Exhibit D51

Emergency Order to Address Imminent Threat to Drinking Water Sources

Red Hill Bulk Fuel Storage Facility

Noa Klein, Ph.D.

Planner

Solid and Hazardous Waste Branch

UST Program Authority

§342L-9 Emergency powers; procedures.

(a) 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.

Source: Chapter 342L, Hawaii Revised Statutes

Definition of UST System

§342L-1 Definitions. As used in this chapter, unless the context otherwise requires:

"Underground storage tank" or "tank" means any one or combination of tanks (including pipes connected thereto) used to contain an accumulation of regulated substances, and the volume of which (including the volume of the underground pipes connected thereto) is ten per cent or more beneath the surface of the ground…"

"Underground storage tank system" or "tank system" means an underground storage tank, connected underground piping, underground ancillary equipment, and containment system, if any.

Source: Chapter 342L, Hawaii Revised Statutes

Lene Ichinotsubo, P.E.

Acting Chief

Solid and Hazardous Waste Branch

Red Hill Bulk Fuel Storage Facility

NAVSUP
NAVAL SUPPLY SYSTEMS COMMAND
FLEET LOGISTICS CENTER
PEARL HARBOR

Par Hawaii & DFSP PH Major Pipeline Footprint

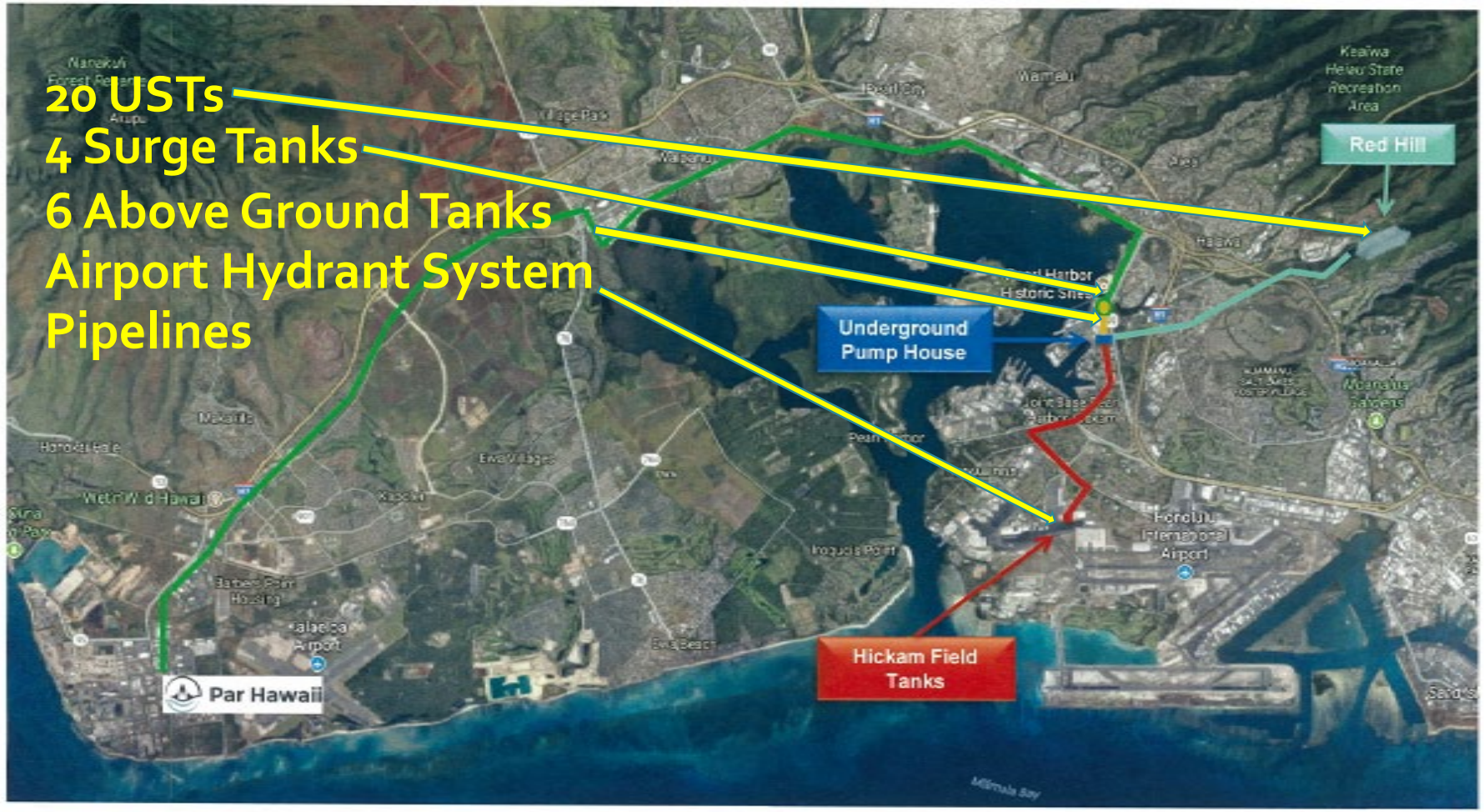


Exhibit D01

Red Hill Shaft and Bulk Fuel Storage Tanks

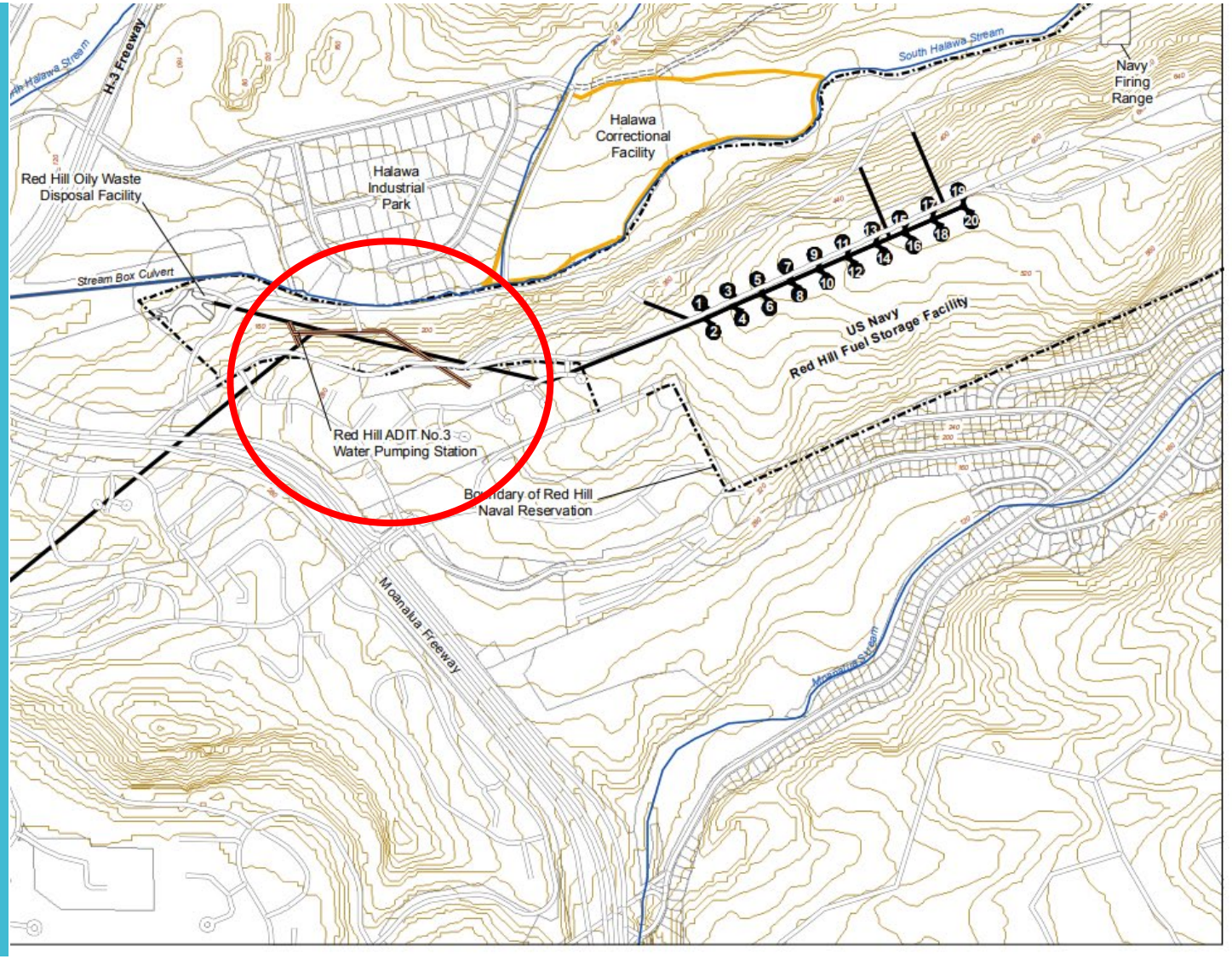


Figure 1-2

Site Plan Map
Red Hill Fuel Storage Facility
Oahu, Hawaii

Source: Exhibit D02 page 28

Red Hill Bulk Fuel Storage Tanks

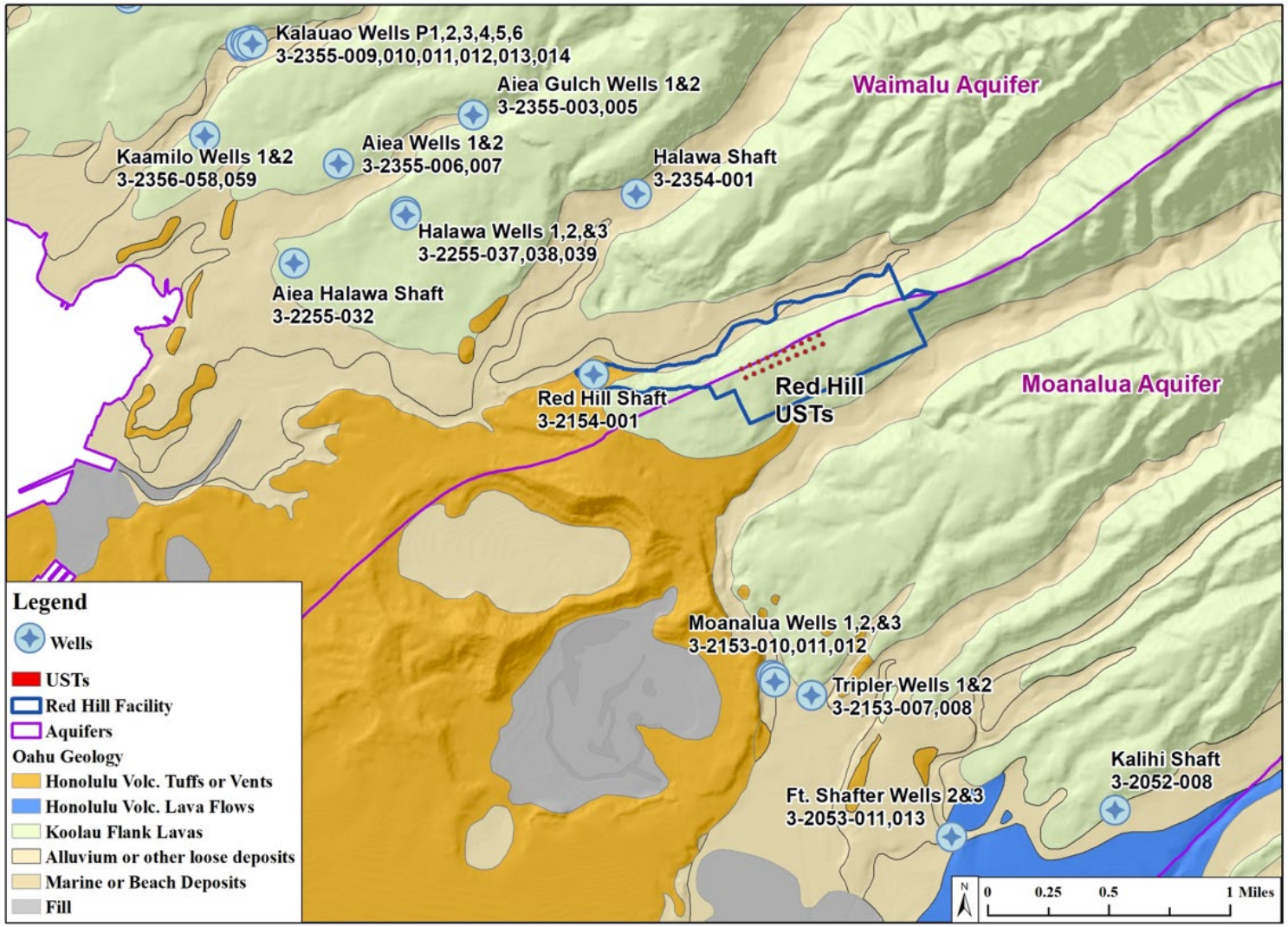


Exhibit D03

Red Hill Bulk Fuel Storage Tanks

- 20 field-constructed underground storage tanks (USTs). Each tank has fuel capacity ranging from about 12 to 12.7 million gallons.
- 14 tanks currently in operation. 2 out of use, 4 under maintenance.
- Bulk fuel storage tanks were constructed and became operational in the 1940s. The tanks and related components at the Facility are unique.

Sources: Exhibit D04, page 21 (figure); Exhibit D05

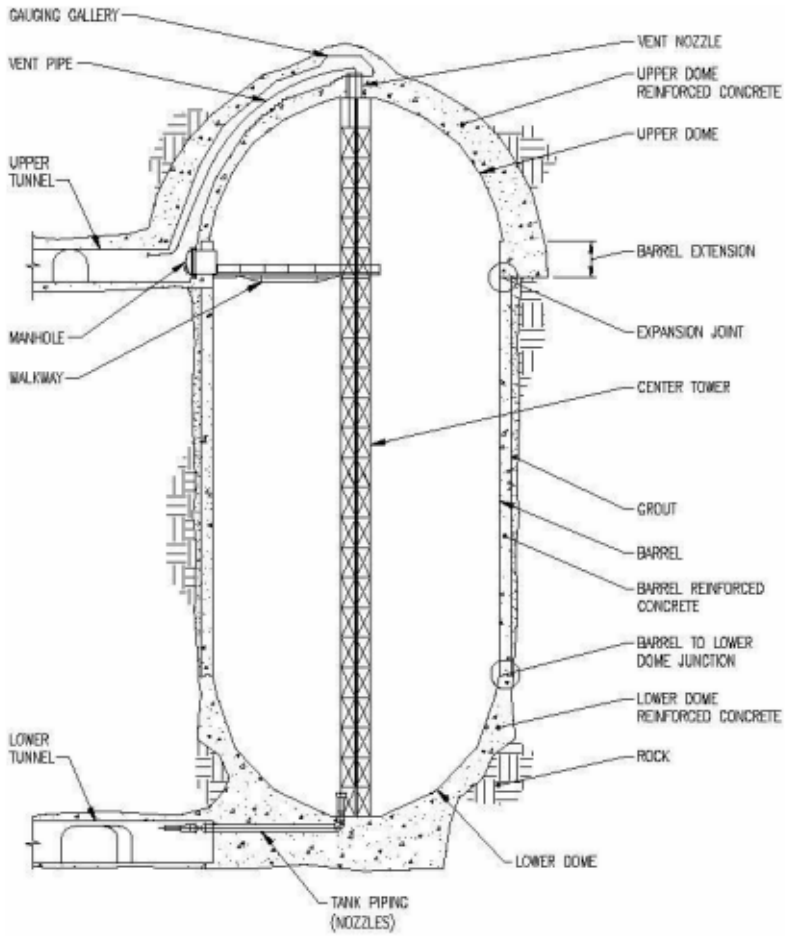


Figure B-1.0-2 Existing Tanks 5 - 20 Elevation

