

Navy Water Contamination Response

Frequently Asked Questions (FAQs)

Acronyms and abbreviations used in this document:

- **SDWB:** Safe Drinking Water Branch
- **CDC:** US Centers for Disease Control & Prevention
- **IDWST:** Interagency Drinking Water System Team
- **HDOH:** State of Hawaii Department of Health
- **EPA:** Environmental Protection Agency
- **BCEE:** Bis(2-Chloroethyl)ether
- **PPB:** Parts per billion a.k.a. ug/L (micrograms per liter)
- **TPH:** Total Petroleum Hydrocarbons

General Questions

What is DOH doing to investigate this incident?

- DOH has mobilized a broad response:
 - Emergency response to restore safe water to Navy water system users (public health advisory)
 - Staff are in the field collecting samples from affected areas, which are being tested for petroleum-related contaminants
 - DOH is part of an Interagency team as a regulator to make sure that all actions taken to restore safe drinking water
 - DOH staff are investigating any continued complaints
 - On December 6, 2021, DOH issued an emergency order to render the Red Hill facility safe by removing fuel from the tanks
 - DOH is taking action to evaluate the drinking water aquifer for contamination

Where is the water safe to drink?

As of Friday, February 25, 2022, DOH amended its public health advisory for Zones I1 (Red Hill Housing) and A1 (Pearl City Peninsula). More information on the amendments is available at health.hawaii.gov/NavyWater

Where can I find test results?

Test results for all zones are available at www.jbphh-safewaters.org.

What if petroleum leached into the plastic pipes that are a part of the distribution system?

DOH accounted for this possibility in its sampling plan. After water was flushed, samples were collected after sitting for 24 hours and 72 hours, which provided time to detect any possible leaching into pipes. All samples in Zone I1 were below the project screening level.



Why are only 10% of the military families' homes being tested as part of the process for amending the health advisory?

Our first obligation as DOH is to verify that the water is safe to drink. The IDWST's joint plan to draw samples from more than 900, or at least 10% of homes, and 100% of schools and child development centers on the overall Navy water system provides an accurate picture to confirm that the water in all homes and buildings is safe. Additional homes and buildings will be sampled as part of a long-term monitoring plan.

DOH's multiple lines of evidence evaluate sample data and how the Navy water system maintains operations to ensure safe drinking water. Home sampling is only one of five lines of evidence DOH evaluates.

The Red Hill Shaft has been disconnected from the drinking water system. Water to homes is coming from the Navy's Waiawa Shaft. That source water has been tested to verify that it is safe to drink. DOH and EPA oversaw flushing operations to verify that the Navy is following flushing and testing protocol to verify that contamination was removed from the drinking water system.

What is the timeline to amend DOH's health advisory?

We admire the strength and patience of the families impacted by this crisis, and we're working to restore clean drinking water as quickly as possible. Our first obligation is to confirm that the water in those homes is safe to drink. There are two processes that require time: flushing out the Navy's system, and sampling and testing the water. Given the scale of this operation – millions of gallons of water, miles of pipes, and thousands of samples being tested in labs– it's taking longer than any of us would like. But for the safety of impacted families, we ask for their continued patience while we work as fast as we can within these constraints.

Does boiling my water get rid of petroleum products that might be in my water?

No. All Navy water system homes under DOH's public health advisory should continue to avoid using tap water for drinking, cooking, or oral hygiene. This includes consumption by pets.

How did DOH calculate the new cumulative 211 ppb TPH action level?

After conducting a risk-based analysis, DOH experts calculated that the TPH screening level for this emergency response should be a cumulative 211 ppb. This means that all three TPH ranges (diesel, oil, and gas) are added together to meet the 211 ppb. This level is more protective than DOH's initial screening level and all zones are being evaluated using the cumulative 211 ppb.

