RED HILL TANK CLOSURE PLAN

Response to 3 May 2023 DOH Comments

14 July 2023

Department of the Navy

Responses to 3 May 2023 DOH comments on the Red Hill Tank Closure Plan, Supplement 1

General Comments

1. *The Hawai'i Department of Health's (DOH's) Emergency Order, dated May 6, 2022, requires the Closure Phase of the Closure Plan to "[incorporate], at a minimum, the following:*

   Description of the sequence and process in which the tanks and pipeline are planned to be cleaned, including the four surge tanks and related piping...the method of permanent closure (remove, fill, or close in place) and associated design and process; ultimate disposition of any accumulated sludge or waste material from the 20 Tanks, four surge tanks, and associated piping; and site assessment...." (Paragraph 8, page 8).

   Because the Closure Plan will remain incomplete for some time, according to the proposed schedule, the DOH continues to recommend that the U.S. Department of the Navy (Navy) submits the plan in sections, as they are completed, in order to continuously expedite the schedule. We understand the structural analysis in the upcoming Tank Closure Plan - Supplement 2 and findings of the beneficial reuse study, to be submitted in May 2023 and Fall 2023 respectively, will support the Navy's proposal for tank and piping disposal (as a component of the Closure Phase). We also understand from Enclosure 4 that the site assessment plan will not be submitted until at least August 2023, and the scope and details of site assessment have yet to be determined. Therefore, the Closure Phase of the Closure Plan remains incomplete.

   Response: The Navy agrees with the approach of submitting the closure plan in sections; we have previously submitted Supplement 1 to address tank cleaning, and Supplement 2 to address tank structural integrity and pipeline removal.

   In past reports and correspondence, the Navy has indicated that the full closure design would depend on the chosen beneficial non-fuel reuse. More recently, however, we have determined that the tank and pipeline closure design will be independent of the beneficial non-fuel reuse, so we plan to submit the full closure design to DOH and EPA as part of Supplement 3, at a date to be determined. The Navy notes that regulatory closure under the Hawaii Administrative Rules (HAR) involves permanent tank closure, site assessment, and necessary remediation, but the HAR does not address reuse. While reuse can only occur if the tanks are properly closed in place, the Navy believes that reuse is outside the scope of UST closure requirements, and we are not aware of other closed USTs that have been reused for non-fuel purposes.

   The Navy will develop the site assessment plan in the required Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP) format, following the UFP-QAPP process, which will include preliminary scoping sessions among Navy, DOH, and EPA to determine assessment details and data requirements. This will be a significant effort, and the Navy anticipates submitting the UFP-QAPP as Supplement 4, at a date to be determined.

2. *Provide a map identifying all existing underground storage tank (UST) system infrastructure that will no longer be used, such that they will be cleaned and decommissioned (e.g., removed, filled, or other method approved by the DOH). If the latter is unknown at this time, provide whatever information is currently available and update with each submission.*

   Response: In Appendix B of Supplement 2, submitted to DOH on May 31, 2023, the Navy provided an exhibit identifying how the Red Hill tanks, the surge tanks, and the pipelines will be decommissioned. In summary, 1) the large fuel storage tanks will be closed in place, 2) the three large-diameter fuel pipelines between the underground pump house and the tanks will be removed and properly disposed of, and 3) the surge tanks will be filled with inert material.

3. *Section 5 describes three separate beneficial reuse studies to be completed before the Navy submits a closure design to the DOH for review. When will each of these studies be completed? When does the Navy expect to propose a beneficial reuse selection and tank and piping closure design to the DOH?*

   Response: The Navy expects to receive the Nakupuna report on beneficial non-fuel reuse in November of 2023. The Navy expects the results of the University of Hawaii study on alternative energy storage at Red Hill and the FY23 NDAA Department of Defense (DoD) study on potential DoD beneficial non-fuel reuse opportunities will be available after the information is provided to Congress in February, 2024. Based on these reports, the DoD will propose a beneficial reuse selection at a later date. As described in the response to Comment 1, the Navy will submit the full closure design to DOH and EPA as part of Supplement 3, at a date to be determined.

4. *We understand the Navy will keep the public informed about the Nakupuna Companies beneficial reuse study using "press releases, website updates and during monthly neighborhood board meetings with the community" (Enclosure 5, page 22). Describe how the Navy will keep the public informed on the statuses and results of the other two studies performed by the University of Hawai'i and Department of Defense. The Navy should be clear that it will not necessarily select a beneficial reuse idea proposed by the public.*

   Response: To keep the public informed about the University of Hawaii and DoD studies, the Navy will follow the same methods used for the Nakupuna study. The Navy acknowledges that a beneficial non-fuel reuse option proposed by the public in the Nakupuna study may not be selected.

5. *Please provide the Unified Facilities Guide Specifications referenced in Supplement 1 and the enclosures.*

   Response: Supplement 1 incorrectly references Unified Facilities Guide Specifications (UFGS) Section 3.2.1. The correct reference is UFGS Section 33 01 50.55, and it is provided as requested. Enclosure 5 "Responses to 11 Jan 2023 DOH comments on the Tank Closure Plan" also references this UFGS section. Enclosure 3 "Statement of Work for Pipeline Cleaning" references numerous UFGS specifications, but these are no longer relevant because the Navy is now planning to remove the three large-diameter fuel pipelines, as described in Section 2 of Supplement 2, rather than clean them.

6. *Supplement 1 and the enclosures propose ultraviolet (UV) visual inspection to determine whether the tanks are clean. However, none of the references the Navy provides verify UV visual inspection is effective for the specific types of fuels at the Red Hill Bulk Fuel Storage Facility (Facility) (or jet fuel in general). We were unable to find any examples online of UV fluorescence being used to verify that jet fuel tanks are clean. We also note the Navy does not provide a backup method, should UV inspection prove ineffective. Provide information to support the use of this method.*

   Response: Polyaromatic hydrocarbons (PAHs) within the fuels at Red Hill (JP-5, F-24, F-76) will fluoresce in the presence of 340-420nm light, so the Navy expects the UV process to be effective for these three fuels. To confirm this expectation, the Navy will perform a series of evaluations, as described below in the response to Comment 36. The Navy has proposed the UV light method to add to other lines of evidence that, taken together, will demonstrate the tanks are clean. Other lines of evidence include 1) the Navy will conduct a thorough cleaning process that involves venting and pressure washing of the entirety of each tank, and 2) a National Fire Protection Association (NFPA) Certified Marine Chemist will certify the air inside the tank to be acceptable for human occupancy and for "hot work" such as welding. Since tank regulations do not require UV light confirmation, the Navy is not aware of any previous examples where it has been used to verify fuel tanks are clean. If the UV inspection process proves to be ineffective, then the Navy will work with DOH and EPA to develop an alternative method. As requested, additional information is provided in

the attached presentation, "UV_Supp 1 Summary & Additional Info.pdf," which has been discussed among Navy, DOH, and EPA during our routine Closure Technical Working Group meetings on May 19, May 25, and June 15, 2023.

