Morgan Lewis

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October 22, 2021

VIA FOIA ONLINE

National Freedom of Information Officer
1200 Pennsylvania Avenue, NW, Suite WJCN 5315
Mail Code 2310A
Washington, DC 20460

Re: Freedom of Information Request

Dear Sir or Madam:

In accordance with the Freedom of Information Act, 5 U.S.C. § 552, we hereby request that you make available for review and/or copying any and all documents, records and files, including supporting data and computer data, in the possession, custody, or control of the United States Environmental Protection Agency ("EPA") relating to the Red Hill Bulk Fuel Storage Facility ("Red Hill") underground storage tank ("UST") system that are responsive to this request and were not otherwise produced in the contested case proceeding before the Hawaii Department of Health ("DOH"), captioned *In the Matter of the Application of United States Navy for an Underground Storage Tank Permit for the Red Hill Bulk Fuel Storage Facility* (Docket No. 19-UST-EA-01).

The below terms are defined as follows:

- The terms "DOCUMENTS" and "COMMUNICATIONS," as used herein, include, but are not limited to, records, memoranda, reports, notifications, investigations, electronic mail, correspondence, surveys, assessments, sampling data, testing data, raw laboratory data, photographs, video recordings, third party reports, interagency memoranda, memoranda of oral conferences, memoranda of telephone conversations, and memoranda of meetings.

- The term "FUEL RELEASE INCIDENT(S)," as used herein includes but is not limited to, any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an underground storage tank or tank system.

- The term "RED HILL," as used herein, refers to the United States Department of the Navy's ("Navy") Red Hill UST system as it is described in the Navy's application for a permit to

operate submitted to DOH on May 23, 2019, as corrected June 12, 2019, and includes USTs, pipelines, and other infrastructure.

Specifically, please produce:

Red Hill Fuel Releases & Investigations of Releases

1. All DOCUMENTS and COMMUNICATIONS relating to any and all known or suspected FUEL RELEASE INCIDENTS at RED HILL. This request includes, without limitation:

    a. All DOCUMENTS and COMMUNICATIONS relating to a known or suspected FUEL RELEASE INCIDENT from supply piping in the RED HILL lower access tunnel during the refilling of Tank 20 on or about May 6, 2021; and

    b. All DOCUMENTS and COMMUNICATIONS relating to a FUEL RELEASE INCIDENT from a RED HILL pipeline that began in or about March 2020 and lasted until approximately July 2021, including, without limitation, the Navy's efforts to investigate and/or respond to the FUEL RELEASE INCIDENT. This FUEL RELEASE INCIDENT was the subject of a June 30, 2021 letter from DOH to Rear Admiral Timothy Kott (Attachment A to this letter), a July 19, 2021 *Hawaii Public Radio* article entitled "Navy Says Pearl Harbor Friday Fuel Leak Contained, Sheds Light on March 2020 Leak" (Attachment B to this letter) and an October 8, 2021 *Honolulu Civil Beat* article entitled "Amid 'Political Concerns' Navy Kept Quiet About Red Hill Pipeline Leaking into Pearl Harbor" (Attachment C to this letter).

Environmental Impacts

2. All DOCUMENTS and COMMUNICATIONS relating to light non-aqueous phase liquid ("LNAPL") quantity and composition discovered in the environment in the vicinity of RED HILL, including, without limitation, water, groundwater, rock cores, and other sub-surface materials.

3. All DOCUMENTS and COMMUNICATIONS comprising or relating to water quality sampling, testing, and monitoring from the entire RED HILL monitoring well network, including Red Hill Shaft.

Release Reporting

4. All DOCUMENTS and COMMUNICATIONS comprising or relating to notification of the EPA or any other regulatory agency of the known or suspected FUEL RELEASE INCIDENTS at RED HILL.

5. All DOCUMENTS and COMMUNICATIONS relating to the DOH's determination that "[p]ressure test failures combined with the existing evidence of a release to surface waters is confirmation that a release from the Red Hill Bulk Fuel Storage Facility has occurred" (Attachment A to this letter) and the allegation the "records show that the Navy had enough evidence to conclude the leak was active as early as January according to state Department of Health standards, but officials waited months to report it to the department amid concerns it would hamper its ability to secure a state permit" (Attachment C to this

letter). This request includes, without limitation, all DOCUMENTS and COMMUNICATIONS relating to the Navy's decision not to inform relevant agencies of any known or suspected FUEL RELEASE INCIDENTS.

Red Hill Inspections

6. All DOCUMENTS and COMMUNICATIONS relating to the sensitivity, accuracy, and/or reliability of and the non-destructive examination ("NDE") testing methods utilized by the Navy or its contractors to inspect the RED HILL USTs, pipelines, and other infrastructure. This request includes, without limitation, all DOCUMENTS and COMMUNICATIONS relating to destructive testing conducted at RED HILL by personnel associated with the University of Hawaii at Manoa.

7. All DOCUMENTS and COMMUNICATIONS relating to any and all inspections or repairs conducted on pipelines or tunnels at RED HILL. This request includes, without limitation:

    a. All DOCUMENTS and COMMUNICATIONS relating to pipeline FUEL RELEASE INCIDENT detection testing conducted on the supply piping in the RED HILL lower access tunnel that released fuel during the refilling of Tank 20 on or about May 6, 2021;

    b. All DOCUMENTS and COMMUNICATIONS relating to pipeline leak detection testing conducted on the RED HILL pipeline that released fuel beginning on or about March 2020 until approximately July 2021;

    c. All DOCUMENTS and COMMUNICATIONS related to pipeline integrity testing (e.g., any American Petroleum Institute 570 testing) or the evaluation of any piping that is in contact with soil or concrete at RED HILL;

    d. All DOCUMENTS and COMMUNICATIONS related to a 2008 manuscript describing inspection of a 32-inch RED HILL Pipeline (Regin, T.M., et al. 2008. "Internal Inspection of 813 Mm (32-Inch) Red Hill Diesel Pipeline, Fisc Pearl Harbor, Hawaii," in CORROSION 2008);

    e. All DOCUMENTS and COMMUNICATIONS related to efforts to repair all major anomalies and to recoat areas following a RED HILL pipeline FUEL RELEASE INCIDENT which was discovered on or about December 20, 2005; and

    f. All DOCUMENTS and COMMUNICATIONS relating to tunnel leak surveys, including, but not limited to the tunnel leak survey project recommended in a 2007 United States Department of Defense report (Office of the Secretary of Defense. 2007. Department of Defense Report: Effort to Reduce Corrosion on the Military Equipment and Infrastructure of the Department of Defense, June 2007; p. VI-5); and

    g. All DOCUMENTS and COMMUNICATIONS describing water (or other liquids) leaking into Red Hill tunnels, and any and all chemical analysis data of water (or other liquids) leaking into Red Hill tunnels.

8. All DOCUMENTS and COMMUNICATIONS relating to the DOH UST and Airport Hydrant Systems compliance inspection conducted at Red Hill from September 28, 2020 to October 8, 2020 and referenced in the November 30, 2020 written testimony of Mr. John Floyd filed in the contested case proceeding before the DOH, captioned *In the Matter of the Application of United States Navy for an Underground Storage Tank Permit for the Red Hill Bulk Fuel Storage Facility* (Docket No. 19-UST-EA-01) (Attachment D to this letter).

To the extent that there are any documents, or portions thereof, which the Navy determines are exempt from disclosure and seeks to withhold, please provide us a listing of such documents as soon as possible and provide us with a listing of the names and titles or positions of each person responsible for the denial of such request as required under 5 U.S.C. § 552(a)(6)(C)(i).

It is our understanding that by submitting this single request to your office, you will notify all appropriate divisions and departments within the Navy to produce any and all responsive documents. If this is not correct, please contact us immediately. We are aware that costs for the fulfillment of this request may be over twenty-five dollars ($25.00). We hereby confirm in advance our willingness to pay the costs for the fulfillment of the request up to one hundred dollars ($100.00). If the costs are expected to exceed this amount, please contact me prior to performing any photocopying in excess of that amount. Additionally, we would appreciate a response to this request as soon as possible, and within the 20 days provided by 5 U.S.C. § 552(a)(6)(A)(i).

Please do not hesitate to contact me to discuss copying arrangements or any questions or additional information needed to conduct your search. Thank you for your assistance.

Sincerely,

Brady Witbeck

Brady Witbeck

ATTACHMENT A

DAVID Y. IGE
GOVERNOR OF HAWAII

ELIZABETH A. CHAR, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:

June 30, 2021 U0711HM

CERTIFIED MAIL NO. 7020 1290 0001 2737 5600
RETURN RECEIPT REQUESTED

Rear Admiral Timothy Kott
Commander, Navy Region Hawaii
850 Ticonderoga Street
Pearl Harbor, Hawaii 96860-5101

Dear RADM Kott:

SUBJECT: Red Hill Bulk Fuel Facility
Pearl Harbor, Hawaii
Hotel Pier Near Arizona Street, Pearl Harbor, Hawaii
UST Facility ID No. 9-102271, UST Release ID No. 210011
HEER Incident Release Case Nos. 2020317-0914 and 20200602-1345

On May 18, 2021, the Department of Health (DOH), Underground Storage Tank (UST) Section received a copy of the *2021 One-time Leak Detection Testing Report of 11 Sections of Petroleum Pipelines, Joint Base Pearl Harbor-Hickam, Hawaii,* dated February 16, 2021. The report documents two pipeline pressure test failures of the 6-inch multi-product defuel line located beneath Arizona Street between Valve Stations (VS) VS-3 and VS-1C. The pipeline pressure test failures occurred on January 20, 2021 and January 23, 2021. Pressure test failures of the single-walled piping constitute a suspected UST release. The pressure test failures combined with the existing evidence of a release to surface waters is confirmation that a release from the Red Hill Bulk Fuel Storage Facility has occurred. Therefore, the DOH-UST Section has assigned confirmed UST Release ID No. 210011 for the piping release at the VS-3 manifold of Hotel Pier.

On March 17, 2020 and June 2, 2020 releases of oil to surface water were reported by the Navy On-Scene Coordinator to the DOH-Hazard Evaluation and Emergency Response (HEER) Office. Since that time, the DOH and the United States Coast Guard have been working with the Navy to locate and identify the source of the release as an emergency response action. The DOH issued a Notice of Interest letter to the Navy on December 21, 2020 requiring the Navy to locate and secure the oil release, remediate the oil spill, and conduct additional pipeline testing. Navy installed skillets to isolate the underground portion of the 6-inch multipurpose defuel line that receives over pressure

fuel from the three active fuel lines (JP-5, F-24, and F-76) on January 23, 2021. The DOH received from the Navy requested schematic diagrams and pressure relief valves specifications on May 25, 2021 that verify that during times of overpressure fresh fuel could be placed in the defuel line.

Under the emergency response phase, the Navy has undertaken and continues release response actions to locate and secure the source(s) of release, contain, and recover oil on surface water and in soils in the immediate vicinity of Hotel Pier. Based on environmental media samples collected and analyzed, the subject release appears to have co-mingled with documented historical releases at Hotel Pier. The current fuel recovery quantities from the Hotel Pier site have been declining over the past several months indicating that efforts to isolate the potential release points have likely been successful in mitigating further release to the environment.

The DOH and the Navy are planning a transition from the ongoing joint emergency response phase to state oversight meeting the requirements of HAR 11-280.1, UST and HAR 11-451, State Contingency Plan overseen respectively by the UST Section and the HEER-Department of Defense State Memorandum of Agreement (DSMOA) Program. Details on joint oversight implementation will be agreed upon as soon as the Navy has identified the funding source(s) and process to meet the state requirements.

