Craig D. Jensen
Marnie E. Riddle
Jonathan C. McKay
Dave Fitzpatrick 6803
DEPARTMENT OF THE NAVY
OFFICE OF GENERAL COUNSEL
850 Ticonderoga Street, Suite 110
JBPHH, HI 96860
Telephone: (703) 727-6194

DEPARTMENT OF HEALTH

STATE OF HAWAII

ENVIRONMENTAL HEALTH DIVISION, DEPARTMENT OF HEALTH, STATE OF HAWAII, Complainant, v. UNITED STATES DEPARTMENT OF THE NAVY, Respondent.	Case No. 21-UST-EA-02 **DECLARATION OF SHERRI R. ENG**

DECLARATION OF SHERRI R. ENG

I, Sherri R. Eng, declare as follows:

1. I am the Senior Environmental Management Director for Naval Facilities Engineering Systems Command Hawaii (NAVFAC HI) and Environmental Regional Program Director for the Commander Naval Installation Command, Navy Region Hawaii. In my position, I oversee a staff of engineers, scientists, environmental professionals, technicians, and management professionals that manage the Navy's environmental compliance program for Navy installations in Hawaii.

2. I make this declaration in support of the Respondent, United States Department of the Navy's ("Navy") opposition to the Emergency Order of December 6, 2021, the Complainant,

Environmental Health Division, Department of Health, State of Hawaii ("DOH"), issued concerning impacts the Red Hill Bulk Fuel Storage Facility ("Red Hill Facility") had on the Navy's drinking water system. I make this declaration based upon personal knowledge and I am competent to testify as to all matters stated herein.

3. On November 28, 2021, the Navy received initial reports of odors of fuel and chemicals in some areas serviced by its water system. Because the reports were from areas that receive a higher proportion of water from the Red Hill Shaft, the Navy initiated its environmental response the same day by shutting down the Red Hill Shaft. The Navy immediately started collecting and testing the water for contaminants the next day on November 29, 2021. Since November 28, 2021, the Red Hill Shaft pump has been shut off and isolated from the Navy's water supply system with a shut off valve. The shut off valve prevents any impacted water from Red Hill Shaft from flowing into the rest of the system.

4. The Navy collected fourteen samples from two Navy-owned and operated drinking water shafts (the Waiawa Shaft and the Red Hill Shaft); two above ground drinking water storage tanks (S1 and S2); four Navy housing community centers; two elementary schools serviced by the Navy's water system; a Navy Child Development Center; and two separate Army communities, the Aliamanu Military Reservation and the Red Hill Housing area, which an Army-operated water distribution system also services.

5. The Navy's initial testing analyzed the samples for Total Organic Carbons (TOC), which provides a measure of the total amount of carbon in organic compounds present in a water sample. The presence or level of TOC was then used along with other information, including the nature of the reports of contamination, to inform which additional locations warranted additional testing and immediate action.

6. In addition to the on-island testing, the Navy sent samples to Eurofins TestAmerica Seattle ("TestAmerica") which is an independent lab capable of performing analysis that is more detailed by utilizing EPA approved methodologies, than any accredited laboratories available in Hawaii. TestAmerica is a lab located in Seattle, Washington, and it is accredited by California, Washington, Montana, Oregon, Florida, Louisiana, Alaska, New Jersey, Kentucky, Maine, and the Department of Defense Environmental Laboratory Accreditation Program (ELAP).

7. The Navy received its first partial results from TestAmerica on December 2, 2021, which it immediately provided to the DOH and EPA. The results showed detections at just one location, from the Red Hill Shaft, and while there was a presence of Total Petroleum Hydrocarbon-g (TPH), xylene, and naphthalene, all of the levels were below the DOH Environmental Action Levels (EAL).

8. Since it began sampling, the Navy has now collected over 900 samples, including samples for TOC, from locations in and around the Red Hill Shaft and many locations within the water distribution system. And of the samples collected and analyzed from the active portions of the Navy's water distribution system**,** which currently is being supplied by just the Waiawa shaft, none have indicted the presence of petroleum-related constituents at or above DOH's EAL.

9. Of the sampling taken from the drinking water wells at each of its three shafts – the Red Hill Shaft, the Navy Aiea-Halawa Shaft, and the Waiawa Shaft – results for TPH above the EAL have been limited to the Red Hill Shaft.

10. Samples taken from a waterline located near the Navy Aiea-Halawa Shaft pump house, which the Navy took off-line on December 3, 2021, indicated elevated results for TPH above the EAL. The Navy first collected these samples on December 5, 2021, not from the shaft of the well extending down into the aquifer but from an isolated section of piping above the well,

upstream of the pre-chlorination treatment point. Samples taken from a nearby post-chlorination point, however, were below the EAL.

11. To further investigate these results, the Navy took additional samples from the same locations on December 7 and 8, 2021, and received the results on December 11, 2021. The analysis indicated TPH was present above the EAL only upstream of the pre-chlorination treatment site at the same isolated, dead-end pipe.

12. On December 8, 2021, in addition to the samples collected from the pre-chlorination site, the Navy also collected a sample from the Navy Aiea-Halawa Shaft well utilizing a bailer, which is used to lift water directly from the aquifer. The Navy received the results on December 12, 2021, and the water tested from the well was a "non-detect" for TPH, and just a low-level detect for TPH-d with Silica Gel Cleanup. Samples collected at the Navy Aiea-Halawa Shaft taken on December 9 and 10, 2021, however, were a "non-detect" for total TPH and a "non-detect" for TPH-d with Silica Gel Cleanup.

13. The analysis for actual chemicals that are constituents or indicators of fuel – benzene, ethylbenzene, toluene, xylenes, and naphthalene – from the Navy Aiea-Halawa Shaft were also "non-detect." This data as a whole suggests that the contaminant detected from the isolated section of piping in the Navy Aiea-Halawa Shaft pump station, which I discussed above in paragraph 11, may have traveled through the Navy's water supply system after the Navy shut down the Red Hill Shaft, so that the contaminant came from the Red Hill Shaft, and not through the drinking water aquifer. The mechanism for this would be the depressurization of the system when the Navy shut off the Navy Aiea-Halawa Shaft pump station. The depressurized system would allow contaminants that are lighter to migrate through the pipes to the highest point, and settle and the end of the line, which is where the samples were taken.

14. Cumulative results of the Navy's sampling data from the drinking water wells are included in **N-3A**.

a. Page 1 of **N-3A** provides the results from the Red Hill Shaft that exceed the EAL, which are highlighted in red.

b. Page 1 of **N-3A** also provides the sampling results taken from the Navy's Aiea-Halawa Shaft well on December 8, 2021, which are highlighted in yellow.

c. Pages 2 -4 of **N-3A** provides samples taken from the Navy's Aiea-Halawa Shaft on December 9 and 10, 2021 – the results which were a complete non-detect for TPH, including Silica Gel Cleanup – are highlighted in yellow.

15. **N-3B** includes the Navy's sampling results that include sampling points other than drinking water wells. The sampling results from the Navy Aiea-Halawa Shaft pump station are included on page four of **N-3B** and highlighted in yellow.

