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DEPARTMENT OF HEALTH

STATE OF HAWAII

In the Matter of the Emergency Order to  
UNITED STATES NAVY  
  
For Emergency Change-In-Service and  
Defueling of 20 Underground Storage  
Tanks, Red Hill Bulk Fuel Storage Facility

DOCKET NO. 21-UST-EA-02

INTERVENOR HONOLULU BOARD OF  
WATER SUPPLY'S PRE-HEARING BRIEF;  
CERTIFICATE OF SERVICE

## INTERVENOR HONOLULU BOARD OF WATER SUPPLY'S PRE-HEARING BRIEF

By its own admission, the United States Department of the Navy (“Navy”) is responsible for Oahu’s unprecedented water crisis. The drinking water is contaminated. The very drinking water that the Navy’s own servicemembers depend upon for their health and safety. Drinking water wells have been shut down. Residents have been displaced. There can be no reasonable doubt that the contamination of our drinking water is an emergency or that this environmental disaster was caused by fuel releases from the Navy’s operations at the Red Hill Bulk Fuel Storage Facility (“Red Hill”). For years, the Honolulu Board of Water Supply (“BWS”) has been warning of the imminent peril that the Red Hill facility poses to our drinking water. Tragically, these pleas have gone unheeded and now our irreplaceable sole-source groundwater aquifer is contaminated, possibly irreparably. The Hawaii Department of Health (“DOH”) must act now to protect Oahu’s drinking water from the clear and present danger posed by the Navy’s operations at the Red Hill facility. The emergency order issued by the DOH to the Navy on December 6, 2021 requiring the Navy to immediately suspend fuel storage operations at the Red Hill facility, expeditiously install a drinking water treatment system at the Navy’s Red Hill Shaft drinking water well, and promptly take action to defuel the underground storage tanks (“USTs”) at the Red Hill facility (the “Emergency Order”) is necessary but it does not go far enough. The existing Red Hill USTs must be immediately defueled and never used again; the Red Hill facility must be permanently relocated away from Oahu’s drinking water resources.

### I. JURISDICTIONAL STATEMENT

The mission of the Honolulu Board of Water Supply (“BWS”) is to provide safe, dependable, and affordable water now and into the future. *See* Written Testimony of Erwin M. Kawata (“Kawata Test.”), at ¶ 6. On December 14, 2021, the BWS timely requested to intervene

in this contested case to ensure meaningful participation in and the opportunity to be heard concerning the Emergency Order. As the largest municipal drinking water utility in Hawaii, the BWS has standing to participate in this contested case because it has a significant interest in the outcome of the decision as to whether to issue the Emergency Order requiring the Navy to defuel the Red Hill facility. Specifically, the BWS has a “unique role and mandate in protecting Oahu’s drinking water” and a “role in actually providing drinking water to the community,” which is the very subject matter at issue in the Emergency Order. Entry Order Granting (1) Sierra Club’s Mot. to Intervene, Filed Dec. 13, 2021; and (2) Mot. of Leave to Intervene of Honolulu Board of Water Supply, Filed Dec. 14, 2021 (Dec. 18, 2021), 10.

This mandate stems from the BWS’ constitutional public trust responsibility to protect the water resources it manages and to preserve the rights of present and future generations in the waters of Hawaii. Article XI, Section 9 of the Hawaii State Constitution guarantees the citizens of Hawaii the substantive “right to a clean and healthful environment.” *See also Cnty. of Hawaii v. Ala Loop Homeowners*, 123 Haw. 391, 406-22, 235 P.3d 1103 (2010) *abrogated on other grounds by Tax Found. of Hawaii v. State*, 144 Haw. 175, 189, 439 P.3d 127 (2019) (Article XI, Section 9 of the Hawaii State Constitution creates a private right of action as defined by laws relating to environmental quality). This fundamental right and these critical drinking water resources are in imminent peril because of the Navy’s operations at the Red Hill facility. The release of fuel from Red Hill has already caused the BWS to incur costs and take responsive actions to address the potential impacts to Oahu’s drinking water. *Kawata Test.* at ¶¶ 22-23, 30-31, 39. Failure to enforce the Emergency Order would directly impact the BWS’ interests and threatens to continue to injure the BWS. *Id.* at ¶¶ 42, 43. Enforcement of the Emergency Order to ensure the Red Hill facility is promptly defueled and relocated would provide relief to the

BWS and its constituents by reducing the potential for further damage to Oahu's sole-source groundwater aquifer. *Id.* at ¶¶ 44, 45.