Hawaii Administrative Rules (HAR) 11-451, Hawaii State Contingency Plan, requires that Navy Region Hawaii and the Defense Logistics Agency conduct response actions to prevent or minimize the release of oil so that it does not migrate to cause substantial danger to present or future public health or welfare, to the environment, and natural resources.

Chapter 11-280.1, HAR, "Underground Storage Tanks," Subchapter 6 “Release Response Action,” requires UST owners and operators to investigate releases of regulated substances from their UST systems. Guidance documents can be found on the DOH-UST Section website at: http://health.hawaii.gov/shwb/.

In accordance with chapter 11-280.1, subchapter 6, owners and operators of UST systems with confirmed release are required to send the following documentation to the DOH, Solid and Hazardous Waste Branch, UST Section, located at
2827 Waimano Home Road, #100, Pearl City, Hawaii 96782:

1. **Confirmed Release Notification (CRN) Form** - Within seven (7) days of confirming the release.

2. **Initial Abatement Measures and Site Assessment** - Within 20 days after release confirmation, owners and operators will submit a report to this office summarizing the initial abatement steps taken under HAR 11-280.1-62(a) and any resulting information or data.

3. **Initial Site Characterization Report** - Within 45 days of release confirmation to include initial release response actions, description and estimated quantity of the release, analytical results of soil, groundwater, surface water, soil vapor (SV) sampling, water quality, use and location of wells in a one-mile radius, location of utilities and other requirements in accordance with HAR 11-280.1-63. Follow the format of a Site Investigation Report in Section 18.5.9 of the DOH-HEER Technical Guidance Manual (TGM).

4. **Free Product Removal** - Removal of petroleum free product to the maximum extent practicable in accordance with HAR 11-280.01-64. If free product is found in the subsurface of a confirmed UST release site, then a Free Product Removal Report is due to this office within 45 days of confirming the UST release.

5. **Notification of members of the affected public** - Within 90 days of confirming a UST release, owners and operators shall notify members of the public in writing who are directly affected by the confirmed release in accordance with HAR 11-280.01-65.1. These include landowners, lessors, lessees, and easement holders at the release site.

6. **Release Response Reporting** - If release response actions exceed 90 days following a confirmed UST release, then a first quarterly status report is due to include all release response actions taken in the first 90 days and a plan for future release response action. Follow the format for a Site Investigation Report in Section 18.5.9 of the DOH-HEER TGM. Quarterly Release Response Reports for your facility are due every 90 days until otherwise notified by the DOH-UST Section.

The DOH-UST Section has adopted the DOH-HEER TGM and the DOH-HEER guidance for UST release response investigations including multi-increment sampling of soil, monitoring well construction/groundwater sampling, and SV sampling. For required sampling analytes by fuel type, see Table 9-5 of the TGM at: www.hawaiidoh.org. Please ensure that all future sampling events are performed in accordance with the DOH-HEER TGM and the DOH-HEER guidance.

Once the subject release has been transitioned from the emergency response phase to the assessment/remediation phase, the DOH will be able to provide oversight under the

DSMOA Program in the Site Discovery, Assessment, and Remediation Section of the DOH-HEER Office. The Naval Facilities Engineering Systems Command Hawaii, Environmental Restoration will have to initiate the addition of the site to the current DSMOA Cooperative Agreement (CA 2020-2022) and provide Joint Execution Plans to allow for the DOH oversight. Should you have any questions regarding this oversight, please contact: Dr. Maria E. Q. Reyes at 586-4249 or maria.reyes@doh.hawaii.gov.

Although the DOH will be providing oversight of the Navy's assessment and remediation actions under the DSMOA Program, please understand that the Navy is also responsible for complying with and reporting release response actions in accordance with the timelines described in the aforementioned UST regulations. Please include your DOH-UST Facility ID and Release ID numbers on all future correspondence regarding this release to the DOH-UST Section. An electronic copy in a single pdf file on CD is required for each report submitted to the DOH-UST Section. We appreciate your cooperation and prompt attention to this matter.

If you have any questions regarding this letter, please contact Ms. Roxanne Kwan at 586-4226 or by email: roxanne.kwan@doh.hawaii.gov.

Sincerely,

Keith E. Kawaoka Env.
Deputy Director for Environmental Health

c: Elizabeth Galvez, HEER Office
Maria Reyes, HEER Office

ATTACHMENT B

Navy Says Pearl Harbor Friday Fuel Leak Contained, Sheds Light on March 2020 Leak

Hawaii Public Radio | By Catherine Cruz, Sophia McCullough, HPR News Staff

Published July 19, 2021 at 3:43 PM HST

LISTEN • 9:45

Catherine Cruz / HPR

A weekend fuel line leak of an estimated 100 gallons at Pearl Harbor has been contained, the Navy said. The latest marine diesel fuel leak occurred Friday, but Hawai'i Public Radio has learned of a larger fuel leak dating back to March 2020.

The state health department's Hazard Evaluation and Emergency Response team worked on both fuel leaks at Joint Base Pearl Harbor-Hickam. They were not previously disclosed to the public.

"Responsible parties are urged to notify the public of their incidents and activities involving releases. If a petroleum spill creates an imminent health risk to the public, then DOH will issue a warning," the department told HPR.

The Navy responded to Friday's fuel leak at a wharf known as "Kilo Pier." Initial estimates indicate about 100 gallons of fuel leaked, Navy spokesperson Lydia Robertson said. The Navy said it also alerted the health department and the Coast Guard.

"The quick reaction of watchstanders and the existing double boomed area allowed us to contain and stop the release," said Capt. Trent Kalp of the Naval Supply Systems Command Fleet Logistics Center in a statement. "We are investigating what happened and working alongside regulators to ensure compliance with applicable regulatory requirements."

About 60 gallons have been recovered and recovery efforts continued Monday, according to the Navy.

HPR learned of a larger leak dating back to March 2020 while investigating Friday's fuel leak. The Navy said about 7,700 gallons of fuel have been collected from soil and water. The leak was first flagged in March 2020 after an "oil sheen" was spotted on the water near Hotel Pier, which sits closest to the Pearl Harbor visitor center.

"The leak subsequently stopped in a couple weeks. When the sheen started again in June 2020, the Navy reported it again to the DOH," the Navy told HPR. The source of the leak was "located, isolated, and secured in February (2021)."

The Sierra Club of Hawai'i Director Marti Townsend said she was shocked and outraged, but not surprised to learn of the latest leaks.

"I think it's important to not get too hung up on the amount of fuel that leaks," Townsend said. "It's important that we recognize that no amount of fuel should be released into the environment. The way the state law is written, it says that fuel, whatever product is

The environmental organization was recently involved in a contested case hearing for the Navy's permit to operate its Red Hill Underground Fuel Storage Facility.

The health department's Environmental Health Administration issued its findings July 13 which included, "Given the documented history of releases at the site, the uncertainty associated with the Navy's groundwater model, and the lack of treatment or recovery systems in place to date, the Navy has not met its burden of demonstrating that this facility is protective of human health and the environment from potentially "significant" future releases."

There had been no mention of the March 2020 leak during the case proceedings, Townsend said, adding that she wants the public's and the environment's best interests to be prioritized.

The Department of Health has not yet issued a final decision on the Navy's permit.

This segment aired on The Conversation on July 19, 2021.

Tags The Conversation | U.S. Navy | pearl harbor | Navy Red Hill Underground Fuel Storage Facility

Catherine Cruz

Catherine Cruz is the Host of The Conversation and a member of HPR's news team. She has been a television reporter in Hawai'i since 1983 and has won a number of awards and respect from a statewide audience. She spent more than thirty years at KITV, covering beats from government to education and health. Originally from Guam, Cruz is also a co-founder and former Board member and programming chair of Pacific Islanders in Communication (PIC). Catherine is a graduate of San Francisco State University with a degree in Broadcast Journalism.

See stories by Catherine Cruz

Sophia McCullough

Sophia McCullough is HPR's digital news producer.

See stories by Sophia McCullough

HPR News Staff

See stories by HPR News Staff

ATTACHMENT C

Reference: https://www.civilbeat.org/2021/10/amid-political-concerns-navy-kept-quiet-about-red-hill-pipeline-leaking-into-pearl-harbor/

Honolulu

Amid 'Political Concerns,' Navy Kept Quiet About Red Hill Pipeline Leaking Into Pearl Harbor

As the health department held hearings on whether the Navy could operate its Red Hill fuel facility safely, fuel from a Red Hill pipeline was leaking into Pearl Harbor.

0

By Christina Jedra / About 6 hours ago

Reading time: 11 minutes.

It was the end of January, just days before the U.S. Navy was set to appear in a hearing before the Hawaii Department of Health that would determine the fate of its Red Hill underground fuel facility.

A particularly inconvenient time for a leak.

And yet, an oil sheen in the water of Pearl Harbor had been growing since March 2020, and a nearby pipeline connected to the Red Hill facility had just failed a leak detection test.

In a Jan. 21 email, a Navy captain said he was worried about the optics.

So-called "historical" releases, such as from fuel-soaked soil near Pearl Harbor, were one thing. But an active leak from an in-use pipeline would reflect poorly on the Navy at a crucial moment.

"There are significant political concerns if this were to become an 'active' leak," he wrote. "Activist organizations will use this to advance their anti-Red Hill narrative ... at a sensitive time as the contested case hearing begins and (the) legislative season starts."

Cory Lum/Civil Beat

Tour boats pass Hotel Pier daily. In March 2020, a pipeline leaked oil into the water near the pier.

Copies of emails and other documents were obtained by Civil Beat from a Navy employee who shared information on the condition of anonymity for fear of retaliation.

The records show that the Navy had enough evidence to conclude the leak was active as early as January according to state Department of Health standards, but officials waited months to report it to the department amid concerns it would hamper its ability to secure a state permit.

The Navy applied for the permit in 2019 seeking the state of Hawaii's permission to continue operating its Red Hill fuel facility for another five years. The Sierra Club of Hawaii and the Honolulu Board of Water Supply, which believe the facility poses a threat to Oahu's drinking water supply, contested the permit.

A contested case hearing ran from Feb. 1 through 6. Even though the pipeline that was leaking into Pearl Harbor is part of the Red Hill fuel facility and falls under its permit application, Navy officials never mentioned it.

By July, the Navy had recovered 7,700 gallons of fuel from the environment around Hotel Pier, near the Pearl Harbor Visitor Center.

"It's an outrage. It makes my blood boil," said Marti Townsend, the Sierra Club's executive director.

Cory Lum/Civil Beat

Sierra Club Director Marti Townsend said the Navy's lack of transparency means "we really can't trust them."

"That they can't be forthcoming with the public and the Department of Health about active leaks means that we really can't trust them when it comes to making the most protective decision possible about the Red Hill fuel tanks. Their judgment is faulty."

Navy spokesman Mike Andrews said in written responses to questions that the Navy was still investigating the source of the leak at the time of the contested case hearing. The Navy did not confirm the source of the problem until July, he said.

Asked about Navy officials' concerns about how an active leak might influence the contested case hearing, Andrews did not respond. Instead, he said the Navy has taken "all necessary steps to remediate this release."

"This demonstrates the Navy's commitment to stewardship and protecting the environment, while ensuring there is no risk to base residents and to the public," he said.

Military officials have known about the leak since March 17, 2020, the Navy acknowledged to Hawaii Public Radio earlier this year. And the Navy reported it to DOH that day, Andrews said.

"At the time the release was reported, investigators thought that the release was from a historical plume located near the Hotel Pier site, and not from a leak in an active pipeline," he said.

After 22 days, the release seemed to stop on its own but it resumed on June 2, Andrews said. The Navy reported it again to DOH.

In a December 2020 letter, the department required the Navy to locate and secure the oil release, remediate the spill and conduct additional pipeline testing.

