



**STATE OF HAWAII**  
**DEPARTMENT OF HEALTH**  
**KA 'OIHANA OLAKINO**  
P. O. BOX 3378  
HONOLULU, HI 96801-3378

In reply, please refer to:  
File:

April 22, 2024

Rear Admiral Stephen Barnett  
Commander, Navy Region Hawai'i  
850 Ticonderoga Street, Suite 110  
Joint Base Pearl Harbor Hickam, Hawai'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: DOH Response to Navy Closure Task Force-Red Hill *Tank Cleaning Ventilation Air Quality Monitoring Plan*, dated April 12, 2024**

Under the Hawai'i Department of Health's (DOH's) May 6, 2022 Emergency Order (EO), the U.S. Department of the Navy (Navy) is required to submit and receive the DOH's approval for an air quality monitoring plan prior to commencing degassing activities at the subject facility. The DOH acknowledges receipt of the Navy Closure Task Force-Red Hill's (NCTF-RH's) *Tank Cleaning Ventilation Air Quality Monitoring Plan* (Plan), dated April 12, 2024. The intent of the air quality monitoring plan is to ensure that the Navy's degassing activities will be carried out in a manner that is protective of the health and safety of the public.

In an email to the NCTF-RH on April 10, 2024, the DOH stated we would send a letter outlining our expectations for the NCTF-RH's Plan. The DOH's comments on the *Tank Cleaning Ventilation Air Quality Monitoring Plan* and our expectations are included in this letter.

Provide response to the comments and expectations no later than April 29, 2024. The NCTF-RH shall not proceed with tank ventilation until the DOH approves or conditionally approves the Air Monitoring Plan in accordance with the 2022 EO.

**Comments on NCTF-RH *Tank Cleaning Ventilation Air Quality Monitoring Plan***

1. The NCTF-RH Plan proposes to use Acute Exposure Guideline Levels (AEGL), U.S. Department of Energy-, U.S. Environmental Protection Agency (EPA)-, and National Oceanic and Atmospheric Administration-developed Protective Action Criteria (PAC), and National Institute for Occupational Safety and Health (NIOSH) standards. The AEGL and PAC standards are for short term exposure, and the NIOSH standards are protective considering occupational exposure based on a 10-hour time weighted average (TWA).

The NCTF-RH Plan must consider both short-term (acute), mid-term (sub-chronic), and long-term (chronic) exposure to ensure that impacts from the three-year degassing and cleaning activity are protective of the health of nearby communities.

2. Pages 1-2: Air Quality Monitoring (AQM) station exceedance/trigger levels for summa canister sampling and public notification:
  - a. Replace the 35 parts per million by volume (ppmv) trigger for air monitoring samples with 3.8 ppmv, which is 10% of the AEGL-1 for a 1-hour TWA. The not-to-exceed AEGL-1 level for JP-5<sup>1</sup> of 290 milligrams per cubic meter air (mg/m<sup>3</sup>) or 38 ppmv applies to a ten-minute exposure period. The EPA webpage<sup>2</sup> for AEGL-1 values states: "Airborne concentrations below the AEGL-1 represent exposure levels that could produce mild and progressively increasing but transient and non-disabling odor, taste, and sensory irritation or certain asymptomatic, non-sensory effects." See No. 7 below.
  - b. 38 ppmv is acceptable for a 1-hr TWA which triggers public notification and cessation of forced ventilation.
3. Page 5: Provide an explanation for why data retrieval is five days a week rather than seven days a week. Active degassing will be occurring 24 hours per day.
4. The DOH is reserving comments on the monitoring locations pending receipt of the required modeling demonstration referenced below.

### **Expectations of the Air Quality Monitoring Plan**

5. The DOH, in consultation with the EPA, identifies the following threshold screening levels to be included in the NCTF-RH Plan. The Navy shall demonstrate degassing activities will not cause or contribute to the endangerment of human health through air quality modeling using maximum potential pound per hour emission rates. The air modeling results including input and output files shall be provided to the DOH along with a depiction of where highest concentrations are projected to occur. For areas beyond the Red Hill Facility boundary, the Plan must include:
  - a. A demonstration that total volatile organic compound (VOC) concentrations will remain at or below 2 mg/m<sup>3</sup>, over each 15-day averaging period for the sub-chronic health risk from the Agency for Toxic Substances and Disease Registry<sup>3</sup>.
  - b. A demonstration that total VOC concentrations will remain at or below 0.13 mg/m<sup>3</sup>, over an annual averaging period for the chronic health risk (from updated April 2024 DOH Total Petroleum Hydrocarbon (TPH) Environmental