Specific Comments

7. ***Page 4, 1. Introduction:*** *The fourth bullet under "Supplement 1 provides the following" lists "Detailed procedures for waste management." However, Supplement 1 only provides a summary of these procedures and states the contractor will be responsible for the detailed means and methods. Please provide the contractor's waste management plan for the DOH's review and approval and an estimate of when this will be submitted.*

   Response: The Navy awarded the tank cleaning contract on June 30, 2023, and the contractor has begun development of the waste management plan, in compliance with state and federal regulatory requirements. We expect this document to be ready for DOH and EPA review in September or October, 2023. Please note these dates are subject to change, and the Navy will provide a more detailed schedule following contract award.

8. ***Page 4, 1. Introduction:*** *The fifth bullet under "Supplement 1 provides the following" lists "A process for updating the Facility Response Plan [FRP]." However, Supplement 1 only states the Navy will update the FRP once it receives the contractor's Environmental Protection Plan (EPP). Please provide the EPP and updated FRP for the DOH's review and an estimate of when these documents will be submitted.*

   Response: The Navy awarded the tank cleaning contract on June 30, 2023, at which time the contractor will begin development of the Environmental Protection Plan (EPP) and Spill Response Plan. We expect the EPP and Spill Response Plan to be ready for DOH and EPA review in September or October, 2023. Based on the contractor's Spill Response Plan, the Navy will update the Red Hill Facility Response Plan (FRP) and submit this document to DOH and EPA in October or November, 2023. The contractor will begin tank cleaning upon completion of defueling. Please note that all dates are subject to change, and the Navy will provide a more detailed schedule following contract award.

9. ***Page 5, 1. Introduction, Figure 1-1:*** *The figure indicates "DOH concurrence on permanent tank closure method & procedures" ("Phase 1") will occur before "[i]dentify, evaluate, and select beneficial non-fuel reuse option" ("Phase 2"). As we have stated in our previous letters and comments, the DOH cannot concur with the Navy's proposed method of tank closure until we receive the full closure design. We understand from the Navy that the closure design will depend on the beneficial reuse option selected. This means, the order of Phases 1 and 2 should be switched.*

   Response: Past Navy reports and correspondence indicated that the closure design would depend on the chosen option for beneficial non-fuel reuse. More recently, however, we have determined that the tank and pipeline closure design will be independent of the beneficial non-fuel reuse, so we plan to submit the full closure design to DOH and EPA as part of Supplement 3, at a date to be determined. Based on this information the order of the phases is accurate in Figure 1-1.

10. ***Page 6, 2.1 Definitions, number 3:*** *This number states "[b]ecause solids cannot be pumped, sludge and other non-flowable material will need to manually removed from the bottom of the tank and lifted out using the center boom in each tank to the upper access tunnel where it can be removed from the facility." Provide*

information on how the sludge will be lifted, containerized, moved out of the tanks, stored (and where) in the upper access tunnel, and the associated spill mitigation and spill response method. Has the Navy considered removing the sludge via the main fuel nozzle and into a container?

Response: The contractor work plan (approved by the Navy) will provide the requested details on how the sludge will be handled. As described in the response to Comment 8, the contractor's Spill Response Plan and the Navy's update to the FRP will provide the associated spill mitigation and spill response method.

11. ***Page 7, 2.2 Tank Cleaning:*** *The second paragraph states Tanks F-13, F-14, F-17, and F-18 have undergone the Clean, Inspect, Repair (CIR) process, and therefore, the Navy does not plan to clean those tanks again. However, we understand, based on meetings with the Navy and U.S. Environmental Protection Agency (EPA), the CIR process cleans tanks for maintenance rather than closure. Explain and justify the continued applicability of the same cleaning process. If a similar cleaning process will be used for tanks currently with fuel in them, how was it decided that UV testing will only be done for tanks that have not yet been cleaned? Also see comment 6 above.*

Response: Tanks F-13, F-14, F-17, and F-18 have been through the Clean, Inspect, Repair (CIR) process and were not refilled with fuel, so these tanks have already been cleaned in accordance with American Petroleum Institute Recommended Practices (API RP) 2016 "Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks," API Std 2015 "Safe Entry and Cleaning of Petroleum Storage Tanks," and Unified Facilities Guide Specifications (UFGS) Section 33 01 50.55. The CIR process involves a rigorous cleaning, accompanied by testing to show the tanks are safe for worker occupancy. This cleaning process (described in Supplement 1 as complete pressure washing of interior tank surfaces) applies to closure as well as maintenance. Since Tanks F-13, F-14, F-17, and F-18 were not refilled with fuel, they remain clean and ready for closure. For consistency, the Navy will perform UV inspections for Tanks F-13, F-14, F-17, and F-18 and follow up with additional cleaning if UV fluorescence indicates the presence of petroleum residual within the tanks.

12. ***Page 10, 2.4 Pipeline Cleaning:*** *The top of the page states "[i]n sections where pigging cannot be performed, the pipelines shall be cleaned using forced air ventilation." How will the "dirty" air be measured to determine when the pipe is considered "clean?" We acknowledge that, short of removing and cleaning the pipes, forced air is likely the next most effective option. Given that piping contains lead and asbestos, the final determination for its management could also assist in determining the pipe cleaning method. For example, if it is prudent to abate the asbestos prior to recycling the metal, and it is easier to do so after the pipes are removed, then could these portions of piping be removed for cleaning, abatement, and disposal at the same time?*

Response: The Navy has proposed the removal of the three large-diameter fuel pipelines (subject to regulatory approval) as described in Section 2 of Supplement 2 (submitted May 31, 2023), rather than clean them and close them in place as proposed in Supplement 1. Supplement 2 also describes the methods to address lead and asbestos.

13. ***Page 10, 2.4 Pipeline Cleaning:*** *At the juncture where the closed pipelines and remaining operational pipelines meet, explain how this "separation" will occur. Will it be disconnected to prevent future use and potential contamination to the remaining fuel system? How will this portion of end piping be cleaned? If piping will be removed, has the structural stability of the remaining operational pipes been determined?*

Response: As noted in Section 2 of Supplement 2, Navy has proposed the removal of the three large-diameter fuel pipelines (subject to regulatory approval), rather than clean them and close them in place. At

the pipeline connections in the lower tank gallery and the underground pump house, the removal contractor will cap the ends of the pipelines remaining in place with a blind flange. The Navy will confirm the removal of the three fuel pipelines will not affect the structural stability of the remaining pipelines.

14. ***Page 10, 2.4 Pipeline Cleaning:*** *The bottom of the page states "[p]ipelines shall be considered clean when no free liquid is observed at the discharge end and the measurement of the Lower Explosive Limit (LEL) is not above the background level." At the LEL, there will still be residual fuel that could later evaporate to above the LEL (when there is no dilution from forced air). Has the Navy considered continuing airflow until the vapors cannot be detected? In addition, after unpacking, the Joint Task Force – Red Hill (JTF-RH) noted fuel remained in several locations along the piping where slope is relatively flat or line sag has occurred. Thus, the lengths of the pipelines need to be checked, including all low points and low point valves, to determine that the pipelines are clean, as opposed to only relying on observations at the discharge end.*

    Response: The Navy has proposed the removal of the three large-diameter fuel pipelines (subject to regulatory approval) as described in Section 2 of Supplement 2 (submitted May 31, 2023), rather than clean them and close them in place. Prior to pipeline removal, the DOD intends to confirm low points in the pipeline and segments of piping adjacent to valves have been drained. Additionally, the pipeline removal contractor will be required to establish containment to prevent any remaining fuel from being released to the environment.