16. **N-3A** and **N-3B**, provide all of the available sampling data for each sample the Navy has collected since November 29, 2021, along with the dates and location of the source of the sample. This data includes both final data and preliminary data that is subject to change during the lab's quality control analyses. The Navy has provided all of this information to the EPA and DOH as it has received it, via email.

17. The Navy's sampling results are consistent with the sampling results that the DOH has collected and analyzed. On December 15, 2021, the DOH announced that it had collected twenty-seven samples from communities in the Iroquois Point and McGrew Point communities, the Iroquois Point Elementary School, the Navy's Aiea Halawa Storage tank, and the Navy's Aiea Halawa Shaft. Five of the twenty-seven samples detected just trace levels of petroleum

product from the Iroquis Point and McGew Point Communities, but all five samples were well below the EAL. The twenty-two samples taken from the other locations – including Navy's Aiea Halawa Shaft – were a non-detect for petroleum. Eurofins Scientific in California analyzed the DOH samples. **N-3C**.

18. My staff is responsible for development of ground water flow models and reports via contracted experts. For example, my staff contracted for and supervised the development of the March 20, 2020 Groundwater Flow Model Report (GWFM), Red Hill Bulk Fuel Storage Facility. That report was developed pursuant to the Section 7.1 of the Scope of Work under the Administrative Order on Consent (In the Matter of Red Hill Bulk Fuel Storage Facility (EPA Docket No: RCRA 7003-R9-2015-01; DOH Docket No: 15-UST-EA-01)). Through these efforts, I am aware that models indicate when the Red Hill Shaft is pumping, groundwater beneath the tanks of the Red Hill Facility is captured by the Red Hill Shaft.

19. The Navy, DOH, EPA, and the Army have completed a Drinking Water Sampling Plan ("Sampling Plan"), which the agencies signed on December 14, 2021. The sampling plan will support the joint effort to determine if the drinking water within the affected areas complies with the State of Hawaii and EPA Drinking Water Standards. **N-3D.**

20. Pursuant to the Sampling Plan, the Navy will: 1) sample its three supply well shafts to characterize the concentration of constituents; 2) through sampling, prioritize contaminated locations in the DoD water distribution system to flush; 3) screen locations where flushing has been completed; 4) perform housing and building specific flushing for all down gradient structures; 5) collect samples from ten percent of the residences, with a minimum of fifteen homes in each zone, and increase sampling in areas where health professionals indicate; and 6) conduct long-term drinking water monitoring.

21. Under the Sampling Plan, once flushing is complete water in the residences could be considered fit for human consumption in as few as twelve (12) days.

22. To expedite sampling, the Navy is trying to secure additional testing and sampling capacity from laboratories accredited by the Hawaii Department of Health, which are located off-island. And because there are currently no Hawaii-accredited drinking water laboratories in Hawaii, the Navy is working with DOH to utilize reciprocity agreements to increase the number of labs available to support sample testing.

23. All of the Navy's efforts that I have described herein have been taken in broad coordination with the EPA and the DOH, and many have included the key stakeholders. Since December 2, 2021, the Navy has been meeting daily with the DOH to discuss its sampling efforts and laboratory results, and it shares any new information it has developed or received.

24. On December 6, 2021, the Navy established a daily meeting, which has since been referred to as the "Red Hill Water Crisis Solution" meeting. Participants include leaders from the DoD, EPA Region 9, the DOH, the Hawaii Department of Land and Natural Resources (DLNR), and the Honolulu Board of Water Supply (BWS).

25. The Navy has also established a multi-disciplinary team to collaborate concerning its groundwater modeling and effort to resume pumping at the Red Hill Shaft. The participants include EPA, DLNR, DOH, BWS, the U.S. Geological Survey (USGS), and representatives from the University of Hawaii.

I declare under penalty of perjury that the foregoing facts are true and correct to the best of my knowledge and belief.

Dated: Honolulu, Hawaii December 17, 2021.

/S/ Sherri R. Eng
Sherri R. Eng

Joint Base Pearl Harbor Hickam Drinking Water Issue
Eurofins TestAmerica Seattle Laboratory Results - Well Results

Analyte	Benzene	Ethylbenzene	Toluene	Xylenes	Naphthalene	TPH-g (C6-C12)	TPH-d (C9-C25) [b]	TPH-d (C9-C25) with Silica Gel Cleanup	TPH-o (C24-C40) [b]	TPH-o (C24-C40) with Silica Gel Cleanup
CAS No.	71-43-2	100-41-4	108-88-3	1330-20-7	91-20-3	PHCC6C10	PHCC10C24	PHCC10C24SGC	PHCC24C40	PHCC24C40SGC
Method	8260B	8260B	8260B	8260B	8260B	8260B	8015B_E	8015B_E	8015B_E	8015B_E
DOH Tier 1 EAL	5	30	40	20	17	300	400	—	500	—
EPA MCL	5	700	1000	10000	—	—	—	—	—	—
Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

Location (General Location / Building)	Specific Location	Field Observations	Sample ID	Sampling Date	Sampling Time	Associated Trip Blank	Type	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Waiawa PS	well point	Ambient PID: 4.0 ppm, Sampling Point PID: 4.0 ppm, no odor detected,no visual indication of sheen	ERH1975	11/29/2021	20:00	ERH1987	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	310 U	77 U	310 U	77 U
Field QC	—	—	ERH2049	12/3/2021	14:25	—	Trip Blank	0.50 U	0.80 U	0.80 U	**1.1 J**	2.0 UQ	80 U	—	—	—	—
Red Hill Shaft Well (RHMW2254-01)	bailer sample down manhole	Ambient PID: 0.8 ppm, Above Open Manway PID: 11.4 ppm, Downhole PID: 86.1 ppm; distinct pale yellow layer was observed on top of water	ERH2050	12/3/2021	14:30	ERH2049	Normal	0.50 U	**1.4**	0.80 U	**16.2**	**44 Q**	**1200**	**130000 D**	**140000 DQ**	**100 J**	**60 J**
Field QC	—	—	ERH2129	12/5/2021	13:00	—	Trip Blank	0.50 U	0.80 U	0.80 U	**3.8**	2.0 UQ	80 U	—	—	—	—
Red Hill Shaft Well (RHMW2254-01)	bailer sample down manhole	Ambient PID: 0.4 ppm, Ground near sampling area PID: 38.5 ppm, Bailer Headspace PID: 63.4 ppm, Downhole PID: 194.2 ppm; distinct layer was observed on top of water	ERH2130	12/5/2021	13:05	ERH2129	Normal	0.50 U	0.80 U	0.80 U	**5.1**	**11 Q**	**950**	**52000 D**	**59000 DQ**	150 U	**28 JQ**
Navy Aiea-Halawa Shaft PS Well	Bailer well	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2152	12/8/2021	11:50	ERH4001	Normal	0.50 UQ	0.80 UQ	0.80 UQ	0.80 UQ	2.0 UQ	80 U	300 U	**36 J**	300 U	75 U

Joint Base Pearl Harbor Hickam Drinking Water Issue
Weck Laboratory Results - Drinking Water Well Results