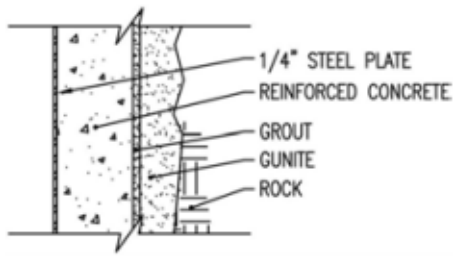


Figure B-1.0-3 Existing Barrel Wall Section

2014 Release & Administrative Order on Consent (AOC)

- 2014: Navy estimated 27,000-gallon release from Tank 5
- 2015: Navy, EPA, and DOH entered into an Administrative Order on Consent (AOC) to take steps to ensure that the groundwater resource in the vicinity of the Facility is protected and to ensure that the Facility is operated and maintained in an environmentally protective manner.

Source: Exhibit D05

Administrative Order on Consent (AOC) Studies

- **Destructive Testing**—Evaluation of Non-Destructive Examination inspection methods to identify areas where tank metal is corroding and requires repair.
- **Tank, Inspection, Repair Maintenance (TIRM)**—Identify and evaluate tanks inspection, repair, and maintenance procedures.
- **Risk/Vulnerability Assessment**—Assess the level of risk the Facility may pose to the groundwater.
- **Groundwater Protection and Evaluation**—Improve understanding of groundwater flow within aquifers around the Facility; and contaminant fate and transport, degradation, and transformation of contaminants that have been and could be released from the Facility.
- **Tank Upgrade Alternatives (TUA)**—Evaluation of Tank Upgrade Alternatives and how design and operations will be protective of groundwater.

Source: Exhibit D06

Corrosion

Non-Destructive Examination (NDE) process

- Use electromagnetic and ultrasonic imaging technology to identify areas of corrosion and remaining metal thickness
- Repair where metal has thinned to 0.16-inch or less

The Navy reported, "In 2018, ten coupons were removed from Tank 14, so that a metallurgical and corrosion analysis of the coupons could be undertaken, with the primary aim of validating non-destructive examination (NDE) results. The steel coupons, concrete powder samples, and corrosion product were submitted to a certified third-party laboratory to perform this analysis."

The Navy concluded that the "NDE results are validated, both by Destructive Testing and thorough, case-by-case analysis."