15. ***Page 13, 5. Planning for Beneficial Non-fuel Reuse:*** *We understand, based on the Tank Closure Plan, the Navy will not explain what measures it will take to render the Facility unusable for future hazardous substance storage until it selects and proposes a beneficial reuse option. However, the first paragraph of this section states "[t]he Navy expects that any potential beneficial reuse will not significantly impact the tank closure process." If that is the case, in the next supplement report, define how the Facility will be physically rendered unusable for future fuel storage.*

    Response: The Navy has proposed the removal of the three large-diameter fuel pipelines (subject to regulatory approval) as described in Section 2 of Supplement 2 (submitted May 31, 2023), thereby rendering the facility physically unusable for future fuel storage. The Navy will submit additional information on the full closure design to DOH and EPA as part of Supplement 3, at a date to be determined.

ENCLOSURE 1: *PRESCRIPTIVE SPECIFICATIONS, CLEANING TANKS AND SUMPS, RED HILL BULK FUEL STORAGE FACILITY JOINT BASE PEARL HARBOR-HICKAM HAWAII*

General Comment

16. *This enclosure is mostly related to worker safety. The DOH does not typically review or comment on worker safety issues because this is outside the scope of our regulatory oversight. Thus, our comments on this enclosure are primarily related to UST cleaning and waste management.*

    Response: Acknowledged.

Specific Comments

17. ***Page 1, 1.1 References:*** *Supplement 1, page 7, states four tanks "have already been cleaned in accordance with American Petroleum Institute Recommended Practices (API RP) 1604 and Unified Facilities Guide*

Specifications (UFGS) Section 3.2.1." However, these two specifications are not listed under Enclosure 1, 1.1 References.

Response: The Navy acknowledges that American Petroleum Institute Recommended Practices (API RP) 1604 is not listed in the references, and we now realize that the statement in Supplement 1, page 7, is incorrect. For the CIR process, the cleaning was actually done in accordance with API RP 2016 "Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks" and API Std 2015 "Safe Entry and Cleaning of Petroleum Storage Tanks," rather than API RP 1604 "Closure of Underground Petroleum Storage Tanks." Nevertheless, while the statement in Supplement 1, page 7, contains an incorrect reference, the cleaning procedures in API RP 2016 and API Std 2015 are the same as the ones in API RP 1604. The reference to Section 3.2.1 of the Unified Facilities Guide Specifications (UFGS) is an error, and the correct section is UFGS 33 01 50.55, "Cleaning of Petroleum Storage Tanks." Section UFGS 33 01 50.55 has been included with this response.

18. ***Page 3, 1.2 Submittals:*** *This statement of work is performance based, and thus leaves the means and methods to the contractor. There are several submittals listed that will require the DOH's review and approval prior to commencement of work, including, but not limited to: identification of cleaning agents, cleaning work plan, spill mitigation and response plan, and waste storage and disposal plan. Please identify in the schedule (Enclosure 4), when submittal of those plans is expected, and estimated review times.*

Response: The Navy expects to provide these submittals (the contractor work plan, spill response plan, and waste management plan) to DOH and EPA in September or October, 2023, and we will request a 30 day review time. Please note that this submittal date is subject to change, and the Navy will provide a detailed schedule following award of the tank cleaning contract.

19. ***Page 11, 2.1.1 Cleaning Agents:*** *Detergent and solvent are specified as FS-O-D-1276 and MIL-PRF-680 respectively. Explain what these are and how they will be used.*

Response: During the upcoming Closure Technical Working Group meetings among DOH, EPA, and the Navy, we will propose a specific cleaning solution and how it will be used, in compliance with state and federal regulatory requirements.

20. ***Page 17, 3.3 Table of Tank and Sump History/Dimensions:*** *Our understanding is Tank F-6 currently contains F-24, not JP-5. Please confirm and provide an updated and completed table.*

Response: See below table with corrected fuel type in tank F-6.

Tank ID	Year Built	Capacity (Gallons)	Contents	Status
F-1	1943	11.98M	Empty	Defueled in 1997
F-2	1943	11.97M	F-24	In Use
F-3	1943	11.98M	F-24	In Use
F-4	1943	12.7M	F-24	In Use
F-5	1943	12.7M	F-24	In Use
F-6	1943	12.7M	F-24	In Use
F-7	1943	12.7M	JP-5	In Use
F-8	1943	12.7M	JP-5	In Use
F-9	1943	12.7M	JP-5	In Use
F-10	1943	12.7M	JP-5	In Use

F-11	1943	12.7M	JP-5	In Use
F-12	1943	12.7M	JP-5	In Use
F-13	1943	12.7M	Empty	Clean and Empty
F-14	1943	12.7M	Empty	Clean and Empty
F-15	1943	12.7M	F-76	In Use
F-16	1943	12.7M	F-76	In Use
F-17	1943	12.7M	Empty	Clean and Empty
F-18	1943	12.7M	Empty	Clean and Empty
F-19	1943	12.7M	Empty	Defueled in 1997
F-20	1943	12.7M	JP-5	In Use

21. ***Page 18, 3.3 Table of Tank and Sump History/Dimensions:*** *There is reference to a fuel oil recovery (FOR) sump near Adit 3. Please clarify whether this sump is the main containment sump of the FOR system that is located near Tanks 1 and 2, rather than Adit 3; or if this is the sump near Adit 3 that was involved in the November 2021 release. If it is the latter, please clarify whether this sump is also part of the FOR system and if the main containment sump will be included in the list of sumps to be cleaned.*

    Response: The sump near Adit 3 is a groundwater sump and not a FOR system sump. The main containment sump, piping, and Tank S311 will be cleaned. Once cleaned, the Navy expects this system will continue to be used to remove groundwater from the tank gallery tunnel. The discharged water from the main sump will continue to be collected in Tank S311 outside of Adit 3.

22. ***Page 18, 3.3 Table of Tank and Sump History/Dimensions:*** *Similar to the sump near Adit 3, which may not be part of the FOR system, we understand there are additional sumps that are located between the tank gallery and the underground pump house. Will those sumps be cleaned as well?*

    Response: All sumps below the lower tank gallery are groundwater sumps. The fuel pipelines in the vicinity of these sumps are inspected on a daily basis as part of the facility operation, and there is no evidence to suggest any release of fuel from these pipelines. The Navy does not intend to clean these groundwater sumps as there is no evidence that these sumps currently or have ever contained fuel. Furthermore, there is continuous flow of groundwater into these sumps, so they cannot be isolated for cleaning.