							Analyte	Mercury	TPH-g	TPH-d	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethene	1,2,4-Trichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
							CAS No.	7439-97-6	8032-32-4	DRO	71-55-6	79-00-5	75-35-4	120-82-1	107-06-2	78-87-5	156-59-2	156-60-5
							Method	245.1	8260	8015 (Weck)	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2
							DOH Tier 1 EAL	2	300	400	200	5	7	70	5	5	70	100
							DOH MCL	2	—	—	200	5	7	70	5	5	70	100
							EPA MCL	2	—	—	200	5	7	70	5	5	70	100
							Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location (General Location / Building)	**Specific Location**	**Field Observations**	**Sample ID**	**Sampling Date**	**Sampling Time**	**Associated Trip Blank**	**Type**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Field QC	—	—	ERH4042	12/9/2021	10:00	—	Trip Blank						—	100 U	—			
Navy Aiea-Halawa Shaft PS Well	Bailer well	Ambient PID: 0.0 ppm, Sampling Point PID:0.0 ppm, no odor detected, no visual indication of sheen, no HCl in VOA vials	ERH4048	12/9/2021	10:40	ERH4042	Normal						0.050 U	100 U	100 U	0.50 U	0.50 U	0.50 U
RHMW2254-01	product sample	Water quality data not collected.	ERH2156	12/10/2021	8:40	ERH2161	Normal	**310**	**58,000**	**52,000**	**390**	**430**						
RHMW2254-01	low-flow pump	Strong fuel-like odor, thin layer of ~1mm product (LNAPL), contained suspended droplets of slightly opaque NAPL, continued biomat in suspension	ERH2157	12/10/2021	9:40	ERH2161	Normal	18 U	**190 J**	300.0 U	**180 J**	**190 J**						
Waiawa PS	well point	No odor or discoloration observed. TDS: 163.09 ppm; pH: 7.66; SpC: 0.25 mS/cm; RDO: 8.85 mg/L; Temp: 22.15 deg C; ORP: 153.5 mV; Sal: 0.1 psu; RDO: 8.85 mg/L; Turbidity: 0.92 NTU.	ERH2158	12/10/2021	17:30	ERH2161	Normal	18 U	300 U	300 U	300 U	**160 J**						
Navy Aiea-Halawa Shaft PS Well	Bailer well	No odor or discoloration observed. TDS: 728.16 ppm; pH: 7.27; SpC: 1.12 mS/cm; RDO: 9.19 mg/L; Temp: 24.57 deg C; ORP: 194.7 mV; Sal: 0.6 psu; RDO%: 110.2%; Turbidity: 2.44 NTU.	ERH2159	12/10/2021	13:00	ERH2161	Normal	18 U	300 U	300 U	300 U	300 U						
Waiawa PS	well point	No odor or discoloration observed. TDS: 163.09 ppm; pH: 7.66; SpC: 0.25 mS/cm; RDO: 8.85 mg/L; Temp: 22.15 deg C; ORP: 153.5 mV; Sal: 0.1 psu; RDO: 8.85 mg/L; Turbidity: 0.92 NTU.	ERH2160	12/10/2021	17:30	ERH2161	Normal	18 U	300 U	300 U	300 U	300 U						
Field QC	—	—	ERH2161	12/10/2021	8:35	—	Trip Blank	18 U										
RHMW2254-01	product sample	Water quality data not collected.	ERH2162	12/10/2021	8:40	ERH2167	Duplicate											
RHMW2254-01	low-flow pump	Strong fuel-like odor, thin layer of ~1mm product (LNAPL), contained suspended droplets of slightly opaque NAPL, continued biomat in suspension	ERH2163	12/10/2021	9:40	ERH2167	Duplicate											
Waiawa PS	well point	No odor or discoloration observed. TDS: 163.09 ppm; pH: 7.66; SpC: 0.25 mS/cm; RDO: 8.85 mg/L; Temp: 22.15 deg C; ORP: 153.5 mV; Sal: 0.1 psu; RDO: 8.85 mg/L; Turbidity: 0.92 NTU.	ERH2164	12/10/2021	17:30	ERH2167	Duplicate											
Navy Aiea-Halawa Shaft PS Well	Bailer well	No odor or discoloration observed. TDS: 728.16 ppm; pH: 7.27; SpC: 1.12 mS/cm; RDO: 9.19 mg/L; Temp: 24.57 deg C; ORP: 194.7 mV; Sal: 0.6 psu; RDO%: 110.2%; Turbidity: 2.44 NTU.	ERH2165	12/10/2021	13:00	ERH2167	Duplicate											
Waiawa PS	well point	No odor or discoloration observed. TDS: 163.09 ppm; pH: 7.66; SpC: 0.25 mS/cm; RDO: 8.85 mg/L; Temp: 22.15 deg C; ORP: 153.5 mV; Sal: 0.1 psu; RDO: 8.85 mg/L; Turbidity: 0.92 NTU.	ERH2166	12/10/2021	17:30	ERH2167	Duplicate											
Field QC	—	—	ERH2167	12/10/2021	8:35	—	Trip Blank											
Waiawa PS	well point	Sampling Point PID: 0.0 ppm	ERH4090	12/10/2021	pending	pending	Normal											

Joint Base Pearl Harbor Hickam Drinking Water Issue
Weck Laboratory Results - Drinking Water Well Results