This is based on the US Environmental Protection Agency's risk assessment methodology and in accordance with DOH's Technical Guidance for Environmental Hazard Evaluation. The development of a risk-based action level involves using information about the specific chemical and predicted types of exposure to calculate a number below which health effects are not likely to occur.

Part of the process includes adding in extra safety buffers to account for exact details that are unknown by science. Levels of the chemical found in water above the risk-based action level do not mean that health effects will occur, but below the level is predicted to be safe. These risk-based action levels are used to guide clean-ups of spills of hazardous chemicals.



DOH's environmental action levels are applied to sites across the state. However, for specific responses such as this one, DOH creates more specific criteria based on the nature of the event.

What if I smell/taste fuel after returning home?

We understand that people are wary and remained concerned about the safety of their drinking water. Based on careful review of the data and detailed oversight, DOH is confident in the amendments of our health advisory.

We urge people to review the materials online that document the careful examination of how the system works, ensuring that contaminated water is no longer entering the system, and flushing and testing to make sure that no contamination remains in the system and to ask questions.

DOH's review ensured that no contamination was entering the distribution system from Waiawa Shaft, the only Navy source. If pressed for more detail: DOH prescribed flushing and sampling plans. DOH also required the Navy to provide a thorough accounting on how the distribution system and buildings were flushed. DOH reviewed all the data from samples taken after flushing of the homes and buildings.

Please contact DOH at 808-586-4258 or sdwb@doh.hawaii.gov

US Navy:

808-449-1979
808-448-3262
808-448-2557
808-448-2570
808-448-2583

US Army:

808-620-7938 or 808-620-7951

What is included in DOH's investigation to show that the health advisory should be amended?

All Navy water zones must meet five lines of evidence before DOH will amend its health advisory. Those lines of evidence are:

Reported sources of contamination are contained

- The Navy's Red Hill Shaft is physically disconnected from the Navy water system.

Source water from the Waiawa Shaft is safe to drink

- Sample results show the water meets State and Federal regulations and project screening levels of the incident specific parameters.

No additional contamination is occurring in the water system

- A Cross Connection Control investigation shows the distribution system is protected, resulting in no additional sources of contamination.

Water within the distribution system is safe to drink

- The zone flushing plan demonstrates the entire zone is flushed.



- Sample results show the water in distribution system meets State and Federal regulations and project screening levels of the incident specific parameters.
- Drinking water does not show sheen, olfactory evidence, or other qualitative methods of petroleum.

Water in homes/building plumbing is safe to drink

- The Flushing Plan includes procedures to ensure no service connections will re-contaminate the distribution system.
- Samples were collected from homes and buildings three days after flushing. This stagnation period was built in to detect possible leaching of contaminants from pipes or other plumbing.
- Sample results show water in premise plumbing of homes/buildings meet State and Federal regulations and project screening levels of the incident specific parameters.

Health and Symptoms

What are possible symptoms of petroleum exposure? Please see additional resource [“Petroleum Health Effects”](#)

Discontinue water use, especially for cooking, drinking and oral hygiene. If you must use the water for bathing, open windows to increase ventilation/air flow, and use cold water instead of hot.

If you develop any severe symptoms, such as respiratory symptoms or fever, please seek urgent medical attention.

What are the possible symptoms of petroleum exposure?

Health effects from exposure to petroleum in the drinking water will depend on the amount, how you were exposed and for how long, as well as other personal traits. People who are exposed to petroleum through ingestion (swallowing it) may experience stomach upset, nausea, vomiting, and diarrhea. Lightheadedness, headache and difficulty concentrating are also possible. Exposure of petroleum products to the skin such as through bathing may cause irritation, redness or peeling of the skin. Breathing the vapors from petroleum products (aka inhalational exposure) at high enough concentrations can cause respiratory symptoms such as difficulty breathing, coughing and a pneumonia like syndrome. If you develop respiratory problems or any other severe symptoms after exposure to petroleum contaminated water, please seek medical evaluation.

