

Navy Response to Comments to  
Hawaii Department of Health  
Letter dated March 8, 2024

1. Exhaust information and on-site/operating conditions:

a. A map showing the location of each exhaust vent exit to the atmosphere, the nearby structures identified in 1.b.viii (below), and identification of the fence line surrounding the property on which the vent exit is located.

Navy Response: See Enclosure 2 -Ventilation Discharge Point for Red Hill Tank Cleaning. There are several temporary structures located within the 100 M (328 feet) radius of the ventilation discharge. These structures are not permanently occupied and serve only as the contractor laydown area (some temporary office and storage facilities). The only permanent building within the 100 M radius is the Red Hill Shaft Chlorination Building which is only utilized for water sampling or adjustments to the chlorination system.

b. For each exhaust vent, provide:

(1) UTM (Universal Transverse Mercator) coordinates in NAD-83 (North American Datum of 1983) of the exhaust vent exit;

Navy Response: The single ventilation exhaust location is located at UTM grid coordinates 2,363,603.14 N, 614,111.49 E in UTM Zone 4Q.

(2) The minimum and maximum flow rate at the exhaust vent exit, in cubic feet per minute;

Navy Response: Minimum flow rate = 55,000 CFM, Maximum = 80,000 CFM. The actual flow rate will be more defined when fan operations begin.

(3) The inside diameter (if circular) or dimensions of the vent at the exhaust exit, in feet;

Navy Response: 4.66 feet (56 inches)

(4) The height of the exhaust vent exit from ground elevation to top of exhaust, in feet;

Navy Response: 25.83 feet (25 feet, 10 inches). The exhaust duct is still being constructed, so the final height may vary slightly.

(5) The exhaust temperature, in degrees Kelvin; exhaust, in feet;

Navy Response: The temperature won't be known until the system is activated. Additionally, contractor will be installing a sensor to the exhaust duct, in order to provide this data as requested.

(6) The direction of the exhaust vent exit, vertical or horizontal;

Navy Response: Horizontal

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(7) Maximum potential pound per hour volatile organic compound (VOC) and hazardous air pollutant emissions and supporting calculations that show how pound per hour emissions were derived; and

Navy Response: Total emission calculations are being developed at this time and will be provided SEPCOR and no later than March 28, 2024.

(8) The location (UTM coordinates in NAD-83) and dimension (length, width, and height) of all structures within 100 meters of the exhaust.

Navy Response: There are no buildings located within the 100 M radius that require permanent occupancy. However, there are several temporary structures located within the 100 M (328 feet) radius of the ventilation discharge. These structures are not permanently occupied and serve only as the contractor laydown area (some temporary office and the rest storage facilities). The only permanent building within the 100 M radius is the Red Hill Shaft Chlorination Building which is only utilized for water sampling or adjustments to the chlorination system.

2. A letter from APTIM Federal Services, dated August 17, 2023, was submitted to the DOH's Clean Air Branch with attachments. Attachment 1 states "Full calculations can be found in the included Excel File." Provide a hard copy and electronic copy of the Excel file or files mentioned in the August 17, 2023 submittal.

Navy Response: Hard copy and excel spreadsheet will be provided SEPCOR and no later than March 28, 2024.

3. Basis for the target odor threshold level at the vent exhaust exit and at the property line. During a February 27, 2024 meeting it was mentioned the goal would be to achieve levels below odor thresholds near the property line.

a. Explain how the target levels of 15 – 50 parts per million by volume (ppmv) total VOC concentrations at the exhaust vent exit were selected and how it was determined that these levels will achieve the above stated goal.

Navy Response: The National Institute for Occupational Safety and Health (NIOSH) has published an exposure limit based on a 10-hour time-weighted average (TWA) of 100 mg/m<sup>3</sup> (15 PPM) for jet fuels (including kerosene). Though the more commonly enforced ACGIH (American Conference of Governmental Industrial Hygienists) standard is 200 mg/m<sup>3</sup>, or 30 PPM, it is based upon an 8-hr normal working day. The project schedule is based upon a 10-hour working day, and so has elected to use the more stringent 15 PPM for VOC concentrations of the vapors that exit the exhaust. Based upon the previous degas evolutions, the contractor has encountered VOC PPMV values of ~60 PPMV at the beginning stages of exhausting vapors from a similar tank (this data was provided as attachment 1 in the February 17, 2023 letter from APTIM Federal Services to DOH Clean Air Branch). Using this data along with having the capability of applying dilution air from an odor control device of the exhaust system, a maximum

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target level of 50 PPM was selected. An additional VOC sensor will be installed to monitor and control the exhaust levels.

b. Provide information on what actions will be implemented, should the concentrations exceed the identified levels of 15-50 ppmv, or if the levels near or beyond the property boundary exceed odor thresholds.

Navy Response: A dilution air dampener installed prior to the blower fan gives the ability to add fresh air to the tank vapors being exhausted. Opening, or increasing dilution also decreases the pressure being used to pull vapors from the tank. Dependent upon the potency of ~50 PPM, contractor may elect to increase dilution air to get levels to comfortable levels. It is also worth noting that the contractor's field offices are located approximately 100 feet away from the exhaust fan. The health and safety of their employees is of highest concern and were valuable inputs to setting the selected emission action levels.

4. Description of the proposed air monitoring, including:

a. Type of monitoring units and parameters to be monitored at the exhaust vent exit.

Navy Response: Currently the exhaust vent only has a VOC sensor installed. A temperature sensor is being procured and will also be installed as requested by DOH in section 1.b.v. The VOC sensor is as follows: GDS Corp. GASMAX GX Gas Monitor with Remote PID Sensor Head configured for PID Low Range, 10.6eV for range 0-50 ppm. Temperature sensor information can be provided once procured.

b. Location of monitors that will be placed away from the ventilation exhaust exit, type of monitoring units, and parameters to be monitored. Monitoring locations should provide coverage of the neighboring military housing and off-base facilities as identified in Figure 1 of APTIM Federal Services' August 17, 2023 letter.

Navy Response: The AQM system will have 6 PID monitors with Summa Canisters triggered to obtain an air sample at a set alarm point, 6 National Ambient Air Quality meters, six weather stations with two additional monitors held as back up. All meters are to be placed within the RHBSF footprint at the facility boundary.

5. Data collection and reporting. At a minimum, the following data shall be reported for each hour of degassing:

a. As measured from the exhaust vent exit:

- (1) Total VOC concentrations in ppmv, averaged on an hourly basis; and
- (2) The exhaust flow rate, in cubic feet per hour.
- (3) The data shall be reported to the DOH no less than weekly.

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Navy Response: Data will be provided weekly. Contractor is working to develop a reporting software that will provide the requested information on the requested reporting schedule of weekly.

b. For each air monitoring location away from the exhaust vent exit:

(1) Total VOC concentrations in ppmv, averaged on an hourly basis.

Navy Response: Data will be provided weekly. Contractor is working to develop a reporting software that will provide the requested information on the requested reporting schedule of weekly. During time of development, manual reports may be generated to satisfy this request.

(2) Data shall be made available to the public by posting on a website hosted by the Navy. Near real time data shall be updated hourly, unless it can be demonstrated that posting at this frequency is not possible. Historical data of the hourly averages shall be maintained and accessible on the website.

Navy Response: Navy Command Task Force – Red Hill is working with our contractor to evaluate the ability to post real time data hourly. If this is determined to be feasible it will take several months to implement.