheet #19 indicates that an unpreserved sample should be analyzed within 48 hours and a preserved or frozen sample should be analyzed within 14 days but also states that a sample "can be frozen upon receipt for seven days." The seven-day holding time is not discussed in Worksheet #14 and it is unclear when the seven-day holding times apply. Please revise Worksheets #14 and #19 to provide consistent holding time information for samples obtained using the EnCore® device for TPH-purgeable and VOC analysis.

20. The Draft WP indicates soil excavated from the Shielding Range area will be transported to a radiological screening pad for radiological survey activities. According toWorksheet #17, the excavated soil will be spread out on screening pads with areas no greater than

1,000 square meters and 6 inches thick for surveying and sampling. According to the information in the Draft WP, excavated soil found to contain radioactive material will be collected, segregated, and stored in appropriate containers for disposal. It is unclear how soil deemed non-radiological will be handled. The Draft WP indicates uncontaminated soil will be stockpiled and used for backfilling the Shielding Range excavation footprint; however, it is unclear if the excavated soil proved "clean" will be transferred to the Soil Stockpile Area. Also, it is unclear how excess soil will be handled as the WP also states that only low areas will be backfilled. Please include the ultimate destination and usage for all soil excavated, contaminated and uncontaminated.

21. It is unclear if dust minimization activities will impact the moisture content of the soil within the excavations. As stated in Section 5.12, Excavation of Experimental Ship Shielding Range, non-saturated soil will be radiologically surface screened to identify and remove radiological anomalies. Additionally, Section 5.12.1, Dewatering of Excavated Materials, states saturated soils and materials encountered during excavation will be drained and transported to the radiological screening pads for drying/dewatering. Consequently, it is unclear if misting dry soils and debris during excavation and segregation to minimize the potential for dust will inadvertently saturate soil causing a significant increase in time for ex-situ radiological screening and processing. Lastly, it is unclear how saturated and non-saturated soil will be defined. Please revise the Draft WP to clarify if dust minimization activities will impact the moisture content of the soil within the excavations and how saturated soil will be measured/identified.

22. The SAP does not indicate how validation qualifiers will be entered into the database or how the accuracy of field, laboratory, and validation information will be verified at various reporting stages (i.e., electronic data deliverables [EDDs], databases, and the final written report). Please revise the SAP to discuss how information in EDDs, databases, and reports will be verified for this project.

23. The SAP briefly discusses document control procedures but does not provide sufficient detail regarding the management of the project files. The SAP should indicate where the project files will be stored (i.e., address), who will manage them, and how long they will be stored. Please revise the SAP to provide this information.

24. It is unclear how results for analytes without defined project action limits (PALs) will be assessed. For example, Worksheet #15.4 does not provide a PAL for chloroethane or 1,3-dichlorobenzene and Worksheet #15.7 does not provide a PAL for 3-nitroaniline. Please revise the SAP to define PALs for these analytes, or alternatively, discuss how these analytes will be assessed.

25. The reference to EPA procedures is inconsistently presented in the SAP. For example, Section 14.7 states that waste chemical characterization analyses will include Title 22 Metals by EPA methods 6010C and Mercury by 7471B. However, Worksheet #19 states that EPA method 6010B and 7471A will be used for metals and mercury analysis, respectively. Further, the acceptance limits for the post digestion spike (PDS) presented in Worksheet #28 do not meet the requirements of EPA Method 6010C (i.e., 80-120%).

Please revise the SAP to provide current EPA methods consistently on all appropriate worksheets and ensure that all acceptance limits reflect the current methods. Alternatively, ensure that the QC limits from Method 6010C are used consistently throughout the SAP.

26. The SAP does not indicate how data will be chosen (e.g., randomly) for laboratory review (Section 14.8.3) or validation in Section 14.12 and Worksheets #35 and #36. Section 14.8.3 states that Level 2 and Level 3 data reviews will be performed on ten percent (%) of all samples and data packages. Section 14.12 states that 90% of the data for off-site sample analysis will be validated by an independent third party validation company at EPA Level III and 10% will undergo EPA Level IV validation. Please revise the SAP to clarify how data will be chosen for review and validation.

27. Worksheet #18 indicates that Title 22 metals will be analyzed for wastewater samples; however, details regarding mercury analysis for wastewater samples have not been included in appropriate worksheets (e.g., #19 and 28). Please revise the SAP to include analytical details for mercury analysis in water or explain why this analysis is not necessary.