## II. STATEMENT OF FACTS

The Red Hill facility is located on the island of Oahu, Hawaii, approximately 2.5 miles northeast of Pearl Harbor, occupying approximately 144 acres of land along the western edge of the Koolau Range situated on a topographic ridge that divides the Halawa Valley and the Moanalua Valley. *Id.* at ¶ 11; Exhibit B-2. Consisting of colossal World War II vintage UST holding early 200 million gallons of fuel, the Red Hill facility sits directly and a mere 100 feet above Oahu's federally designated, irreplaceable sole-source groundwater aquifer, the Southern Oahu Basal Aquifer, from which the BWS supplies more than three quarters of the total island-wide water supply. *Kawata Test.* at ¶ 15. Oahu's sole-source aquifer is currently used to supply the island with drinking water and is an irreplaceable resource with a high vulnerability to contamination. *Id.* at ¶ 16. In 1987, the United States Environmental Protection Agency ("EPA") determined that this aquifer is the "principal source of drinking water" for the island, and that "[i]f contaminated, would create a significant hazard to public health." *Id.* at ¶ 17; Exhibit B-5; Southern Oahu Basal Aquifer in the Pearl Harbor Area at Oahu; Principal Source Aquifer Determination, 52 Fed. Reg. 45496, at 45497 (Nov. 30, 1987).

The twenty Red Hill USTs were field constructed during the early 1940s by mining into the ridge to create cavities for concrete tank shells lined with ¼-inch thick steel plates welded together. *See Kawata Test.* at ¶ 14; Exhibit B-3; Exhibits B-190 through B-192. The outside or backside of these steel liners as well as the concrete tank shells cannot be physically inspected or directly maintained. *See Written Testimony of David M. Norfleet ("Norfleet Test."),* ¶ 12.b, Exh. A (Expert Report: Evaluation of Underground Storage Tanks at the Red Hill Bulk Fuel

Storage Facility (“Norfleet Expert Report”)), 12-17. Each tank is approximately 250 feet tall, 100 feet in diameter, and provides a fuel storage capacity of up to 12.5 million gallons. *See* Kawata Test. at ¶ 12; Exhibit B-2. Two of the Red Hill USTs are currently out of service and two or three are generally empty as part of the Navy’s ongoing clean, inspect, and repair program. *See* Exhibit B-152. This leaves at least 15 tanks, with a total capacity of over 187 million gallons, in operation directly above Oahu’s sole-source aquifer.

It is undisputed that the Navy’s operations at Red Hill have contaminated the environment and damaged Oahu’s critical drinking water resources. Numerous episodic releases<sup>1</sup> from the Red Hill facility have occurred and sampling from under and around Red Hill has demonstrated the existence of petroleum contamination in the very aquifer that sustains Oahu’s water supply. *See* Kawata Test. at ¶ 19. In total, at least 76 fuel release incidents at Red Hill – almost an incident per year – have been documented, involving nearly 200,000 gallons of product. *See* Norfleet Test. at ¶ 12.a, Exh. B. Testing conducted to date indicates that the water served from the BWS’ drinking water wells remains compliant with standards for safe drinking water. *See* Kawata Test. at ¶ 38. However, sampling from under and around the Red Hill facility, including testing of the Navy’s drinking water at its Red Hill Shaft, has demonstrated the existence of petroleum contamination in the very aquifer that the people of Oahu rely upon for clean drinking water and at levels that have rendered Red Hill Shaft unfit for drinking water service. *See* Kawata Test. at ¶¶ 34, 35; Exhibit B-409; Exhibits B-419 through B-421b.

