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In reply, please refer to:

September 3, 2024

Rear Admiral Stephen Barnett  
Navy Closure Task Force – Red Hill  
850 Ticonderoga Street, Suite 110  
Joint Base Pearl Harbor-Hickam, Hawaii'i 96860  
[via email only: [stephen.d.barnett.mil@us.navy.mil](mailto:stephen.d.barnett.mil@us.navy.mil)]

Dear Rear Admiral Barnett:

**SUBJECT: Request for Information and Comments on NCTF-RH's  
Draft Site Assessment Pilot Study Work Plan  
Emergency Order Docket Number 22-UST-EA-01**

On August 8, 2024, the Hawaii'i Department of Health (DOH) received the *Draft Technical Memorandum, Site Assessment Pilot Study Work Plan (PSWP), Red Hill Bulk Fuel Storage Facility*, dated July 26, 2024. The PSWP was submitted as part of the Navy Closure Task Force – Red Hill's (NCTF-RH's) site assessment portion of the Closure Plan required under the DOH's May 2022 Emergency Order.

The project schedule in the NCTF-RH's June 2024 site assessment work plan (*Draft Tank Closure Plan, Supplement 3: Phase 1 Site Assessment, Red Hill Bulk Fuel Storage Facility*, hereinafter "SAWP") lists a pilot study scoping meeting with regulators in July 2024, which was never scheduled. However, we still believe it would be beneficial for the NCTF-RH to meet with regulators and discuss the placement and design of this pilot study.

Typically, the first step in evaluating a method intended to detect the presence or absence of fuel is to clearly identify a defined fuel source for the pilot study. The current PSWP does not do this. Thus, **provide documentation within 28 calendar days of receiving this letter that clearly delineates the proposed source zone area(s) for the pilot study**, such as cross-sections, maps, results of soil/rock sampling, vapor sampling, water sampling, geophysical data, and other related investigation information. After the NCTF-RH provides this information, we invite the NCTF-RH to discuss how this understanding of the site can be used to design an efficient and informative pilot study. After this discussion, resubmit the PSWP for the

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DOH's approval or disapproval. In addition, we are providing the enclosed comments to incorporate into the revised PSWP.

If you have any questions regarding this letter or its enclosure, please contact Kelly Ann Lee, DOH Red Hill Project Coordinator, at [KellyAnn.Lee@doh.hawaii.gov](mailto:KellyAnn.Lee@doh.hawaii.gov) or (808) 586-4226.

Sincerely,

*Kathleen Ho*

KATHLEEN S. HO  
Deputy Director for Environmental Health

Enclosure

c (w/encl.) [via email only]:  
Jamie Marincola, EPA  
Ash Nieman, EPA  
Matthew Cohen, EPA  
RDML Marc Williams, NCTF-RH  
Milton Johnston, NCTF-RH  
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Joshua Stout, NCTF-RH

## Enclosure

### DOH Comments on *Draft Technical Memorandum, Site Assessment Pilot Study Work Plan (PSWP), Red Hill Bulk Fuel Storage Facility, received August 8, 2024*

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#### General Comments

1. Throughout the *Draft Technical Memorandum, Site Assessment Pilot Study Work Plan (PSWP), Red Hill Bulk Fuel Storage Facility, received August 8, 2024*, there are procedures without descriptions that only refer to the Navy's internal guidance document. Add descriptions of procedures that will be used. Procedures shall be conducted according to the Hawai'i Department of Health (DOH) Hazard Evaluation and Emergency Response (HEER) Office Technical Guidance Manual (TGM). Any proposed deviation(s) from the DOH HEER Office TGM should be described, with supporting justification.
2. Provide references for any literature reviewed, where these proposed methodologies were evaluated at similar sites. Key site characteristics include volcanic settings, variable fuel distributions and ages, statistical findings of the studies, and how false-negatives were addressed.
3. The DOH is concerned about potential false negatives, i.e., nondetects near an actual fuel source. Therefore, the evaluation of these methods must account for rock and soil properties; ranges of chemical compositions and volatility in the various fuels historically stored in the underground storage tank (UST) system that includes the Red Hill Bulk Fuel Storage Facility; dilution of fuel vapor readings by atmospheric inputs due to barometric, ventilation, or other factors influencing vapor in the subsurface; and effects of biodegradation and other attenuation mechanisms. In the revised PSWP, explain how each of these factors was considered/addressed.