28. The decision criteria used to determine which excavated material can be reused as backfill does not clearly describe how each waste characterization unit will be assessed and managed (i.e., if results for a waste characterization unit do not meet the criteria described in Worksheets #11 and #15, the entire volume of material in that unit will be disposed appropriately). Further, it is not clear how waste materials that do not meet reuse criteria will be kept separate from waste materials that do meet criteria. Please revise the SAP to describe how waste characterization units will be assessed and how waste materials in each waste characterization unit will be managed.

29. Calculations to support the required size of the containment tanks have not been provided in Appendix C, the Stormwater Pollution Prevention Plan. According to several places in the text, runoff water (e.g., from decontamination pad or soil stockpiles) will be pumped to a containment tank with a leak prevention liner or, in the case of Resource Conservation and Recovery Act (RCRA) or California Hazardous liquids, a containment tank that will hold 10 percent of the tank volume, plus the maximum rainfall from a 25-year, 24-hour storm event. As such, it is unclear if the containment tank(s) will be large enough to hold 10 percent of the tank volume, plus the maximum rainfall from a 25-year, 24-hour storm event. Please revise Appendix C to include calculations to support the required size of the containment tank.

SPECIFIC COMMENTS

1. **Section 2.1, Site Description and History, Page 2-1; Figure 2, Construction Site Layout, and Figure 3, Proposed Grid Layout:** The description of the Shielding Range in the text is not consistent with Figures 2 and 3. According to the description of the Shielding Range provided, the Shielding Range comprises three areas: Area A, the fan-

shaped field and a 550-foot long berm; Area B, a 60-foot by 50-foot site; and Area C, a 60-foot by 35-foot site. These areas are reportedly shown on Figure 2 and Figure 3, but Area A is shown only as a small rectangular area west of the fan-shaped area that does not include the fan-shaped area or berm as defined in Section 2.1. In addition, Area C is not depicted on the figures. Please revise the figures to illustrate the three Shielding Range areas as defined in the text.

2. **Section 2.1, Site Description and History, Page 2-1:** The text states, "Area A was covered with 6 inches of base coarse with seal coarse," but it is unclear if this was intended to describe the construction of both the berm and fan-shaped area or the small Area A that is depicted on Figures 2 and 3. Please revise the text to clarify the specific area(s) being described.

3. **Section 2.2, Topography and Site Features, Page 2-2 and SAP Worksheet #10, Section 10.1.2, Topography and Site Features, Page 27:** The text describes the topography of Parcel E-2 and the Panhandle Area, but does not discuss the specific topography and features of the Shielding Area. Please revise the text to include the specific topography and features of the Shielding Area.

4. **Section 3.2, Radiological Removal Action Objective, Page 3-1:** The text states that the RRAO is to remove ^{60}Co "in soil and debris to 1 foot bgs," but according to Section 2.1, the top six inches across most of this area consists of base coarse (i.e., gravel). As a result, it is unclear if the intent is to remove the base coarse and seal coarse, if present, and then to remove up to 1 foot of soil and debris or if only 6 inches of soil and debris will be removed below the base coarse. Further, Section 5.12 appears to indicate that the entire 5 to 6 foot high Shielding Range berm will be removed, since it discusses removal of multiple 12-inch lifts. Please revise the text to clarify the intent of the RRAO.

5. **Section 3.3, Anticipated Waste Streams, Page 3-2 and Section 7.1, Project Waste Descriptions, Pages 7-1 and 7-2:** The anticipated waste streams do not include gravel. Since the description of the Shielding Area includes 6 inches of base coarse, it appears that significant gravel may be present. In addition, it is unclear how gravel will be handled, since it may not be possible to fully scan this material. Please revise the list of waste streams to include gravel and discuss how this material will be handled.

6. **Section 5.1, Permitting and Notifications, Page 5-2:** The qualifications for the competent person performing daily inspections of the excavation have not been provided. According to the text, a competent person will perform daily inspections of the excavation to assess the stability of slopes and the excavated area, but the text should specify the qualifications this person must have. Please revise the Draft WP to identify the qualifications the competent person performing daily inspections of the excavation must have.