The Navy’s January 2014 release into the environment of approximately 27,000 gallons of fuel from Tank 5 led to the Navy and the Defense Logistics Agency – the owner of the fuel

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<sup>1</sup> Under Hawaii law, a “[r]elease” includes, but is not limited to, any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an underground storage tank or tank system.” H.R.S. § 342L-1.

stored at Red Hill – entering into an administrative order on consent (“AOC”) with the EPA and the DOH requiring the Navy to conduct certain investigations and other work to address fuel releases from Red Hill. *See* Emergency Order at 2; Exhibits B-1, B-6, and B-81. The AOC recognizes that corrective action by the Navy is “necessary to address potential impacts to human health, safety and the environment ... due to historical, recent and potential future releases at the [Red Hill] Facility.” Exhibit B-81 at BWS008935. The AOC, through its Scope of Work, recognizes the BWS as a Subject Matter Expert from which technical advice is to be sought for scoping and review of key deliverables. *See* Kawata Test. at ¶ 24; Exhibit B-82 at BWS008966. In that role, the BWS has submitted over 140 letters providing feedback on the Navy’s AOC deliverables, including urging the Navy to take decisive action to relocate or upgrade the Red Hill facility. *See* Kawata Test. at ¶ 27.<sup>2</sup> To date, many of the deliverables required by this order still have not been approved by the regulators, with key Navy reports disapproved and the Navy tank upgrade proposal rejected. *See, e.g.*, Exhibits B-28, B-30, and B-37. The Emergency Order explicitly and correctly recognizes that the Navy “has consistently been unable to submit AOC deliverables to the satisfaction of the Department.” Emergency Order at 3.

The DOH recognizes that “the storage of up to 187 million gallons of fuel, 100 feet above a drinking water resource, is inherently dangerous.” *See* Kawata Test. at ¶ 41; Exhibit B-21 at BWS006270. Now the Navy’s inherently dangerous operations at the Red Hill facility have unquestionably, and possibly irreparably, contaminated the drinking water of tens of thousands

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<sup>2</sup> The BWS has also separately informed the DOH that the Navy’s operations at the Red Hill facility do not comply with Hawaii law. Specifically, the Red Hill facility cannot be operated to prevent releases for its operational life as required by Hawaii Revised Statutes Section 342L-32(b), is not adequately protected from corrosion as required by Hawaii Administrative Rule Section 11-280.1-20, and does not meet the requirements for leak detection as required by Hawaii Administrative Rule Section 11-280.1-33. *See* Declaration of Ella Foley Gannon ISO Mot. to Intervene of Honolulu Board of Water Supply (Dec. 14, 2021), Exhs. A, B.

of Oahu residents. The Navy's own servicemembers and their families have been forced from their homes due to a lack of safe drinking water. *See* Exhibits B-416, B-417. Fuel releases from the Red Hill facility have forced the Navy to shut down one of the primary drinking water well from which it supplies Joint Base Pearl Harbor-Hickam and has left the BWS no choice but to stop pumping drinking water from many of the wells that service metropolitan Honolulu. *See* Kawata Test. at ¶¶ 39, 40.