#### Specific Comments

4. **Section 2, PDF page 7:** The three analyses listed in Section 2 do not match what is proposed in the June 2023 *Draft Tank Closure Plan, Supplement 3: Phase 1 Site Assessment Work Plan (SAWP), Red Hill Bulk Fuel Storage Facility*. For example, the SAWP does not clearly state that active soil gas samples will be collected for laboratory analysis of biogenic gases. The SAWP instead states biogenic gases will be measured using field instruments. In addition, according to the SAWP, soil samples will be analyzed for tetraethyl lead and groundwater samples will be collected in the event that groundwater is encountered. Address the discrepancies between Section 2 and the SAWP.
5. **Section 4, PDF page 7:** The pilot study should include an area outside of the tunnel because the tunnel pressurization may have an impact on the effectiveness of the proposed vapor sampling methods. Areas to consider include the former holding and leach tank area and the former oily waste disposal facility, where contamination is known.
6. **Section 5, PDF page 8**
  - a. How does the Navy Closure Task Force – Red Hill (NCTF-RH) plan to compare results from the passive soil gas samplers (PSGS) to results from the active soil gas

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samples collected using summa canisters, when different analytical methods will be used (i.e., TO-17 vs TO-15)?

- b. This page mentions testing closer spacing of 12.5 feet (ft) between five PSGS locations in the tunnel to evaluate whether the 25-ft spacing proposed in the SAWP will be adequate to detect releases from the UST system. While these locations are valuable, spacing should also be evaluated around the edge of a known source and outside of the tunnel. The five locations proposed 12.5 ft apart are in an area of known contamination.
- c. To evaluate spacing, sampling points should become incrementally closer moving towards a known source, as contaminant transport is log normal over distance. This approach will better indicate the ideal spacing to detect a release and may reduce the potential for false negatives.

#### 7. Section 6, PDF page 9

- a. Why does the SAWP (Section 14.4.1) propose PSGS installation 2 to 3 feet below the tunnel floor, while the PSWP proposes sampling 1 to 2 feet below the tunnel floor?
- b. The pilot study should also evaluate different depths to determine the appropriate depth to detect releases from the UST system.

#### 8. Section 6.3, PDF page 11: The PSWP and SAWP describe different methods of measuring biogenic gases. The PSWP states biogenic gases will be measured by collecting active soil vapor samples using Summa canisters and tedlar bags, as well as carbon traps. However, the SAWP states biogenic gases will be measured after the PSGS has been removed from the borehole by inserting field instruments into the borehole to collect a reading. The SAWP mentions potential carbon trap collection, but there is no clear description of how or when this would occur. Clarify the proposal for measuring biogenic gases. The proposed method should be reflected in the PSWP and evaluated in the pilot study.

#### 9. Section 6.3.2, PDF page 13: The level of detail provided about post processing for passive versus active sampling is significantly different. For example, for active samples, there is no description of holding time or how or where samples will be shipped. Provide the same level of detail for both sampling schemes.

#### 10. Section 6.3.3.1, PDF page 13: Before conducting the pilot study, differential pressure should be measured throughout the study area so that conditions are well understood and appropriate adjustments can be made (e.g., modifying sampling locations, duration of sample collection, etc.). Differential pressure should also be measured at various areas throughout the study area during the pilot study, so that the data gathered can be accurately interpreted.

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**DOH Comments on *Draft Technical Memorandum, Site Assessment Pilot Study Work Plan (PSWP), Red Hill Bulk Fuel Storage Facility*, received August 8, 2024**

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**11. Figure 2, PDF page 21**

- a. Relying only on soil vapor field screening to locate source areas is not appropriate. Soil vapor tends to migrate through the subsurface away from a source, so elevated soil vapor measurements may not necessarily indicate the actual location of petroleum in the subsurface. Thus, subsurface data, such as known areas of petroleum product on perched water and data collected during coring, should also be used to identify sources.
- b. Clearly label the boundaries of the petroleum source area(s) in the subsurface on Figure 2.
- c. Include a cross-sectional figure identifying the vertical and lateral location of source area(s) in the subsurface within the pilot study area.