7. **Section 5.7, Utility Survey, Page 5-5:** Although it is indicated that geophysical survey will identify any subsurface utilities and/or remaining structures, the Draft WP not does include steps to be taken if underground utilities or structures are located. The Draft WP

does not indicate whether utilities will be relocated or temporarily disabled and replaced during site restoration. In addition, the Draft WP does not indicate how any remnant structures (if discovered) will be screened and disposed. If underground utilities and structures are not believed to be located within the Shielding Range, this should clearly be stated in the text; however, the text should cover actions that will be taken in the event they are discovered. Please revise the Draft WP to include a discussion of how subsurface utilities and/or structures will be handled.

8. **Section 5.12, Excavation of Experimental Ship Shielding Range, Page 5-10:** The Draft WP states the maximum excavation depth of the Shielding Range fan area will not exceed 12 inches and during excavation work, the Shielding Range will be radiologically screened for evidence of undergroundexperiments and/or structures. If evidence of undergroundexperiments or structures is observed, the Navy will be notified and the material addressed. The Draft WP does not sufficiently indicate how these underground experiments or structures will be managed. The Draft WP does not indicate whether they will be partially removed (up to the 12-inch excavation depth) or left intact in-place. The specific locations of these underground features should be logged for future remediation activities and included in the Removal Action Completion Report (RACR). Please revise the Draft WP to include additional details regarding the removal and documentation of undergroundfeatures encountered during excavation.

9. **Section 5.12.1, Dewatering of Excavated Materials, Page 5-11:** It is unclear how soil will be determined to be sufficiently dry to perform a radiological surface survey. The text states that "the soils and material will remain on the [radiological screening] pads until the RCT [Radiological Control Technician] determines them to be sufficiently dry to perform a radiological surface survey," but this does not clarify whether instrumentation, manual manipulation, or visual inspection will be used to make this determination or provide the criteria to be utilized. Please revise the Draft WP to clarify how soil will be determined to be sufficiently dry to perform a radiological surface survey or at a minimum please provide decision criteria.

10. **Section 5.12.2, Soil Stockpiles, Page 5-12:** It is unclear how ground surfaces will be surveyed prior to the construction of the stockpile containment area. The text states that, "Prior to construction of the stockpile containment area, the ground surfaces will be surveyed by a qualified RCT for the presence of radioactive materials." However, details regarding the survey have not been provided. Please revise the Draft WP to include details regarding the preconstruction survey.

11. **Section 5.13, Final Conditions Survey of Experimental Ship Shielding Range, Page 5-13:** Upon completion of excavation, a GWS will be performed and systematic confirmation soil samples will be collected from the accessible areas of the Shielding Range footprint. If hot spots are identified, the Draft WP states the areas will be documented and reported to the Navy and the Radiological Affairs Support Officer (RASO). The Draft WP does not clearly state whether radiological devices or residual radiological contamination, if identified during this survey, will be removed. Please revise the text clarify whether removal of radiological devices or re-excavation of areas

excavated to less than 12 inches and containing residual radiological contamination will be considered.

12. **Section 5.14, Backfill Placement and Compaction, Page 5-13:** The text does not state how the final condition of the site will be documented. According to the text, backfill will be placed in the excavation to fill low points and, if needed, the backfill material will be compacted by wheel or track rolling to a firm, unyielding condition (no rutting) and verified by the Field Engineer. Because no compaction testing is proposed, as the site is slated for open space reuse, it is assumed the Field Engineer will visually observe and inspect the backfilled areas. Proper documentation of these observations/inspections should be maintained and included in the RACR. Please revise the Draft WP to include this information.

13. **Section 5.15, Site Restoration, Page 5-13:** The Draft WP states that areas within the Panhandle Area that were previously covered with vegetation prior to excavation activities will be revegetated. The Draft WP does not provide details that include what types of plants and grass cover will be used. The vegetation selected should provide adequate cover and be consistent with the future use of the area (i.e., contain no invasive species). Further, measures should be taken to ensure that the vegetation becomes viable (i.e., reaches a good stand). Please revise the Draft WP to include additional details regarding site restoration and verification of restoration.