Possible Symptoms

- Headache
- Gastrointestinal issues (diarrhea, stomach cramps, throwing up)
- Dizziness
- Nosebleeds
- Lethargy
- Skin issues (burning, rash)



Pregnancy

In general, exposures to petroleum hydrocarbons are not known to have specific impacts on pregnant women, their pregnancies or their babies and potential health effects for pregnant women are expected to be the same as the general population.

However, because the exact contaminant is still unknown and it is important for pregnant women to be as healthy as possible during their pregnancy, we encourage pregnant women to follow the recommendations of not using the water.

Supplies

Compensation

Please contact your water purveyor regarding compensation

Water supplies/availability

As much as possible, conserve water by discontinuing any non-essential water use (don't water your plants use paper goods so you don't have to wash dishes, hold off on doing laundry, etc.)

The Navy started sending out water buffalos/containers in certain areas since 12/01/2021. The Armed Forces Housing Advocates is also distributing water in various locations.

Testing

Testing Process

- There are different types of tests involved and special equipment used to provide accurate and precise results
- DOH samples are sent to Eurofins Scientific in Garden Grove, California for TPH testing

Sampling Plan

The IDWST sampled 10% of homes and non-residential buildings. How can you be assured that all homes are safe?

The overall sampling plan was designed to achieve a 99% confidence level that 95% of the total population of houses and non-residential buildings do not exceed an action/screening level and are receiving safe drinking water.

Long term monitoring will also be conducted on various houses/buildings for the next 2 years. We expect to have data for over 6300 of the houses and buildings

578 samples at houses/buildings * 3 months = 1734 samples in the Interim Long-Term Monitoring (for three months)

1151 samples at houses/buildings * 4 periods = 4604 samples during the Long-Term Monitoring (4 –24 months where there are three 6-month periods and one 3-month periods)

6338 total

We expect to have data for over 5400 of the houses and schools/child development centers.

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487 samples at houses and schools/CDC only * 3 months = 1461 samples in the Interim Long-Term Monitoring (for three months)

974 samples at houses and schools/CDC * 4 periods = 974 samples during the Long-Term Monitoring (4 –24 months where there are three 6-month periods and one 3-month periods)

5358 total

There have been a lot of calls recently about testing for the petroleum hydrocarbons in urine or blood. This is basically not possible in any kind of useful way. Here is some language you can share if it helps.

While some of the individual chemicals found in petroleum-based fuels can be detected in blood and urine, these chemicals are not specific to the contaminants that impacted the Navy water distribution system. In addition, these chemicals are eliminated from the body very quickly (within hours) so blood or urine samples would need to be taken within hours of exposure. Also, more commonplace exposures to fuels, such as inhalation of gasoline fumes while pumping gas or inhaling cigarette smoke, can result in a positive test. Detection of these chemicals in blood or urine does not indicate petroleum poisoning or help determine if a person's health symptoms are related to ingestion of petroleum products. For these reasons, such testing is not medically indicated. Hair testing is unlikely to provide exposure information and is not recommended.

Why did DOH change its TPH screening level?

DOH's environmental action levels are applied to sites across the state. However, for specific responses such as this one, DOH creates more specific criteria based on the nature of the event. After conducting a risk-based analysis, DOH experts calculated that the TPH screening level for this emergency response should be a cumulative 211 ppb.

Does DOH conduct testing on a regular basis for gasoline in our drinking water?

DOH doesn't regularly test for gasoline, diesel, jet fuel or any other petroleum hydrocarbons because they are not regulated under federal or state drinking water rules. None of these contaminants should EVER be found in our drinking water.

DOH Testing Navy Water Systems

The Navy conducts sampling on their own water system. DOH are regulators of the Navy system, so we ensure they're in compliance with the federal and state drinking water regulations.

Media

If media sources are calling to speak to someone at DOH for comments please refer them to our Public Information Officer (PIO) – Kaitlin Arita-Chang (kaitlin.arita-chang@doh.hawaii.gov)