In January, two leak detection tests yielded troubling results. On Jan. 20, a defuel line, used to collect fuel from other lines when they heat up, failed its test. Officials added some hardware to try to ensure the pipeline was airtight, according to the report, but on Jan. 23, the pipeline failed again.

The Department of Health would later state that two failed tests and an obvious oil sheen are sufficient evidence to confirm fuel was leaking from the Red Hill facility's pipeline. But it wasn't enough for the military, emails show.

Cory Lum/Civil Beat/2021

The leak occurred right across the harbor from the USS Arizona.

In a Jan. 28 email, a Navy captain asserted that "no leak has been confirmed" and that a more advanced leak confirmation test would be done to "validate/invalidate the results on the 'defuel' line." However, it was ultimately determined that subsequent testing could not occur because of conditions in the soil and water, Andrews said.

On Feb. 2, an oil spill cleanup company, which the Navy would later hire, conducted a site visit. The contractor, David "DC" Carter, a senior response manager for Pacific Environmental Corporation, or PENCO, almost immediately determined the leak was active, an email shows.

"Mr. DC Carter was firm in his belief that there is an active leak mixing with and pushing the older product out," John Floyd, the deputy director of fuel and facility management at Naval Supply Systems Command, wrote after PENCO visited the site.

Carter did not respond to a request for comment. PENCO's $2 million contract with the Navy included a nondisclosure clause that requires the contractor to refer all media requests to the military.

Despite the failed tests, the oil sheen and Carter's assessment, the Navy still would not acknowledge that the Red Hill pipeline was the source of the leak.

Cory Lum/Civil Beat/2021

The Navy used orange oil booms like those pictured to contain the spill at Hotel Pier.

On Feb. 3, Navy Commander Darrel Frame, the director of the Red Hill program for Naval Facilities Engineering Command Hawaii, testified under oath that – with the exception of a well-known 2014 release – fuel from the Red Hill facility had not contaminated the environment at any time since 1988.

"So generally, except for the 2014 event, are you proposing to state that there have been no releases of fuel that have gotten into the environment, again, other than perhaps the 2014 Tank 5 event?" Hearing Officer Lou Chang asked, according to the transcript.

"You know, sir, after looking at this pretty carefully, I'm reasonably confident saying that," Frame said. "Not to say there couldn't be some different interpretations, but those are my interpretations, yes, sir."

As contested case hearings were happening, "a relatively significant amount" of fuel was being released into Pearl Harbor's water every day, according to a Feb. 4 email a Navy captain wrote to colleagues. That Navy official, too, was concerned about how the release might impact the Red Hill permit.

"This release into the harbor is not only an environmental concern but also a concern as it relates to the Red Hill fuel system," he wrote.

The entire fuel system Joint Base Pearl Harbor Hickam relies on – the Red Hill tanks and the pipelines that connect them to Pearl Harbor – are all under a Hawaii Department of Health operating permit, he said.

"We do not want the issues at the harbor to be conflated with the Red Hill tanks and strategic fuel storage," he said.

The Department of Health didn't find out about the failed test results until May 18, according to a letter the DOH wrote to Rear Admiral Timothy Kott – more than three months after the contested case hearing had concluded.

"The pressure test failures combined with the existing evidence of a release to surface waters is confirmation that a release from the Red Hill Bulk Fuel Storage Facility has occurred," wrote Keith Kawaoka, DOH's deputy director for environmental health.

In the letter, Kawaoka reminded Kott that the Navy is responsible for complying with state regulations and must notify DOH within seven days of a "confirmed release."

Kawaoka retired earlier this year, DOH said. He declined to comment for this story.

It was only after Kawaoka's June 30 letter that the Navy determined the source of the leak was the defuel line at Hotel Pier.

"Through a methodical approach (coordinated with DOH), in early summer 2021 it was determined that the source of the active release was both the historical plume and the defuel line," Andrews said.

Courtesy of U.S. Navy

Rear Admiral Timothy Kott, commander of Navy Region Hawaii, received a letter from the Department of Health at the end of June stating that pipeline failures and oil sheens confirmed a release from the Red Hill facility.

Much of the criticism about Red Hill has been focused on the World War II-era tanks themselves, which are located in the main facility located near the Halawa prison. The 20 tanks, each with a 12.5 million-gallon capacity, are made up of a quarter-inch thick steel liner encased in concrete that sit 100 feet above Oahu's drinking water aquifer. These liners have been corroding.

In 2014, 27,000 gallons of fuel leaked from a tank. The Navy blamed the incident on human error by a contractor.

In May, Hawaii News Now reported approximately 1,000 gallons spewed from a distribution pipe at the same underground facility. The contested case hearing was reopened on July 7 to

address the details of that spill.

However, concerns about the facility's appendages, the system of pipelines that allow the force of gravity to deliver fuel to Pearl Harbor, have received relatively little attention until recently.

At Rep. Ed Case's request, a provision was added to the National Defense Authorization Act to require the Navy to adhere to "significantly enhanced" inspection standards for the pipelines attached to its Red Hill fueling facility.

The bill was passed by the U.S. House last month. Case did not respond to a request for comment.

Cory Lum/Civil Beat

Hawaii Health Department Director Libby Char will decide whether to issue the Navy a permit.

Whether the Navy will be allowed to continue operating the entire Red Hill facility – tanks, pipes and all – is an open question.

The Navy, Sierra Club and the Board of Water Supply are required to submit their final materials to the Department of Health by Oct. 20. In the weeks following, the parties will present their final oral arguments to the Department of Health, Townsend said.

In a statement, the Board of Water Supply declined to make an official available for an interview, citing the "ongoing nature of the contested case proceeding."

Last month, Chang, the hearing officer, recommended issuing the Navy a permit for continued operations at Red Hill if it can meet certain inspection and repair requirements for its underground fuel tanks.

Townsend said it's wrong that Chang wasn't able to take the March 2020 leak into account and factor it into his recommendation to DOH Director Libby Char.

In the end, the decision on whether to issue the permit lies with Char.

"We obviously need to have a full investigation, and the parties will get an opportunity to make the case to the director both in writing and in oral arguments," Townsend said.

"Evidence like this speaks to the unreliability of the Red Hill fuel facility and the unreliability, honestly, of the Navy officials who are managing it. And that speaks to the need for the Department of Health and the EPA to be much stronger and protective of the public's health."

Timeline: Red Hill Pipeline Leak Into Pearl Harbor

March 2020

A leak at Pearl Harbor Hotel Pier is discovered. Navy reports it to DOH.

June 2020

The leak at Pearl Harbor Hotel Pier, which had stopped, starts again. Navy reports again to DOH.

Dec. 2020

Dec. 21: DOH tells the Navy to "locate and secure the oil release, remediate the oil spill, and conduct additional pipeline testing."

January 2021

Jan. 20: A defuel line that leads to the Hotel Pier area fails a leak detection test.

Jan. 21: A Navy commander voices concerns via email about "political" implications of an active leak.

Jan. 23: The defuel line fails a second leak detection test.

February 2021

Feb. 1: Contested case hearing begins

Feb. 2: During a site visit, a Navy contractor says he believes the leak is active.

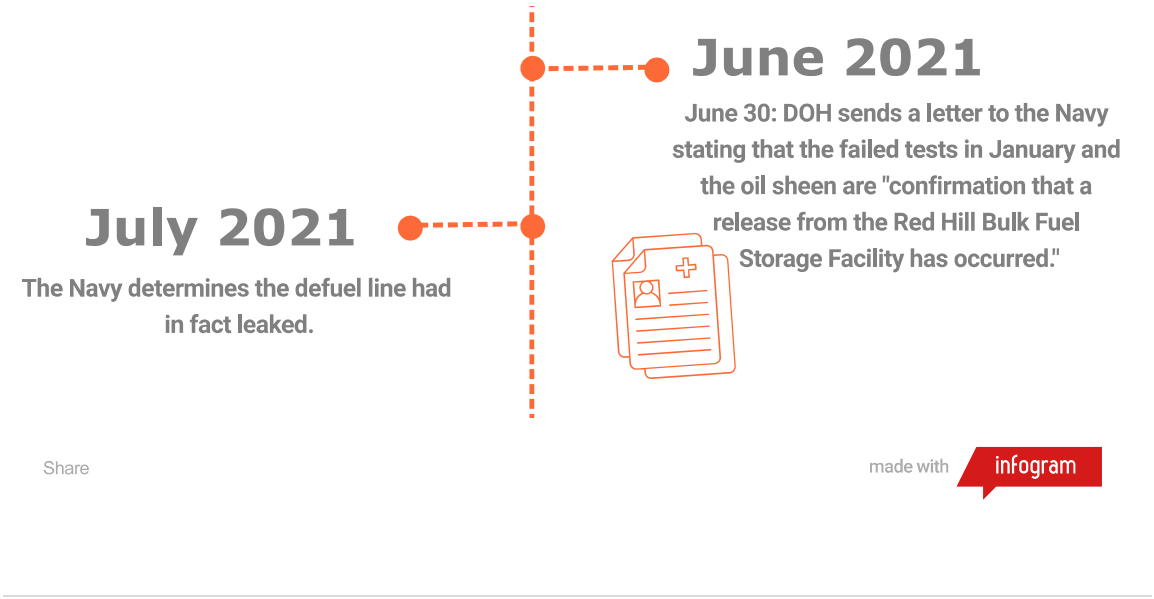
Feb. 3: Commander Darrel Frame denies knowledge of fuel from the Red Hill facility contaminating the environment, with the exception of a well-known 2014 spill.

Feb.4: A Navy commander emails colleagues to say "a relatively significant amount" of fuel is being released into Pearl Harbor's water every day.

Feb. 5: Contested case hearing concludes.

May 2021

May 18: DOH learns of the two failed pipeline tests in January.



Timeline: Red Hill Pipeline Leak Into Pearl Harbor
Infogram

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ATTACHMENT D

STATE OF HAWAII DEPT. OF HEALTH

Case No. 19-UST-EA-01

TESTIMONY OF JOHN FLOYD

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, EMPLOYER, AND BUSINESS ADDRESS.

A. My name is John Floyd and I am employed by the Department of the Navy at Naval Supply Systems Command Fleet Logistics Center Pearl Harbor.

Q. WHAT IS YOUR CURRENT POSITION?

A. I am the Deputy Director of the Regional Fuel Department for Naval Supply Systems Command, Fleet Logistics Center Pearl Harbor.

Q. HOW LONG HAVE YOU BEEN AT YOUR CURRENT POSITION?

A. I have been the Deputy Director of the Regional Fuel Department for six years, but have worked in petroleum operations management for 41 years total.

Q. WHAT OTHER POSITIONS HAVE YOU HELD IN PETROLEUM OPERATIONS?

A. I have managed fuel operations, fuel facilities maintenance, environmental compliance, and safety programs at thirteen different activities where I was responsible for all phases of operational petroleum logistics support. My most recent assignment, prior to being assigned to Pearl Harbor, was as the Area Fuels Director for Naval Supply Systems Command, Fleet Logistics Center Yokosuka, Japan. In that capacity I managed operations and maintenance for three bulk fuel terminals: Defense Fuel Support Point Atsugi, Defense Fuels Support Point Tsurumi, and Defense Fuel Support Point Hazozaki, which like the Red Hill Bulk Fuel Storage Facility (Red Hill Facility), is a multi-product

terminal with deep water piers, and large underground storage tanks (USTs) that were mined into a mountain.