23. ***Page 18, 3.3 Table of Tank and Sump History/Dimensions:*** *If the FOR sump near Adit 3 is the main containment sump located near Tanks 1 and 2, please confirm the volume of the sump. In addition, three surge tanks are not part of the scope for tank cleaning, however, all four surge tanks currently contain fuel. Please explain.*

    Response: The volume of the main sump is approximately 425 gallons. Fuel in all four surge tanks will be removed, and the four surge tanks will be cleaned using the methods described in Supplement 1.

24. ***Page 19, 3.4.2 Flowable Tank Bottom and Sludge:*** *Please provide the referenced technical specification 01 14 00.05 20.*

    Response: The referenced specification section has been replaced in a revised version of the draft contract documents for tank cleaning. See attached UFGS Section 01 14 00.

25. ***Page 20, 3.5.2 Rinsate Removal and Disposal:*** *Will aboveground storage tank (AST) 311 be emptied prior to cleaning the bulk fuel tanks? Or will rinsate from the bulk fuel tanks mix with the contents currently in AST 311?*

    Response: Rinsate from the bulk fuel tanks will mix with contents in Tank S311. Liquid in Tank S311 will be treated at the FOR Facility (FORFAC) or properly disposed of by the Navy's tank cleaning contractor.

26. ***Page 20, 3.5.4 Washing:*** *This section mentions rinsing and power washing. Does the Navy intend to use rinsing or power washing as the primary cleaning method?*

    Response: The Navy will use power washing as the primary cleaning method.

27. ***Page 21, 3.5.5 Wash Water, Detergent Solution, and Sediment Removal:*** *For larger tanks, this section specifies using the FOR line and Tank 311. We understand there may be some reconfiguration of the FOR system during defueling. The DOH recommends coordinating the final FOR line configuration with the JTF-RH to ensure tank cleaning plans are prepared appropriately.*

    Response: The Navy will coordinate with JTF-RH as recommended to ensure proper FOR line configuration during tank cleaning.

28. ***Page 21, 3.5.5 Wash Water, Detergent Solution, and Sediment Removal:*** *This section states rinsate from the surge tanks and sumps will be continuously pumped out. Please identify where the rinsate will be pumped from and to what container/location.*

    Response: In the body of Supplement 1, Section 3.2 "Waste Removal and Accumulation" describes the handling of rinsate. In summary, the contractor may use the FOR line to move the oily wastewater and spent tank cleaning solution to the FOR tank (Tank S311). As an alternative, previous contractors have used a temporary, flexible pipe to collect rinsate in 275 gallon Intermediate Bulk Container (IBC) totes or 55 gallon drums. The contractor work plan (approved by the Navy) will provide additional detail.

29. ***Page 21, 3.5.5 Wash Water, Detergent Solution, and Sediment Removal, item a:*** *This item references a "paragraph entitled 'Water, Sediment, and Sludge Analysis." We were unable to locate this paragraph.*

    Response: The paragraph titled "Water, Sediment, and Sludge Analysis" was included as Section 3.5.3 in the Statement of Work for the tank cleaning contract. This paragraph says the following:

    > In the contract documents, the Navy will task the Contractor to independently test the water, sediment, and sludge in accordance with 40 CFR 261. Submit laboratory reports to the Contracting Officer describing sampling and testing procedures used, test results, and findings. If the Contractor's tests determine that the water, sediment, and sludge are hazardous, then the hazardous wastes must be packaged, labeled, stored, transported, treated and disposed of in accordance with 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265, and 40 CFR 266. Transporters, storers, treaters and disposers must be certified and have EPA ID numbers. Payment for disposal of hazardous waste will not be made until a completed hazardous waste manifest from the treatment or disposal facility is returned, and a copy furnished to the Government. Nonhazardous or hazardous wastes must be handled and disposed of as described below.

30. ***Page 21, 3.5.5 Wash Water, Detergent Solution, and Sediment Removal, item b:*** *The sludge and sediment must be characterized for proper disposal. Please provide copies of the results when testing is complete.*

    Response: As requested, the Navy will provide copies of the results once analyses are complete.

31. ***Page 21, 3.6 Sump Cleaning:*** *The specifications mention cleaning the sumps to pass UV visual inspection. In addition to our previous comments on the applicability of UV testing for jet fuel, we question the effectiveness of UV testing the sumps, which may not have smooth surfaces. Please explain.*

    Response: UV fluorescence works effectively on rough surfaces, and can even be used in soils, as documented in the references included with the Standard Operating Procedures enclosed with Supplement 1. The sensitivity of UV light for detecting petroleum products is quite high, so even if the surface is not smooth, small pockets of petroleum products will still cause noticeable fluorescence.

32. ***Page 23, 3.6.3.1 Sludge Disposal Using Landfill:*** *For non-hazardous waste disposal into a municipal solid waste landfill, the waste must also meet landfill bulk liquid restriction requirements. In addition, landfill approval for acceptance should be obtained prior to delivery.*

    Response: Contract documents will require the cleaning contractor to comply with these requirements.

33. ***Page 23, 3.6.7 Disposal of Used Blasting Abrasive:*** *The hazardous waste determination must be made in accordance with State hazardous waste regulations.*

    Response: The Navy does not anticipate the use of blasting abrasive. Contract documents will require the contractor to provide supporting data and make recommendations in order for the Navy to make hazardous waste determinations, in compliance with state and federal regulatory requirements.

ENCLOSURE 2: ***RED HILL BULK FUEL STORAGE FACILITY, STANDARD OPERATING PROCEDURES FOR VISUAL MONITORING TO VERIFY TANK CLEANING COMPLETION***

Specific Comments

34. ***Page 1, I. General Provisions:*** *The third bullet states "[t]his SOP [Standard Operating Procedure] is modeled after 'California Code of Regulations Title 23 § 2642 – Visual Monitoring' (Cal. Code Regs. Tit. 23, § 2642) which describes procedures for visual inspection of underground storage tank for hazardous substances." This regulation appears similar to Hawai'i's UST regulations associated with walk-through inspections. Hawai'i's walk-through inspection requirement is for operational tanks and is not related to tank cleaning or tank closure. Please describe how this California regulation would apply to determine when the tank interiors are clean.*

    Response: The attached presentation "UV_Supp 1 Summary & Additional Info.pdf," describe how the UV light method proposed for Red Hill is based on California and Hawaii regulations. In summary, the proposed UV method involves a visual determination of the presence or absence of fuel.