Despite Navy assurances to the contrary, compliance problems persist at the Red Hill facility and fuel release after fuel release continues to occur. On October 26, 2021, the DOH issued the Navy a Notice of Violation and Order finding several violations of Hawaii law during a compliance inspection conducted at the Red Hill facility from September 28, 2020 through October 8, 2020 and ordering the Navy to pay a \$325,182 fine. *Id.* at ¶ 29; Exhibits B-408, B-418. In the past couple of years, fuel releases into the environment have been increasing. From approximately March 2020 through July 2021, an active fuel release occurred from a pipeline at the Hotel Pier pipeline at the Red Hill facility. *See* Emergency Order at 2; Exhibit B-410. On May 6, 2021, a release of a reported 1,600 gallons of jet fuel from supply piping occurred in the lower access tunnel tanks during the refilling of Tank 20. *See* Emergency Order at 2; Exhibits B-411, B-412, B-413. On July 16, 2021, a corrosion-induced hole in a pipeline lead to a fuel release at the Red Hill facility's Kilo Pier. *See* Emergency Order at 2; Exhibit B-414. On November 20 and 21, 2021, a release of a reported 14,000-gallon mixture of water and fuel occurred from the Navy's fire suppression system at the Red Hill facility. *See* Emergency Order at 2-3; Exhibit B-415. Fuel releases from the Red Hill facility have resulted in detections of petroleum constituents in the Navy's own drinking water supply as high as 140,000 micrograms per liter (µg/L) and as high as 6,300 µg/L in the monitoring wells in the vicinity of Red Hill. *See*

Kawata Test. at ¶¶ 34-35; Exhibit B-409; Exhibits B-419 through B-421b. The DOH's environmental action levels ("EALs") – that is, the amount below which the contaminants are assumed to not pose a significant threat to human health or the environment – for gross contamination and drinking water toxicity are 500 µg/L and 400 µg/L respectively. *See* Kawata Test. at ¶ 36. The Navy and the DOH have received hundreds of complaints from users of the Navy's water distribution system concerning fuel or chemical smells from the Navy drinking water. *See* Emergency Order at 2.

Finally, on December 6, 2021, the DOH issued the Emergency Order requiring the Navy to immediately suspend fuel storage operations at the Red Hill facility, expeditiously install a drinking water treatment system at the Navy's Red Hill Shaft drinking water well, and promptly take action to defuel the Red Hill USTs. *See* Emergency Order at 4. By letter dated December 7, 2021, the Navy informed the DOH of its intent to contest the Emergency Order. The Emergency Order noticed a contested case hearing pursuant to Hawai'i Revised Statutes Chapter 91 and Hawaii Administrative Rules Chapter 11-1 and made clear that at that hearing additional obligations necessary to protect public health and the environment may be imposed. *See* Emergency Order at 4-5. On December 14, 2021, the BWS timely moved to intervene in this proceeding.

### III. THE DOH HAS THE LEGAL AUTHORITY AND THE DUTY TO ISSUE THE EMERGENCY ORDER

The DOH must act now to prevent the significant public health hazard that has and will continue to persist as a result of fuel releases from the Red Hill facility. The Hawaii Constitution guarantees that "[a]ll public natural resources are held in trust for the benefit of the people" and directs the State, and by extension the DOH, "to protect, control and regulate the use of Hawaii's

water resources for the benefit of its people.” Haw. Const. art. XI, §§ 1, 7. Like the BWS, the DOH has a public trust responsibility to protect our drinking water resources. Public trust is the principle embedded in the Hawaii Constitution and State law that obligates the State, including the DOH, to protect the purity of Hawaii’s water:

[T]he public trust doctrine applies to all water resources without exception or distinction. The state water resources trust thus embodies a dual mandate of 1) protection and 2) maximum reasonable and beneficial use. The public trust is, therefore, the duty and authority to maintain the purity and flow of our waters for future generations and to assure that the waters of our land are put to reasonable and beneficial uses.

*Kauai Springs, Inc. v. Planning Comm’n of Cnty. of Kauai*, 133 Haw. 141, 172, 324 P.3d 951 (2014) (alteration and emphasis in original) (citations and internal quotation marks omitted).

The Supreme Court of Hawaii has made clear that this responsibility is “unlimited by any surface-ground distinction,” extending to all water resources, including groundwater. *In re Water Use Permit Applications*, 94 Haw. 97, 133-135, 139, 9 P.3d 409 (2000).