							Analyte	Benzene		Carbon tetrachloride		Chlorobenzene		o-Dichlorobenzene		p-Dichlorobenzene		Ethylbenzene		Methylene chloride		Styrene		Tetrachloroethene		Toluene		Trichloroethene		Vinyl chloride		m,p-Xylene	
							CAS No.	71-43-2		56-23-5		108-90-7		95-50-1		106-46-7		100-41-4		75-09-2		100-42-5		127-18-4		108-88-3		79-01-6		75-01-4		179601-23-1	
							Method	524.2		524.2		524.2		524.2		524.2		524.2		524.2		524.2		524.2		524.2		524.2		524.2		524.2	
							DOH Tier 1 EAL	5		5		50		10		5		30		5		10		5		40		5		2		20	
							DOH MCL	5		5		100		600		75		700		5		100		5		1000		5		2		10000	
							EPA MCL	5		5		100		600		-		700		5		100		5		1000		5		2		10000	
							Unit	µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
Location (General Location / Building)	**Specific Location**	**Field Observations**	**Sample ID**	**Sampling Date**	**Sampling Time**	**Associated Trip Blank**	**Type**	**Result**		**Result**		**Result**		**Result**		**Result**		**Result**		**Result**		**Result**		**Result**		**Result**		**Result**		**Result**		**Result**	
Field QC	—	—	ERH4042	12/9/2021	10:00	—	Trip Blank																										
Navy Aiea-Halawa Shaft PS Well	Bailer well	Ambient PID: 0.0 ppm, Sampling Point PID:0.0 ppm, no odor detected, no visual indication of sheen, no HCl in VOA vials	ERH4048	12/9/2021	10:40	ERH4042	Normal	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
RHMW2254-01	product sample	Water quality data not collected.	ERH2156	12/10/2021	8:40	ERH2161	Normal																										
RHMW2254-01	low-flow pump	Strong fuel-like odor, thin layer of ~1mm product (LNAPL), contained suspended droplets of slightly opaque NAPL, continued biomat in suspension	ERH2157	12/10/2021	9:40	ERH2161	Normal																										
Waiawa PS	well point	No odor or discoloration observed. TDS: 163.09 ppm; pH: 7.66; SpC: 0.25 mS/cm; RDO: 8.85 mg/L; Temp: 22.15 deg C; ORP: 153.5 mV; Sal: 0.1 psu; RDO: 8.85 mg/L; Turbidity: 0.92 NTU.	ERH2158	12/10/2021	17:30	ERH2161	Normal																										
Navy Aiea-Halawa Shaft PS Well	Bailer well	No odor or discoloration observed. TDS: 728.16 ppm; pH: 7.27; SpC: 1.12 mS/cm; RDO: 9.19 mg/L; Temp: 24.57 deg C; ORP: 194.7 mV; Sal: 0.6 psu; RDO%: 110.2%; Turbidity: 2.44 NTU.	ERH2159	12/10/2021	13:00	ERH2161	Normal																										
Waiawa PS	well point	No odor or discoloration observed. TDS: 163.09 ppm; pH: 7.66; SpC: 0.25 mS/cm; RDO: 8.85 mg/L; Temp: 22.15 deg C; ORP: 153.5 mV; Sal: 0.1 psu; RDO: 8.85 mg/L; Turbidity: 0.92 NTU.	ERH2160	12/10/2021	17:30	ERH2161	Normal																										
Field QC	—	—	ERH2161	12/10/2021	8:35	—	Trip Blank																										
RHMW2254-01	product sample	Water quality data not collected.	ERH2162	12/10/2021	8:40	ERH2167	Duplicate																										
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Navy Aiea-Halawa Shaft PS Well	Bailer well	No odor or discoloration observed. TDS: 728.16 ppm; pH: 7.27; SpC: 1.12 mS/cm; RDO: 9.19 mg/L; Temp: 24.57 deg C; ORP: 194.7 mV; Sal: 0.6 psu; RDO%: 110.2%; Turbidity: 2.44 NTU.	ERH2165	12/10/2021	13:00	ERH2167	Duplicate																										
Waiawa PS	well point	No odor or discoloration observed. TDS: 163.09 ppm; pH: 7.66; SpC: 0.25 mS/cm; RDO: 8.85 mg/L; Temp: 22.15 deg C; ORP: 153.5 mV; Sal: 0.1 psu; RDO: 8.85 mg/L; Turbidity: 0.92 NTU.	ERH2166	12/10/2021	17:30	ERH2167	Duplicate																										
Field QC	—	—	ERH2167	12/10/2021	8:35	—	Trip Blank																										
Waiawa PS	well point	Sampling Point PID: 0.0 ppm	ERH4090	12/10/2021	pending	pending	Normal																										

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Weck Laboratory Results - Drinking Water Well Results

							Analyte	o-Xylene		Dibromochloromethane		Bromoform		THM (total)	
							CAS No.	95-47-6		124-48-1		75-25-2		75-25-2	
							Method	524.2		524.2		524.2		524.2	
							DOH Tier 1 EAL	20		0.93		80		-	
							DOH MCL	10000		-		80		-	
							EPA MCL	10000		-		-		-	
							Unit	µg/L		µg/L		µg/L		µg/L	
Location (General Location / Building)	**Specific Location**	**Field Observations**	**Sample ID**	**Sampling Date**	**Sampling Time**	**Associated Trip Blank**	**Type**	**Result**		**Result**		**Result**		**Result**	
Field QC	—	—	ERH4042	12/9/2021	10:00	—	Trip Blank								
Navy Aiea-Halawa Shaft PS Well	Bailer well	Ambient PID: 0.0 ppm, Sampling Point PID:0.0 ppm, no odor detected, no visual indication of sheen, no HCl in VOA vials	ERH4048	12/9/2021	10:40	ERH4042	Normal	0.50	U	0.50	U	0.50	U	0.50	U
RHMW2254-01	product sample	Water quality data not collected.	ERH2156	12/10/2021	8:40	ERH2161	Normal								
RHMW2254-01	low-flow pump	Strong fuel-like odor, thin layer of ~1mm product (LNAPL), contained suspended droplets of slightly opaque NAPL, continued biomat in suspension	ERH2157	12/10/2021	9:40	ERH2161	Normal								
Waiawa PS	well point	No odor or discoloration observed. TDS: 163.09 ppm; pH: 7.66; SpC: 0.25 mS/cm; RDO: 8.85 mg/L; Temp: 22.15 deg C; ORP: 153.5 mV; Sal: 0.1 psu; RDO: 8.85 mg/L; Turbidity: 0.92 NTU.	ERH2158	12/10/2021	17:30	ERH2161	Normal								
Navy Aiea-Halawa Shaft PS Well	Bailer well	No odor or discoloration observed. TDS: 728.16 ppm; pH: 7.27; SpC: 1.12 mS/cm; RDO: 9.19 mg/L; Temp: 24.57 deg C; ORP: 194.7 mV; Sal: 0.6 psu; RDO%: 110.2%; Turbidity: 2.44 NTU.	ERH2159	12/10/2021	13:00	ERH2161	Normal								
Waiawa PS	well point	No odor or discoloration observed. TDS: 163.09 ppm; pH: 7.66; SpC: 0.25 mS/cm; RDO: 8.85 mg/L; Temp: 22.15 deg C; ORP: 153.5 mV; Sal: 0.1 psu; RDO: 8.85 mg/L; Turbidity: 0.92 NTU.	ERH2160	12/10/2021	17:30	ERH2161	Normal								
Field QC	—	—	ERH2161	12/10/2021	8:35	—	Trip Blank								
RHMW2254-01	product sample	Water quality data not collected.	ERH2162	12/10/2021	8:40	ERH2167	Duplicate								
RHMW2254-01	low-flow pump	Strong fuel-like odor, thin layer of ~1mm product (LNAPL), contained suspended droplets of slightly opaque NAPL, continued biomat in suspension	ERH2163	12/10/2021	9:40	ERH2167	Duplicate								
Waiawa PS	well point	No odor or discoloration observed. TDS: 163.09 ppm; pH: 7.66; SpC: 0.25 mS/cm; RDO: 8.85 mg/L; Temp: 22.15 deg C; ORP: 153.5 mV; Sal: 0.1 psu; RDO: 8.85 mg/L; Turbidity: 0.92 NTU.	ERH2164	12/10/2021	17:30	ERH2167	Duplicate								
Navy Aiea-Halawa Shaft PS Well	Bailer well	No odor or discoloration observed. TDS: 728.16 ppm; pH: 7.27; SpC: 1.12 mS/cm; RDO: 9.19 mg/L; Temp: 24.57 deg C; ORP: 194.7 mV; Sal: 0.6 psu; RDO%: 110.2%; Turbidity: 2.44 NTU.	ERH2165	12/10/2021	13:00	ERH2167	Duplicate								
Waiawa PS	well point	No odor or discoloration observed. TDS: 163.09 ppm; pH: 7.66; SpC: 0.25 mS/cm; RDO: 8.85 mg/L; Temp: 22.15 deg C; ORP: 153.5 mV; Sal: 0.1 psu; RDO: 8.85 mg/L; Turbidity: 0.92 NTU.	ERH2166	12/10/2021	17:30	ERH2167	Duplicate								
Field QC	—	—	ERH2167	12/10/2021	8:35	—	Trip Blank								
Waiawa PS	well point	Sampling Point PID: 0.0 ppm	ERH4090	12/10/2021	pending	pending	Normal								