Q. WHAT ARE YOUR RESPONSIBILITIES AS THE DEPUTY DIRECTOR OF THE REGIONAL FUEL DEPARTMENT?

A. There are four main responsibilities of the Deputy Director of the Regional Fuel Department. I am responsible for recruitment, staffing, training, qualification and employee development and performance management, as well as for development, submission, and execution of the financial operating budget. This is critical to ensure the terminal is properly resourced through human capital as well as having the right parts, material, and equipment available to sustain operations. Additionally, I also manage all aspects of fuel operations to include fuel receipt, storage, delivery, quality surveillance, and inventory management. I develop and execute short and long range plans for accomplishment of mission requirements and set overall work priorities and resolve conflicts in workload scheduling and resource commitments. I oversee development of standard operational procedures (SOPs) and operational order. Fuel operations to support the warfighter is the very core of what we do at the Red Hill Facility. This requires controls and oversight of every operation, procedure, and employee involved. Lastly, I ensure completion of all required maintenance and repair work, to include preventive and corrective, breakdown, and out-sourced contractor maintenance. I develop and prioritize long range plans to include Military Construction and Sustainment Restoration and

1 Modernization to maintain the physical plant and supporting infrastructures to ensure the
2 facilities meet all fuel operations, safety, fire, and environmental requirements. We
3 currently have planned approximately $470 million in projects over the next five years.
4 Sustainment of the Red Hill Facility infrastructure is a critical aspect of operating the
5 facility in a safe and environmentally compliant manner.

6 **Q. WHO IS ON YOUR STAFF?**

7 There is a total of 118 employees within the Fuels Department. There are eight military
8 personnel and 110 civilian personnel.

9 **Q. WHAT ARE YOUR RESPONSIBILITIES OVER REGULATORY**
10 **COMPLIANCE?**

11 A. It is my job to ensure the facility and its operations are in compliance with all federal,
12 state, and local laws, regulations and policies. I establish, maintain, and test oil spill
13 response plans, spill prevention control and countermeasures plans, and all other
14 contingency plans in accordance with the regulations. These include life, safety, and fire
15 prevention programs and associated training requirements for the Red Hill Facility
16 personnel; the use of proper personal protective equipment; and facilitate periodic
17 inspections of facilities, their operations, and personnel.

18 **II. <u>THE RED HILL FACILITY</u>**

19 **Q. WHERE IS THE RED HILLFACILITY LOCATED?**

A. As Exhibit N-88 provides, the Red Hill Facility is a bulk fuel storage facility located approximately three miles northeast of Joint Base Pearl Harbor-Hickam and approximately eight miles northwest of Honolulu, between south Halawa Valley and Moanalua Valley. Exhibit N-88 is a top satellite view of the volcanic mountain ridge between Halawa and Moanalua valleys, which depicts the rough locations of the Red Hill Facility, Halawa Correctional Facility and Board of Water Supply (BWS) Drinking Water Wells.

Q. HOW DOES THE RED HILL BULK FUEL STORAGE FACILITY DIFFER FROM OTHER FUEL STORAGE FACILITIES?

A. The Red Hill Facility is unique and distinct from other fuel storage facilities because it is an underground facility hardened against kinetic attacks. It is resilient because it does not require electrical power to issue fuel, since the tanks were built at elevation to facilitate gravity flow of fuel down the mountain to the piers and Hickam airfield. The fuel stored also provides economic independence from the local market. It is also capable of being used to support the state of Hawaii in the event of a disaster.

Q. WHAT IS EXHIBIT N-87?

A. This map provides an overview of the Red Hill Facility and the major outside commercial agencies: HECO Honolulu Power Plant, Daniel K. Inouye International Airport and Port of Honolulu, and their respective locations. The bolded green line is the 23 mile cross-country Par Hawaii Refining multi-product pipeline that runs west to east from Kapolei

to Honolulu, which supports fuel lifts to the Red Hill Facility and outside commercial agencies.

Q. WHAT SYSTEMS COMPRISE THE RED HILL FACILITY?

A. It consists of twenty (20) fuel storage tanks, seven miles of tunnels with 29 miles of pipelines, ventilation systems with air intakes and exhaust portals, a bombproof pump house with intricate controls and surge tanks, slop oil and oil recovery facilities, and a concrete pier that can fuel four ships at the same time.

Q. WHAT DOES EXHIBIT N-50 DEPICT?

A. Exhibit N-50 is a view of the inside of a Red Hill tank within the Red Hill Facility. The top and bottom ends of the cylinders are dome-shaped for. The tank in this picture is empty because it is undergoing the Clean, Inspect, and Repair (CIR) Process. The two pictures of the Lower Dome area show different phases of the CIR Process. The picture on the left depicts the coating of the Lower Dome area during the repair phase. The picture on the right was taken during the Inspection Phase.

Q. **WHAT DOES EXHIBIT N-90 DEPICT?**

A. Exhibit N-90 provides a cross-section view of one of the Red Hill tanks. The tanks have an upper and lower access tunnel for Red Hill Rovers to inspect the skin valves, pipeline and manholes of each of tank.

Q. WHAT ARE THE UPPER AND LOWER TUNNELS?

A. The upper and lower tunnels are the two access points of the tanks. The upper tunnels now serve as access to the ventilation for the tanks, their gauging electronics, as well as the ladders leading to the top of the tanks where manual gauging can be conducted. When the tanks undergo the CIR process, the upper tunnel is used as the primary entrance and exit. The lower access tunnel serves as the tunnel for the above ground fuel pipeline to carry fuel back down to Pearl Harbor.

Q. **WHAT DOES EXHIBIT N-51 DEPICT?**

A. Exhibit N-51 is a view of the Red Hill Upper Access Tunnel Area, which travels from Red Hill Tanks 19 and 20 to ADIT #4. The Upper Tunnel Area provides a pathway to travel from and between tanks, and transports materials and equipment to conduct maintenance. All tanks can be accessed using the upper tunnel.

Q. **WHAT DOES EXHIBIT N-52 DEPICT?**

A. This picture is a view from the Red Hill Upper Tunnel Area. The Tank Gallery is a direct pathway to each Red Hill UST at approximately 190 feet. The ladder travels on top of each Red Hill UST for manual gauging. In the right picture, the equipment display shows all necessary data for that particular tank, including the product type, inventory, level and temperature. The Upper Tunnel Gallery Area is also where the Red Hill Rover inspects the tank once per shift for any weeps, leaks, or safety hazards, and to conduct manual gauging as required. The Automatic Tank Gauge (ATG) apparatus is also inserted into the tank at this point.

1 **Q. WHATDOES EXHIBIT N-53 DEPICT?**

2 A. This picture is a view of the Red Hill lower access tunnel area, which travels from Red
3 Hill Tank 19 and 20 to Pearl Harbor. The lower access tunnel area provides a pathway to
4 travel from or between tanks. The lower access tunnel also has the piping and skin
5 valves for each tank that is aligned to distribute fuel throughout the complex.

6 **Q. WHAT DO EXHIBIT N-54 AND EXHIBIT N-55 DEPICT?**

7 A. Exhibits N-54 and N-55 are pictures that represent the lower access tunnel oil tight door,
8 which displays both viewpoints of the door. This door acts as a secondary containment
9 barrier if a substantial release is confirmed in the Red Hill Facility lower access tunnel
10 area, and is designed to hold the liquid content from one Red Hill tank. The door can
11 either be activated from a Control Room or remotely at the doorway.

12 **Q. WHAT DOES EXHIBIT N-89 DEPICT?**

13 A. Exhibit N-89 is a side satellite view, oriented southwest to northeast, of the volcanic
14 mountain ridge between Halawa and Moanalua valleys, which graphically represents the
15 rough location of the Red Hill Facility, including the twenty (20) vaults arranged in two
16 parallel rows.

17 **Q. WHAT DO EXHIBITS N-46 AND N-47 DEPICT?**

18 A. Exhibits N-46 and N-47 represent the Underground Pump House (UGPH). The UGPH
19 serves as the "Hub" of the Red Hill Facility, where the majority of all fueling operations
20 and movements transfer through. During fuel delivery operations, the three fuel pipelines

from Red Hill run through an underground tunnel for approximately 3.5 miles and enter the UGPH, where piping and valves are aligned to distribute fuel to its destination. For receipt of fuel operations, it provides additional pressure from the UGPH pumps to transfer the fuel up the hill and into the Red Hill tanks.

Q. WHAT DOES EXHIBIT N-48 DEPICT?

A. Exhibit N-48 shows the Harbor Tunnel, which consist of the three gravity-fed pipelines which run approximately 3.5 miles from the Lower Tunnel Red Hill Facility to Pearl Harbor. The Harbor Tunnel serves as the "Spokes" of the Red Hill Facility, where all Red Hill Facility fuel operations and movements must transfer through the Harbor Tunnel to reach UGPH. The Harbor Tunnel is inspected by our Red Hill Rover on a daily basis for any weeps, leaks, and safety concerns.

Q. WHAT DOES EXHIBIT N-49 DEPICT?

A. Exhibit N-49 is a diagram that provides a macro view of the Red Hill Facility.

Q. WHO OPERATES THE RED HILL FACILITY?

A. Naval Supply Systems Command (NAVSUP) Fleet Logistics Center (FLC) Pearl Harbor.

Q. WHAT IS THE ROLE OF THE DEFENSE LOGISTICS AGENCY (DLA) FOR THE RED HILL FACILITY?

A. DLA owns the fuel stored in the Red Hill Facility that the Navy retails to the end user. DLA is also responsible for funding terminal operations, maintenance, facility sustainment, restoration, and modernization of facilities.

STATE OF HAWAII DEPT. OF HEALTH

Case No. 19-UST-EA-01

TESTIMONY OF JOHN FLOYD

Q. WHAT IS THE ROLE OF NAVSUP FOR THE RED HILL FACILITY?

A. NAVSUP is responsible for the day–to-day operation of the Red Hill Facility to include the receipt, storage, and issuance of all fuel as well as the coordination of all maintenance and repair. NAVSUP is responsible for operating the facility in accordance with established DoD guidelines and the Hawaii Administrative Rules that regulate USTs.

Q. WHAT IS THE MISSION OF THE NAVY REGIONAL FUEL DEPARTMENT?

A. The mission of the Fuels Department is to store, manage, and distribute bulk petroleum, oil, and lubricants, in support of the Navy, U.S. Department of Homeland Security and other Federal agencies across the Pacific Area of Responsibility (AOR).

The Pearl Harbor Terminal is the primary fuel storage and dispensing facility in the Pacific and serves the mid-Pacific arena. It provides mission-critical fuel and lubricating oils to support operations of the Navy, U.S. Department of Homeland Security, and other Federal agencies. Specifically, the mission of the Fuels Department is to: (1) Direct and coordinate the receipt, storage, issue, and distribution of bulk petroleum products required for support of fleet units and the area military shore activities; (2) Maintain and operate a petroleum laboratory designed to serve all military departments and 3rd Fleet Units in the Pacific Basin, to test all petroleum samples received to ensure usability and quality status of petroleum assets; (3) Maintain bulk fuel and aircraft refueling facilities in an operational ready status through corrective and planned

1 maintenance in accordance with higher directives; and (4) Oversee all aircraft fuels and
2 cryogenics operations at Joint Base Pearl Harbor Hickam.

3 **Q. WHAT IS THE ORGANIZATIONAL STRUCTURE OF THE NAVY REGIONAL**
4 **FUEL DEPARTMENT?**

5 A. The Director is responsible for the overall fuel operations, facilities maintenance and
6 sustainment of the Defense Fuel Supply Point (DFSP) Pearl Harbor, long term planning,
7 and customer support. and is tasked with ensuring DFSP Pearl Harbor meets the mission
8 requirements. The Deputy Director reports to the Director. Supervisors of Inventory
9 Accounting, Operations, and Technical Division and the Training Administrator report to
10 the Deputy Director. In the absence of the Director, the Deputy Director serves as the
11 senior fuel department representative and is responsible for the day to day operations of
12 Fleet Logistics Center fuels.

13 **Q. WHAT ARE THE RESPONSIBILITIES OF THE FACILITIES DIVISION**
14 **WITHIN THE REGIONAL FUEL DEPARTMENT?**

15 A. The Facilities Division is responsible for the overall management of the maintenance of
16 fuels facilities, structures, and grounds.