State policy for water resources in Hawaii is likewise directed toward achieving the highest water quality consistent with maximum benefit to the people of the State and “shall be liberally interpreted to obtain maximum beneficial use of the waters of the State ....” H.R.S. § 174C-2(c). Pertinent here, drinking water is the highest beneficial use of groundwater. State law governing underground storage tanks only serves to bolster these public trust commitments, expressly empowering the DOH to take immediate action to avert a crisis like the contamination of Oahu’s drinking water by the Navy’s operations at the Red Hill facility. Indeed, Hawaii Revised Statutes Section 342L-9 grants the DOH certain “emergency powers” to protect human health and the environment:

Notwithstanding any other law to the contrary, if the governor or the director determines that an imminent peril to human health and safety or the environment is or will be caused by:

- (1) A release;
- (2) Any action taken in response to a release from an underground storage tank or tank system; or
- (3) The installation or operation of an underground storage tank or tank system;

that requires immediate action, the governor or the director, without a public hearing, may order any person causing or contributing to the peril to immediately reduce or stop the release or activity, and may take any and all other actions as may be necessary. The order shall fix a place and time, not later than twenty-four hours thereafter, for a hearing to be held before the director.

H.R.S. § 342L-9(a). Where, as here, multiple recent fuel releases from the Red Hill facility have contaminated the drinking water on Oahu, the DOH can, and must, act.

The Navy must comply with the Emergency Order. Federal facilities are required to adhere to all federal, state, interstate, and local solid and hazardous waste requirements (including statutes, regulations, permits, reporting requirements, and administrative and judicial orders and injunctions). The express waiver sovereign immunity contained in the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 *et seq.*, subjects the Navy to the same substantive and procedural requirements as any person under state laws regulating USTs. Specifically:

**Each department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal Government** (1) having jurisdiction over any underground storage tank or underground storage tank system, or (2) engaged in any activity resulting, or which may result, in the installation, operation, management, or closure of any underground storage tank, release response activities related thereto, or in the delivery, acceptance, or deposit of any regulated substance to an underground storage tank or underground storage tank system **shall be subject to, and comply with, all Federal, State, interstate, and local requirements, both substantive and procedural (including any**

**requirement for permits or reporting or any provisions for injunctive relief and such sanctions as may be imposed by a court to enforce such relief), respecting underground storage tanks in the same manner, and to the same extent, as any person is subject to such requirements**, including the payment of reasonable service charges. The Federal, State, interstate, and local substantive and procedural requirements referred to in this subsection include, but are not limited to, all administrative orders and all civil and administrative penalties and fines, regardless of whether such penalties or fines are punitive or coercive in nature or are imposed for isolated, intermittent, or continuing violations. **The United States hereby expressly waives any immunity otherwise applicable to the United States with respect to any such substantive or procedural requirement** (including, but not limited to, any injunctive relief, administrative order or civil or administrative penalty or fine referred to in the preceding sentence, or reasonable service charge).

42 U.S.C. § 6991f(a) (emphasis added). Simply put, the clear and unambiguous waiver of sovereign immunity means that the Navy's Red Hill facility must comply with all substantive and procedural requirements of Hawaii law applicable to USTs, including emergency orders.

The Navy has not and cannot argue otherwise.<sup>3</sup>

#### IV. THE NAVY'S OPERATIONS AT THE RED HILL FACILITY ARE AN IMMINENT PERIL TO DRINKING WATER

The Emergency Order is justified. Oahu's drinking water crisis necessitates immediate responsive action. The Navy's operations at the Red Hill facility have already contaminated the drinking water. The Red Hill UST system and associated infrastructure has released fuel into the environment in the past, did so just last month, and will continue to do so in the future. Unless defueled as required by the Emergency Order, the Red Hill facility will continue to jeopardize the health and wellbeing of Oahu's resident and the future security of our water resources.

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<sup>3</sup> Nor does the AOC provide a basis upon which to challenge the Emergency Order. Pursuant to the AOC, the DOH retains its authority, on an emergency basis, "to take, direct, or order any and all actions necessary to protect public health, any source of drinking water or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants, or contaminants, or hazardous or solid waste or constituents of such wastes, on, at, or from the [Red Hill] Facility," under, among other things, Hawaii Revised States Chapter 342L. Exhibit B-81 at BWS008953.

