



Review of Sites

Temporarily out of use (pending decommissioning):

Kuahua Peninsula (a.k.a. Diesel Purification Plant)

Permanently out of use:

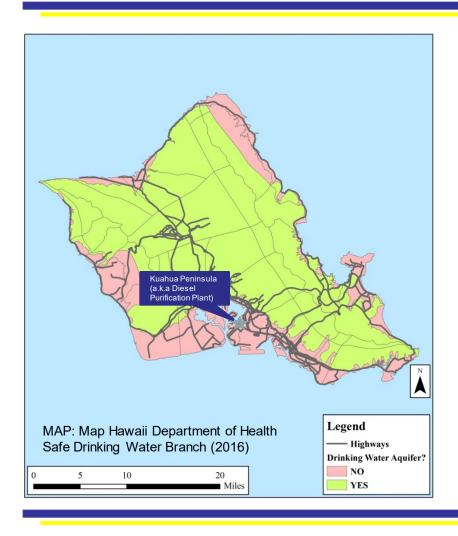
- Hickam POL Annex (Kipapa)
- Hickam POL Annex (Waikakalaua)

Currently in use:

- Pacific Missile Range Facility
- Red Hill Underground Storage



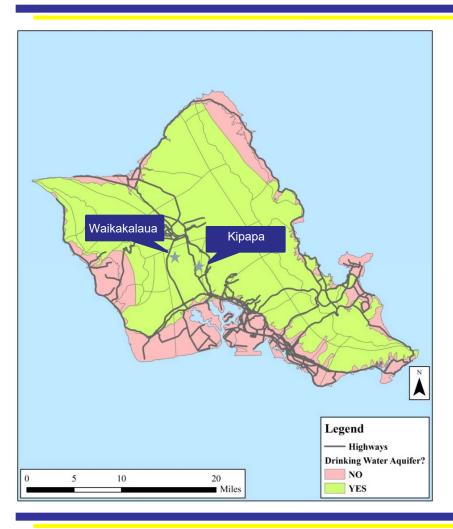
Kuahua Peninsula (a.k.a Diesel Purification Plant)



- Contract in progress to empty, clean, cap, and secure eight USTs and associated piping
- Area development plan includes removing the USTs and tank system, no timeline yet for the demolition



Hickam Fuel Annexes



Kipapa:

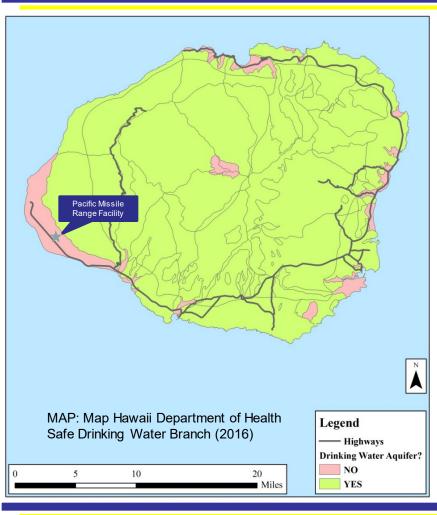
- Monitored natural attenuation enhanced with bioventing (currently shutdown)
- Annual groundwater monitoring.
- When sample criteria are met, surface water and sediment sampling.

Waikakalaua:

 A Record of Decision approved and signed by DOH on 19 Oct 2009 with a no further action decision



Pacific Missile Range Facility



PMRF:

 All tanks at PMRF currently in use continue to successfully pass monthly release detection evaluation







Red Hill Bulk Fuel Storage Facility

Navy Update on the Administrative Order on Consent (AOC)



Red Hill Bulk Fuel Storage Facility Update on AOC Actions

Actions completed since <u>last</u> meeting:

- Submittal of Quantitative Risk and Vulnerability Assessment Phase 1 (May 2019)
- DOH/EPA conditional approval of Quantitative Risk and Vulnerability Assessment Phase 1 (September 2019)
- Submittal of Destructive Testing Results Report (July 2019)
- Updated submittal of Groundwater Conceptual Site Model (July 2019)
- Installation of Red Hill Monitoring Well Nos. 14 and 15 (March & Aug 2019)
- Submittal of Tank Upgrade Alternatives (TUA) and Release Detection Decision Documents (September 2019)



Red Hill Bulk Fuel Storage Facility Update on AOC Actions

2019 Annua

Water Quality Report



(Waiawa, Halawa & Red Hill Sources)

This report meets federal and state requirements for Consumer Confidence Reports. This report is updated annually and reflects monitoring data collected up to Dec. 31, 2018.