35. ***Page 1, I. General Provisions:*** *The fourth bullet states "[a]pplication of ultraviolet light to induce fluorescence and identify petroleum products during visual monitoring is based upon approved field screening procedures accepted by State of Hawaii Department of Health's (HDOH) Hazard Evaluation and Emergency Response (HEER)." However, the DOH, Technical Guidance Manual (TGM) cited only describes using UV to identify petroleum in soil and groundwater, not on tank surfaces for cleaning. Please:*

    a) Explain how this technology will be used for tank surfaces;

    Response: A laser is needed to excite petroleum in soil and groundwater, but a UV floodlight will work in the open air setting of a tank. Thus, the UV approach is simpler for tank surfaces than for soil and groundwater, but the concept of UV fluorescence of petroleum remains the same in each case.

    b) Identify examples of equipment and corresponding specifications that may be used to perform this work;

    Response: As described in the attached presentation, "UV_Supp 1 Summary & Additional Info.pdf," the UV light source will be a floodlight that produces UVA light in the range of 320 to 400 nm. Such light sources are commercially available as handheld lamps. The tank cleaning contractor will select the specific UV instrument and demonstrate its ability to excite the specific fuel products (F-76, F-24, and JP-5) in the Red Hill tanks.

    c) Provide examples of this technology being used for similar applications; and

    Response: UV fluorescence is widely used in the food and drug industry to verify the cleanliness of processing tanks. UV fluorescence is also used to identify petroleum in soil and groundwater.

    d) Explain how the Navy will ensure the equipment is operated by highly trained technicians familiar with the technology and its application.

    Response: Contract documents will require the contractor to provide consistent training to inspectors. Since the UV method is based on a basic determination of presence or absence of fluorescence, the training process will be straightforward.

36. ***Page 1, I. General Provisions:*** *The DOH-TGM referenced in the fourth bullet specifically provides the following recommendations for using screening tools: 1) Conduct an initial site-specific evaluation of this method; and 2) conduct laboratory confirmation data for formal decision making. Explain how these recommendations will be accomplished for this project.*

    Response: The following evaluations will be performed to address the DOH-TGM recommendations:

    - The Navy will conduct a benchtop laboratory study of two of the three Red Hill fuel types (F-76 and JP-5) on small steel plates using UV equipment producing UVA light in wavelengths ranging from ~320nm to ~400nm.
    - The Navy will conduct a large scale study of two Red Hill fuel types (F-76 and JP-5) to identify the distance from which the UV light can produce fluorescence on a thin layer of fuel (approximately 1 mil [0.001 inch]) on large steel plates. This distance will be the "effective distance" of the light. Depending on the results, more than one UV floodlight may be tested in order to identify an optimal UV floodlight.
    - The tank cleaning contractor will use the optimal UV floodlight in one of the Red Hill surge tanks to

demonstrate effectiveness of the UV method on actual Red Hill fuel. Please note this effort depends on the timing of surge tank defueling and the contractor having access to a surge tank.

- The tank cleaning contractor will apply the UV floodlight in each of the surge tanks and each of the large storage tanks to field verify the effectiveness of the method prior to beginning the cleaning of each tank.

37. ***Page 2, II. Inspection & Enforcement Overview:*** *The sixth bullet in this section states if standing liquid is observed at the base of the tank, inspection personnel will use a bailer to collect a sample and record a description of the sample. What would the source of water be, if the tank cleaning specifications require the tanks to be dried after rinsing? Will the liquid sample be tested, and if yes, what method and reporting requirements will be followed?*

Response: The Navy agrees that standing liquid is unlikely to be present at the base of the tanks. We will delete this bullet from the SOP.

38. ***Page 3, III. Visual Monitoring Program:*** *During the report inspection, the contractor should also indicate the type of fuel and location of any detections.*

Response: As recommended, the contractor will indicate the type of fuel and locations of detection on the inspection form.

39. ***Page 3, III. Visual Monitoring Program:*** *The second bullet states, "[p]rior to use, UV light instruments must be demonstrated to be capable of producing fluorescence on a fuel contaminated surface from a distance of 25 feet." Please explain:*

a) Why the distance of 25 feet was chosen;

Response: The Navy chose the distance of 25 feet as a conservative starting point. During the testing efforts (described in the response to Comment 36), the "effective distance" of the UV equipment will be determined.

b) What the Navy plans to do if 25 feet is not achievable, or if the process does not work;

Response: As described in the response to Comment 36, the Navy will conduct a large scale study to determine the actual "effective distance" of the UV flood light, and this distance may be less than 25 feet. Prior to tank cleaning, the tank cleaning contractor will test the effective distance in each tank, and make adjustments if necessary. During the QC process, the contractor will apply the UV light from a distance less than the effective distance.

c) To what standard the equipment will be able to identify the presence of petroleum; and

Response: The standard will be as follows: the UV floodlight(s) must produce fluorescence on a thin layer of fuel (approximately 1 mil [0.001 inch]) for each of the 3 fuels (F-76, F-24, and JP-5) from the effective distance in each tank.

d) How environmental impacts were considered in choosing the detection standard.

Response: In collaboration with DOH and EPA during Closure Technical Working Group conference calls

on May 19, May 25, and June 15, 2023, the Navy chose the detection standard (described above) to demonstrate the tanks are clean and eliminate environmental impacts.

40. ***Page 3, VI. Supplemental Material: Theory of Operation for Fluorescence Screening:*** *The last paragraph states, "[g]iven the proven application and scientific study of fluorescence screening to identify petroleum-based contamination in the field of environmental restoration and within the state of Hawaii, this tool is well supported for its application as visual monitoring tool to verify completion of tank cleaning." As previously mentioned, the DOH-TGM cited in this enclosure only discusses applying this technology to subsurface contamination. The TGM does not discuss using UV for tank cleaning, nor does it describe equipment besides those used for direct push rigs. Thus, more information is needed to understand how this technology and available equipment can be applied to determine whether the tanks are appropriately cleaned.*

Response: The Navy provides additional information in responses to Comments 35 through 39 and in the attached presentation, "UV_Supp 1 Summary & Additional Info.pdf." In summary, a laser is needed to excite petroleum in the subsurface, but a UV floodlight will work in the open air setting of a tank. Thus, the UV approach is simpler for tank surfaces than for soil and groundwater, but the concept of UV fluorescence of petroleum remains the same in each case.

ENCLOSURE 3: *STATEMENT OF WORK, RED HILL BULK FUEL STORAGE FACILITY PIPELINE CLEANING, JOINT BASE PEARL HARBOR HICKAM, PEARL HARBOR, HAWAII*

General Comments

41. *This statement of work is performance-based, and thus leaves the means and methods to the contractor. There are several submittals mentioned that will require the DOH's review and approval prior to commencing work, including, but not limited to: work plan, project pigging plan, environmental protection plan (including spill prevention and response plan), plan to assess pipeline cleanliness, design quality control plan, and pipeline inspection completion report. In the project schedule (Enclosure 4), include estimated dates when the DOH can expect these submissions, and include estimated review times.*

Response: The Navy has proposed the removal of the three large-diameter fuel pipelines (subject to regulatory approval) as described in Section 2 of Supplement 2 (submitted May 31, 2023), rather than clean them and close them in place. As requested, the Navy will develop a schedule of submittals for DOH and EPA review and concurrence.

42. *How will the FOR line be cleaned? This statement of work (SOW) does not appear to apply to the FOR line. If it is intended to apply, then the FOR line should be added to the scope. If it does not apply, how will the FOR be cleaned?*

Response: At the end of the closure process, the Navy will clean the FOR line using the pipeline cleaning approach described in the Tank Closure Plan, submitted November 1, 2022. In summary, the FOR line will be cleaned by ventilation for an amount of time sufficient to remove fuel vapors and trace contaminants.