A. Navy Operations At The Red Hill Facility Have Already Contaminated The Drinking Water

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Make no mistake, the people of Oahu are in the midst of an unprecedented drinking water crisis. The Navy has not and cannot dispute this. Navy operations have contaminated the sole-source groundwater aquifer beneath the Red Hill facility and fouled the drinking water that its own servicemembers and their families depend upon for their health and safety. The Red Hill facility has a long history of fuel releases that have damaged the very sole-source groundwater aquifer that nourishes Oahu's drinking water supply, and this facility will continue to jeopardize human health and the environment unless and until the Navy is required to defuel the facility as directed in the Emergency Order. To date, at least 76 fuel release incidents involving nearly 200,000 gallons of product have occurred at the Red Hill facility. *See* Norfleet Test. at ¶ 12.a, Exh. B. Because not all releases are documented and because not all documented releases have volume estimates, this total release volume should be considered a lower bound estimate; it likely underrepresents the total number of releases and volume of fuel released from Red Hill. *See id.* at ¶ 12.a.

Recent events demonstrate that the fuel releases from and the Navy's inability to maintain the Red Hill facility are spiraling out of control and that the Navy simply is not capable of stopping them. Over the past two years alone there have been at least four separate fuel releases, including a May 6, 2021 release of a reported 1,600 gallons of jet fuel from supply piping in the lower access tunnel tanks during the refilling of Tank 20, at least two releases from the Hotel Pier and Kilo Pier pipelines fed by the Red Hill facility, and a release last month of a supposed 14,000 gallons of a mixture of water and fuel from the Navy's fire suppression system.

See Emergency Order at 2-3; Exhibits B-410 through B-415. This is unacceptable and it must be stopped.

The sheer magnitude of the drinking water contamination caused by the Navy is staggering. As are the impacts to the tens of thousands of Oahu residents, including service members and their families, who rely upon pure drinking water to live. **Navy fuel releases from the Red Hill facility have now resulted in the detection of petroleum constituents in drinking water as high as 350 times the level the DOH considers safe.** See Kawata Test. at ¶¶ 35, 42.h; Exhibit B-409. If this fact alone does not warrant the DOH taking emergency action to stop the endless fuel releases from the Navy's Red Hill facility that imminently threaten human health and the environment, then nothing does. But the real life impacts do not stop there. The Navy and the DOH have been inundated with hundreds of complaints from users of the Navy's water distribution system about the contamination in Navy drinking water. See Emergency Order at 2. As a result, the Navy elected to shut off its Red Hill Shaft drinking water well and implement an emergency response to address the ongoing drinking water crisis. See Kawata Test. at ¶ 40; Exhibits B-416, B-417. The BWS has likewise been forced to shut off its Halawa Shaft drinking water well and other nearby wells, reducing its capacity to provide water service to its customers and ratepayers. See Kawata Test. at ¶ 39. Over 1,000 families have been forced to leave their homes. *Id.* at ¶ 40; Exhibits B-416, B-417. This is precisely the imminent peril to human health and safety and to the environment that emergency orders are intended to address.

B. Unless Action Is Taken Now, Fuel Releases From The Red Hill Facility Will Continue To Contaminate Irreplaceable Drinking Water Resources

