REGION 9
SAN FRANCISCO, CA 94105

November 20, 2023

**VIA ELECTRONIC MAIL – READ RECEIPT REQUESTED**

Rear Admiral Stephen Barnett
Commander
Navy Closure Task Force – Red Hill
850 Ticonderoga Street, Suite 110
Joint Base Pearl Harbor-Hickam, Hawaii 96860-5101
stephen.d.barnett.mil@us.navy.mil

Re: Comments on Work Plan, Environmental Protection Plan with Spill Response Plan, and Waste Management Plan regarding Fuel Storage Tank Cleaning for Closure

Dear Rear Admiral Barnett,

The United States Environmental Protection Agency Region 9 (EPA) has received three submissions by the United States Navy Region Hawai'i (Navy) regarding fuel storage tank cleaning for the proposed closure of the Red Hill Bulk Fuel Storage Facility (RHBFSF). EPA understands that tank cleaning activities are planned for the 14 Red Hill tanks that still held fuel when defueling began on October 16, 2023, as well as four surge tanks, the main sump, and sump 7 at Joint Base Pearl Harbor-Hickam (JBPHH). Navy estimates these activities will generate up to 44,000 gallons of non-flowable sludge and up to 524,000 gallons of oily water or tank wash water.

Navy first submitted a Work Plan, an Environmental Protection Plan with Spill Response Plan, and a Waste Management Plan on October 4, 2023. Navy submitted the same files with updated Controlled Unclassified Information (CUI) labels on October 11, 2023. EPA has completed its review of all three plans and prepared the enclosed comments seeking additional information related to tank cleaning.

Please respond by December 22, 2023. If you seek any clarification upon reading the enclosed comments, please contact Drew Suesse (808-539-0545, suesse.andrew@epa.gov).

Sincerely,

/s/
Amy C. Miller-Bowen, Director
Enforcement and Compliance Assurance Division

Enclosures: (1) Comments on Clean Fuel Storage Tanks for Closure – Work Plan (October 11, 2023)

(2) Comments on Clean Fuel Storage Tanks for Closure – Environmental Protection Plan with Spill Response Plan (October 11, 2023)

(3) Comments on Clean Fuel Storage Tanks for Closure – Waste Management Plan (October 11, 2023)

cc: CAPT Marc Williams, Navy Closure Task Force – Red Hill [email only]
CAPT Darrel Frame, U.S. Department of the Navy [email only]
Joshua Stout, U.S. Department of the Navy [email only]
Donald Panthen, U.S. Department of the Navy [email only]
Dan Waddill, U.S. Department of the Navy [email only]
Kathleen Ho, Hawaii Department of Health [email only]