Source: Exhibit D07 page 8

Corrosion

Coupon 1

Coupon 2

Coupon 3

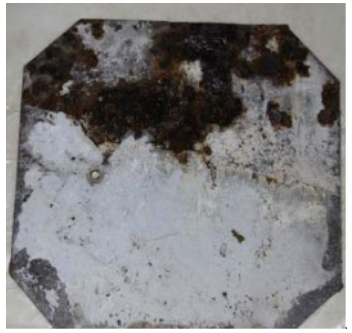
Coupon 5

Coupon 6

Coupon 7

Coupon 8

Coupon 10



Coupon A1

Coupon A2

Source: Exhibit D07 pages 24-51

Corrosion

Regulatory Agency Disapproval[2] of Destructive Testing Results Report

- **The Navy cannot accurately determine thickness of steel and where repairs are needed.**[1]
  - Based on laboratory measurements, 4 of 10 of coupons reversed repair status determined by NDE (2 from "fix" to "no fix," 2 from "no fix" to "fix"). [3]
- **Gaps between the steel plates and the concrete/grout** ranged from $^1/_{16}$" to ½" for 9 of 10 coupon sites. [4]
- **Moisture** was noted on the back side of the steel coupons or the concrete structure 6 of 10 coupon locations. [4]
- "[The] **steel was rusting and had lost passivation** on 7 of the 10 coupons."[4]
- "The evidence of carbonation of the concrete, presence of chlorides in the corrosion products, and structure-to-electrolyte corrosion potential readings all corroborate that **regions of the tank were actively corroding**."[5]

Sources: 1. Ex D08 p 5; 2. Ex D08 p 1
3. Ex D08 p 6; 4. Ex D08 p 24; 5. Ex D08 p 29

Corrosion Protection

Regulatory Requirements

11-280.1-21(a)(2)(A):
Airport hydrant fuel distribution systems and UST systems with field-constructed tanks installed before July 15, 2018 must meet system performance standards in section 11-280.1-20(b).

11-280.1-20(b) Allowable corrosion protection mechanisms for steel tanks:

- Cathodic protection;
- The tank is constructed of steel and clad or jacketed with a non-corrodible material;
- The tank is constructed of metal without additional corrosion protection provided that: (A) The tank is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life; and (B) Owners and operators maintain records that demonstrate compliance with the requirements of subparagraph (A) for the remaining life of the tank; and
- The tank construction and corrosion protection are determined by the department to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than aforementioned options.

Source: Chapter 11-280.1, HAR

Tank, Inspection, Repair, and Maintenance (TIRM)

Red Hill Facility, Tank Inspection, Repair, and Maintenance Procedure Decision Document, dated April 24, 2017.[1]

- This report summarizes the recommendations from the Tank Inspection, Repair, and Maintenance Report, dated October 11, 2016 regarding processes moving forward and sets forth a schedule for implementation.
- The recommendations are based on a review and understanding of the underlying cause and contributory factors of the Red Hill Tank 5 fuel release.
- "The current Navy/DLA's repair program is to repair all corrosion areas while the tank is out of service, so that the **corrosion rate on non-repaired corrosion areas will allow the next inspection to be in twenty (20) years**."[2]

Regulatory Agencies conditionally approved the Decision Document on September 5, 2017.[3]

Sources: 1. Exhibit D09;
2. Exhibit D10 page 228; 3. Exhibit D11

Delays in TIRM Schedule

Tank	April 24, 2017[1] Start	April 24, 2017[1] Finish	September 2021[2] (estimated) Start	September 2021[2] (estimated) Finish	Last Inspection Date[3]	Estimated Years Since Last Inspection
1	empty		empty		NA	NA
2	3/7/2024	10/14/2026	2028	2031	2008	13
3	2/4/2019	9/10/2021	2026	2028	1983	38
4	5/12/2016	1/3/2020	2022	2025	1983	38
5	8/1/2016	6/22/2018	2017	2020	2020	1
6	3/7/2024	10/14/2026	2031	2033	2006	15
7	6/30/2022	2/5/2025	2030	2032	1998	23
8	10/22/2020	5/31/2023	2028	2030	1998	23
9	10/22/2020	5/31/2023	2028	2030	1995	26
10	6/30/2022	2/5/2025	2030	2032	1998	23
11	2/14/2019	9/22/2021	2025	2027	1981	40
12	2/14/2019	9/22/2021	2025	2027	1995	26
13	5/12/2016	9/26/2018	2017	2022	1995	22
14	5/12/2016	6/20/2018	2017	2023	1982	35
15	6/30/2022	2/5/2025	2023	2026	2005	16
16	6/30/2022	10/14/2026	2026	2028	2006	15
17	5/12/2016	9/27/2018	2017	2021	2012	5
18	5/12/2016	1/15/2020	2020	2024	1960	60
19	empty		empty		NA	NA
20	11/13/2025	6/21/2028	2032	2035	2008	13

empty, under maintenance

Tanks that have not been inspected for over 20 years and are currently active

Exhibit D12, Sources: 1. Ex D09 p 77; 2. Ex D13 p 84; 3. Ex D10 p 230

Risk Assessment

Statistical analysis to "**assess the level of risk the Red Hill Bulk Fuel Storage Facility (RHBFSF) may pose to the surrounding groundwater**…The first phase of the baseline QRVA [Quantitative Risk and Vulnerability Assessment]…is designed to focus on internal events (not including the risk from internal fires or internal floods)…includes, but is not limited to equipment or structural failures in both frontline and support systems, human errors, etc"[1]

- Estimated acute risk[2]
  - Events leading to ≥120,000 gallon release: 0.00417 events per year (**1 in about 240 years**)
  - Events leading to 1,000 to 30,000 gallon release: 0.32305 events per year (**1 in about 3.1 years**)
- Estimated chronic risk[3]
  - Expected average release: 5,803 gallons per year

"The Regulatory Agencies understand that **Navy and DLA dispute the Risk Assessment's quantitative results** …The Regulatory Agencies also recognize that numerous assumptions regarding the Facility were made…Variations in any of the assumptions made in the assessment could affect risk estimates."[4]

Sources: 1. Ex D14 page 3; 2. Ex D14 p 5, 7; 3. Ex D14 p 7; 4. Ex D15 p 3

Fenix Grange, M.S.

Site Discovery, Assessment, and Remediation Section Supervisor

Hazard Evaluation and Emergency Response (HEER) Office

Groundwater Protection and Evaluation

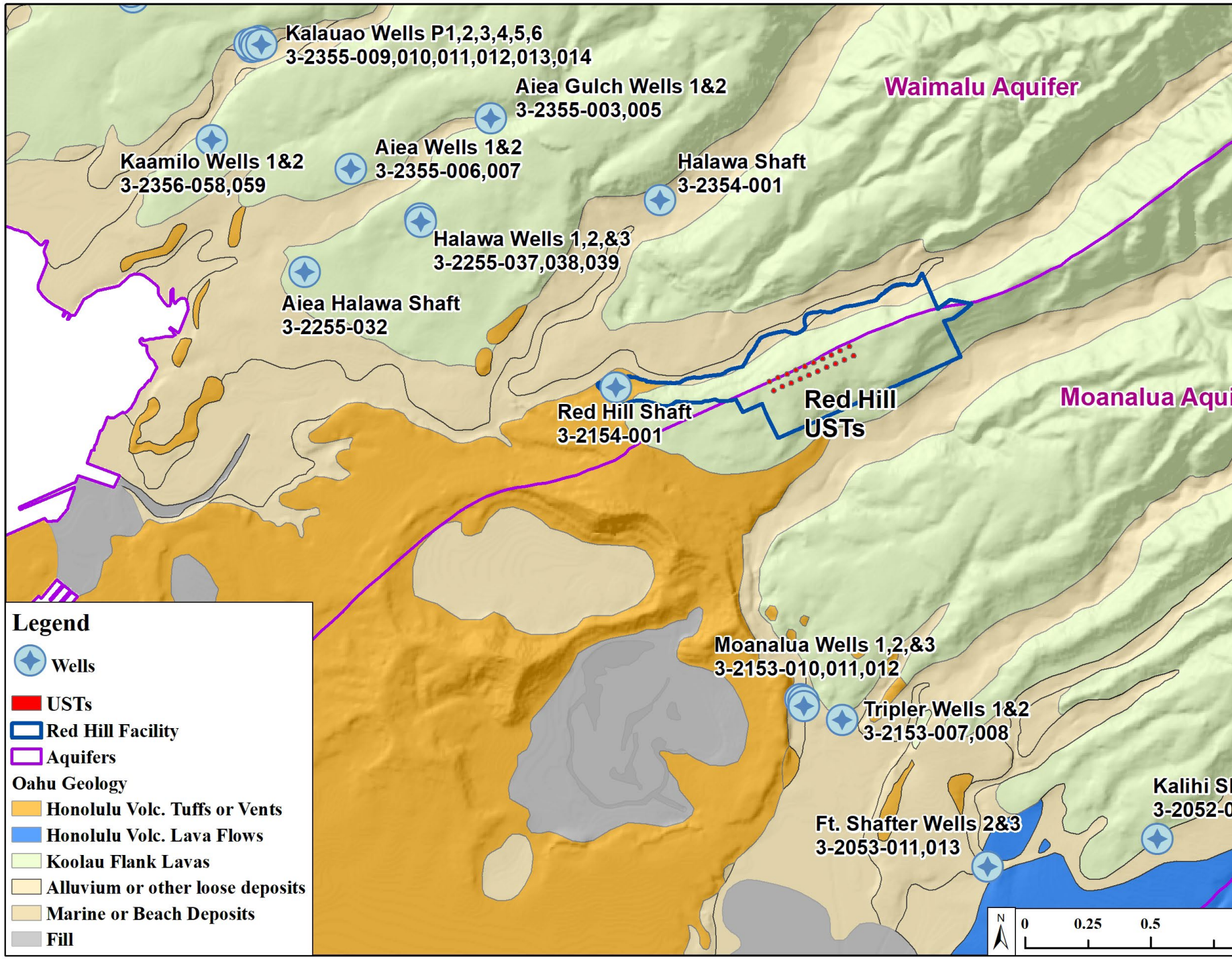


Exhibit D03

Groundwater Protection and Evaluation

The AOC requires the Navy to develop scientifically supported groundwater modeling with the **goal of informing the Navy and regulators of the risk** to the aquifer.