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As disturbing as the reality of the contamination of Oahu's drinking water is, future fuel releases from the Red Hill facility remains an urgent concern. The Navy clearly cannot operate the Red Hill facility without releasing fuel into the environment. The situation at Red Hill is so dire, and the evidence so compelling, that Dr. David M. Norfleet, the head of an incident investigation group that conducts over 100 failure investigations each year, concluded that more fuel releases from Red Hill are "inevitable." Norfleet Test. at ¶ 12.b; Norfleet Expert Report at iii, 12-61. The most pervasive and ongoing threat to the integrity of the Red Hill facility is corrosion which has and can develop into holes in the Red Hill USTs and associated piping that allow fuel to be released into the environment. Moisture trapped between the outside face of the Red Hill USTs' steel liner and concrete shell causes corrosion to form on the backside of the steel liner, and that corrosion progresses inward with time. *See* Norfleet Expert Report at 27, fig. 10. It is well documented that corrosion has and will continue to take place on the outsides or backsides of the USTs' steel liners, areas that the Navy cannot physically access, inspect, maintain, or protect. *See id.* at 17-26, tbl. 2 (summarizing 22 through holes identified in inspections performed on Tanks 2, 5, 6, 15, 16, and 20). Corrosion-induced holes result in the release of fuel into the environment because the concrete structure does not provide fluid containment, as evidenced by the presence of water on the backside of the USTs' steel liner and the presence of released fuel in the subsurface at Red Hill. *See* Norfleet Expert Report at 3.

This ongoing corrosion means that the likelihood of chronic leaks and potentially catastrophic fuel releases from the Red Hill facility is unacceptably high. Norfleet Expert Report at iii, 59-60; *see also* Exhibit B-15. Given the ever-present threat to tank integrity posed by

corrosion-induced failure which cannot be directly observed, eliminated, or reduced as the tanks are currently configured and operated, the only potential way to protect human health and the environment is through a rigorous and thoroughly reliable inspection program that can identify ***any and all*** areas that are vulnerable to corrosion and effectively repair these areas prior to a through hole developing in the tank wall. Unfortunately, the overwhelming majority of the Red Hill USTs have not been properly inspected and the evidence in the record clearly shows that even the Navy's current non-destructive examination ("NDE") techniques used to inspect the ¼-inch steel liner of the Red Hill USTs, the only meaningful barrier protecting the environment, are not reliable or accurate. *See* Norfleet Expert Report at 12. Specifically, the American Petroleum Institute ("API") standard 653 for aboveground storage tanks calls for tank inspections to occur on a ten-year interval. *See* Exhibit B-6 at BWS001329. The Navy's own modified API 653 inspection process requires that every Red Hill UST should be inspected within every ten years, unless the corrosion rate is such that an API 653 inspector recommends it can be inspected in 20 years. *See id.* The Navy has failed to meet even its own subpar standard. According to the DOH and the EPA, the Navy's current inspection cycle "is averaging 30 years, with the longest duration being 59 years for Tank 18." Exhibit B-30 at BWS007575.

Not only are most of the Red Hill USTs overdue for a proper inspection but the Navy's own laboratory testing demonstrates that the Navy's inspection practices are neither accurate nor reliable. *See* Norfleet Expert Report at 32-37. Destructive testing performed by a Navy-contracted laboratory on ten steel liner samples, commonly referred to as "coupons," removed from Tank 14 in June 2018 indicates that the "vast majority" of the Navy's tank wall inspection measurements do not meet the Navy's own specified accuracy requirements. *See id.* at 33. In addition, four of the ten coupons removed from Tank 14 were thinned by corrosion to the point

that they required patching under Navy repair criteria but the NDE prior to coupon removal only identified two of these locations as warranting repair, which corresponds to a 50 percent rate of correctly identifying tank wall areas in need of corrosion repair. *See id.* at 33, tbl. 4, fig. 12. Collectively, these misidentified areas establish that the Navy's NDE process both over and underestimates the remaining thickness of the Red Hill USTs' steel liner and is unquestionably inaccurate and unreliable. *See* Norfleet Expert Report at 26-27. The odds of the Navy's NDE performing as needed to ensure tank integrity and prevent fuel releases "is the same as flipping a coin." *See id.* at 33.