**Enclosure 1 – Comments on Clean Fuel Storage Tanks for Closure – Work Plan (October 11, 2023)**

1. Section 4, "*[S]afety will be maintained through compliance with the Accident Prevention Plan (APP) in addition to health and safety documents*" – Please clarify which entity, contractor, or organization has line authority over the safety of the project.
2. Section 4 DFOW, "*Install liner access system*" – It is unclear what is meant by "liner access system." Is this referring to the scaffolding and boom? Please clarify.
3. Section 4.2, 1(d) & (e) – Provide the location of where concrete pads for equipment and vehicles will be installed. A drawing should be used to outline the proposed site locations.
4. Section 4.2 Electric vehicles, equipment, and lighting systems – Please confirm that all equipment used during tank cleaning is rated for the electrical classification area inside the tanks. Use of electric vehicles will require approval by fire marshal or other appropriate parties.
5. Section 4.2, 14, "*Close tank with the new lockable steel door which will not be airtight*" – Please provide the rationale for using non-airtight, lockable steel doors. While EPA does not disapprove of the use of these doors, it is unclear why this specification was made.
6. Section 4.2.1 Tank Access – This section refers to out-of-date standards. API Recommended Practice 2016 has been merged with API Standard 2015. The latest edition of API Standard 2015 should be referred to in this work plan. Please confirm applicable standard.
7. Section 4.2.4.1 Tank Degassing – The work plan does not specify the LEL and VOC threshold for safe entry. What levels will VOCs and LEL be reduced to during degassing, and what is the basis for these concentrations? Additionally, does Navy have historic VOC data from previous tank cleanings that can provide an expected baseline concentration of an empty tank? EPA recommends testing VOCs prior to the commencement of degassing if anticipated concentrations are unknown.
8. Section 4.2.4.1 Tank Ventilation, "*A 200 HP fan will be staged outside to pull the necessary 10,000 CFM per tank…*" – The specified rate results in one exchange of air within each tank approximately every two hours. What is the basis for concluding 10,000 CFM is the necessary ventilation rate? Please provide supporting calculations. Additionally, Figure 4-4 references a 150 HP fan will be used. Please clarify and/or reconcile.
9. Section 4.2.4.1, "*The piping in the lower tunnel will be disconnected in each alcove...*" – Pipe openings created by disconnecting the pipeline laterals from the tank skin valves should be properly sealed to ensure any residual material cannot escape the piping system. If piping is expected to contain hazardous material, capping of the line needs to meet all local, state, and federal requirements. Please describe what method will be used to cover pipe openings following disconnection. Any capping must allow for the complete cleaning of pipelines (see comment 10, below).
10. Section 4.2.4.1 Tank standpipe and encased pipeline cleaning – It is unclear how Navy intends to clean the fuel pipeline extending from the bottom of the tank to a point within the tank (i.e., standpipe), and the portion of pipeline between the standpipe and the skin valve. Please provide the anticipated method that will be used to clean this line.

11. Section 4.2.4.1, "*[A] structural engineer from Hawaii Engineering Group (HEG) will inspect existing tank catwalk and center tower infrastructure for deficiencies*" – Due to the specialized nature of this work, EPA would like to reiterate the importance of having a licensed structural engineer (S.E.) inspect and approve of the existing and newly installed structures to ensure the safety of all tank cleaning personnel. EPA requests that all inspection reports, conditions assessments, and recommendations from an S.E. be provided for review.
12. Section 4.2.4.1, "*Drums of sludge will be stored in an adjacent alcove within secondary containment*" – It is not clear if this refers to a specific alcove or the area adjacent to each tank. Please provide further detail on the location and the space available for storage of 55-gallon drums. Section 5.1 of the Environmental Protection Plan notes that the typical transport truck can hold 30-40 drums, and this quantity should serve as the maximum stored on site at one time. Will there be sufficient storage in the alcove(s) for this quantity of drums? Based on Navy's estimates, EPA calculates that approximately 55 drums will be generated per tank, or 800 drums in total, for all fuel storage and surge tanks.
13. Section 4.2.4.1, "*Only a visual inspection will be required for a tank to be constituted as 'clean'*" – EPA continues to work with Navy on identifying an acceptable method to certify tank cleanliness. EPA does not agree that visual inspection alone will be a sufficient means of verifying the "removal of all product, vapor, sludge and residual from a tank". Please continue to provide updates and submit a tank cleaning verification plan to EPA once an acceptable method has been determined. When this tank cleaning verification plan is submitted, please address how it will be applied to Red Hill tanks 1, 5, 13, 14, 17 and 18 previously emptied and/or cleaned.

**Enclosure 2 – Comments on Clean Fuel Storage Tanks for Closure – Environmental Protection Plan with Spill Response Plan (October 11, 2023)**