43. *This SOW does not mention forced air ventilation but Section 2.4 of Supplemental 1 does. Will this work be performed by a different contractor?*

Response: As stated above, the Navy has proposed the removal of the three large-diameter fuel pipelines

(subject to regulatory approval) as described in Section 2 of Supplement 2 (submitted May 31, 2023), rather than clean them and close them in place. The pipeline removal work will be performed by a separate contract from the tank cleaning contract.

Specific Comments

44. ***Page 1, 3.C.2 Background:*** *The plan assumes the maximum operating pressure of the pipeline is 275 psig (pounds per square gauge). Please coordinate with the JTF-RH on the applicable maximum operating pressure, as appropriate.*

    Response: The three large-diameter fuel pipelines will no longer be used following defueling, so maximum operating pressure is no longer applicable.

45. ***Page 14, 5.12.4 Waste Disposal:*** *This section does not mention a waste disposal plan, but the contractor will be responsible for disposal of waste. The waste disposal plan should also discuss how waste will be collected and stored prior to disposal.*

    Response: The Navy and the contractor will be responsible for disposal of waste, and Section 3 of the body of Supplement 1 describes waste management procedures, in compliance with state and federal regulatory requirements. Following contract award, the tank cleaning contractor will provide to DOH and EPA a detailed waste management plan.

ENCLOSURE 4: ***CRITICAL PATH METHOD SCHEDULE: GANTT CHART AND NETWORK DIAGRAM***

General Comments

46. *There are no dates on the Gantt chart other than a general timeline at the top, so we are unable to locate specific dates without cross-referencing task IDs on the network diagram, which itself is difficult to read given the scale. Would it be possible to provide two schedules – one at a high-level and one with detail? A high-level schedule would also benefit the public. For example, we understand the Navy is preparing an easily readable schedule of the Nakupuna Companies beneficial reuse study, based on feedback from the community.*

    Response: The Navy is currently updating the Gantt chart to provide the requested information, and we will provide a copy to DOH and EPA and DOH once the update is complete.

47. *Based on the other enclosures, there are a number of plans contractors must provide to the Navy and DOH for review and approval before work can proceed. Submission dates and time to review these products must be incorporated into the schedule.*

    Response: As requested, the Navy will incorporate these submission dates and review times into the schedule, which will be provided in the updated Gantt chart.

48. *Enclosure 5 mentions "a later supplement focusing on the Site Assessment and Release Investigation and Response aspect of tank closure" (page 4). We assume this refers to a future Tank Closure Plan –*

Supplement 3 (Supplement 3), as we understand the upcoming Tank Closure Plan - Supplement 2 will focus on the third-party structural analysis. If this is correct, add Supplement 3 and the DOH's review of Supplement 3 to the schedule. Submission of Supplement 3 should also be added to "Appendix A: Updated Plan of Action and Milestones" in Supplement 1 (page 18).

Response: As noted in the response to Comment 1, the Navy will develop the site assessment plan in the UFP-QAPP format. The UFP-QAPP process will include preliminary scoping sessions among the Navy, DOH, and EPA to determine assessment details and data requirements. This will be a significant effort, and the Navy anticipates submitting the UFP-QAPP as Supplement 4, at a date to be determined. The Navy is currently working to update the detailed Gantt chart schedule, and will also update Appendix A as requested.

49. *The schedule indicates vents will be secured. What does this mean, and how will it affect condensate generation and air flow through the tanks?*

Response: The Navy will secure each of the vents by shutting a valve in the upper access tunnel adjacent to each tank. If necessary, vents can be reopened to address condensation and provide air flow. The Navy notes that Tank 19 has been constantly ventilated, and the tank has remained dry for many years, so condensation has not been an issue. Tank 1 has not been ventilated, and it contained water in the bottom when it was last opened. Further investigation will be required to determine the source of the water in Tank 1.

Specific Comments

50. ***ID 8:*** *This item states "NEPA [National Environmental Policy Act] Compliance for Defueling" occurs from December 2, 2022 to January 5, 2024. However, the JTF-RH's press release, dated March 14, 2023, states NEPA review will occur from March 20, 2023 to August 31, 2023. Please clarify.*

Response: The press release schedule is correct. Both JTF-RH and Defense Logistics Agency (DLA) expect the NEPA environmental assessment process to be complete by August 31, 2023. The Navy is currently updating the schedule so it is aligned with the dates in the press release.

51. ***ID 9:*** *We understand, based on a meeting with the Navy and EPA on March 9, 2023, a "Final Closure Alternates Report" will not be submitted because the Red Hill Tank Closure Plan Analysis of Alternatives & Concept Design to Close In Place (Analysis of Alternatives) provided on December 22, 2022 is a final document. Please update the schedule accordingly.*

Response: The Navy will update the schedule as recommended.

52. ***ID 13:*** *The network diagram indicates the DOH received Supplement 1 on February 14, 2023. Please correct this to February 28, 2023.*

Response: The Navy will make this correction.

53. ***ID 14:*** *There is no time allotted for the DOH's review and comment of the upcoming Tank Closure Plan - Supplement 2. Please add this to the schedule.*

Response: The Navy will add DOH review time as requested.

54. ***ID 45 through ID 394:*** *We understand the Navy is leaving the tank cleaning schedule to the tank cleaning contractor. However, given that the current schedule indicates cleaning will take two years, we reiterate our previous comment to prioritize cleaning the tanks that contain fuel over the tanks that are empty and may not require additional cleaning.*

    Response: The Navy will prioritize cleaning of the tanks that were emptied of fuel during defueling, rather than tanks that have long been empty and may not require additional cleaning. Ultimately, the tank cleaning contractor will recommend the most efficient order for cleaning the tanks.

55. ***ID 451:*** *A plan for site assessment work that addresses our previous comments has not yet been provided, nor a date for when it will be submitted. Please include this in the schedule. We are, therefore, unable to provide detailed comments on this aspect of the proposed schedule at this time. We note, however, the schedule does not appear to include time for field work to conduct the site assessment and only provides a due date for the Site Investigation Report. This portion of the schedule will need to be revised pending submission of the site assessment plan.*

    Response: The Navy will provide the recommended updates to the schedule.

56. ***ID 459:*** *The sumps are scheduled to be closed in early 2025, but the last tank to be cleaned (Tank 20) is scheduled for cleaning in 2026. This timing does not make sense because the Tank Closure Plan proposes to use the sumps to drain rinsate from the tanks as they are cleaned. Explain this scheduling.*

    Response: The Navy will correct the schedule to show the sumps will not be closed until all tanks are cleaned.

57. ***ID 459:*** *Should time be allotted for cleaning the FOR lines, or has this time been included with another line item?*

    Response: The Navy is currently updating the Gantt chart, and time will be allotted for cleaning the FOR lines after tank cleaning is complete.