14. **Section 5.20, Demobilization, Page 5-18:** It is unclear what actions will be taken should the ground surface within unexcavated areas be determined to be radioactively contaminated. Based on Section 5.20, "Once all construction equipment and material have been removed from the project site, laydown staging, and radiological screening pads areas will be surveyed for gamma-emitting ROCs. Data obtained from the pre-mobilization survey will be compared to the data collected during the demobilization survey to ensure that radioactive materials have not been relocated or additional radioactive contamination in excess of release criteria has not been introduced to the Panhandle Area." As such, it is unclear what actions will occur should the ground surface within unexcavated areas be determined to be radioactively contaminated. Please revise the Draft WP to clarify what actions will be taken to remediate ground surfaces within unexcavated areas that are determined to be radioactively contaminated.

15. **Section 7.2.3, Container Labeling, Page 7-4:** Specifications and/or best management practices (BMPs) for container labeling have not been provided in the Draft WP. Please revise the Draft WP to include specifications and/or BMPs for container labeling.

16. **Section 7.2.4, Waste Accumulation Areas, Page 7-5:** The text indicates that fueling and equipment maintenance will be performed on site, but this should only be done in an area designed for this purpose and procedures for addressing spills should be included in the WP. Please revise the WP to include a designated area for fueling and equipment maintenance, a design for this area, and procedures for addressing spills.

17. **Section 7.3.2, Waste Accumulation and Storage, Page 7-7:** The text states, "Each [Ziploc] bag [containing radiological sources] will be sealed to prevent contamination from inadvertently escaping from the container," but this procedure is insufficient for preventing gamma radiation and beta particles from escaping. The text should be revised to clarify that the bags will be sealed to prevent radiological devices and soil from escaping. Please make this change.

18. **Section 10.0, Remedial Action Completion Report, Page 10-1:** The text does not include a detailed outline for a RACR. An outline should be provided. In addition, the costs to complete this TCRA should be included. Please revise the Draft WP to include a detailed outline for the RACR, including the costs for this TCRA.

19. **Table 1, Radiological Release Criteria; SAP Worksheet # 11, Project Quality Objectives, Page 30; and SAP Worksheet #15.1, Release Criteria for Radionuclide of Concern (Soil Matrix), Page 49:** The fourth bullet under Step 5 discusses comparison of isotopic plutonium and isotopic uranium with release criteria, but Table 1 of the WP does not include release criteria for plutonium or uranium. Release criteria for plutonium-239 and uranium-235 are included in SAP Worksheet #15.1. Please include all release criteria in WP Table 1.

20. **Appendix A, Section 6.1, Air Monitoring, Pages 6-1 and 6-2 and Appendix D, Dust Control Plan:** The text briefly describes air sampling and references Shaw SOP T-RA-007, but neither the text in Section 6.1, Appendix D, nor the SOP discuss how the downwind location(s) will be selected or if the locations will be changed when the wind shifts. The wind at Hunters Point typically increases around noon, so locations selected at the beginning of the day when the wind is calm may not be downwind in the afternoon. The generic locations specified in Appendix D may not be suitable at all times. For example, if the excavation area changes, the sampler may not be downwind of the new location. Further, if winds shift from the east, southeast, or northeast, it will be important to monitor the western site boundary (i.e., to the west or southwest of proposed monitoring station 14), as there are potential downwind receptors to the west. As a result, a single downwind sampler may not be sufficient or the sampler may need to be moved. Please revise the text to state how the downwind sampling location(s) will be selected, whether a downwind location can be changed during the day if the wind direction or excavation location changes, and whether a single downwind sample location is sufficient. Also, please consider the potential need to monitor the western site boundary when winds are from the east, southeast, or northeast.

21. **SAP Worksheet #9, Project Scoping Session Participants Sheet:** The worksheet does not provide any information regarding the kick-off meeting discussions, only a list of attendees. The worksheet references the "Meeting minutes" for information on the comments/decisions, action items, and consensus decisions, but summary of the meeting minutes, especially outlining any decisions agreed upon and action items, is the type of information which is intended to be provided in this worksheet. Please revise Worksheet #9 to include a summary of the meeting, including decisions and action items.

22. **SAP Worksheet #10, Problem Definition and Worksheet #11, Project Quality Objectives:** These worksheets do not address the issues and questions listed on pages 14 and 15 of the Workbook for Uniform Federal Policy for Quality Assurance Project Plans, Volume 2A (UFP-QAPP Workbook). Worksheet #10 should clearly define the problem, including the environmental questions being answered, and include project decision conditions in "if..., then" format. Worksheet #11 should describe how the data collected during the TCRA will develop the project quality objectives. Please revise these worksheets using the outlines provided in the UFP-QAPP Workbook.