- Conceptual Site Model (CSM) – A functional understanding to guide investigations of the geology, hydrogeology, release mechanisms, and fate and transport of contaminants as they impact groundwater and drinking water supplies.
- Groundwater flow model (GWFM) – Where does groundwater go?
- Contaminant Fate and Transport (CF&T) model – Where does spilled fuel go? (LNAPL) Light Non Aqueous Phase Liquid

Navy **models** "are **not sufficiently supported by data** collected at the site",[1] ignore data that is available,[2] and are not using best available scientific practice.[2] Regulators have identified several key deficiencies since 2018.[1, 3, 4, 5]

Without reliable models, we don't know the risk and the Navy can't do proper release response planning.

Sources: 1. Ex D16 p 2; 2. Ex D16 p 3-6;
3. Ex D17 p 45-62; 4. Ex D18 p 2; 5. Ex D19 p 2

Challenges to Developing Good Models

Red Hill site is not well characterized

- Very complex geology and hydrogeology with few windows
  - Lava flows create complex underground geometry and direct gravity flow of water and contaminants to drinking water aquifer[1]
  - Groundwater Monitoring wells: Only 3 in 14 acre tank farm, 19 perimeter wells
- Lava flows create barriers and fast track pathways for water and fuel to move down into to the groundwater[2]

Source :1. Exhibit D17 pages 51-56;
2. Exhibit D17 page 56

Challenges to Developing Good Models

Red Hill site is not well characterized

Only 3 GW monitoring wells within the tank farm

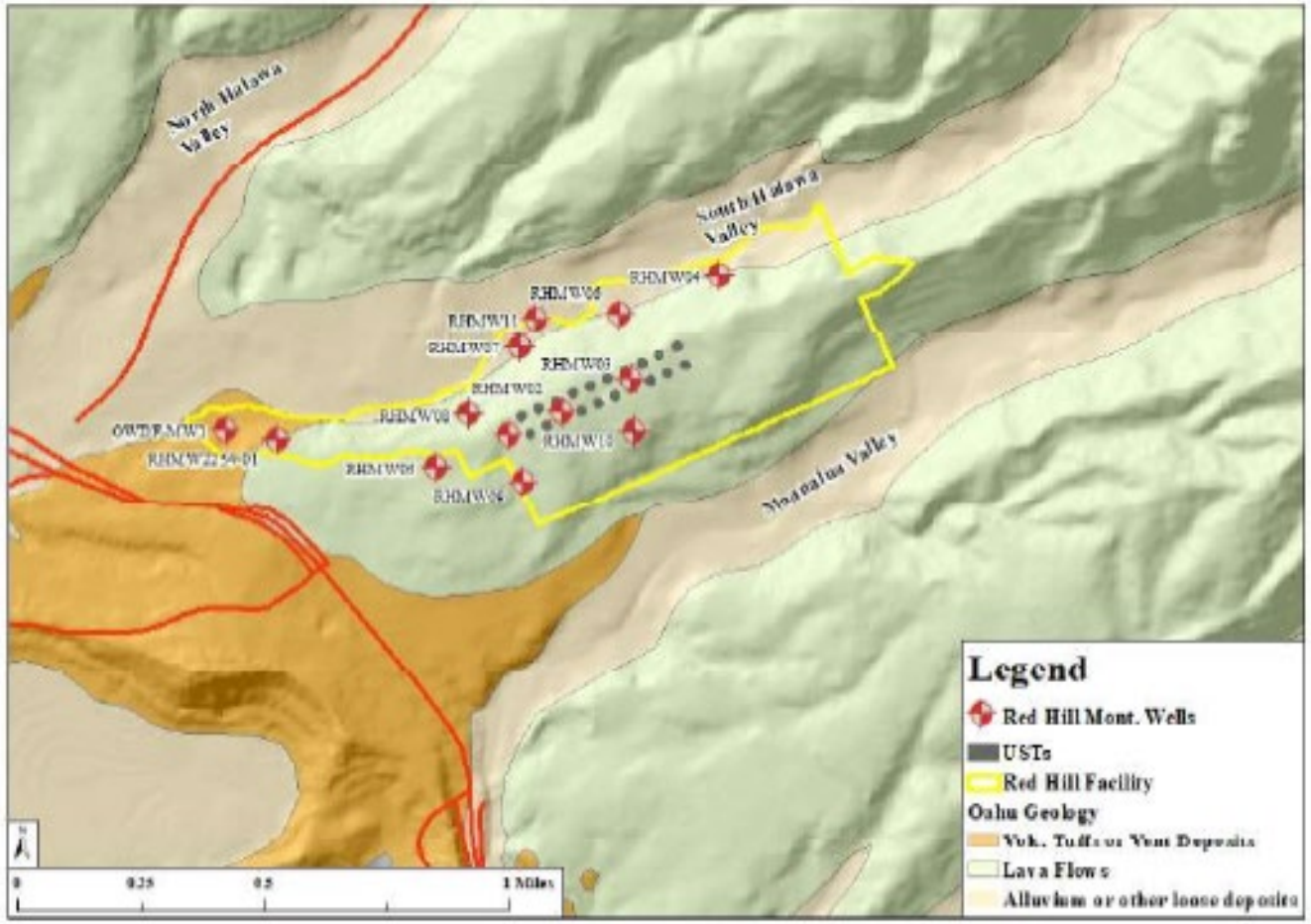


Figure 1 The Red Hill investigation area showing major features and the generalized geology.

Source: Exhibit D18 p 6

Deficiencies Affecting Risk Management

Navy models are built on faulty assumptions

1. Underestimate existing contamination from prior releases
2. Assume unrealistic direction and speed of groundwater flow – contradicted by existing data
3. Drastically overestimate holding capacity –protective containment function of rock and soil above the groundwater
4. Overestimate rate of natural breakdown of petroleum in the ground and in the groundwater
5. Do not account for how fuel moves differently than water
6. Overstate effectiveness of "capture zone" to allow for water treatment

Leads to **a false sense of security** and a **lack of focus on release scenarios and response preparedness**

Sources: Exhibits D16, D17, D18, D19

Deficiencies Affecting Risk Management

1. Existing contamination

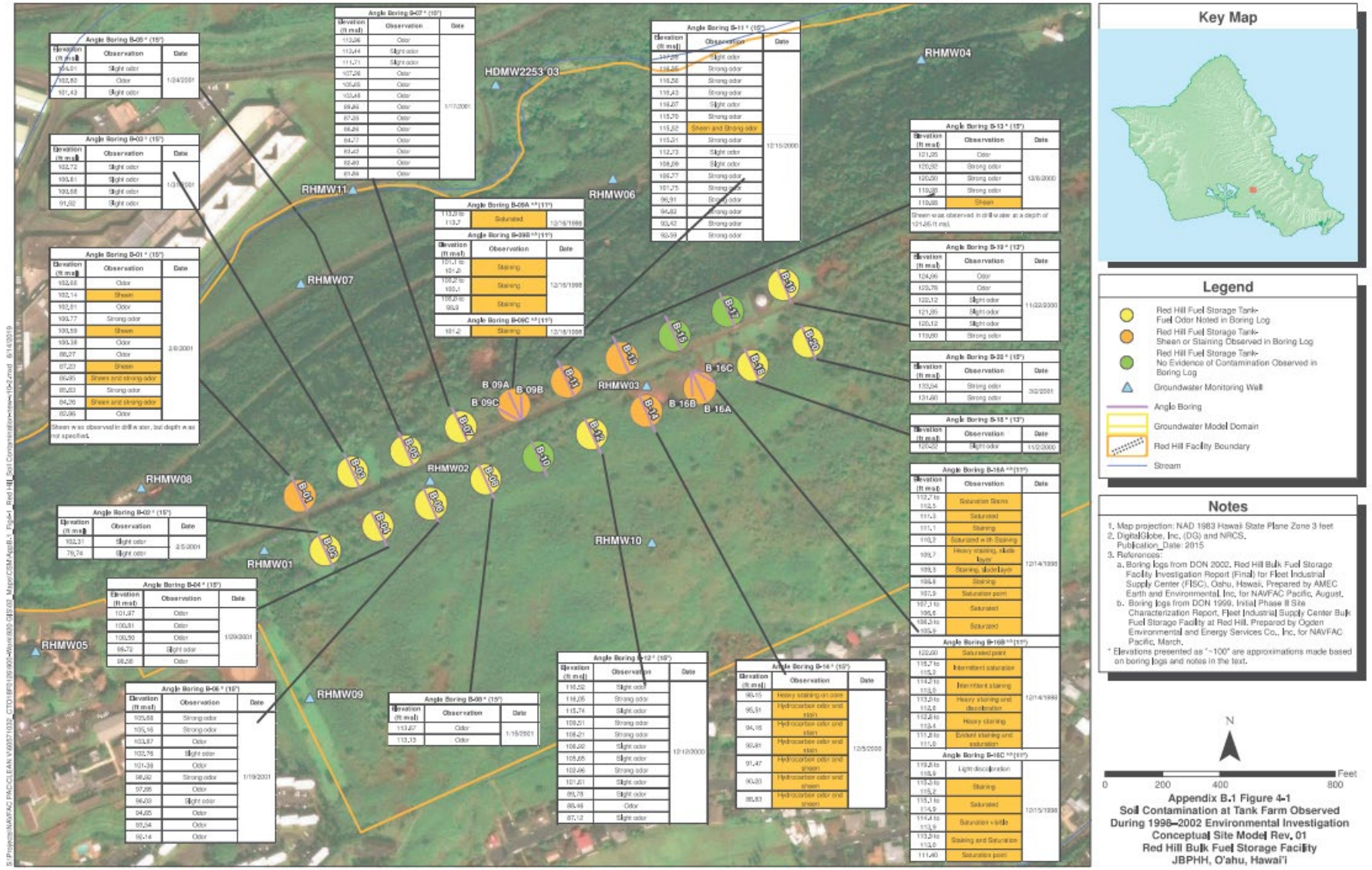
Jet fuel has likely impacted groundwater beneath the tank farm and beyond both from the 2014 release and prior releases.[1]