58. ***ID 466:*** *Should the Hazardous Waste Accumulation Area be scheduled for closure before all of the sludge is removed from the tanks? Currently, Tank 20 is not scheduled to be cleaned until 2026, whereas the Hazardous Waste Accumulation Area will be closed in early 2025. If cleaning priority is given to tanks with sludge in them, then perhaps, the Hazardous Waste Accumulation Area can be closed sooner.*

    Response: The Navy will address these questions and recommendations during the update of the Gantt chart.

ENCLOSURE 5 – *RESPONSES TO 11 JAN 2023 DOH COMMENTS ON THE TANK CLOSURE PLAN*

Specific Comments

59. ***Comment 1:*** *After reviewing the Tank Closure Plan and Analysis of Alternatives, the difference(s) between Alternatives 1 (Closure in Place) and 2 (Closure in Place for Potential Non-Fuel Reuse of Tanks) remains unclear. Until the Navy provides sufficient clarity, the DOH will assume Alternative 1 represents closure in place with no beneficial reuse (such that the closure design will be incorporated in the upcoming Tank Closure Plan - Supplement 2 structural analysis), and Alternative 2 represents closure in place with beneficial use (such that the closure design will depend upon the beneficial reuse selection). Being that the Navy is already seeking public input for potential beneficial reuse options, it is unclear why the Navy has chosen to request approval for Alternative 1 before completing the beneficial use study.*

    Response: In order to create an approach that could be analyzed under Alternative 2, the Navy assumed the tanks would be used to store products other than fuel. The Analysis of Alternatives notes, "If a different reuse is ultimately selected, the coating proposed under this alternative may not be needed. As a result, there is significant uncertainty in the schedule and level of effort for this alternative." The Navy has requested approval for Alternative 1 because Closure in Place is a necessary starting point for any beneficial non-fuel reuse option.

60. ***Comment 2:*** *The response states "[a] significant advantage of Closure in Place is that it will allow the greatest flexibility for beneficial non-fuel reuse of the tanks." This is concerning because creating flexibility also means future administrations could reopen the Facility. The DOH cannot approve a Tank Closure Plan until the Navy defines what steps it will take to render the Facility unusable for future hazardous substance storage.*

    Response: Section 2 of Supplement 2 (submitted May 31, 2023) describes the Navy's proposal to remove the three large-diameter fuel pipelines (subject to regulatory approval), thereby rendering the tanks incapable of being used again for storage of fuel or hazardous substances. Pipeline removal will not limit the options for beneficial non-fuel reuse because new pipelines would need to be designed and installed to support any reuse that required piping.

61. ***Comment 4:*** *The Navy's response specifies the FOR lines will be used throughout the closure process to collect rinsate from the tanks as they are cleaned. While it is stated the sumps will be cleaned after use, there is no discussion of whether the FOR lines or the above ground tank will be cleaned. Please clarify.*

    Response: The Navy will clean the FOR line and above ground tank at the end of the closure process.

62. ***Comment 5:*** *The response states "[t]he Navy is submitting Supplement 1 in order to provide the requested details on tank and pipeline cleaning." The enclosures in Supplement 1 are performance specifications for contractors that will ultimately determine the means and methods of performance. While the specifications provide some information, the DOH will need to review and approve the contractors' detailed plans before work can begin.*

    Response: As noted, the Navy will provide the contractor work plan for DOH review and comment before the work begins. The work will be performed in compliance with state and federal regulatory requirements.

63. ***Comment 6:*** *The information provided in the Tank Closure Plan is only limited to work currently on-going in the Tank Gallery and Adit 3 area. The potential for additional site characterization work in this area should be considered after defueling and tank cleaning, as previous efforts were limited due to concerns of*

creating preferential pathways for future releases. In addition, the site assessment for the purposes of closure is not limited to the location of past known releases but should include the entire UST system.

Response: The Navy will consider these comments during development of the site assessment plan, which will be written in the required UFP-QAPP format and will include preliminary scoping sessions among the Navy, DOH, and EPA to determine assessment details and data requirements.

64. ***Comments 8:*** *The response mentions "a later supplement focusing on the Site Assessment and Release Investigation and Response aspect of closure." The DOH cannot approve the Tank Closure Plan before reviewing this submittal. Please update the schedule to identify when the site assessment plan will be submitted.*

    Response: The Navy is currently working to update the schedule as requested.

65. ***Comment 15:*** *The response states "[t]he Navy will take the appropriate steps (i.e. tanks and pipeline are clean and remain in place and surge tanks are filled with inert material) to render the tanks unusable for fuel storage...." These steps will only render the surge tanks – but not the fuel tanks – unusable for fuel storage. We look forward to receiving a proposal from the Navy that demonstrates how the fuel storage tanks and pipeline will also be rendered unusable for fuel and other hazardous material storage.*

    Response: The Navy has proposed the removal of the three large-diameter fuel pipelines (subject to regulatory approval) as described in Section 2 of Supplement 2 (submitted May 31, 2023), thereby rendering the tanks incapable of being used again for storage of fuel or hazardous substances.

66. ***Comment 16:*** *The cost comparison provided in the Analysis of Alternatives did not provide much additional clarity from the Tank Closure Plan because a beneficial reuse has not yet been proposed.*

    Response: The Analysis of Alternatives was intended to provide rough order of magnitude costs associated with each of the four tank closure alternatives, as requested by DOH during the July 14, 2022, Meet and Confer session between DOH and Navy. Most importantly, the Navy did not consider cost as a factor in selecting the preferred alternative of Closure in Place. Instead, the Navy chose Closure in Place because it provides the safest approach for site workers, the quickest schedule, and the least impact on the environment and local community, while having no significant constraints on engineering feasibility and allowing the potential for beneficial non-fuel reuse of the tanks. The Navy can develop a refined engineering estimate upon regulatory approval of the proposed alternative of closure in place.

67. ***Comment 17:*** *No details on long-term maintenance plans or structural inspections were provided in the Analysis of Alternatives. We expect greater detail as to what will be involved in these inspections to be included with the structural stability analysis in the upcoming Tank Closure Plan – Supplement 2, along with the consultant's recommended frequency.*

    Response: The Navy has provided some of the requested detail on structural inspections in Section 3 of Supplement 2 (submitted May 31, 2023), which contains an analysis of the long term structural stability of the tanks and general recommendations for post closure maintenance and inspections. Further details concerning long-term maintenance will be provided in a future supplement.

68. ***Comment 20:*** *The response states "[t]he Navy is not proposing to clean Tanks F-13, F-14, F-17, and F-18 again because these tanks were cleaned previously using the Clean, Inspect, Repair (CIR) process, which involves a rigorous cleaning, accompanied by testing to show the tanks are safe for worker occupancy." The purpose of cleaning at that time was maintenance rather than closure. Explain and justify the continued applicability of the same cleaning process. We understand the Navy intends to use similar methods to clean tanks that currently contain fuel, followed by a UV method to determine if they are clean. Please the explain the inconsistency of not using the UV testing method on previously cleaned tanks.*

    Response: During the Clean, Inspect, Repair (CIR) process, Tanks F-13, F-14, F-17, and F-18 were cleaned in accordance with American Petroleum Institute Recommended Practices (API RP) 2016 "Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks," API Std 2015 "Safe Entry and Cleaning of Petroleum Storage Tanks", and Unified Facilities Guide Specifications (UFGS) Section 33 01 50.55. Since these tanks were not refilled with fuel, they remain clean and ready for closure. For consistency, the Navy will perform UV inspections for Tanks F-13, F-14, F-17, and F-18 and follow up with additional cleaning if UV fluorescence indicates the presence of petroleum residual within the tanks.