Joint Base Pearl Harbor Hickam Drinking Water Issue
Immediate Drinking Water Sampling Plan

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28-Nov-21	29-Nov-21	30-Nov-21	1-Dec-21	2-Dec-21	3-Dec-21	4-Dec-21
DOH Lab / JBPHH Lab	Eurofins-Seattle	Eurofins-Seattle		Eurofins-Seattle	Eurofins-Seattle	Eurofins-Seattle
Sample Locations: 1. 1923 Kirkpatrick 2. Red Hill Shaft 3. 3409 Taylor 4. 3307 Jaluit 5. Halsey Terrace NEX 6890 Nimitz Rd 6. 4076 Enger Street 7. NAVFAC Bldg A4 8. 4726 Reeves Street 9. 3107 Anderson Ave	Sample Locations: 1. RHS DW Pre-chlorination 2. RHS DW Post-chlorination 3. Halsey Terrace Community Center 4. Radford Terrace Community Center 5. Catlin ParkCommunity Center 6. Moanalua Terrace Community Center 7. Peltier Child Development Center 8. Nimitz Elementary School 9. Pearl Harbor Elementary School 10. Tank S2 (Facility No: S2 at FW STOR TANK, Halawa STOR) 11. Tank S1 (Facility No: S1 at FW STOR TANK, Halawa STOR) 12. Aliamanu Military Reservation (AMR) AAFES Aliamanu Express/gas station area 13. Red Hill Mauka Community Center 14. Waiawa Shaft	Sample Locations: 1. Bishop Point - Community barbecue pit 2. Shipyard - West end of building 167 3. Submarine base – Pier Side Child Development Center 4. Halawa Landing – Commander in Chief (CIC) Boathouse 5. FISC/NAVSUP Area – near base of NAVSUP FLC flag pole 6. Makalapa Housing - Generator building at U.S. Pacific Fleet Headquarters corporate offices 7. Hickam Officer Housing - Hickam Officer's Club 8. Hale Moku Housing - JBPHH Pass and ID Office	Groundwater Sampling for May 6 and Nov 20 Events	Sample Locations: Group A 1. Halsey Terrace 2. Radford Terrace 3. Catlin Park 4. Doris Miller Park 5. Moanalua Terrace 6. Hale Moku / Hokulani 7. Waiawa PS Pre-Chlorination 8. Waiawa PS Post-Chlorination 9. Earhart (Hickam Community) 10. Hale Nakoa(Hickam Community) 11. Officer Field(Hickam Community) 12. Onizuka(Hickam Community)	Sample Locations: Group B 1. Aliamanu MR 2. Red Hill Housing 3. Halawa PS Pre-Chlorination 4. Halawa PS Post-Chlorination 5. Red Hill PS Pre-Chlorination/Aquifer 6. S1/S2 Tank 7. Red Hill HSG Storage Tank 8. Shipyard Clinic 9. SUBASE Lockwood Hall 10. Ford Island CDC 11. Makalapa Clinic 12. NEX Commissary Add'l: ~~1. Red Hill Elementary~~ 1. RHMW2254-01	Sample Locations: Group A
	Tests: BTEX, Naphthalene, TPH-g/d/o	Tests: BTEX, Naphthalene, TPH-g/d/o		Tests: BTEX, Naphthalene, TPH-g/d/o	Tests: BTEX, Naphthalene, TPH-g/d/o	Tests: BTEX, Naphthalene, TPH-g/d/o
Results rec'd	Results rec'd	Results rec'd	Results rec'd	Results rec'd	Results rec'd	Results rec'd
5-Dec-21	6-Dec-21	7-Dec-21	8-Dec-21	9-Dec-21	10-Dec-21	11-Dec-21
Eurofins-Seattle	Eurofins-Seattle	Eurofins-Seattle	Eurofins-Seattle	Weck	Weck	Weck
Sample Locations: Group B Add'l: RHMW2254-01 (split w/ DOH)	Sample Locations: Group A Add'l: 1. Red Hill Elementary Cafeteria 2. Red Hill Elementary Girl's Restroom	Sample Locations: Group B Add'l (split w/ DOH): 1. Waiawa Shaft Pre-Chlorination 2. Waiawa Shaft Post-Chlorination	Sample Locations: Group A Add'l: 1. Navy Aiea-Halawa Shaft PS Pre-Chlorination 2.Navy Aiea-Halawa Shaft PS Post-Chlorination 3. Navy Aiea-Halawa Shaft PS Pre-Chlorination Pump Room 4. Navy Aiea-Halawa Shaft PS Well 5. Red Hill Elementary Cafeteria 6. Red Hill Elementary Girl's Restroom	Sample Locations: Group B Add'l (split w/ DOH): 1. Storage Tank #1 2. Storage Tank #2 3. 6181 Ibis Ave 4. 6674 106th Street 5. 5534 Bittern Avenue 6. 5673 Dovekie Avenue 7. 5669A Dovekie Avenue 8. 4908 Mokupea Place Apt. B 9. Halawa Correctional Facility 10. Navy Aiea-Halawa Shaft PS Pre-Chlorination Pump Room 11. Navy Aiea-Halawa Shaft PS Well	Sample Locations: Group A Add'l (split w/ DOH): 1. 5682 Dovekie Avenue 2. 5012A Iroquois Ave 3. 5861 Fulmar Avenue 4. 5856B Fulmar Avenue 5. 5869 Fulmar Avenue 6. 4976 Kela Place Apt B 7. 7273 Elm Place 8. 3763 Elm Drive 9. 5321 Cedar Drive 10. 7257 Birch Circle 11. 7236 Birch Circle 11. 7236 Birch Circle	Sample Locations: Group B
Tests: BTEX, Naphthalene, TPH-g/d/o	Tests: BTEX, Naphthalene, TPH-g/d/o	Tests: BTEX, Naphthalene, TPH-g/d/o	Tests: BTEX, Naphthalene, TPH-g/d/o	Tests: BTEX, Naphthalene, TPH-g/d/o	Tests: BTEX, Naphthalene, TPH-g/d/o	Tests: BTEX, Naphthalene, TPH-g/d/o
Results rec'd	Results rec'd	Results rec'd	Results rec'd	Results expected 12 Dec 21	Results expected 13 Dec 21	Results expected 14 Dec 21
12-Dec-21	13-Dec-21	14-Dec-21	15-Dec-21	16-Dec-21	17-Dec-21	18-Dec-21
Weck	Weck	Weck	Weck	Weck	Weck	Weck
Sample Locations: 1. Manana Housing 2. Manana Housing 3. Field QC 4. Field QC 5. Halawa ST1 6. Halawa ST1 7. Halawa ST2 8. Halawa ST2 9. Red Hill ST1 10. Red Hill ST2 11. Red Hill ST2	Sample Locations:	Sample Locations:	Sample Locations:	Sample Locations:	Sample Locations:	Sample Locations:
Tests: BTEX, Naphthalene, TPH-g/d/o	Tests:	Tests:	Tests:	Tests:	Tests:	Tests:
Results expected 15 Dec 21	Results expected 16 Dec 21	Results expected 17 Dec 21	Results expected 18 Dec 21	Results expected 19 Dec 21	Results expected 20 Dec 21	Results expected 20 Dec 21