The near certainty of future fuel releases from the Red Hill facility are presented in the baseline quantitative risk and vulnerability assessment ("QRVA") report issued by Navy consultant ABS Consulting (Exhibit B-15), which substantiates the chronic and potentially catastrophic risks associated with operating enormous fuel tanks a mere 100 feet above a one of a kind sole-source aquifer. The Navy's QRVA report details a comprehensive quantitative engineering evaluation of the internal event hazards at the Red Hill facility designed to provide a baseline assessment of the level of risk the Red Hill facility poses to nearby groundwater resources. *See* Exhibit B-15 at BWS005019; *see also* Norfleet Expert Report at 50 (the QRVA report "was professionally executed using recognized risk assessment software"). The QRVA report confirms that both the risk of a sudden, large release and an undetected, slow fuel release from the Red Hill facility to the environment are unacceptably high. According to the Navy's own consultant, we can expect:

- Greater than 27% probability of a sudden release of between 1,000 and 30,000 gallons of fuel from Red Hill each year;
- Greater than 34% chance of a sudden release of more than 120,000 gallons from Red Hill in the next 100 years;

- Greater than 5% chance of a sudden release of more than 1 million gallons from Red Hill in the next 100 years; and
- 5,803 gallons per year of chronic, undetected fuel releases from Red Hill.

Exhibit B-15 at BWS005021. While these are immense risks to our irreplaceable drinking water resources, the Navy's QRVA likely underestimates the overall risk of future releases from Red Hill. *See* Norfleet Test. at ¶ 12.c; Norfleet Expert Report at 50-51.<sup>4</sup>

The multiple recent fuel releases from the Red Hill facility that have contaminated the drinking water on Oahu merely serve to underscore the reality of these immense risks to our drinking water. That more and more fuel releases from the Red Hill facility are occurring should come as no surprise given that the installation is nearly 80 years old. The Red Hill facility is at the end of its useful life. *See* Norfleet Test. at ¶ 12.d (the Red Hill facility "has reached an end-of-life phase"). It is past time for the Red Hill facility to be retired. The Navy's operations at the Red Hill facility are not just a drinking water crisis now but, without an emergency response, such operations will continue to imperil human health and the environment into the future. Fuel releases will continue to occur from the Red Hill facility. There is no treatment system in place to address them. *See* Emergency Order at 2. The next fuel release could be even more devastating.

## V. CONCLUSION AND REQUESTED RELIEF

Immediate action is necessary to protect the tens of thousands of residents who rely on the water supplied by the Navy's water distribution system and, ultimately, the nearly one million people who rely on the sole-source aquifer that underlies Red Hill. Based on the historic

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<sup>4</sup> These risks are also compounded by the Navy's failure to properly investigate and learn from prior failures, which are often blamed on human error. *See* Norfleet Test. at ¶ 12.e.

performance of the Navy's operation of the Red Hill facility, the BWS has long called for the relocation of the fuel at the Red Hill facility away from Oahu's irreplaceable drinking water resources. Accordingly, the BWS respectfully requests that the Emergency Order be amended to ensure both that the fuel at the Red Hill facility is safely removed now and that refueling the existing USTs is not allowed. It is irrefutable that the Navy's operations at the Red Hill facility have caused a drinking water crisis that imperils human health and the environment. Relocating the Red Hill facility is the only way to protect the purity of our drinking water for present and future generations.

DATED: Honolulu, Hawaii, December 18, 2021.

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DEPARTMENT OF HEALTH

STATE OF HAWAII

In the Matter of the Emergency Order to

UNITED STATES NAVY

For Emergency Change-In-Service and  
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Red Hill Bulk Fuel Storage Facility

DOCKET NO. 21-UST-EA-02

CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing documents were served upon the  
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DOCKET NO. 21-UST-EA-02, IN THE MATTER OF THE EMERGENCY ORDER TO  
UNITED STATES NAVY FOR EMERGENCY CHANGE-IN-SERVICE AND DEFUELING  
OF 20 UNDERGROUND STORAGE TANKS, RED HILL BULK FUEL STORAGE  
FACILITY - INTERVENOR HONOLULU BOARD OF WATER SUPPLY'S PRE-HEARING  
BRIEF; CERTIFICATE OF SERVICE