17 **Q. WHAT ARE THE RESPONSIBILITIES OF THE INVENTORY ACCOUNTING**
18 **DIVISION WITHIN THE REGIONAL FUEL DEPARTMENT?**

19 A. The Inventory Accounting Division is responsible for fuels accounting, purchasing,
20 equipment and budgets.

Q. WHAT ARE THE RESPONSIBILITIES OF THE OPERATIONS DIVISION WITHIN THE REGIONAL FUEL DEPARTMENT?

A. The Operations Division is responsible for the operation of all DFSP Pearl Harbor fuel systems to include tank farms, piers, truck racks, and pipelines.

Q. WHAT ARE THE RESPONSIBILITIES OF THE TECHNICAL DIVISION WITHIN THE REGIONAL FUEL DEPARTMENT?

A. The Technical Division provides fuels quality assurance services for the mid-Pacific region.

Q. WHAT TYPE OF EDUCATION OR CERTIFICATIONS ARE REQUIRED OF THE STAFF WITHIN THE FUELS DEPARTMENT?

A. There are varying levels of education through-out the department ranging from High School through graduate degrees. The only positions with an educational requirement are the four engineers and two chemists. All Operations and Lab employees must complete a competency-based certification for their position. All Class A/B and C UST Operators must complete a state approved training program every five years in accordance with Hawaii Administrative Rules (HAR) 11-280.1. All Class C UST Operators must complete a state approved training program every year per HAR 11-280.1. All Responsible Officers and alternates appointed to manage the Defense Working Capital Fuel Inventory must complete formal training before assuming duties and retrain every

1 two years thereafter. Finally, all fuel accountants must complete formal training before
2 assuming duties and retrain every two years thereafter.

3 **Q. WHAT ARE THE RESPONSIBILITIES OF THE OPERATIONS GROUP?**

4 A. The Operations group is responsible for the operation and maintenance of the Red Hill
5 Facility, Pearl Harbor, and Hickam fuel systems to include the piers, tank farms, truck
6 loading racks, hydrant pits, and pipelines.

7 **Q. WHAT IS THE ROLE OF THE SUPERVISORY DISTRIBUTION FACILITIES**
8 **SPECIALIST?**

9 A. The Supervisory Distribution Facilities Specialist is responsible for the overall planning,
10 organizing, scheduling, and directing of fuel operations. The Supervisory Distribution
11 Facilities Specialist determines requirements for personnel and equipment to support
12 fueling operations, plans and revises shift schedules and manning levels, and determines
13 workforce skills/competency requirements to meet work requirements.

14 **Q. WHAT IS THE ROLE OF THE FUEL DISTRIBUTION SYSTEM OPERATORS?**

15 A. Fuel Distribution System Operators operate automated and manual work stations to
16 control and direct the transfer of petroleum products, monitor bulk storage and pump
17 house areas, check pressure gauges, inspect for fuel leaks and respond to alarms.

18 **Q. WHAT IS THE ROLE OF THE FUEL DISTRIBUTION SYSTEM EMPLOYEES?**

19 A. The Fuel Distribution System Workers operate manual work stations within the bulk fuel
20 storage and dispensing system to transfer fuel to ships, small craft, tankers, barges, and

tank trucks. They are present at the facility 24-hours per day and respond to alarms and monitor bulk storage and pump house areas checking pressure gauges, inspecting for fuel leaks, and ensuring proper position of valves, tank gauges, and switches, and use manual or automated means to read, record, and properly document.

Q. WHAT IS THE ROLE OF THE SUPPLY SYSTEMS ANALYST?

A. The Supply Systems Analyst serves as the Fuels Manager Defense (FMD) Resource Control Officer and is responsible for management and maintenance of the FMD database. The FMD is an automated fuels management system that supports inventory accounting, dispatch operations, fuel quality control and testing, equipment and personnel management for airfield fuels operations.

III. OPERATION OF THE RED HILL FACILITY - SYSTEMS OF SYSTEMS AND LAYERS OF PROTECTION

Q. WHAT DOES SYSTEM OF SYSTEMS MEAN AT THE RED HILL FACILITY?

A. System of systems is used to describe aspects of the Red Hill Facility's operation because it has multiple systems that work dependently or independently to provide multiple layers of protection. Each system is designed and implemented to monitor and ensure the safe operation of the Red Hill Facility.

Q. WHAT DOES LAYERS OF PROTECTION MEAN AT THE RED HILL FACILITY?

A. There are three layers of protection related to releases that are implemented at the Red Hill Facility -- *prevention, detection, and mitigation.*

Q. WHAT ARE THE LAYERS OF PROTECTION RELATED TO *PREVENTION* OF RELEASES?

A. Prevention of releases at the Red Hill Facility is accomplished through the Tank Inspection Repair and Maintenance (TIRM) process. This includes recoating areas of the tank interior steel liners to prevent corrosion as specified by the coating specialist; decommissioning smaller nozzles (piping at bottom of tank) to reduce risk; enhanced contractor qualification process to improve the reliability of tank inspection and repairs; updated processes and procedures for inspection, testing, quality control, and quality assurance; enhanced procedures for returning tanks to service; and standardized operator UST training. The enhanced repair processes provide for better reliability of the Red Hill tanks. The basic process is three steps. First, the tank is scanned with non-destructive technologies, then, for safety, holes are drilled, tested for gas, and repaired. Finally, patch plates are welded on, inspected, and tested for integrity. In addition to the repair process, portions of the tank interior steel liners are recoated to prevent corrosion as specified by coating specialists.

Q. WHAT HAS THE NAVY DONE REGARDING DECOMMISSIONING NOZZLES AS IT RELATES TO *PREVENTION* OF RELEASES?

A. To reduce the risk of a potential fuel release as identified in the quantitative risk assessment completed under the AOC, the Navy is decommissioning nozzles that are too small for humans to inspect from service during each CIR project and are converting them to double-wall piping.

Q. WHAT HAS THE NAVY DONE REGARDING PROCESSES AND PROCEDURES RELATED TO THE *PREVENTION* OF RELEASES?

A. In addition to updated processes and procedures for inspection, testing, quality control, quality assurance and upgraded procedures for returning tanks to service, the Navy has revised and standardized operator training and enhanced contractor qualification processes to improve tank inspection and repairs.

Q. WHAT ARE THE LAYERS OF PROTECTION RELATED TO *DETECTION* OF RELEASES?

A. The focus areas for detecting any releases at the Red Hill Facility include: (1) conducting fuel inventory monitoring using Automated Fuel Handling Equipment system and Automatic Tank Gauging systems; (2) conducting daily visual inspections; (3) conducting manual fuel inventory, including trend analysis; (4) pipeline monitoring; (5) increased tank tightness testing from annual to semi-annual, twice the state requirement; (6) soil vapor monitoring; (7) increased groundwater monitoring; and (8) overfill protection system.

Q. WHAT ARE THE LAYERS OF PROTECTION RELATED TO *MITIGATION* IN THE EVENT OF A RELEASE AT THE RED HILL FACILITY?

A. It is my understanding the Navy is working with Regulating Agencies through the AOC to meet its mitigation requirements.

Q. FOCUSING BACK ON YOUR RESPONSE RELATED TO *DETECTING* ANY RELEASES AT THE RED HILL FACILITY, WHAT IS THE AFHE SYSTEM?

A. The Red Hill AFHE informs the Navy of inventory data, alarm conditions, system pressures via remote transmitters, fuel metering, high pressure and low pressure conditions, valve position indicators, and pump controls and status. It is essentially a distributed control system that provides remote, real-time monitoring of the fuel distribution system and is integrated into the fuel handling and storage system installed at the Red Hill Facility. It is designed to improve the efficiency and safety of fuel operations by providing the remote monitoring and control of fuel storage and transfer operations, thus improving data management.

Q. DESCRIBE THE ACTIONS THAT ARE TAKEN IF AN ALARM IS TRIGGERED IN THE AFHE SYSTEM.

A. The AFHE Control Room Operator (CRO) will receive an alarm report at the AFHE central operating station. The alarm will be acknowledged and the Rover will be dispatched to the site depending on the type of alarm. All operations will cease for critical alarms and the alarm will be reported to the Operations Supervisor, and the

1 Operations Supervisor will notify me, the Deputy Director. Next, a trouble ticket is
2 initiated for all alarms that can't be resolved and all workers are tracked by the
3 Operations Supervisor until closed. The history of all alarms are recorded in the AFHE
4 system and alarm data can be retrieved by a Reports Generator.

5 **Q. WHAT IS THE AFHE CONTROL ROOM?**

6 A. The AFHE Control Room provides a centralized location to operate and monitor the
7 operations of the Red Hill Facility. From this centralized location, a CRO assisted by
8 two Rovers can operate and monitor the entire Red Hill fuel complex. Exhibit N-91
9 depicts the Red Hill Facility's AFHE Control Room, located in the UGPH. This Control
10 Room is manned 24 hours a day, seven days a week by a CRO, which is a senior Fuel
11 Distributions System Operator.

12 **Q. WHAT FUNCTIONS OF THE AFHE SYSTEM RESIDE IN THE CONTROL**
13 **ROOM?**

14 A. All Product Storage and Product Movement functions of the AFHE System reside in the
15 Control Room and the Control Room delivers all Inventory Control Information to the
16 Fuels Office on site.

17 **Q. WHAT IS THE PRODUCT STORAGE FUNCTION?**

18 A. Product storage and inventory information, to include liquid level, temperature, and
19 density, is measured and recorded by the Automatic Tank Gauging (ATG) probes located
20 inside each tank. The data is presented as graphical displays on AFHE screens in the

1 Control Room, client stations, or used to produce daily or on-demand product inventory
2 reports to account for fuel.

3 **Q. WHAT ACTIONS ARE TAKEN IF AN ALARM IS TRIGGERED FOR THE**
4 **PRODUCT STORAGE FUNCTION?**

5 A. The critical alarms that are triggered in this function are Unscheduled Fuel Movement
6 (UFM) and high-level alarms. UFMs are triggered when one-half inch of uncommanded
7 fuel movement occurs. The CRO will stop all operations for the particular tank with the
8 alarm, dispatch a Rover to verify that alarms are closed, and inspect the tank for visible
9 signs of a release.

10 **Q. WHAT IS THE RESPONSE WHEN A UFM IS RECEIVED?**

11 **A.** When a UFM is received, the operator is required to immediately silences the alarm and
12 print the event. The Red Hill Rover will investigate the lower tank gallery and tank
13 suction valves for evidence of leakage or a valve that is not fully shut. If the UFM is
14 received for one of the Upper Tank Farm tanks, the Kuahua Rover will investigate the
15 tank berm area and skin valves. The Rover will manually close the Tank suction/fill
16 valves and put the valve/s into high torque. Next, the CRO places the affected tank into
17 an evolution, prints the tank display that had the UFM, then immediately removes it from
18 evolution. If the UFM does not clear, continue to order the Rover to manually gauge the
19 affected tank. The CRO will compare the manual reading to the current AFHE reading
20 and annotate any discrepancies and will compare the most recent manual gauge to the last

recorded manual measurement to determine if the fuel level has changed since the last applicable issue, receipt or sample. If the most recent manual measurement matches the last manual measurement (within 3/16"), but the AFHE reading is not within 3/16th inch, then the problem probably resides with the AFHE. If the problem resides with the AFHE, then email the Bulk Fuel Operations Supervisor, the Fuel Operations supervisor, the Deputy Director, and the Director with your causative research and clearly state that this appears to be an AFHE problem rather than a fuel leak. If the problem resides with the AFHE, then the Control Room Operators will be responsible for having the affected tank manually gauged daily, unless directed otherwise by Management. If the most recent manual measurement does not match the last manual measurement (decrease in excess of 3/16"), then the CRO on watch will call the Bulk Fuel Operations Supervisor, Fuel Operations Supervisor, the Deputy Director, and Director immediately. In addition, the CRO will direct the Red Hill Rover to conduct manual measurements every two hours until directed otherwise by Management. For high-level alarms, the CRO will announce and acknowledge all high-level alarms and terminate all operations. High-high level alarms trigger a full system shutdown by inhibiting operation of all pumps and remote operation of all skin valves until the high-level has decreased.