Bold text indicates detected value, but below the Environmental Action Level (EAL).
Bold and red shaded text indicates exceeds the Department of Health Tier 1 EAL.
Black text indicates preliminary laboratory results.
Blue text indicates results are laboratory final and undergoing third-party validation.
Green test indicates results have completed third-party validation.
[1]Pumps at Aiea-Halawa Pump Station were turned off on 3 Dec 21. Samples collected after the pumps were turned off are not representative of the Aiea-Halawa well water. Pre-chlorination samples were collected at the dead end of the distribution system.
— = not analyzed or not applicable
µg/L = microgram per liter (same as parts per billion)
CAS = Chemical Abstracts Service
J = estimated value
J- = estimated value, low bias
J+ = estimated value, high bias
mg/L = milligram per liter
no. = number
Q = one or more quality control outside of acceptance criteria
QC = quality control
U = nondetect value
TB = trip blank. Do not count for total sample number. Only done for quality control purposes.
TPH-g = total petroleum hydrocarbons-gasoline range organics
TPH-d = total petroleum hydrocarbons-diesel range organics
TPH-o = total petroleum hydrocarbons-residual range
EPA MCLs are included for reference only; the data were collected using SW-846 methods and not appropriate for comparison to MCLs.

Joint Base Pearl Harbor Hickam Drinking Water Issue
Eurofins TestAmerica Laboratory Results - Detected Results Shown

Analyte	Benzene	Ethylbenzene	Toluene	Xylenes	Naphthalene	TPH-g (C6-C12)	TPH-d (C9-C25) [b]	TPH-d (C9-C25) with Silica Gel Cleanup	TPH-o (C24-C40) [b]	TPH-o (C24-C40) with Silica Gel Cleanup
CAS No.	71-43-2	100-41-4	108-88-3	1330-20-7	91-20-3	PHCC6C10	PHCC10C24	PHCC10C24SGC	PHCC24C40	PHCC24C40SGC
Method	8260B	8260B	8260B	8260B	8260B	8260B	8015B_E	8015B_E	8015B_E	8015B_E
DOH Tier 1 EAL	5	30	40	20	17	300	400	—	500	—
EPA MCL	5	700	1000	10000	—	—	—	—	—	—
Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

Location (General Location / Building)	Specific Location	Field Observations	Sample ID	Sampling Date	Sampling Time	Associated Trip Blank	Type	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Red Hill PS Pre-Chlorination/Aquifer	pre-chlorination spigot	Ambient VOCs in shaft=0.6 ppm; no color or odor or VOCs stronger than ambient conditions noted	ERH1970	11/29/2021	14:05	ERH1985	Normal				1.4 J	3.8	31 J		64 J		
Red Hill PS DW Compliance Point	DW Compliance Point (post-chlorination)	Ambient VOC=0.1 ppm, headspace=0.1 ppm , no color or odors noted in samples	ERH1971	11/29/2021	14:40	ERH1985	Normal								40 J		
Halsey Terrace	Community Center hose bib on side of building	Ambient PID: 4.3 ppm, PID of splash area on ground: 6.5 ppm, no odor detected, no visual indication of sheen	ERH1972	11/29/2021	13:20	ERH1986	Normal								33 J		
Moanalua Terrace	Community Center hose bib on side of building	Ambient PID: 2.0 ppm, Sampling Point PID: 2.5 ppm, no odor detected, no visual indication of sheen	ERH1973	11/29/2021	14:25	ERH1986	Normal								28 J		
Radford Terrace	Community Center hose bib on side of building	Ambient PID: 1.5 ppm, Sampling Point PID: 3.1 ppm, no odor detected, no visual indication of sheen	ERH1974	11/29/2021	13:40	ERH1986	Normal								30 J		
Red Hill Mauka	Bldg. 73140 Community Center hose bib on side of building	Ambient PID: 2.4 ppm, Sampling Point PID: 2.4 ppm, no odor detected, no visual indication of sheen	ERH1977	11/29/2021	19:15	ERH1987	Normal								44 J		
S1/S2 Tank	Overflow/Storage Tank S1	Ambient PID: 3.6 ppm, Sampling Point PID: 3.6 ppm, no odor detected, no visual indication of sheen	ERH1978	11/29/2021	18:25	ERH1987	Normal								23 J		
S1/S2 Tank	Overflow/Storage Tank S2	Ambient PID: 1.4 ppm, Sampling Point PID: 1.4 ppm, no odor detected, no visual indication of sheen	ERH1979	11/29/2021	18:15	ERH1987	Normal								32 J		
Aliamanu MR	AMR AAFES Aliamanu Express/Gas Station Area	Ambient PID: 2.3 ppm, Sampling Point PID: 2.4 ppm, no odor detected, no visual indication of sheen	ERH1980	11/29/2021	18:55	ERH1987	Normal								29 J		
Catlin Park	Community Center hose bib on side of building	Ambient PID: 4.0 ppm, Sampling Point PID: 4.0 ppm, no odor detected, no visual indication of sheen	ERH1981	11/29/2021	14:05	ERH1986	Normal								26 J		
Peltier Child Development Center	hose bib on side of building	Ambient PID: 4.0 ppm, Sampling Point PID: 4.0 ppm, no odor detected, no visual indication of sheen	ERH1982	11/29/2021	16:45	ERH1987	Normal								30 J		
Hale Moku / Hokulani	Pass and ID Office, hose bib on left side of main door	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm	ERH1988	11/30/2021	12:15	ERH1999	Normal								25 J		
Submarine Base	Pier Side Child Development Center	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm	ERH1992	11/30/2021	14:00	ERH1999	Normal								24 J		
Catlin Park	Community Center hose bib on side of building	Sampling Point PID: 0.4 ppm, no odor detected	ERH2026	12/2/2021	12:25	ERH2031, ERH2032	Normal								23 J		
Waiawa PS Post-Chlorination	faucet inside chlorination room	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2030	12/2/2021	12:45	ERH2031, ERH2032	Normal										70 JQ
Navy Aiea-Halawa Shaft PS Post-Chlorination	right spigot	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2041	12/3/2021	10:00	ERH2044	Normal								48 J		
Red Hill HSG Storage Tank	Green tank spigot (swagelok faucet installed by NAVFAC)	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2042	12/3/2021	11:00	ERH2044	Normal								31 J		
Red Hill Mauka	Bldg. 73140 Community Center hose bib on side of building	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2047	12/3/2021	13:05	ERH2043	Normal								33 J		
Officer Field (Hickam Community)	15th Wing Headquarters (Bldg. 1110) hose bib on left side of building entrance	Sampling Point PID: 0.0 ppm, no odor detected	ERH2055	12/4/2021	15:10	ERH2053	Normal							54 J	30 JQ	120 J	37 J
Onizuka (Hickam Community)	Bldg. 5500 hose bib on right side of building near entrance	Sampling Point PID: 0.0 ppm, no odor detected	ERH2056	12/4/2021	15:46	ERH2053	Normal								29 JQ		
Hale Nakoa (Hickam Community)	Hose bib on south side of Bldg. 1723	Sampling Point PID: 0.0 ppm, no odor detected	ERH2057	12/4/2021	16:10	ERH2053	Normal								27 JQ		
Waiawa PS Pre-Chlorination	swagelok faucet	Sampling Point PID: 0.0 ppm, no odor detected	ERH2058	12/4/2021	17:30	ERH2053	Normal								25 J		
Earhart (Hickam Community)	Chapel (Bldg. 1750) hose bib on left side of building.	Sampling Point PID: 0.0 ppm, no odor detected	ERH2059	12/4/2021	16:35	ERH2053	Normal								51 J		
Waiawa PS Post-Chlorination	faucet inside chlorination room	Sampling Point PID: 0.0 ppm, no odor detected	ERH2060	12/4/2021	17:35	ERH2053	Normal								45 J		
Hale Moku / Hokulani	Pass and ID Office, hose bib on left side of main door	Sampling Point PID: 0.0 ppm, no odor detected	ERH2061	12/4/2021	14:15	ERH2053	Normal								36 J		
Catlin Park	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected	ERH2062	12/4/2021	13:18	ERH2054	Normal								40 J		
Doris Miller Park	hose bib out back of a mini mart	Sampling Point PID: 0.0 ppm, no odor detected	ERH2063	12/4/2021	12:45	ERH2054	Normal								58 J		
Moanalua Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected	ERH2064	12/4/2021	13:50	ERH2054	Normal								41 J		
Halsey Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected	ERH2065	12/4/2021	11:50	ERH2054	Normal								47 J		
Radford Terrace	Community Center hose bib on side of building	chemical odor coming from nitrile glovesUsed to collect sample	ERH2066	12/4/2021	10:20	ERH2054	Normal								38 J		