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<sup>1</sup> <https://www.epa.gov/aegl/jet-fuels-jp-5-and-jp-8-results-aegl-program>

<sup>2</sup> <https://www.epa.gov/aegl/about-acute-exposure-guideline-levels-aegls>

<sup>3</sup> <https://www.atsdr.cdc.gov/toxprofiles/tp121.pdf>

Action Level (EAL) for vapors from middle distillate fuels, see summary Table C EAL Surfer 1 and Table C-3 in Appendix 1<sup>4</sup>).

- c. A demonstration for benzene and naphthalene that:
  - i. The ambient air concentration for any 8-hour averaging period is at or below 1/100<sup>th</sup> of the threshold limit value-time weighted average (TLV-TWA) (sub-chronic health risk); and
  - ii. The annual ambient air concentration is at or below 1/420<sup>th</sup> of the TLV-TWA (chronic health risk).

Demonstration shall be made using the current American Conference of Governmental Industrial Hygienists TLV-TWA as specified in the Documentation of the Threshold Limit Value and Biological Exposure Indices<sup>5</sup>. The hourly emission rate used in 5.c.ii. may be based on the maximum potential annual emissions averaged over 8,760 hours.

6. The Navy's modeling demonstration may require changes to the pollutants monitored and the locations of monitors.
7. The DOH requires monitoring of total VOC at the property boundary and other areas of potential impact to ensure concentrations remain at levels that are protective of public health and meet the modeling objectives described above. Monitoring of total VOC shall be continuous for the duration of the degassing activities.
  - a. When the total VOC exceeds 3.8 ppmv for 1-hr TWA, sample and test for the full suite of TPH (the sum of C6-C12 plus benzene and naphthalene) a minimum of one time per day.
  - b. If the AEGL has not been exceeded after a minimum of 10 samples have been collected, then the DOH may revise the sample collection frequency.

Collection of these samples are to quantify the full suite of TPH in the air.

8. NCTF-RH shall provide the DOH with access to near-real time total VOC concentration (parts per million [ppm]), flowrate (cubic feet per meter [cfm]), and pounds per hour (lb/hr) emissions at the ventilation stack exhaust. The calculated lb/hr emissions at the ventilation stack exhaust shall not exceed the maximum lb/hr total VOC emission rate used in the model. When exceeded, NCTF-RH shall immediately stop active ventilation, reevaluate, and make appropriate corrections to meet this requirement.

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<sup>4</sup> <https://health.hawaii.gov/heer/files/2024/04/EAL-Surfer-HDOH-Draft-Spring-2024.xlsx>

<sup>5</sup> <https://www.acgih.org/science/tlv-bei-guidelines/tlv-chemical-substances-introduction/>

Rear Admiral Barnett  
April 22, 2024  
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Should you have any questions regarding this letter, please contact Ms. Kelly Ann Lee, Red Hill Project Coordinator, at (808) 586-4226 or [kellyann.lee@doh.hawaii.gov](mailto:kellyann.lee@doh.hawaii.gov); Ms. Marianne Rossio, Clean Air Branch Manager, at (808) 586-4200 or [marianne.rossio@doh.hawaii.gov](mailto:marianne.rossio@doh.hawaii.gov); or Mr. Roger Brewer, Hazard Evaluation and Emergency Response Office Environmental Scientist, at (808) 586-4249 or [roger.brewer@doh.hawaii.gov](mailto:roger.brewer@doh.hawaii.gov).

Sincerely,

*Kathleen Ho*

KATHLEEN S. HO  
Deputy Director for Environmental Health

cc via email only:

Amy Miller, EPA  
Roshni Brahmabhatt, EPA  
Claire Trombadore, EPA  
Matthew Cohen, EPA  
RDML Marc Williams, NCTF-RH  
CAPT James Sullivan, NCTF-RH  
CAPT Milton Washington, NCTF-RH  
CAPT Steven Stasick, NCTF-RH  
Sherri Eng, NCTF-RH  
Milton Johnston, NCTF-RH  
Joshua Stout, NCTF-RH