23. **SAP Worksheet # 11, Project Quality Objectives, Page 30:** Step 4, which states that excavation will occur to 1 foot bgs, does not appear to be consistent with Section 5.12, which describes removal of the entire 5 to 6 foot high berm in 12 inch lifts. Please resolve this discrepancy.

24. **SAP Worksheet # 11, Project Quality Objectives, Page 30:** Step 5 on Worksheet #11 presents the decision rules for the project, but these do not appear to be consistent with the main text of the WP. The first "if..., then" statement states if the survey results comply with the ROC release criteria, the results will be documented in the final report, but the WP states that 1 foot of soil and debris will be removed from the Shielding Area. It is unclear why the first statement under Step 5 indicates that no further action will be required for areas not deemed contaminated. Please resolve this discrepancy.

25. **SAP Worksheet #12, Measurement Performance Criteria Table – Soil Field QC Samples, Page 32**: Worksheet #12 states that field duplicates for soil will not be collected; however, it is not clear why field duplicates will not be used. Field duplicates should be analyzed to document the heterogeneity of the soils, which will aid in the understanding of the results and in the data quality assessment process. Further, trip blanks are not listed as a field QC sample. Trip blanks should be included in each shipment containing samples for VOC analysis. Please revise Worksheet #12 to include field duplicates. Also, please include trip blanks for VOC analysis.

26. **SAP Worksheet #13, Secondary Data Criteria and Limitations Table, Page 33**: Worksheet #13 states that no secondary data for this project will be used; however, the conceptual site model described in Worksheet #10 identifies other documents for previous site work that are relevant to the current investigation. Please revise Worksheet #13 to include all secondary data that will be used for decision making in this project.

27. **SAP Worksheet # 14, Summary of Project Tasks, Section 14.9, On-Site Radiological Laboratory Operations, Pages 43 and 44:** The third bullet point in this section states that if ^{90}Sr is detected by the off-site laboratory, additional analyses for plutonium and uranium will be performed, but it is unclear why ^{90}Sr must be detected for these analyses to occur. Also, this contingency is not specified in the WP, which does not discuss plutonium and uranium analyses. Please revise the text to explain why detection of ^{90}Sr is the trigger for analysis of plutonium and uranium and revise the WP to be consistent.

28. **SAP Worksheet #16, Project Schedule/Timeline Table:** The worksheet does not follow the table format provided on page 16 of the UFP-QAPP Workbook. Instead, Figure 4, Project Schedule is replicated. The figure does not include the organization responsible for the activity nor does it associate the deliverables with a specific action as suggested in the UFP-QAPP Workbook. Additionally, the figure size appears to be condensed to fit the page and is illegible in places. Please revise Worksheet #16 using the table provided in the UFP-QAPP.

29. **SAP Worksheet #17, Sampling Design and Rationale:** According to the SAP, soil samples will be collected at various times during the excavation process, including samples collected from the radiological yard screening pads, post-excavation sampling, and samples collected during the final conditions survey. All the samples will be analyzed for ^{60}Co, cesium-137 (^{137}Cs), and ^{226}Ra. Ten percent of the samples will be sent to an off-site laboratory for total strontium/^{90}Sr analysis. The SAP does not indicate how the ten percent of samples sent to the off-site laboratory will be selected, whether the selection will be at random or biased based on the on-site laboratory results of the ^{60}Co, ^{137}Cs, and ^{226}Ra analyses. Please revise the worksheet and applicable WP text to indicate the selection for method for total strontium/^{90}Sr analysis.

30. **SAP Worksheet #28, Laboratory QC Samples Table, Pages 98-114:** This worksheet references the Department of Defense (DoD) Quality Systems Manual (QSM) for both the method/SOP QC acceptance limits and the measurement performance criteria (MPC), but the laboratory-specific control limits should be provided in the SAP to ensure they will meet the MPC. Please revise the SAP to include the laboratory-specific control limits.

31. **SAP Worksheet #31, Planned Project Assessments Table, Page 118**: This worksheet does not specify the decision criteria for determining when field or laboratory technical system audits (TSA) will occur. Please revise the SAP to define when audits will occur or summarize the decision criteria that will be used to determine if an audit is necessary.