Joint Base Pearl Harbor Hickam Drinking Water Issue
Eurofins TestAmerica Laboratory Results - Detected Results Shown

Analyte	Benzene	Ethylbenzene	Toluene	Xylenes	Naphthalene	TPH-g (C6-C12)	TPH-d (C9-C25) [b]	TPH-d (C9-C25) with Silica Gel Cleanup	TPH-o (C24-C40) [b]	TPH-o (C24-C40) with Silica Gel Cleanup
CAS No.	71-43-2	100-41-4	108-88-3	1330-20-7	91-20-3	PHCC6C10	PHCC10C24	PHCC10C24SGC	PHCC24C40	PHCC24C40SGC
Method	8260B	8260B	8260B	8260B	8260B	8260B	8015B_E	8015B_E	8015B_E	8015B_E
DOH Tier 1 EAL	5	30	40	20	17	300	400	—	500	—
EPA MCL	5	700	1000	10000	—	—	—	—	—	—
Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

Location (General Location / Building)	Specific Location	Field Observations	Sample ID	Sampling Date	Sampling Time	Associated Trip Blank	Type	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
SUBASE Lockwood Hall	hose bib at entrance of hotel	Ambient PID: 0.6 ppm, Sampling Point PID: 0.6 ppm	ERH2069	12/5/2021	11:56	ERH2068	Normal								17 JQ		
Ford Island CDC	hose bib on side of building	Ambient PID: 1.8 ppm, Sampling Point PID: 1.8 ppm	ERH2070	12/5/2021	11:00	ERH2068	Normal								17 JQ		
Shipyard Clinic	Bldg. 1750 hose bib on side of building	Sampling Point PID: 0.0 ppm	ERH2071	12/5/2021	12:43	ERH2068	Normal								19 JQ		
Makalapa Clinic	Bldg. 1407 hose bib on side of building	Sampling Point PID: 0.0 ppm	ERH2072	12/5/2021	12:20	ERH2068	Normal								20 JQ		
Red Hill Mauka	Bldg. 73140 Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm	ERH2073	12/5/2021	14:49	ERH2068	Normal								29 JQ		
[1] Navy Aiea-Halawa Shaft PS Pre-chlorination	left spigot	Sampling Point PID: 0.0 ppm	ERH2074	12/5/2021	15:31	ERH2067	Normal							920	700 Q		
Navy Aiea-Halawa Shaft PS Post-Chlorination	right spigot	Sampling Point PID: 0.0 ppm	ERH2075	12/5/2021	15:31	ERH2067	Normal							68 J	39 JQ		
NEX Commissary	Bldg. 607 hose bib backside of building	Sampling Point PID: 0.0 ppm	ERH2077	12/5/2021	13:23	ERH2068	Normal								20 JQ		
S1/S2 Tank	Overflow/Storage Tank S2	Sampling Point PID: 0.0 ppm	ERH2078	12/5/2021	13:51	ERH2068	Normal								29 JQ		
S1/S2 Tank	Overflow/Storage Tank S1	Sampling Point PID: 0.0 ppm	ERH2079	12/5/2021	14:02	ERH2068	Normal								20 JQ		
Aliamanu MR	AMR AAFES Aliamanu Express/Gas Station Area	Sampling Point PID: 0.0 ppm	ERH2080	12/5/2021	14:25	ERH2068	Normal								16 JQ		
Makalapa Clinic	Bldg. 1407 hose bib on side of building	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2134	12/7/2021	12:26	ERH2146	Normal										49 J
[1] Navy Aiea-Halawa Shaft PS Pre-chlorination	left spigot	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2137	12/7/2021	10:10	ERH2147	Normal							730	420		
Navy Aiea-Halawa Shaft PS Post-Chlorination	right spigot	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2138	12/7/2021	10:15	ERH2147	Normal								23 J		
Red Hill HSG Storage Tank	Green tank spigot (swagelok faucet installed by NAVFAC)	Sampling Point PID: 0.0 ppm	ERH2144	12/5/2021	15:15	ERH2067	Normal								27 JQ	160 U	75
Field QC	—	—	ERH2146	12/7/2021	13:22	—	Trip Blank				0.76 J						
Field QC	—	—	ERH2147	12/7/2021	10:05	—	Trip Blank				0.89 J						
[1] Navy Aiea-Halawa Shaft PS Pre-Chlorination Pump Room	Pump Room tap	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2150	12/8/2021	11:57	ERH4001	Normal						56 J	620	440		
Navy Aiea-Halawa Shaft PS Post-Chlorination	right spigot	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2151	12/8/2021	11:31	ERH4001	Normal						54 J		26 J		
Waiawa PS Pre-Chlorination	swagelok faucet	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected	ERH2209	12/7/2021	13:00	ERH2147	Normal				0.69 J						61 J
Halsey Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4002	12/8/2021	10:19	ERH4001	Normal								29 J		
Radford Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4003	12/8/2021	9:53	ERH4001	Normal								23 J		
Catlin Park	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4004	12/8/2021	13:38	ERH4001	Normal								26 J		
Doris Miller Park	hose bib out back of a mini mart	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4005	12/8/2021	10:43	ERH4001	Normal								34 J		
Moanalua Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4006	12/8/2021	13:13	ERH4001	Normal								28 J		
Hale Moku / Hokulani	Pass and ID Office, hose bib on left side of main door	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4007	12/8/2021	12:42	ERH4001	Normal								27 J		
Waiawa PS Post-Chlorination	faucet inside chlorination room	Ambient PID: 1.2, Sampling Point PID: 1.2 ppm, no odor detected, no visual indication of sheen	ERH4009	12/8/2021	12:45	ERH4000	Normal								25 J		
Earhart (Hickam Community)	Chapel (Bldg. 1750) hose bib on left side of building.	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4010	12/8/2021	11:55	ERH4000	Normal								33 J		
Hale Nakoa (Hickam Community)	Hose bib on south side of Bldg. 1723	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4011	12/8/2021	11:50	ERH4000	Normal								49 J		
Officer Field (Hickam Community)	15th Wing Headquarters (Bldg. 1110) hose bib on left side of building entrance	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4012	12/8/2021	11:05	ERH4000	Normal								30 J		
Onizuka (Hickam Community)	Bldg. 5500 hose bib on right side of building near entrance	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4013	12/8/2021	10:45	ERH4000	Normal								28 J		
Red Hill Elementary Cafeteria	Spigot on south side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4014	12/8/2021	10:20	ERH4000	Normal								30 J		
Red Hill Elementary Girls Restroom	Restroom Sink	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4015	12/8/2021	9:55	ERH4000	Normal								29 J		
[1] Navy Aiea-Halawa Shaft PS Pre-chlorination	left spigot	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2149	12/8/2021	11:30	ERH4001	Normal							550	380		