- "Periodic low-level dissolved-phase impacts at the Red Hill Shaft monitoring well suggest distal transport from the tank farm has potentially occurred…the Navy CSM does not appear to consider these data points nor their implied transport and risk potentials." [2]
- "Jet fuel sheens and blebs have been reported during some past monitoring events."[1]

Navy models "underestimate existing contamination in the subsurface from historic releases."[3]

Sources: 1. Ex D16 page 5;
2. Ex D16 pages 4-5; 3. Ex D18 page 2

1998-2001 TPH Detection in Soil Borings Below Tanks



Source: Exhibit D20 page 400

2013-2014 Soil Vapor Sampling

Exponential increase in vapor concentrations below Tank 5 before and after 2014 Tank 5 release

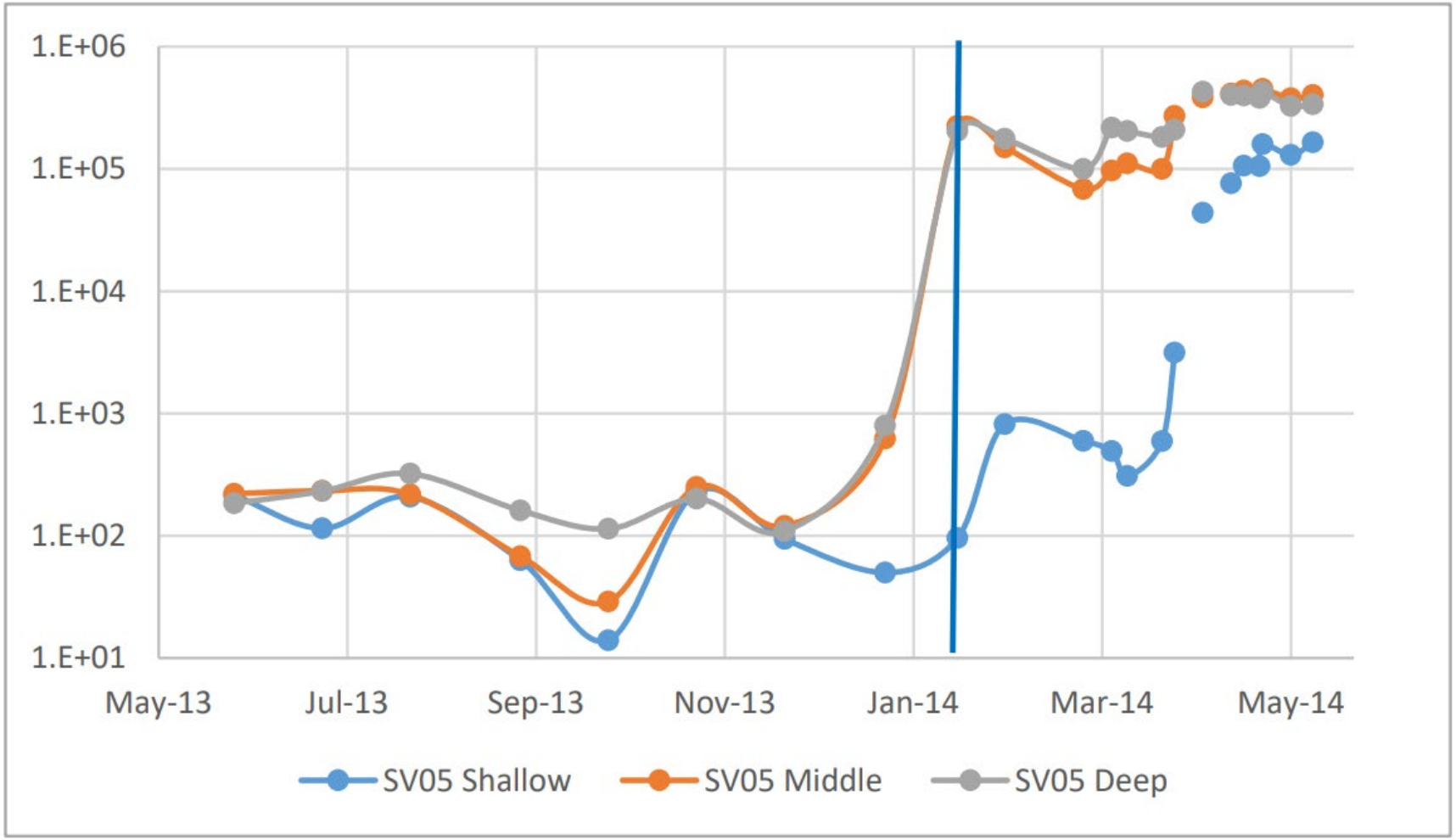
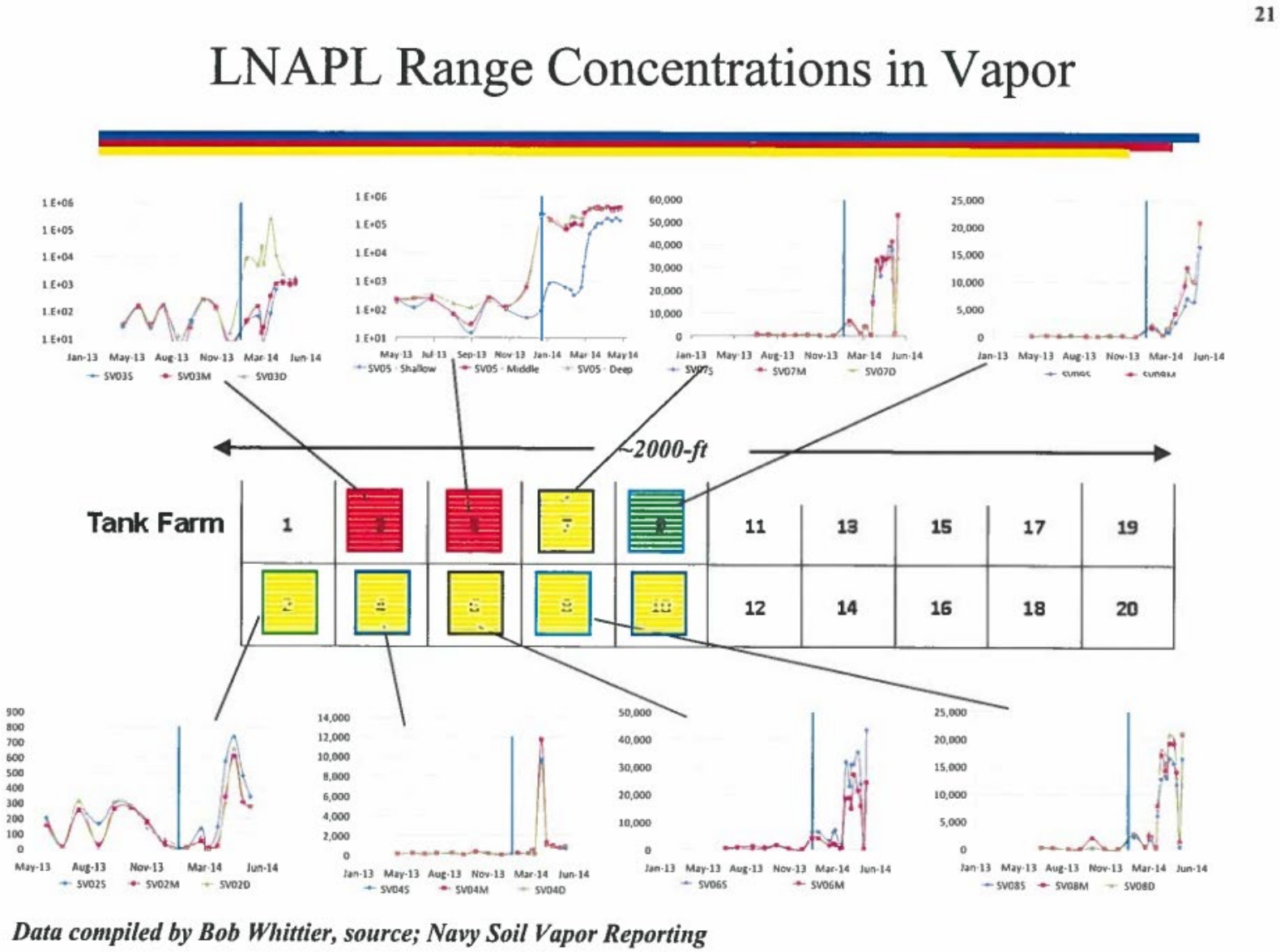