The Navy is pleased to provide you with this year's annual Water Quality Report for the Joint Base Pearl Harbor-Hickam Water System.

This pamphlet provides information about the water that has been delivered to you over the past year. It describes where your water comes from, what it contains, and how it compares to standards for safe drinking water.

Our goal is, and always has been, to provide you safe and dependable drinking water.

Water Provider

The Naval Facilities Engineering Command (NAVFAC) Hawaii owns and operates the water system servicing your area. As the Navy water provider in the state, NAVFAC Hawaii primarily supplies water to military housing and installations.

Drinking Water Standards

The Environmental Protection Agency (EPA) and State of Hawaii regulations require us to test your water for contaminants on a regular basis, making sure it is safe to drink, and to report our results accordingly.

To ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration does the same for bottled water.

We are continually working to protect your drinking water from contaminants. The State of Hawaii's Department of Health completed the Source Water Assessment in 2004. This document identifies the susceptibility of your water supply to contamination. The source water assessment is available for review by contacting NAVFAC Hawaii, Public Affairs, at 808-471-7300.

Source of Water

Your drinking water comes from three ground water sources: Waiawa, Halawa, and Red Hill. Ground water is naturally filtered as it travels from the surface to the aquifer below ground. The water is pumped up from the aquifer, disinfected, fluoridated, and piped into the distribution system.

For a limited time during 2018:

- The Radford Terrace Eastern Housing area was supplemented with water from the Honolulu Board of Water Supply's (BWS) Kalauao Wells and Punanani Wells.
- The Manana housing area was supplemented with water from the Honoiulu Board of Water Supply's (BWS) Pearl City Shaft and Well 1.

Possible Source of Contaminants

The sources of drinking water (both tap water and bottled water) includer rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals. It can also pick up other substances resulting from the presence of animals or human activity. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1-800-426-4701.

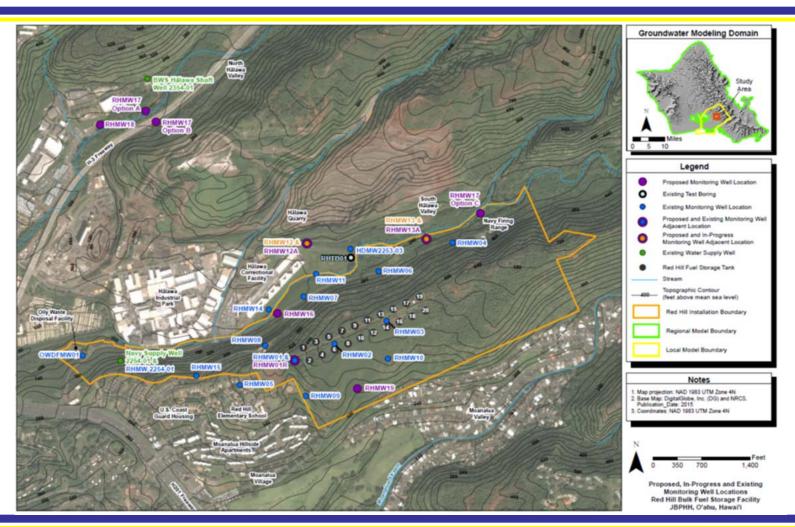
Page 1 of 5

Ongoing work:

- Semi-annual Tank Tightness Testing
- Continued Updating of Groundwater Conceptual Site Model
- Installation of Red Hill Monitoring Well Nos.
 12 and 13
- Ongoing Groundwater Modeling Working Group Collaboration with BWS, UH, USGS, DOH, and EPA
- Quarterly Groundwater Monitoring
- Monthly Soil Vapor Monitoring
- Annual Water Quality Reporting
- Monthly Water Interface Testing
- Annual Split Sampling
- Synoptic Water Level Study