1. Section 5.1, "*Rainwater shall be collected in appropriate containers and treated as if it contains contaminants*" – The document indicates that stormwater will be diverted from wastes and that, to the extent possible, wastes will be covered. Where does Navy expect potentially contaminated rainwater to accumulate? Please clarify.
2. Section 5.1, "*The typical transport truck supplied to transfer drummed waste off-site can hold 30-40 drums. This quantity should serve as the maximum stored on site at one time allowing for the regular removal of waste from the job site*" – How many storage drums can be safely managed onsite in the event there is an interruption in regular removal of waste?
3. Section 5.1, "*Once the sludge has passed all tests and been determined to be nonhazardous, it will be disposed of in a sanitary landfill*" – Not all sanitary landfills are capable or permitted to accept petroleum contaminated sludges. Please identify the specific landfill(s) and confirm the chosen landfill(s) is permitted to receive petroleum sludges and has capacity for the total estimated amount of waste to be generated. EPA calculated the potential number of 55-gallon drums from Navy estimates of 3,000 gallons for each of 14 Red Hill tanks and 500 gallons for each of four surge tanks. Please confirm this assumption.
4. Section 5.2.1, "*Hazardous waste disposal shall be performed at a permitted off-island treatment, storage, and disposal facility*" – Please identify the specific off-island disposal facility or facilities that will receive hazardous wastes generated during the tank cleaning project.
5. Section 5.2.2 – Please identify the specific off-island and on-island disposal facility or facilities that will receive non-hazardous wastes generated during the tank cleaning project.
6. Section 6.2, "*Containment is a catchment area around the potential release source capable of capturing all the contaminants, typically 110% of the largest quantity or container*" Freeboard for precipitation should also be considered for outdoor applications that are not fully covered. Please confirm that either the containment will be covered or there is sufficient capacity to account for precipitation.
7. Section 6.3, "*To control the spread of a spill, the project will evaluate the use of diversion barriers to create spill ways to direct the release away from critical infrastructure such as sumps or drains. The project site is designed to flow fuel downgradient*" – To the extent possible, diversion barriers should avoid creating spill ways that are over soil and instead direct them to paved or concrete surfaces that are relatively impermeable. Please confirm this strategy will be incorporated into the plan.
8. Section 6.4, Sources of Spills, Tank wash water – As described in Section 4.2.4.1 of the Work Plan, all internal structures of the tank interiors will be pressure washed with a mixture of freshwater and Simple Green all-purpose cleaner, then pressure washed again with freshwater. If tank wash water containing Simple Green or other surfactants were released to the subsurface, it could remobilize petroleum from previous spills, mobilize any petroleum bound to concrete between the metal tank wall and the mountain, and/or cause petroleum to migrate unpredictably. Rinsate water should be completely captured, assuring it does not impact existing environmental conditions. Please clarify how Navy

will mitigate this risk and verify that the volume of water used to clean each tank is equal to the volume of rinsate recovered in Tank 311?

9. Section 6.4, Sources of Spills, FOR pipeline, "*Perform visual inspection at necessary intervals during project timeline*" – How will "necessary intervals" be determined? EPA recommends scheduled or routine inspection intervals be used instead.
10. Section 6.6, "*A spill response kit shall contain any applicable tools, equipment, or material necessary for the initial containment and cleanup of a release until additional support can respond to the location. All spill kits at a minimum shall contain the following supplies…*" – EPA recommends that in addition to the spill kit supplies listed, drain cover seals also be included to augment berms for preventing entry into stormwater drains and drywells.

**Enclosure 3 –Comments on Clean Fuel Storage Tanks for Closure – Waste Management Plan (October 11, 2023)**

1. Section 4.0 Waste testing requirements – EPA recommends using knowledge gained during previous tank cleaning operations to help inform and expedite classification of hazardous waste. If waste streams have previously been deemed hazardous, Navy may choose to forgo testing and preemptively classify the waste as hazardous.
2. Section 9.3 Table 5, "*If the less than 90-day accumulation area is not covered…*" – Section 5.2 of the Environmental Protection Plan indicates "containers of liquid must be stored on adequate secondary spill containment under shelter". This commitment appears inconsistent with the language presented in Table 5 of the Waste Management Plan. Please clarify and/or reconcile the language of the two documents.
3. Due to the age and historic use of the facility, it is likely that some storage tanks may have contained different products than the ones most recently held. Best practices suggest the tanks would have been cleaned before the introduction of a new product to avoid contamination. However, it is unknown if residual material from previous products may still be present. Please confirm that tanks have been cleaned prior to storage of the most recent products.