Exhibit D21, Source: Exhibit D16 p 31

2013-2014 Soil Vapor Sampling

20180223 RA Comment letter . Aquiver, Inc. Attachment "Comments on the State of the Conceptual Site Model and Related Evaluations for the Navy Red Hill Tank Farm Facility, Pearl City, Hawai'I" page 31



Source: Exhibit D16 page 31

Deficiencies Affecting Risk Management

2. Groundwater flow direction and speed

The Navy's conclusions about direction and rate of flow do not match data collected in the field

- Groundwater elevations in wells indicate a different speed of groundwater flow
- Chloride concentrations indicate a different direction of groundwater flow

"While it is true that previous studies did indicate a southwesterly flow direction, these studies did not benefit from the wealth of new, more precise and accurate groundwater elevation data that are currently available showing a dominant groundwater gradient to the northwest. **It is the standard scientific process to revise findings as new data becomes available."**[1]

Sources: Ex D16, D18 p 7-10, D19;
1. Ex D18 p 8

Deficiencies Affecting Risk Management

3. Holding capacity

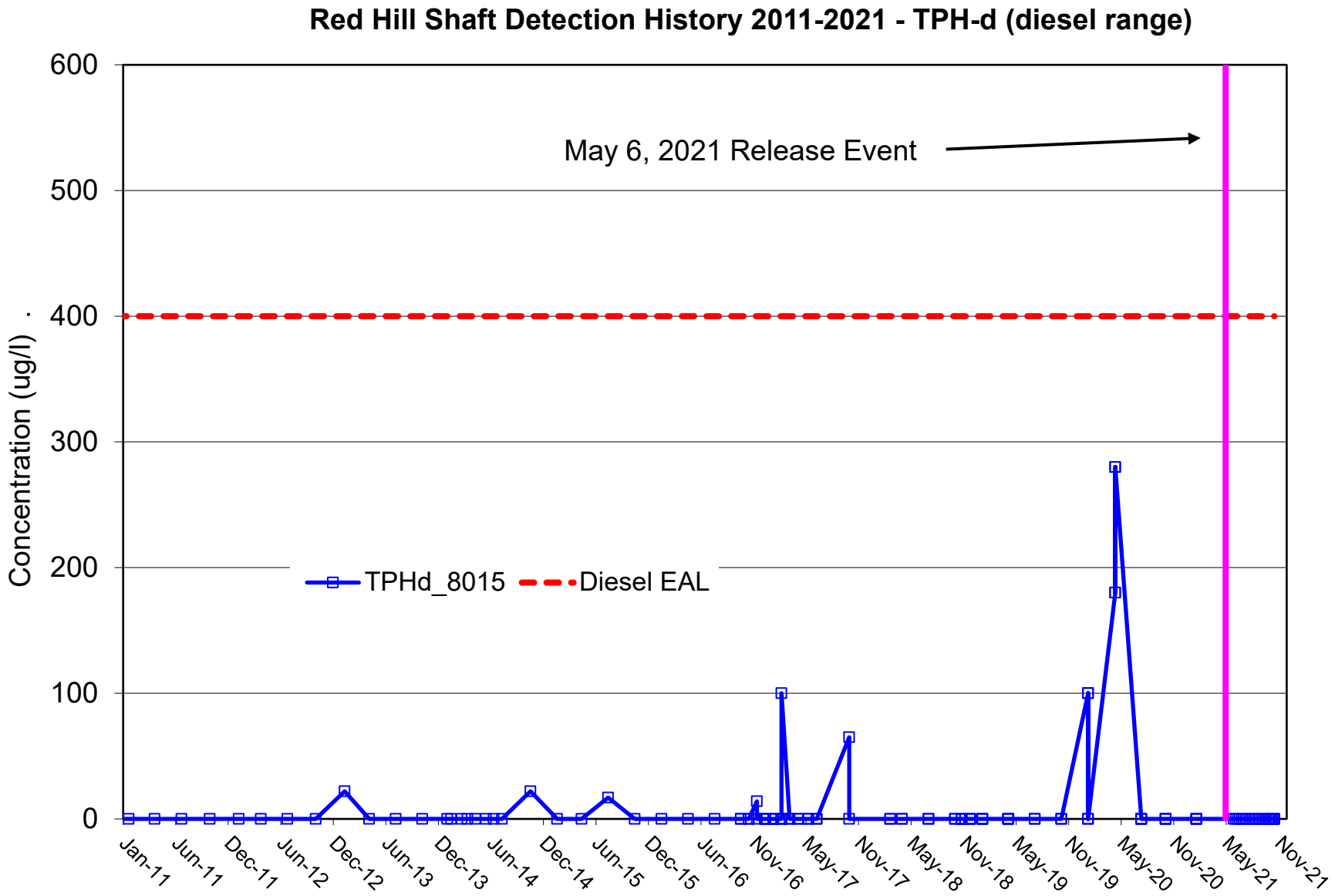
CSM holding model grossly overestimates protective containment function of rock and soil above the groundwater.[1]

- Simplified geology implemented in groundwater flow model is **not supported by available geologic data**
- DOH disputes the Navy's petrophysical test results
  - Centrifuge testing method **does not match real-world conditions** and "produces unreliably high residual saturations"[2]
- Navy estimates of holding capacity
  - 2,600,000 gallons January 2018[3]
  - 66,000 to 112,500 gallons August 2021[4]

Sources: Exhibits D16, D18, D19; 1. Ex D18 p 6-7; 2. Ex D18 p 7; 3. Ex 22; 4. Ex 13 p 62-63

Impacts at Red Hill Shaft (RHMW2254-01)

TPH-d
2005-2021

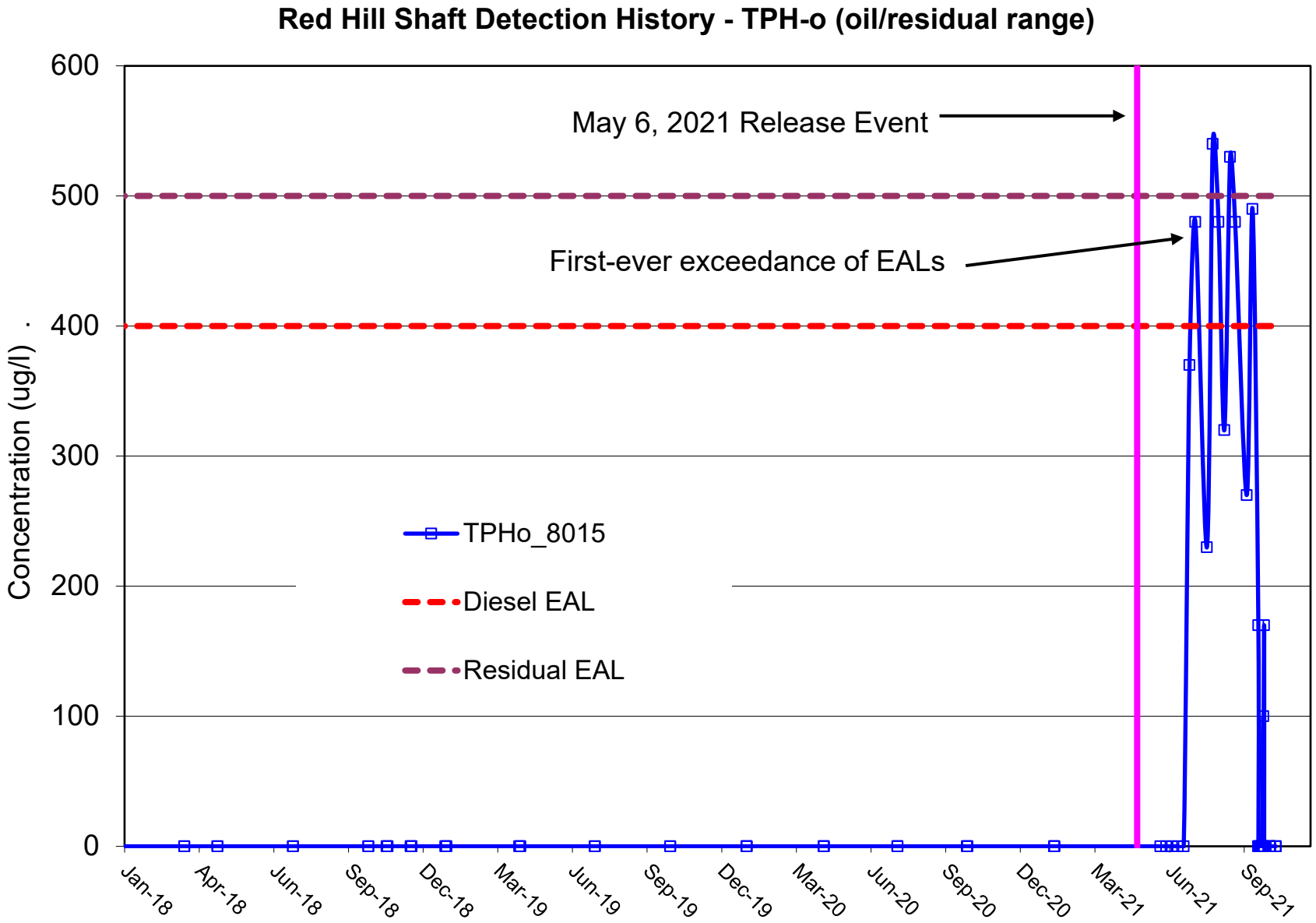


Source of data: Q2 LTM, preliminary data for Q3, and May 6 release data

Exhibit D23

Impacts at Red Hill Shaft (RHMW2254-01)