Red Hill Bulk Fuel Storage Facility Groundwater Monitoring Wells





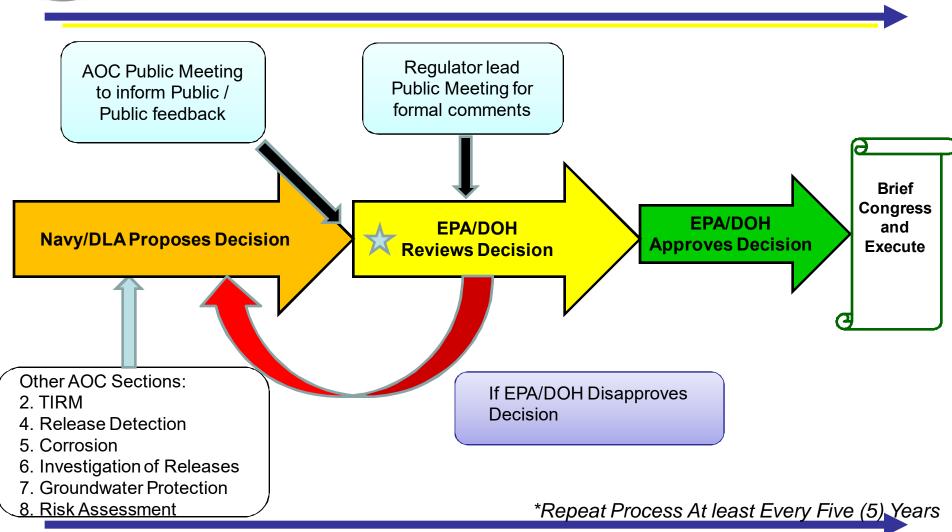
Red Hill Bulk Fuel Storage Facility Update on AOC Actions

Actions scheduled for completion prior to <u>next</u> meeting:

- DoD Strategic Fuel Storage/Distribution Analysis Study
- TUA and Release Detection Decision Document Review and Comment from EPA/DOH
- Destructive Testing Results Report Acceptance
- Continued Execution of Long-term Quarterly Groundwater Monitoring and Monthly Soil Vapor Monitoring
- Groundwater Flow Model Report
- Investigation and Remediation of Releases Report
- Installation of additional Red Hill Monitoring Wells
- Semi-annual Tank Tightness Testing
- Water treatment plant planning



TUA Decision Process





TUA Decision Layers of Protection

PREVENTION

- 1. Improving Tank Inspection Repair and Maintenance Program continuously
- 2. Recoating tank interior steel liners to prevent corrosion as 6. Upgraded procedures for returning tanks to service specified by coating specialist
- 3. Decommissioning nozzles (piping at bottom of tank) to reduce risk
- 4. Enhanced contractor qualification process to improve tank inspection and repairs

- 5. Updated processes and procedures for inspection, testing, quality control, quality assurance
- 7. Revised and standardized operator training

DETECTION

- 1. Conducting continuous (versus monthly) soil vapor monitoring
- 2. Conducting daily visual inspection of pipeline
- 3. Conducting manual fuel inventory trend analysis
- 4. Installing permanent enhanced release detection system in each tank

- 5. Increased tank tightness testing from annual to semiannual, twice the state requirement
- 6. Improved fuel inventory monitoring using automated fuel handling equipment
- 7. Increased groundwater monitoring wells from eight to 15 since 2014; add eight more by 2021

MITIGATION

- 1. Determining feasibility for potential construction of water 2. Improving release response procedures continuously treatment plant



Red Hill Bulk Fuel Storage Facility Industry and Academia Engagement

- Robotic crawler demonstration (14 MAR 2019)
- Sources sought notification (17 APR 2019)
- Industry day (19 JUN 2019)
- Drone demonstration (23 JUL 2019)







