

Evaluating Fuel Leak And Aging Infrastructure At Red Hill, Hawaii, The Largest Underground Fuel Storage Facility In The United States

In January 2014, the U.S. Navy reported to Hawaii's Department of Health a leak of approximately 27,000 gallons of jet fuel from a tank at the Red Hill Bulk Fuel Storage Facility near Pearl Harbor, Hawaii. The Navy subsequently drained the tank and collected samples from existing monitoring wells. Results in and around the tank indicated a spike in levels of hydrocarbons in soil vapor and groundwater. Drinking water monitoring results confirmed compliance with federal and state safety standards for drinking water both before and after the 2014 release.



Tanks superimposed to show their location at Red Hill facility

This leak brought attention to the aging Red Hill facility and highlighted the significant environmental threat to Oahu's groundwater. In response to the leak, EPA Region 9 and Hawaii Department of Health in September 2015 negotiated an enforceable agreement with the Navy and Defense Logistics Agency. The agreement lays out specific tasks the Navy and Defense Logistics Agency must take to protect human health and the environment by addressing the 2014 fuel release and improving Red Hill's infrastructure to prevent future fuel releases.

By the end of 2016, work was underway to evaluate and improve tank corrosion control, release detection, inspection, and maintenance procedures; develop tank upgrade alternatives; and investigate releases and take steps to protect drinking water.

According to the agreement, the Navy must:

- evaluate investigation and remediation techniques;
- refine the understanding of how groundwater and contaminants flow in the subsurface;
- monitor existing contamination to determine its extent and movement;
- evaluate and improve procedures and practices to maintain the integrity of the tanks;
- evaluate and implement structural upgrades to the tanks;
- use the best technology available to detect leaks; and
- determine the overall risk Red Hill poses to the surrounding environment.

Red Hill Facility By The Numbers

- 20 vertical steel lined underground tanks encased in 2.5 to 4 feet of concrete, plus 3 pipelines running 2.5 miles through a tunnel to fueling piers at Pearl Harbor
- Each tank holds 12.5 million gallons
- Total facility storage capacity = 250 million gallons of fuel
- Each tank measures 100 feet in diameter and 250 feet high, the height of a 20 story building
- Tanks lie under 100 feet of rock and are built in a cavity mined inside of Red Hill
- Stores and dispenses 3 types of petroleum fuel: marine diesel for ships and 2 types of jet fuel, JP-5 and JP-8
- Hundreds of thousands of residents in and around Honolulu rely on the aquifer, located 100 feet below Red Hill facility, for fresh drinking water
- Tank upgrades will occur in 5 year intervals over a 20 year period

Background

Built from 1940 through 1943 and located under a volcanic mountain ridge near Honolulu, Hawaii east of Pearl Harbor, the Red Hill Bulk Fuel Storage Facility is the largest underground storage tank facility in the United States. Owned by the U.S. Navy, Red Hill supports military operations in the Pacific.

For More Information

To learn more about the Red Hill Facility, see EPA's website www.epa.gov/red-hill or YouTube videos www.youtube.com/watch?v=Ilz8IstwnWU and www.youtube.com/watch?v=0Bx81rD206A.