TPH-o 2018-2021



Source of data: Q2 LTM, preliminary data for Q3, and May 6 release data

Exhibit D24

Deficiencies Affecting Risk Management

4. Rate of degradation

Navy estimates of how quickly petroleum will naturally break down in the environment contradict available data[1]

- Unrealistic rates of natural source zone depletion are applied
  - The last reported release near monitoring well RHMW03 was more than 20 years ago, but elevated temperatures indicate contamination is still present and degradation is ongoing
- Estimates of degradation based on untested assumptions and faulty models

Sources: Exhibits D16, D18 p 12-13, D19;
1. Ex D18 p 6; 2. Ex D18 p 13

Deficiencies Affecting Risk Management

5. Contaminant fate and transport

- **No modeling on contaminant fate and transport of new releases** has been completed. Spilled fuel moves differently than water and must be accounted for.
- **The groundwater steady state model can't predict capture related to transient contaminant movement on the order of days**, like the rapid movement of the 11/20/21 fuel release to the Red Hill Shaft drinking water source detected on 11/28/21. **Development of a CF&T model to address this deficit is essential.**
- Lack of release response preparedness for fresh spills affected by migration of older plumes and no active remediation plan for the aquifer in place.

Source: Exhibits D16, D18, D19

Deficiencies Affecting Risk Management

6. Effectiveness of capture zone

The Navy's **capture zone conclusions are not supported by the available data on field flow conditions**

- Modeled geology does not include key information from the CSM, tank boring logs, and engineering drawings of the Red Hill Shaft from the time of construction
  - Adequately reflecting geological complexity is necessary to understand how contaminant plumes will migrate
  - Tracer tests and other field verification tests needed

Contamination in the aquifer cannot be "captured," pumped out, and treated

- Success of capture, pump, and treat has not been demonstrated to be effective at the aquifer scale[1]
- Location, size, and speed of release make a big difference

Sources: Exhibits D16, D18, D19;
1. Exhibit 50 p 3

Deficiencies Affecting Risk Management

Navy models ignore available data and "lack scientific defensibility"[1]

DOH has identified the following problems:[2]

1. Dismissing or redefining important data sets
2. Making blanket assertions to support specific interpretations while providing insufficient supporting data
3. Drawing conclusions from inappropriate or inconclusive tests

The Navy has responded to DOH technical objections with rebuttals that do not address the underlying objection. The Navy has not done adequate technical work as requested by DOH to corroborate some of their more contentious interpretations.

Sources: 1. Exhibit D18 page 17;
2. Exhibit D18 pages 5-7

Deficiencies Affecting Risk Management

The Navy's failure to generate valid models based on existing data makes it impossible to accurately assess risk.

- Models with flawed assumptions are not reliable for decision making and needed protective actions.
- Unrealistic estimates of holding capacity and rapid natural degradation provide a false sense of security.

- **Recent releases highlight ongoing risks to our community and drinking water supply.**

Sources: Exhibits D16, D17, D18, D19

2020-2021 Incident Highlights & Current Concerns

- Hotel Pier Release (March 17, 2020 and June 2, 2020)
- May 6, 2021, Incident and Release
- Kilo Pier Release (July 23, 2021)
- September 29, 2021, Surge Event
- November 20, 2021, Fire Suppression Drain Line Incident
- November 28, 2021, Drinking Water Impacts

May 6, 2021 Incident

- A September 15, 2021 Navy memo transmitting the Cause Analysis of the JP-5 Pipeline Damage summarized the likely cause for the pipeline releases near Tanks 18 and 20 as a dynamic transient surge resulting from the Control Room Operator failure to follow the valve opening and closing sequence.[1]
- The Navy estimated the amount of JP-5 released in the lower Red Hill Tunnel was 1618 gallons, of which 1580 gallons were recovered. The Navy reported that **38 gallons** were unaccounted for and released into the environment.[2]
- The pipeline associated with this event has not yet been repaired.

Sources: 1. Exhibit D25 page 2;
2. Exhibit D25 page 6

September 29, 2021 Surge

- Based on an internal Navy email received from the media on November 9-10, a surge event in a pipeline, similar to the May 6 incident appeared to have occurred on September 29, 2021. No damage or releases were reported.

Sources: Exhibits D26, D27

November 20, 2021 Incident

- The Navy reported a release from a crack in a valve in the fire suppression drain line.
- About ¼ mile downhill from the bulk fuel storage tanks, close to the Red Hill Shaft.
- Approximately 14,000 gallons of a mix of water and fuel released into the tunnel was captured in a sump.
- The Navy suspects the sump and related connections (e.g., "french drain") are the conduits for the release into the environment.
- Preliminary screening of fuel product collected from the sump indicates JP-5 fuel.
- DOH is investigating possible connections between the May 6 and November 20 incidents and current water contamination.

Sources: Exhibits D28 to D30

November 28, 2021 Drinking Water Impacts

- On or about November 28, 2021, the Navy began receiving complaints from water users from the Respondent's water system regarding a gas or fuel odor from their drinking water. The Navy shut down Red Hill Shaft on the evening of November 28, 2021.[1]
- On or about December 1, 2021, the DOH received preliminary results identifying petroleum product in water samples from Red Hill Elementary School on the Navy Water System.[2]
- On December 5, 2021, DOH observed a floating fuel layer in Red Hill Shaft, and petroleum hydrocarbons measured in samples collected far exceed Environmental Action Levels (EALs).[3, 4]
- TPH-d 140,000 ppb (parts per billion)
  - EAL= 400 ppb
- TPH-g 20,000 ppb
  - EAL = 300 ppb

Sources: 1. Ex D31; 2. Ex D32; 3. Ex D33 p 5; 4. Ex D34

2021 Groundwater Data

- Prior to the November 20, 2021 event, we have seen TPH-o increases in groundwater beneath the Red Hill tanks and significant increases in Red Hill Shaft in July and August 2021.[1]
- The Department believes that the increased detections of TPH-o could indicate the recent mobility of weathered fuel from past releases from beneath the tanks, perhaps mobilized by the May 6, 2021 release.
- After November 20, 2021, the layer of fuel and contaminants in the water in Red Hill Shaft, have a different petroleum signature that better reflects fresh JP-5 fuel.[2]

Sources: 1. Exhibit D24;
2. Ex D33 p 5, D35 p 2

Unprecedented Impacts at Red Hill Shaft

December 3 and 5, 2021

- **Fuel observed floating on groundwater**[1]
- **Emulsified fuel present in samples**
- **TPH-g and TPH-d far exceed DOH Environmental Action Levels (EALs)**[2]

12/3/21 Navy sampling[3] (results received by DOH 12/11/21)

- TPH-g 1,200 ppb
- TPH-d 130,000 ppb

12/5/21 Navy sampling[3] (results received by DOH 12/11/21)

- TPH-g 950 ppb
- TPH-d 52,000 ppb

12/5/21 DOH sampling[4, 5]

- Sample of product = 100% TPH-d[5] & chromatograms match JP-5[6]
- TPH-g 20,000 ppb
- TPH-d 140,000 ppb

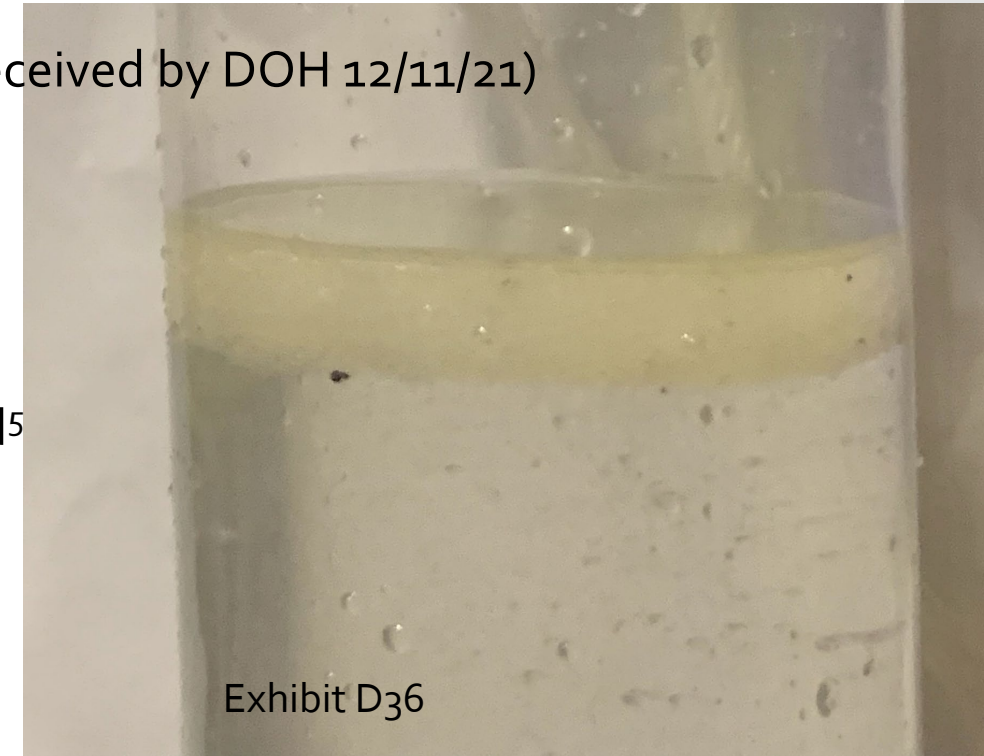


Exhibit D36

Sources: 1. Ex D36; 2. Ex D34; 3. Ex D35 p 2; 4. Ex D33 p 5, Ex D37 p 20; 6. Ex D38

Diana Felton, M.D.