Q. DESCRIBE THE PRODUCT MOVEMENT FUNCTIONS.

A. The product movement function commands product movement from a source tank to a specific destination. The AFHE records and tracks the product movement start level,

start inventory, stop time, closing inventory, flow rates, source and destination temperatures. This information is recorded on AFHE screens in the Control Room and can be filed on the system server.

Q. WHAT ACTIONS ARE TAKEN IF AN ALARM IS TRIGGERED FOR THE PRODUCT MOVEMENT FUNCTION?

A. The most typical alarm during the product movement function is the source destination out of balance alarms which occurs when the flow rate between the source tank and receiving source does not match. This is an indication a fuel release or system misalignment. The CRO will cease operations and reconcile the inventory from the source tank to the destination to ensure no fuel has been lost to release.

Q. WHO ARE THE CONTROL ROOM OPERATORS?

A. There are four Fuel Distribution System Operators that are the primary CROs, six Fuel Distribution System Workers that are back-up CROs that staff the Control Room during complex operations, weekends/holidays, and call-offs for the primary operators.

Q. WHAT ARE THE RESPONSIBILITIES OF THE CRO?

A. The CRO is the senior Fuels Distribution System Operator on a shift. They spend their on-duty shift inside the AFHE Control Room where their main duties are to operate and monitor the AFHE. Specifically, they align the system for fuel receipts and transfers, remotely open and close valves to provide centralized control and monitoring of the system, remotely operate and monitor run times on pumps and monitor flow and system

pressures, monitor and respond to alarms, monitor inventory, direct the actions of Rovers in the field, maintain logs and records, and monitor security of the system.

Q. WHAT IS A ROVER?

A. The Rover works in concert with the CRO and is the eyes and ears in the field. The Rovers shift is spent inside the Red Hill Facility and is responsible for gauging tanks and inspecting the facility for leaks, safety hazards, and security violations.

Q. WHAT IS THE RED HILL ROVING WATCH CHECKLIST?

A. The Rover systematically inspects the facility during their shift using a checklist of specific inspection items. The Rover checklist is submitted to the Operations Supervisor after completion of each 24-hour period. Exhibit N-73 is the Red Hill Roving Watch Checklist. Rovers are required to conduct checks on all the items on the Checklist twice per shift by physically walking or riding in the train to make the checks.

Q. WHAT ARE THE DIFFERENT AREAS THE ROVER INSPECTS TWICE PER SHIFT?

A. The Rover must check and conduct preventative maintenance in the Upper Tunnel, Lower Tunnel, ADITS, Main Sump Pit, Battery Room, Ventilation Fans/Blowers, Tank #1701(311), AFFF Retention Tanks, Rover Station, Train, and Train tracks switches. Upon completion of the checks, the Rover must print and sign the Fleet Logistics Center Fuel Form 703-30 and report any abnormalities to the CRO and record conditions in the log, as necessary.

1 **Q. HOW DOES THE FLEET LOGISTICS CENTER FUEL FORM COMPARE TO**
2 **THE HAWAII STATE DEPARTMENT OF HEALTH (DOH) INSPECTION**
3 **FORM?**
4 A. Exhibit N-45 provides the DOH Inspections form. The Red Hill Rover inspection far
5 exceeds the DOH requirements in terms of frequency and what is inspected. When
6 reviewing the DOH form, you will also note that the majority of the inspections required
7 by DOH are not applicable for the Red Hill Facility. This was confirmed by the DOH
8 Inspectors during the October 2020 Compliance Inspection.
9 **Q. WHAT STEPS ARE TAKEN IF AN ANOMALY IS FOUND WHEN**
10 **CONDUCTING INSPECTIONS?**
11 A. The Rover will record the anomaly on the Rover checklist and inform the CRO
12 immediately. The CRO will then notify the Operations Supervisor.
13 **Q. HOW DOES THE NAVY MONITOR FUEL LEVELS TO DETECT RELEASES**
14 **AT THE RED HILL FACILITY?**
15 A. The Navy has Automatic Tank Gauging (ATG), which is a system for measuring the
16 level of fuel in the tanks and monitoring fuel storage tank product levels automatically for
17 both inventory control and custody transfer purposes. The ATG provides a real time
18 report of the product level in each tank. The ATG system provides for continuous, real
19 time inventory management, measures product levels, relative density, temperature, water
20 levels, and ullage (vapor space) in each tank.

Q. HOW DOES THE ATG SYSTEM WORK?

A. Each tank has an ATG probe that measures the level of fuel in each tank. The ATG data is transmitted to a central computer that is used to monitor and control operation of the system and is monitored 24 hours a day, seven days a week, from the AFHE Control Room. The system triggers alarms when tank levels change. If the tank level exceeds pre-set limits, the ATG system will trigger a system shutdown as part of the overfill protection system for each tank. Each ATG is validated monthly using a National Institute of Standards (NIST) certified manual gauging tape. Any discrepancies between the ATG measurements and manual gauging plus or minus 3/16 of an inch requires recalibration of the ATG. The ATG data is used to monitor, record, and trend the inventory level in each tank.

Q. WHAT HAPPENS IF THERE IS A CHANGE IN THE LEVEL OF FUEL IN THE TANKS?

A. If there is a change of one-half of an inch, the ATG system triggers unscheduled fuel movement (UFM) alarms. A high-level alarm and a high-high level alarm are triggered when the fuel limit reaches a pre-set limit for each tank. The high-high alarm is set at different levels for each tank, but no levels exceed 94 percent of the tank shell capacity.

Q. WHAT ACTIONS ARE TAKEN IF AN INDICATOR OR AN ALARM IS TRIGGERED?

1 A. The CRO will announce and acknowledge all high-level alarms and terminate all
2 operations. High-high level alarms trigger a full system shutdown by inhibiting
3 operations of all pumps and remote operations of all skin valves until the high-high level
4 has decreased. The issue is reported immediately to the Operations Supervisor.

5 **Q. HOW ARE ALARMS LOGGED?**

6 A. There is a central computer server that is controlling and monitoring the whole facility.
7 This server also acts as the alarm logging and history database for the facility and stores
8 all the data to be retrieved at any time via the systems report generator.

9 **Q. WHAT ACTIONS ARE TAKEN IF AN ANOMALY IS FOUND WHEN**
10 **GAUGING TANKS?**

11 A. All in service tanks are gauged continuously by the ATG system. If an anomaly is found
12 when gauging tanks, the CRO will order the Rover to perform a manual gauge validation
13 if the ATG is thought to be in error. If inventory continues trending down or a leak is
14 suspected, enhanced trend analysis is performed by manual gauging every four hours or
15 twice per shift until a determination is made regarding the integrity of the tank.

16 **Q. HOW DOES THE NAVY CONDUCT INVENTORY MANAGEMENT TO**
17 **DETECT RELEASES AT THE RED HILL FACILITY?**

18 A. The Navy has daily inventory management for the Red Hill Facility which provides daily
19 accounting and reconciliation of all fuel received, stored, and issued. Inventory
20 information is filed on the systems server, presented as graphical displays on AFHE

1 screens in the Control Room and client stations or used to produce product inventory
2 reports to account for fuel. The AFHE inventory information informs management of the
3 quantity and disposition of fuel on hand and is used to account for fuel in static storage
4 and as it moves through the system, it is used for fuel accounting, and to establish
5 inventory trend analysis.

6 **Q. WHAT IS THE INVENTORY TREND ANALYSIS?**

7 A. Inventory trend analysis is a method of looking at the inventory over time to identify and
8 assess trends that are so small that they might not be caught through other methodologies.

9 **Q. WHAT LOGS AND RECORDS ARE MAINTAINED AND WHY IS IT**
10 **IMPORTANT?**

11 A. Alarm logs, equipment run logs, inventory logs, fuel transfer records, system pressure
12 records, and evolution tickets are all maintained by the Navy. The information contained
13 in the logs and records provide a traceable and auditable archive of the processes that
14 occur within the system and describe the details of a specific operation.

15 **Q. HOW DOES THE NAVY CONDUCT PIPELINE MONITORING TO DETECT**
16 **RELEASES AT THE RED FACILITY?**

17 A. The Navy has a pipeline monitoring system that provides a real time remote integrity
18 check of the pipelines. The monitoring system senses and records pipeline pressures at
19 specific locations and transmits this information back to the Control Room via pressure

1 indicating transmitters (PITs). This system is monitored 24 hours a day, seven days a
2 week from the AFHE Control Room.

3 **Q. WHAT ACTIONS ARE TAKEN IF AN INDICATOR OR AN ALARM IS**
4 **TRIGGERED?**

5 A. The system produces audible and visual alarms in the AFHE Control Room, if there is an
6 issue with the pipeline pressure. Operations are ceased and a Rover is dispatched out to
7 the site to investigate any fuel release. High pressure alarms may occur on a hot day, and
8 the excess pressure is relieved to a surge tank after the Rover has verified there is no fuel
9 release. All unresolved situations are reported to the Operations Supervisor.

10 **Q. WHAT IS THE VALVE ACTUATOR NETWORK?**

11 A. The valve actuator network provides real time status of all automated valves positioning
12 on the network; open, closed, or the percentage the valve is open. The positioning of the
13 valve is reported back to the Control Room. The status of all remotely operated valves is
14 monitored 24 hours a day, seven days a week from the Control Room.

15 **Q. WHAT ACTIONS ARE TAKEN IF AN ALARM IS TRIGGERED?**

16 A. The system produces audible and visual alarms in the AFHE Control Room. The CRO
17 will send the Rover out to the site to investigate and trouble shoot the source of the
18 problem. The issue is reported to the AFHE Maintenance Tech and Operations
19 Supervisor, if the problem cannot be resolved in the field.

Q. HOW DOES THE NAVY CONDUCT TANK TIGHTNESS TESTING TO DETECT RELEASES AT THE RED HILL FACILITY?

A. Tank tightness testing is a leak detection measure used to determine the integrity of the underground storage tanks. The Navy began biennial tank tightness testing at the Red Hill Facility as a best management practice in 2009. In 2015, the Hawaii Administrative Regulations implemented this requirement, and the Navy increased testing from biennial to annual. Since 2019, the Navy tests every tank's integrity twice as often as the state requires and conducts semi-annual tank tightness testing that can detect a 0.5 gallons per hour (gph) leak rate for each tank containing petroleum product at the Red Hill Facility as a best management practice. The tank tightness testing at the Red Hill Facility is conducted by Mass Technology Corporation using the Mass Technology Corporation's Mass Technology Precision Mass Measurement System (MTPMMS) leak detection method. MTPMMS has been third-party certified for bulk underground storage tank leak detection by Ken Wilcox and Associates, Inc. and is listed in the National Work Group on Leak Detection Evaluations (NWGLDE).

Q HOW DOES TANK TIGHTNESS TESTING WORK?

A. The tank tightness testing uses a transducer attached to a flexible probe that is inserted to the bottom of the tank through the gauge port on the top of the tank. The device measures the differential pressure between a point at the bottom of the tank and another point immediately above the surface of the fuel, over a period of five days when the tank

is closed to any fuel transfer. At the conclusion of the test, the tester conducts a statistical trend analysis of the pressure data to determine whether a leak exists. The Navy's consultant reports that this test can detect a leak of as little as 0.5 gph, which is the current detection limit specified in the regulations for TTT. Exhibit N-64 provides the May 2020 TTT report.