32. **SAP Worksheet #36, Analytical Data Validation (Steps IIa and IIb) Summary Table, Page 123**: This worksheet lists multiple guidelines for the validation criteria; however, data validation checklists have not been provided. Please revise the SAP to provide data validation checklists specifying the items to be evaluated, acceptance criteria, and how qualifiers are applied if exceedances are observed.

33. **SAP Worksheet #37, Usability Assessment, Pages 124-126:** The information provided in this worksheet is insufficiently detailed. For example, this worksheet does not specify that the data quality assessment report will include an evaluation of trends or biases observed in the data. Further, the description and calculation for completeness appears to address laboratory completeness but not field completeness. The SAP should discuss how data quality objectives will be assessed if any of the proposed samples cannot be collected. Please revise the SAP to provide additional details as described above.

34. **Appendix D, Dust Mitigation Plan, Section 4.0 General Construction Dust Control Methods:** The Dust Mitigation Plan states in several instances that water will be applied to roadways, excavation areas, etc. on an as-needed basis; however, no action levels or decision criteria are provided to define "as-needed." For example, visible dust clouds or elevations of particle matter on air monitoring equipment should be avoided and discussed at the daily tailgate health and safety meetings so workers are aware of conditions that require additional suppression. Please revise the Dust Mitigation Plan to include action levels or provide criteria that define "as-needed."

35. **Appendix D, Dust Mitigation Plan, Section 4.1.1, Track-out Prevention, Page 4-1:** It is unclear if the minimum length of the gravel pad must be at least 40 feet or 50 feet. According to Section 4.1.1, "to ensure that the tires are free of mud or loose soils prior to leaving the site egress, bulk loaded trucks and commercial vehicles will be required to pass over a gravel pad (at least 40 feet in length) and over the rumble grid plates where the soil residue from the tires will be removed." However, BMP TC-1 (Stabilized Construction Entrance/Exit) in Appendix C (SWPPP) states that the constructed length of the stabilized construction entrance/exit must be a minimum of 50 feet in length. Please revise the Draft WP to clarify the minimum length of the gravel pad.

36. **Appendix D, Dust Mitigation Plan, Section 4.1.1, Track-out Prevention, Page 4-1:** Potentially contaminated soil that accumulates from the removal of soil from tires as vehicles pass through the control point and drive over the gravel pad and rumble grid plates will accumulate on the gravel pad. The Draft WP does not address how this soil will be managed. The Draft WP should describe procedures to screen the accumulated soil for ROCs, transport, store, and properly disposal. Please revise the Draft WP to include these processes.

37. **Appendix E, Construction Quality Control Plan, Attachment 5, Outside Organizations:** The table provided does not include outside organizations or contractors providing on-site services or assistance during the TCRA. The Draft WP should at least provide a date or timeframe as to when information regarding these organizations can be anticipated (e.g., two weeks prior to mobilization). Sufficient time should be given for the Regulatory Agencies to review the list of outside organizations and request any necessary documentation or certifications. Please revise the attachment to include the missing information or when the information will be presented.

MINOR COMMENTS

1. **Acronyms and Abbreviations:** Several acronyms and abbreviations (e.g. AM, RSY, FCS) are not included in the list provided in the beginning of the Draft WP. Please review the list and Draft WP to include all acronyms and abbreviations referenced.

2. **Section 8.1, Existing and Natural Resources, Page 8-1:** The second paragraph appears to contain a typographical error in the form of "BuRRAOws." Please revise the text with the correct word.

3. **Section 9.1, Key Project Personnel, Page 9-1:** The text references the incorrect table; Table 8 does not exist. Please revise the text to reference Table 2.

4. **Figure 2, Construction Site Layout:** The legend includes a Soil Stockpile Area, but does not include a symbol or outline designation for this area on the figure. A Soil Stockpile Area is shown on the figure near the southeast corner of the landfill area and is outlined using a dashed line. In addition, there are several other areas with orange, bright pink, and brown shading that are not defined in the legend. These areas are labeled on the figure but the designation of the shading is unknown. Please revise the figure to include all areas illustrated on the figure in the legend. Also, please review all the figures in the Draft WP for similar issues.

5. **SAP Figure B-1, Site Location Map:** The pink outline denotes the Shielding Range berm and fan-shaped area to be removed; however, this is not defined in the figures legend. Please revise the figure and legend to define the pink outlined areas.