69. ***Comment 22:*** *Waste must be characterized for disposal. However, if the FOR line and sumps are part of the UST system, in accordance with chapter 11-280.1, Hawai'i Administrative Rules, the UST system must be cleaned as part of permanent closure or change in service.*

    Response: The Navy will clean the FOR line and the associated above ground tank (Tank S311) at the end of the closure process.

70. ***Comment 29:*** *The Analysis of Alternatives did not provide sufficient detail to fully define what "Closure in Place" entails. It did not provide a description of what infrastructure will remain as necessary for structural support while removing all others, nor does it describe how fuel or other hazardous substances will be prevented from being stored in the system, such as filling the nozzles with concrete. Please provide this information or indicate when it will be available.*

    Response: As requested, the Navy will submit the full closure design to DOH and EPA in Supplement 3, at a date to be determined. The Navy has proposed the removal of the three large-diameter fuel pipelines (subject to regulatory approval) as described in Section 2 of Supplement 2 (submitted May 31, 2023), thereby rendering the tanks incapable of being used again for storage of fuel or hazardous substances.

71. ***Comment 31:*** *The response states some tanks have already been cleaned in accordance with API RP 1604 as part of the CIR process. However, the purpose of cleaning at that time was for maintenance rather than closure. Explain and justify the continued applicability of the same cleaning process. In addition, similar cleaning processes are proposed for tanks that currently contain fuel, and these tanks will be UV tested to determine whether they are clean. Why are these tanks treated differently from previously cleaned tanks?*

    Response: Please see response to number 68, Comment 20 above.

72. ***Comment 32:*** *Please include the submission of a third-party Quality Assurance Plan and time for the DOH's review in the schedule.*

Response: The Navy will include this submission in the schedule as requested.

73. ***Comment 33.a:*** *The response states "the tank closure contractor will determine the sequence for cleaning the tanks and will be responsible for preventing or addressing any accidental contamination." We assume this information will be provided in the contractor's work plan, which the DOH will receive for review and approval.*

    Response: The assumption is correct, and the Navy will submit the contractor's work plan for DOH review and comment.

74. ***Comment 34:*** *The DOH has not approved a cleaning method for pipelines for the purposes of defueling. Perhaps, this response is referring to unpacking rather than cleaning. We note that about eight inches of fuel has been trapped in a relatively flat portion of piping. Thus, additional verification measures, some of which were mentioned in Supplement 1, are required to ensure fuel has been completely removed prior to cleaning.*

    Response: The Navy has proposed the removal of the three large-diameter fuel pipelines (subject to regulatory approval) as described in Section 2 of Supplement 2 (submitted May 31, 2023), rather than clean them and close them in place as described in Supplement 1. Prior to pipeline removal, fuel will be removed from low points and relatively flat portions of the piping.

75. ***Comment 38:*** *The response mentions that the performance standard requires continuous removal of liquid from the tanks either through the FOR line or placement into totes. However, we could not find the alternative use of totes or the limitation of head on the tank bottom in Enclosure 3.*

    Response: In the body of Supplement 1, Section 3.2 "Waste Removal and Accumulation" describes the removal of liquids from the tanks. In summary, the contractor may use the FOR line to move the oily wastewater and spent tank cleaning solution to the FOR tank (Tank S311). In addition, this section notes that previous contractors have used a temporary, flexible pipe to collect rinsate in 275 gallon Intermediate Bulk Container (IBC) totes or 55 gallon drums. Since the cleaning solution will be continuously removed, little to no head is expected to be created in the tank bottom. The contractor work plan (approved by the Navy) will provide additional detail.

76. ***Comment 40:*** *Please be reminded that the FOR line may be reconfigured. The closure team should coordinate with the JTF-RH on the status of the FOR line during the transition from the defueling phase to the closure phase to ensure that the infrastructure can still be used for cleaning activities, as necessary.*

    Response: The Navy closure team will coordinate with JTF-RH as recommended.

77. ***Comment 48:*** *We do not understand why Alternative 2 is labeled as "Closure In Place & Preparation for Non-Fuel Reuse" in the Analysis of Alternatives. How can the Navy prepare for a non-fuel reuse without knowing what the reuse will be?*

Response: In order to create an approach that could be analyzed under Alternative 2, the Navy assumed the tanks would be used to store products other than fuel. The Analysis of Alternatives notes, "If a different reuse is ultimately selected, the coating proposed under this alternative may not be needed. As a result, there is significant uncertainty in the schedule and level of effort for this alternative."

78. ***Comment 50:*** *We disagree with the statement that the Analysis of Alternatives "contains information that completely describes and evaluates the alternatives." As stated in our comments for that submittal, the evaluation is only cursory.*

Response: The Navy developed the Analysis of Alternatives with sufficient detail to compare the four approaches and select the preferred alternative. The Navy will continue to work with DOH and EPA as more information becomes available, and we will provide additional details in response to your specific questions and comments.

79. ***Comment 53:*** *The response states "[t]he Navy expects to perform post-closure monitoring and maintenance of the tanks." Noting that past submissions did not provide details on these subjects, when will the DOH receive this information?*

Response: The Navy has provided some of the requested detail on structural inspections in Section 3 of Supplement 2 (submitted May 31, 2023), which contains general recommendations for post closure maintenance and inspections. Further details concerning long-term monitoring and maintenance will be provided in a future supplement, at a date to be determined.

80. ***Comment 60:*** *The response did not address our comment because the Analysis of Alternatives did not provide all of the requested information.*

Response: Comment 60 addresses Alternative 3: Closure with Fill and asks about the type of fill material, where it would come from, and whether or not the source has sufficient quantities to fill the twenty 12.5-million-gallon tanks and four 420,000-gallon surge tanks. The Navy response provided the information we had at the time. The Navy will continue to work with DOH and EPA as more information becomes available, and we will do our best to respond to your specific questions and comments.

81. ***Comment 61:*** *The response did not address our comment because the Analysis of Alternatives did not consider long-term operations and maintenances.*

Response: Estimates of procedures and cost for post-closure monitoring and maintenance were beyond the scope of the Analysis of Alternatives; however, the report does provide rough order of magnitude costs associated with each of the four tank closure alternatives, as requested by DOH during the July 14, 2022, Meet and Confer session between DOH and the Navy. Most importantly, the Navy did not consider cost as a factor in selecting the preferred alternative of Closure in Place. Instead, Closure in Place was chosen because it provides the safest approach for site workers, the quickest schedule, and the least impact on the environment and local community, while having no significant constraints on engineering feasibility and allowing the potential for beneficial non-fuel reuse of the tanks. The Navy can develop a refined engineering estimate upon regulatory approval of the proposed alternative of closure in place.