Q. HOW DOES THE NAVY CONDUCT SOIL VAPOR MONITORING TO DETECT RELEASES AT THE RED HILL FACILITY?

A. They Navy conducts continuous soil vapor monitoring for volatile organic compounds (VOCs) in the soils beneath each Red Hill tank to detect any releases. A third-party contractor collects and analyzes soil gas samples at depths of shallow, medium, and deep, and provides a monthly Soil Vapor Monitoring Report. Exhibit N-74, provides the October 2020 report which had no exceedances above environmental action levels.

Q. HOW DOES THE NAVY CONDUCT GROUNDWATER MONITORING TO DETECT RELEASES AT THE RED HILL FACILITY?

A. While not my area of operations, the Navy is conducting groundwater monitoring pursuant to the AOC. The Navy implemented a groundwater monitoring program that collects samples on a quarterly basis and analyzes the samples for petroleum constituents. All monitoring data is submitted to the regulatory agency.

Q. WHAT IS THE NAVY'S OVERFILL PROTECTION AT THE RED HILL FACILITY?

A. The Red Hill tanks are equipped with an AFHE system that has inventory monitoring ATG equipment overflow protection sensors and equipment that de-energizes the pump and shuts an isolation valve to prevent overfilling each underground storage tank once the fuel level in the tank reaches a certain, predetermined level. The AFHE is equipped with both a high and high-high level alarm that is triggered when the fuel level reaches a specific level. High-high level alarms trigger a full system shutdown by inhibiting operation of all pumps and remote operation of all skin valves until the high-high level has decreased. The CRO will cease all operations and investigate the cause of the alarm. The issue is reported immediately to the Operations Supervisor. This monitoring system enables safe operations and protects the environment by shutting down the system before there is a release from overfilling of a tank.

IV. PLANS AND RESPONSE PLANS FOR THE RED HILL FACILITY

Q. WHAT RESPONSE PLANS ARE IN PLACE AT THE RED HILL FACILITY?

A. The Red Hill Facility includes the Operations, Maintenance, Environmental, and Safety Plan; Spill Prevention Control and Countermeasures Plan, Integrated Contingency Plan; Red Hill Fuel Storage Facility Plan; and the Fuel Release Monitoring Systems Report. All of these plans establish policy to operate the Red Hill Facility in accordance with federal and state regulations.

Q. WHAT IS THE OPERATIONS, MAINTENANCE, ENVIRONMENTAL, AND SAFETY PLAN MANUAL?

A. Exhibit N-30 is the Operations, Maintenance, Environmental, and Safety (OMES) Plan is a manual specifically written for the Red Hill Facility and Pearl Harbor Bulk Terminal and is intended to be used primarily by Terminal personnel for facility management, operation, and maintenance responsibilities. The Plan is designed to satisfy the requirements for a manual imposed by Chapter 33 Code of Federal Regulations (CFR) §154.300. The OMES Plan provides SOPs for the following functional areas: general information, security, safety, environmental protection, emergency response procedures, training and qualification program, operational procedures and guidelines, normal receipt operations, normal issue operations, other normal operations, abnormal operations, quality surveillance, and fuel system maintenance. The OMES Plan is used daily by FDSW, Supervisors, and Work Leads to develop job plans for specific and recurring operations.

Q. WHAT IS THE SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN?

A. The SPCC regulations establish the minimum spill prevention and containment procedures, methods, appropriate containment and/or diversionary structures or equipment and other requirements for equipment necessary to prevent and to contain discharge of oil from facilities. Exhibit N-43 is the Spill Prevention Control and Countermeasures Plan (SPCC Plan) developed and implemented for the Red Hill Facility. The plan is for aboveground storage tanks (ASTs) and containers greater than 55 gallons.

1 This is not a response plan but a long-range plan intended to prevent and control the
2 discharge of oil into or upon navigable waters or adjoining shorelines.

3 **Q. WHAT IS THE INTEGRATED CONTINGENCY PLAN?**

4 A. Exhibit N-29 is the Integrated Contingency Plan (ICP), which is the Facility Response
5 Plan that serves as a mechanism to ensure the Spill Management Team is adequately
6 prepared to respond to an emergency Oil or Hazardous Substance incident in order to
7 minimize life threatening situations and damage to natural resources and the
8 environment. The ICP provides facility information, notification requirements, action
9 plans, and spill response management guidance for managing oil spill contingencies.

10 **Q. WHAT IS THE RED HILL FUEL STORAGE FACILITY RESPONSE PLAN?**

11 A. Exhibit N-72 is the Red Hill Fuel Storage Facility (RHFSF) Response Plan and provides
12 response information and procedures for responding to a major oil spill emergency at the
13 Red Hill Facility. Federal regulations require Facility Response Plans to address worst-
14 case discharges that could occur from aboveground storage tank at fuel storage or
15 production facilities (under 40 CFR 112.20).

16 **Q. WHAT IS THE CURRENT FUEL RELEASE MONITORING SYSTEMS**
17 **REPORT?**

18 A. Exhibit N-22 is the Current Fuel Release Monitoring Systems Report. The purpose of
19 the Current Fuel Release Monitoring Systems Report was to document the current release
20 detection system and tank tightness testing procedures used at the Red Hill Facility and

1 evaluate those procedures, in accordance with Section 4 of the Administrative Order on
2 Consent (AOC). The report includes an explanation of recordkeeping procedures, re-
3 filling procedures for tank re-commissioning, filling procedures for daily operations,
4 release detection systems and methods, release detection sensitivity, and previous market
5 surveys for applicable leak detection systems.

6 **V. IMPROVEMENTS TO THE RED HILLFACILITY – PART OF THE AOC**

7 **Q. FROM THE OPERATIONAL PERSPECTIVE, WHAT SIGNIFICANT**
8 **IMPROVEMENTS HAVE BEEN IMPLEMENTED OR ARE PLANNED TO BE**
9 **CONDUCTED THAT ARE PART OF THE AOC?**

10 A. There have been many improvements but those most significant to me as the operator
11 have been the changes that enhanced tank repair and maintenance and leak detection.

12 **Q. HOW HAS THE TANK REPAIR AND MAINTENANCE OF THE TANKS**
13 **CHANGED UNDER THE AOC?**

14 A. We have enhanced our tank repair and maintenance procedures as a result of the AOC
15 Section 2, Tank Inspection Repair Maintenance (TIRM). Some items from the TIRM
16 that have already been incorporated are enhanced tank inspection procedures that used an
17 independent third-party inspector with a different type of test instrument to prove the
18 original findings. We also contracted for a third-party quality assurance specialist to
19 verify welding techniques and non-destructive evaluation techniques and findings. We
20 conduct blind testing of non-destructive evaluation techniques to validate their

1 qualifications and instruments before they begin work on site. The tank repair
2 improvements were implemented to improve the reliability of our tank repair process.
3 The repair improvements help to ensure the hydraulic and structural integrity of the
4 repaired tanks.

5 **Q. HOW HAS THE LEAK DETECTION OF THE RED HILL TANKS CHANGED**
6 **UNDER THE AOC?**

7 A. Leak detection has improved under the AOC Section 4 by moving from biennial tank
8 tightness testing as a best management practice to an annual requirement for all Red Hill
9 tanks before beginning semi-annual testing in 2019. We are now working on the final
10 stages of a hard installation of a leak detection for all tanks. This new technology will
11 allow the facility to increase the frequency that we conduct tank tightness testing; it will
12 also allow the Red Hill Facility to initiate a test on demand, vice waiting for a contractor
13 to mobilize, if a leak is suspected. We have improved our alarm response procedures
14 used to report, prosecute, and clear alarms. We have implemented rigorous controls in
15 our Return to Service process for tanks completing an out of service API-653 repair cycle
16 to now mandate smaller incremental fills with hold times for monitoring and incremental
17 tank tightness testing to be conducted for at least five different levels during the fill
18 process. Lastly, we have just initiated a project to install continuous soil vapor
19 monitoring as a pilot at one tank. Similar to the tank repair improvements, the lead

1 detection improvements help to ensure the hydraulic integrity of the tank, as well as
2 increase the ability to detect a release from a tank.

3 **VI. INITIATIVES/IMPROVEMENTS BEYOND THE AOC**

4 **Q. WHAT IS EXHIBIT N-65?**

5 A. Exhibit N-65 is what is referred to as the 1998 Willbros Report. The appendices to this
6 report are Exhibits N-66, N-67, N-68, N-69, and N-70.

7 **Q. WHAT IS THE SIGNIFICANCE OF THE 1998 WILLBROS REPORT?**

8 A. In 1992, the Navy contracted Willbros Engineers, Inc., to conduct a comprehensive study
9 of the Red Hill Fuel Tunnel Complex and provide a fire, life safety, and environmental
10 risk assessment and analysis. In 1998, the contractor completed the study and made 188
11 recommendations for improvement totaling an estimated $1.35 million.

12 **Q. WHAT HAS THE NAVY DONE TO ADDRESS THE RECOMMENDATIONS OF**
13 **THE 1998 WILLBROS REPORT?**

14 A. The Navy has implemented and completed all 188 of the recommendations to mitigate
15 deficiencies that existed within the Red Hill Facility at the time. Some of the items from
16 this report that have been completed include: (a) Repair Red Hill Tunnel Oil Tight Doors,
17 $713,000.00 (construction completed October 2009); (b) Replace Red Hill slopline,
18 $1,950,000.00 (construction was completed 2013); (c) Red Hill Tunnel Structural
19 Repairs, $30,000,000.00 (construction was completed 2014); (d) Red Hill Fire
20 Suppression and Ventilation Improvements, $55,000,000.00 (funded under Fiscal Year

2015); (e) Fire Protection contract that provides routine maintenance, testing, inspection, and repair of Red Hill fire protection systems ($400,000.00 per year); (f) Repair Red Hill Ventilation, $8,700,000.00 (construction completed 2014); and (g) Improve Red Hill Tunnel Drainage and Rails, $7,100,000.00 (construction completed 2009).

Q HOW HAVE THESE IMPROVEMENTS AND UPGRADES IMPROVED THE SAFE OPERATION OF THE RED HILL FACILITY?

A. This assessment established requirements for upgrade of key life safety, fire protection, and environmental systems that have been installed and are now maintained to protect the facility and water resources in the area.

VII. THE RED HILL FACILITY INSPECTIONS

Q. ARE YOU FAMILIAR WITH INSPECTIONS CONDUCTED BY REGULATORS OF THE RED HILL FACILITY?

A. Yes, under the terms of the AOC, the DOH and EPA have authority to oversee and inspect the facility. They routinely inspect the facility at their discretion to ensure the facility is operating and being maintained in accordance with regulatory requirements, and to verify if the facility is being operated and maintained in an environmentally safe manner.

Q. ARE YOU FAMILIAR WITH THE INSPECTION OF THE RED HILL FACILITY THAT TOOK PLACE IN 2016?

1 A. Yes, the evaluation was conducted from May 9-12, 2016. The evaluation team conducted
2 inspections of specific areas, in accordance with regulations or compliance codes. This
3 was followed-up with a review of the applicable logs, records, and reports for that area to
4 ascertain compliance. For some areas, the evaluators conducted interviews with
5 operators and maintainers to validate their processes and controls. The Final Evaluation
6 Report is provided as Exhibit N-71.

7 **Q. WHAT WAS THE OBJECTIVE OF THIS INSPECTION?**

8 A. Five Petroleum, Oil and Lubricant (POL) Subject Matter Experts (SMEs) from various
9 disciplines inspected the Red Hill Facility in 2016 alongside EPA Region 9 and DOH
10 employees. That inspection was a baseline evaluation to provide an overall assessment of
11 the Red Hill Facility's ability to be operated in a manner that prevents release of fuel into
12 the environment.