Navy/Industry/Academia Collaboration



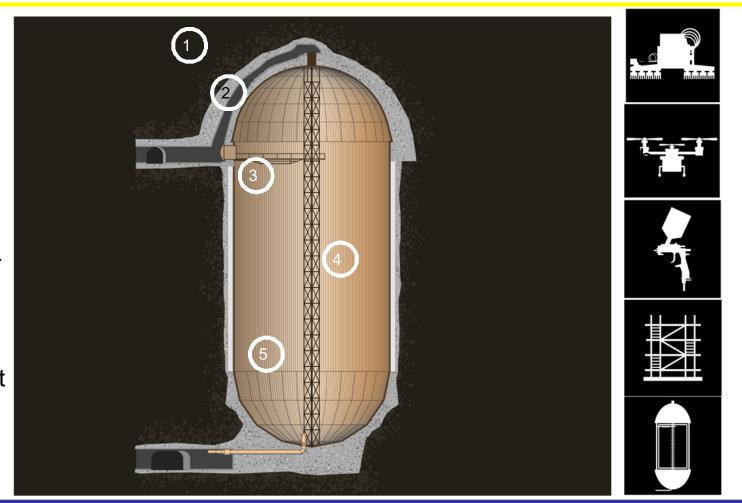
Basalt

Concrete

Steel Liner

Tank Interior

Secondary Containment





Status of Operating Permit

DAVID Y. IGE



BRUCE S. ANDERSON, PI

STATE OF HAWAII DEPARTMENT OF HEALTH HONOLILLI HI 96801-3378

July 16, 2019

U0747RK

Captain Marc Delao Regional Engineer Navy Region Hawaii 850 Ticonderoga St., Ste. 110 JBPHH, Hawaii 96860

Dear Captain Delao:

SUBJECT: Status of Application for an Underground Storage Tank Permit

Red Hill Bulk Fuel Storage Facility, Red Hill, Aiea

Facility ID No. 9-102271

The Department of Health (DOH), Underground Storage Tank (UST) Program received your application to operate a UST system on March 14, 2019, and your revised application on May 23, 2019. In response to your application, we drafted permit conditions and requested public comment on your application and on the draft permit through publication of a public notice in the Honolulu Star-Advertiser on May 29, 2019.

Before the completion of the 30-day comment period, we received requests for a contested case hearing and a public hearing, together with approximately 156 letters with comments. The DOH is currently reviewing the requests and comments.

The DOH considers Navy Region Hawaii's (Navy's) submission of its application for a permit as timely. Based on this, the DOH intends to allow the Navy to continue to operate the subject UST system until its decision on the permit application is rendered.

The DOH will act deliberately and in the interest of public health and the environment. For this reason, the DOH will not reach a final decision about whether to issue a permit or, in the event a permit is issued, what conditions will be attached, until the DOH's process is completed.

Should you have any questions regarding this letter, please contact Ms. Roxanne Kwan of the Solid and Hazardous Waste Branch at (808) 586-4226.

Sincerely

stith Etewarks

KEITH E. KAWAOKA, D.Env. Deputy Director for Environmental Health

- On time submission of permit application by Navy
- Application under review by DOH
- Authority to Operate letter issued by DOH 16 July 19 pending final review of operational permit



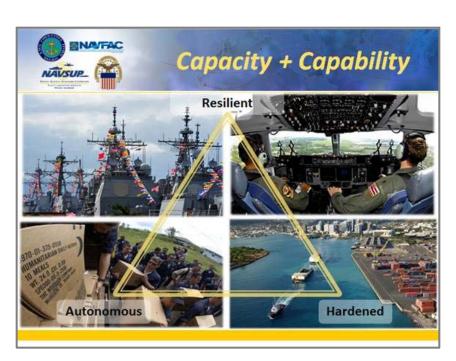
Red Hill Bulk Fuel Storage Facility Clean, Inspect and Repair Status



- Tanks 5, 13, and 17 currently undergoing CIR process
- Tank 5 scheduled to be returned to operation in 2020
- Tank 14 awaiting contract mod award before continuing construction
- Tank 4 currently next scheduled tank to undergo CIR process
- Revising CIR schedule to focus on Tank
 18, rather than Tank 4



Summary



- Water continues to be safe to drink
 - Routine water sampling/testing
- Tanks continue to pass semi-annual tank tightness tests
- TUA and Release Detection Decision Document submitted September 2019
- AOC is working
 - Navy/DLA is held accountable to EPA and the State of Hawaii
 - Navy/DLA has met/meeting all AOC deadlines



And Finally.....

We're committed to finding a secondary containment solution

The technology doesn't exist today that would allow Red Hill tanks to be double-walled in a practicable manner. We are absolutely committed to finding a way to provide secondary containment or we will remove the fuel from Red Hill around 2045.



Mahalo

Questions?