State Toxicologist

Hazard Evaluation and Emergency Response (HEER) Office

How People are Exposed to Petroleum Hydrocarbons in Water

Ingestion (swallowing) from drinking, cooking, and oral hygiene

Dermal (skin) from bathing and showering

Inhalation (breathing) from vapors via showers or ingestion

Sources: Exhibits D39 to D45

Acute Health Effects From Exposure to Petroleum Hydrocarbons in Water

Body System	Symptoms	Exposure
Gastrointestinal System	Upset stomach, nausea, vomiting, diarrhea, abdominal cramping	Ingestion
Skin	Irritation, redness, rashes, peeling skin	Dermal
Mucous Membranes	Irritation, sore throat, nosebleeds	Ingestion
Nervous System	Headache, dizziness, lightheadedness, fatigue	Ingestion, Inhalation, Odors
Respiratory System	Shortness of breath, cough, hydrocarbon pneumonitis	Inhalation

Sources: Exhibits D39 to D45

Hydrocarbon Pneumonitis

Severe lung condition similar to pneumonia

Caused by destruction of the cells in the lungs that make surfactant (the lubricant of the lungs)

Can be very severe and even fatal, especially in children

Higher risk with higher concentrations of petroleum

Sources: Exhibits D39, D46, D47, D48

Long-term Health Effects From Exposure to Petroleum Hydrocarbons in Water

Jet fuels like JP5 can contain over 1000 individual chemicals

For most of those chemicals there is little to no information known about the long-term health impacts of exposure

Repetitive and longer exposures increase the risk of long-term health effects

Sources: Exhibits D39 to D45

Impacts of Current Water Contamination

Thousands of families affected

Over **650** calls to DOH

Over **120** calls to the Hawaii Poison Center

Over **5400** medical screenings and visits by Military Health Services

Unknown impact on community health providers

Complaint Calls to DOH Nov 28 - Dec 8

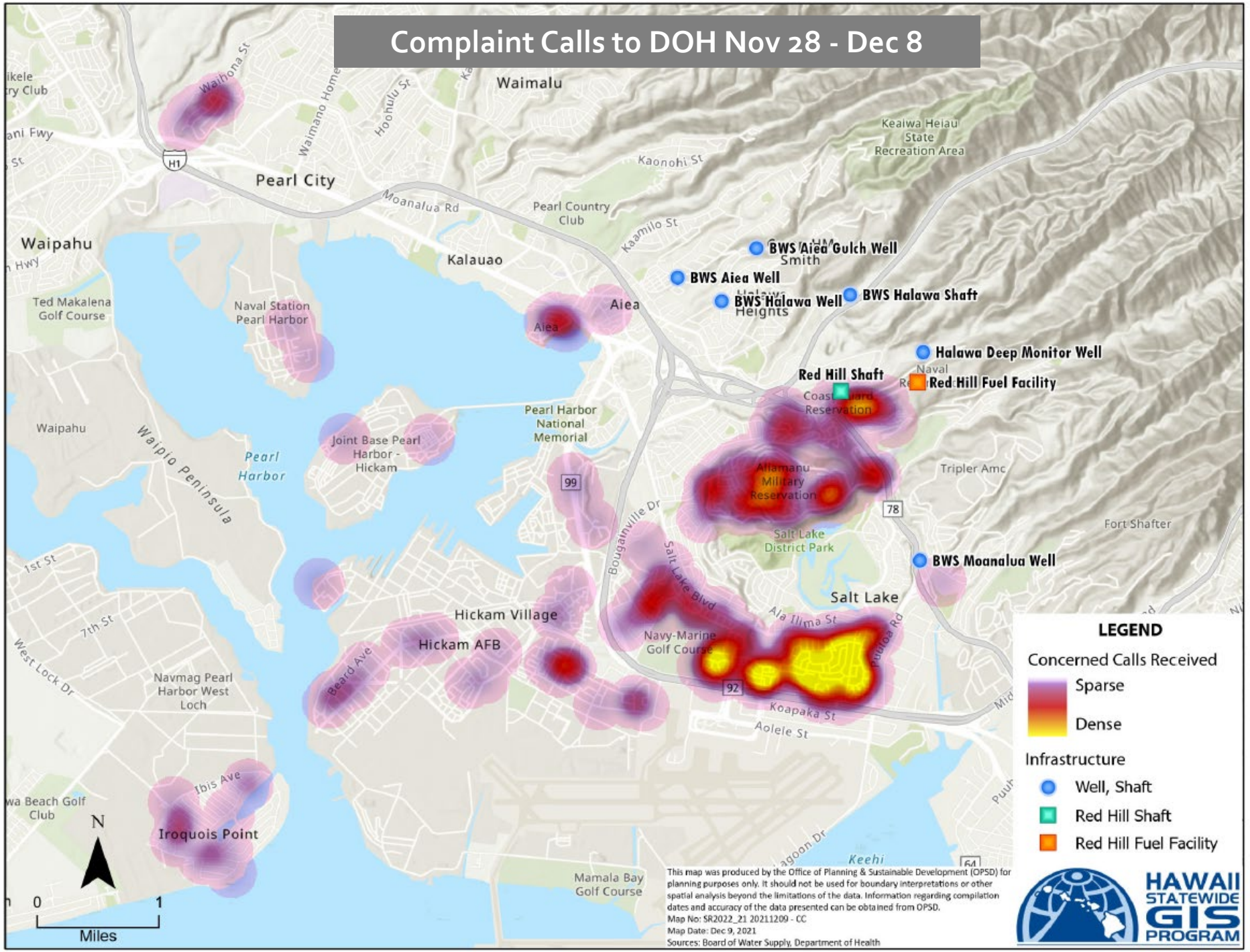


Exhibit D49

Rationale for Action

- Loss of water usage, the impact to the Navy water users, and potential threat to other water systems are reasons enough to pursue action.
- The Navy's water samples collected at Red Hill Shaft identified significantly higher concentrations of TPH-o in recent months than previously detected, possibly indicating that weathered fuel is migrating.
- TPH-o and TPH-d concentrations from groundwater wells beneath the tanks have increased after the May 6 incident. The size of the impact does not appear to correlate with the Navy's description of the incident (38 gallons). This type of uncertainty affects the identification of facility risk and associated response measures.
- Floating fuel and significantly elevated TPH-g and TPH-d concentrations have been identified at Red Hill Shaft after the November 20 incident. The risk of any additional contaminant in the aquifer or lack of immediate action now may exacerbate the current situation and further jeopardize our aquifer system.

Actions Needed in Emergency Order

1. Immediately suspend operations, including but not limited to, fuel transfers, at the Bulk Fuel Storage Tanks at the Facility. The Respondent shall, however, maintain environmental controls, release detection and release response protocols, and compliance with applicable regulations.
2. Take immediate steps to install a drinking water treatment system or systems at Red Hill Shaft to ensure distribution of clean drinking water conforms to the standards prescribed by the Safe Drinking Water Act and applicable regulations and minimize movement of the contaminant plumes(s). The treatment system(s) shall be reviewed and approved by the Department prior to installation and shall be installed as expeditiously as practicable.
3. Within 30 days of receipt of this EO, submit a workplan and implementation schedule, prepared by a qualified independent third party approved by the Department, to assess the Facility operations and system integrity to safely defuel the Bulk Fuel Storage Tanks. Upon the Department's approval of the assessment, workplan and implementation schedule, conduct necessary repairs and make necessary changes in operations to address any deficiencies identified in the assessment and workplan. corrective actions shall be performed as expeditiously as possible.

Actions Needed in Emergency Order

4. Within 30 days of completion of required corrective actions under Item 3, defuel the Bulk Fuel Storage Tanks at the Facility. Any refueling shall be subject to a determination by the Department that it is protective of human health and the environment.
5. Within 30 days of receipt of this EO submit a workplan and implementation schedule, prepared by a qualified independent third party approved by the Department, to assess operations and system integrity of the Facility to determine design and operational deficiencies that may impact the environment and develop recommendations for corrective action to the Department with an implementation schedule. Upon the Department's approval, perform work and implement corrective actions. Corrective actions shall be performed as expeditiously as possible.