13 **Q. WHO WERE THE FIVE POL SMEs?**

14 A. Eastern Research Group, Aspen Controls, PEMY Consulting, Atlas Geotechnical, and
15 Powers Engineering and Inspection. They were selected by DOH to be a part of the
16 evaluation/inspection team.

17 **Q. WHAT IS YOUR UNDERSTANDING OF THE EXPERIENCE AND EXPERTISE**
18 **OF EASTERN RESEARCH GROUP AS IT RELATES TO THIS INSPECTION?**

19 A. Eastern Research Group (ERG) has 15 years of experience supporting EPA in analyzing
20 aboveground storage tanks and USTs and assessing compliance with tank regulations.

ERG supported the assessment by evaluating the facility's operations against existing and likely forthcoming state and federal underground storage tank requirements for field-constructed tanks.

Q. WHAT IS YOUR UNDERSTANDING OF THE EXPERIENCE AND EXPERTISE OF ASPEN CONTROLS AS IT RELATES TO THIS INSPECTION?

A. Aspen Controls (AC) has more than 30 years of specialized experience focusing on tank gauging systems as well as automation and control systems. AC was tasked with evaluating the control systems used in the facility to handle all fuel transfer and storage operations. Their primary focus was to review the level gauging system and overfill alarm system for the storage tanks and compare them to systems found in typical petroleum industry terminals.

Q. WHAT IS YOUR UNDERSTANDING OFEXPERIENCE AND EXPERTISE OF PEMY CONSULTING AND ATLAS GEOTECHNICAL AS IT RELATES TO THIS INSPECTION?

A. PEMY Consulting (PEMY) has more than 30 years of experience specializing in tanks and piping ownership issues, including environmental analyses, reliability, and risk management. Atlas Geotechnical (AG) has more than 40 years of experience specializing in geomechanics and geotechnical risk management. PEMY and AG evaluated the facility's tanks and piping from a reliability and risk management perspective.

Q. WHAT IS YOUR UNDERSTANDING OF THE EXPERIENCE AND EXPERTISE OF POWERS ENGINEERING AND INSPECTION AS IT RELATES TO THIS INSPECTION?

A. Powers Engineering and Inspection (PEI) has more than 28 years of experience inspecting and managing fuel systems, including tanks, pipes, and pressure vessels and was tasked with evaluating the facility's tank and piping inspections, as specified in API Standards 579, 650, and 653.

Q. WHAT DOES THE FINAL EVALUATION REPORT CONCLUDE ABOUT THE OVERALL GENERAL FINDINGS OF THE EVALUATION TEAM?

A. Page 1 of Exhibit N-71, the last paragraph under section II, General Findings, states that the "evaluation team did not identify areas of noncompliance with current state or federal regulations" and that, "[t]he evaluation team generally found that systems and management practices in place at the Red Hill Facility meet or exceed best practices for petroleum terminals and bulk fuel storage facilities."

Q. WHAT DID THE FINAL EVALUATION REPORT CONCLUDE ABOUT TANK TIGHTNESS TESTING AT THE RED HILL FACILITY?

A. As found in the Final Evaluation Report, each tank in operation had successfully passed at least one tank tightness testing with a detection limit of 0.5 gph since October 2014. Tanks 1 and 19 are permanently out of service, Tanks 13, 14, 17, and 18 were out of

service for maintenance during the last cycle and therefore were not tested. These tanks will be tested when they are returned to service.

Q. WHAT DID THE FINAL EVALUATION REPORT CONCLUDE ABOUT THE LIMITATIONS OF THE TANK TIGHTNESS TESTING AT THE RED HILL FACILITY?

A. On the bottom of page 5 of the Evaluation Report, it states that a leak of less than 0.5 gph from any of the tanks may not be detectable with the facility's annual tank tightness testing, even though tank level systems may be able to detect smaller inventory losses.

Q. WHAT DID THE FINAL EVALUATION REPORT CONCLUDE ABOUT THE UFM REPORTS THAT WERE PROVIDED?

A. The evaluators found that the UFM reports demonstrated that each UFM had been resolved in a logical manner based on a detailed investigation of the incident. These reports that were provided as Attachment C of the Final Evaluation Report, which is included in Exhibit N-71. They also found that although the gauges used to generate the UFMs are only accurate to within 3/16 of an inch, they can detect inventory losses during operation almost continuously.

Q. WHAT DID THE FINAL EVALUATION REPORT CONCLUDE ABOUT THE RED HILL FACILITY'S CONTROL SYSTEMS?

A. On page 7 of the Final Evaluation Report, it states, "[t]he Red Hill Facility control system contains all of the expected components and features, and is by far exceeding industry standards by upgrading a system that is only 10 to 12 years old."

Q. WHAT DID THE FINAL EVALUATION REPORT CONCLUDE ABOUT SOIL VAPOR MONITORING AT THE RED HILL FACILITY?

A. The evaluators found that all soil gas data for the past few years were below action levels except near Tank 5 for a few months after the January 2014 release. Additionally, the evaluators noted that while this empirically validates the system, no information was available on the leak detection limit for the soil gas system.

Q. BASED ON PEI'S REVIEW OF GENERAL DESIGN DETAILS, WHAT WAS PEI'S OBSERVATION OF A POTENTIAL LEAK PATH IN THE FINAL EVALUATION REPORT?

A. On page 4 of the Final Evaluation Report, Exhibit N-71, it states that, "[b]ased on PEI's review of the general design details, it is most likely that if potential leak paths are present under the steel line, the product would likely stay between the steel liner and the concrete outer shell."

Q. WHAT DID THE FINAL EVALUATION REPORT PROVIDE ABOUT THE OVERALL TANK RELEASE DETECTION FINDINGS BY THE POL SMEs? On

A. page 3 of the Final Evaluation Report, Exhibit N-71, it states, "[u]pon review of original design drawings and historical documents, overall, key construction components

of the tanks exceed or meet most modern day construction standards. Based on limited review of historical inspection reports, the methods of tank inspection that have been applied at the Red Hill Facility were the best that could be implemented with the limitation in place, and no historical issues of concern have been noted related to structural integrity." The evaluation also found that "[l]imited review of previous inspections indicates no structural integrity, tank verticality, or out-of-roundness issues of immediate concern."

Q. WHAT DID THE FINAL EVALUATION REPORT CONCLUDE REGARDING EXTERNAL FACTORS THAT MAY IMPACT A STORAGE TANK?

A. On page 3 of the Final Evaluation Report, Exhibit N-71, the report states that "[s]ince the main USTs are located approximately 100 feet below ground and encased in concrete with a ¼-inch steel liner, concerns of external factors are minimal." The report continues and states that "[d]amage mechanisms like distortion of the steel plates or other damage due to stress, seismic events, and settlement, which normally impact an AST are minimal or non-existent."

Q. DESCRIBE THE PIPING ASSOCIATED WITH THE RED HILL TANKS.

A. There are one to three pipes that penetrate each tank. After exiting the tanks, the steel pipes run along the side of an open tunnel down to the pumphouse. They are suspended against the wall by a series of steel supports located approximately 30 feet on center. Roughly every 1,000 feet, the pipes penetrate a concrete support wall that is

1 approximately three feet thick. In some cases, the pipes are in direct contact with the
2 concrete. In others, they are sleeved with various non-metallic materials.
3
4 **Q. HOW DOES THE NAVY MONITOR THE PIPING ASSOCIATED WITH THE**
5 **RED HILL TANKS?**
6 A. The Navy monitors the piping via roving patrols that inspect for any signs of leakage.
7 The pressure in each of the three pipelines that convey product between the underground
8 storage tanks at the top of the Red Hill Facility tunnel and at the pump house is
9 monitored by PITs. Any catastrophic release of fuel from the piping would create a drop
10 in pressure that would initiate an alarm in the AFHE Control Room.
11 **Q. WHAT DID THE FINAL EVALUATION REPORT PROVIDE REGARDING**
12 **PIPING ASSOCIATED WITH THE RED HILL FACILITY?**
13 A. As provided on page 6 of the Final Evaluation Report, Exhibit N-71, PEI reviewed the
14 API 570 inspection reports of the piping system connecting the pumphouse at Pearl
15 Harbor to the Red Hill Facility tank farm and concluded that "the piping system
16 inspection process meets or exceeds industry standards."
17 **Q. WHAT METHODS ARE USED AT THE RED HILL FACILITY FOR**
18 **CORROSION PROTECTION TO ADDRESS THE PIPES AND NOZZLES?**
19 A. Pipes running between the pump house and the filling and dispensing locations receive
20 cathodic protection from impressed current systems where they emerge from the

underground tunnel to the surface. As stated on page 4 of the Final Evaluation Report, Exhibit N-71, it states "[i]mpressed current systems provide cathodic protection for several ASTs that are connected to the Red Hill Facility system in the downhill portion of the facility (near the shoreline), as well as an aboveground slop tank located near the Red Hill USTs." The report continues and states that above ground piping has a protective layer of noncorrodible material, as shown in Attachment B of the Final Evaluation Report.

Q. HOW DOES THE NAVY ENSURE OPERATOR TRAINING REQUIREMENTS ARE MET?

A. The Red Hill Facility provides operators of the underground storage system with annual, generic underground storage tank training through a state approved contractor, and one-time, site-specific training on specific operations that each employee will support at the facility in accordance with 40 CFR §280.242. The generic UST training includes separate training classes for Class A/B and Class C operators. Additionally, we have developed our own lesson plan that has been approved by the state and this plan is used to train new employees that report between the contract training sessions. All training completions and designated UST operators are reported to the DOH. We have a matrix that tracks site-specific training and the due dates for all employees to ensure that there are no gaps in training, Exhibit N-71.

Q. WHAT DID THE FINAL EVALUATION REPORT CONCLUDE ABOUT THE RED HILL FACILITY'S OPERATOR TRAINING PROGRAM?

A. On page 10 of the Final Evaluation Report, the evaluation team reviewed operator training records and "ERG determined that the Navy is already meeting training requirements." ERG reviewed the slides provided during the training and verified that the curriculum in the slides was appropriate for the differed classes of UST operators, it generally covers the work areas relevant to UST system operations and ERG was able to verify training records for most of the individuals with whom ERG interacted during the evaluations.

Q. DID THE EVALUATION TEAM VERIFY THAT FACILITY STAFF ARE ADEQUATELY TRAINED FOR EMERGENCY RESPONSE ACTIVITES?

A. Yes. The evaluation team verified that emergency response plans were in order, readily accessible and up-to-date. On page 11 of the Final Evaluation Report, the evaluation team also "verified that facility staff are adequately trained for emergency response activities and possess a working knowledge of what is required in the event of a spill or other type of release."

VIII. OTHER INSPECTIONS

Q. DESCRIBE THE OCTOBER 2020 INSPECTION THE DOH CONDUCTED.

A. The DOH underground storage tank and Airport Hydrant Systems compliance inspection was conducted from 28 September 2020 to 8 October 2020. The DOH inspection team

completed 34 inspection events during a two-week formal inspection that focused on the physical integrity of the facility as well as an examination of various records and record keeping.

Q. WHAT WERE THE RESULTS OR FINDINGS OF THE OCTOBER 2020 INSPECTION?

A. The inspection resulted in no major findings. More specifically, no fuel leaks or visible staining of fuel was found at any of the operational Red Hill storage tanks, surge tanks, above ground storage tanks, Hickam fuel storage tanks, hydrants or any of the pipelines. The inspectors reported the infrastructure was clean and pristine with no fuel leaks. The Inspectors commented that a review of all AFHE alarm records and logs revealed that all alarm events were responded to correctly.

Executed this 30th day of November, 2020 at Pearl Harbor, HI.

//S//

John Floyd

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