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							Analyte	Benzene	Ethylbenzene	Toluene	Xylenes	Naphthalene	TPH-g (C6-C12)	TPH-d (C9-C25) [b]	TPH-d (C9-C25) with Silica Gel Cleanup	TPH-o (C24-C40) [b]	TPH-o (C24-C40) with Silica Gel Cleanup
							CAS No.	71-43-2	100-41-4	108-88-3	1330-20-7	91-20-3	PHCC6C10	PHCC10C24	PHCC10C24SGC	PHCC24C40	PHCC24C40SGC
							Method	8260B	8260B	8260B	8260B	8260B	8260B	8015B_E	8015B_E	8015B_E	8015B_E
							DOH Tier 1 EAL	5	30	40	20	17	300	400	—	500	—
							EPA MCL	5	700	1000	10000	—	—	—	—	—	—
							Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location (General Location / Building)	**Specific Location**	**Field Observations**	**Sample ID**	**Sampling Date**	**Sampling Time**	**Associated Trip Blank**	**Type**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Red Hill PS Pre-Chlorination/Aquifer	pre-chlorination spigot	Ambient VOCs in shaft=0.6 ppm; no color or odor or VOCs stronger than ambient conditions noted	ERH1970	11/29/2021	14:05	ERH1985	Normal	0.50 U	0.80 U	0.80 U	**1.4 J**	**3.8**	**31 J**	290 U	**64 J**	290 U	73 U
Red Hill PS DW Compliance Point	DW Compliance Point (post-chlorination)	Ambient VOC=0.1 ppm, headspace=0.1 ppm , no color or odors noted in samples	ERH1971	11/29/2021	14:40	ERH1985	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	290 U	**40 J**	290 U	73 U
Halsey Terrace	Community Center hose bib on side of building	Ambient PID: 4.3 ppm, PID of splash area on ground: 6.5 ppm, no odor detected, no visual indication of sheen	ERH1972	11/29/2021	13:20	ERH1986	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	290 U	**33 J**	290 U	72 U
Moanalua Terrace	Community Center hose bib on side of building	Ambient PID: 2.0 ppm, Sampling Point PID: 2.5 ppm, no odor detected, no visual indication of sheen	ERH1973	11/29/2021	14:25	ERH1986	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	300 U	**28 J**	300 U	74 U
Radford Terrace	Community Center hose bib on side of building	Ambient PID: 1.5 ppm, Sampling Point PID: 3.1 ppm, no odor detected, no visual indication of sheen	ERH1974	11/29/2021	13:40	ERH1986	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	300 U	**30 J**	300 U	74 U
Red Hill Mauka	Bldg. 73140 Community Center hose bib on side of building	Ambient PID: 2.4 ppm, Sampling Point PID: 2.4 ppm, no odor detected, no visual indication of sheen	ERH1977	11/29/2021	19:15	ERH1987	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	300 U	**44 J**	300 U	75 U
S1/S2 Tank	Overflow/Storage Tank S1	Ambient PID: 3.6 ppm, Sampling Point PID: 3.6 ppm, no odor detected, no visual indication of sheen	ERH1978	11/29/2021	18:25	ERH1987	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	300 U	**23 J**	300 U	76 U
S1/S2 Tank	Overflow/Storage Tank S2	Ambient PID: 1.4 ppm, Sampling Point PID: 1.4 ppm, no odor detected, no visual indication of sheen	ERH1979	11/29/2021	18:15	ERH1987	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	290 U	**32 J**	290 U	73 U
Aliamanu MR	AMR AAFES Aliamanu Express/Gas Station Area	Ambient PID: 2.3 ppm, Sampling Point PID: 2.4 ppm, no odor detected, no visual indication of sheen	ERH1980	11/29/2021	18:55	ERH1987	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	290 U	**29 J**	290 U	72 U
Catlin Park	Community Center hose bib on side of building	Ambient PID: 4.0 ppm, Sampling Point PID: 4.0 ppm, no odor detected, no visual indication of sheen	ERH1981	11/29/2021	14:05	ERH1986	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	290 U	**26 J**	290 U	72 U
Peltier Child Development Center	hose bib on side of building	Ambient PID: 4.0 ppm, Sampling Point PID: 4.0 ppm, no odor detected, no visual indication of sheen	ERH1982	11/29/2021	16:45	ERH1987	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	300 U	**30 J**	300 U	74 U
Nimitz Elementary School	hose bib in courtyard	Ambient PID: 7.0 ppm, Sampling Point PID: 7.0 ppm, no odor detected, no visual indication of sheen	ERH1983	11/29/2021	17:25	ERH1987	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	290 U	73 U	290 U	73 U
Pearl Harbor Elementary School	hose bib on side of building	Ambient PID: 4.2 ppm, Sampling Point PID: 4.7 ppm, no odor detected, no indication of visual sheen	ERH1984	11/29/2021	17:40	ERH1987	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	290 U	73 U	290 U	73 U
Field QC	—	—	ERH1985	11/29/2021	14:00	—	Trip Blank	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	—	—	—	—
Field QC	—	—	ERH1986	11/29/2021	13:15	—	Trip Blank	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	—	—	—	—
Field QC	—	—	ERH1987	11/29/2021	17:35	—	Trip Blank	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	—	—	—	—
Hale Moku / Hokulani	Pass and ID Office, hose bib on left side of main door	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm	ERH1988	11/30/2021	12:15	ERH1999	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	310 U	**25 J**	310 U	76 U
Halawa Landing	Commander in Chief (CIC) Boathouse	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm	ERH1989	11/30/2021	12:50	ERH1999	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	310 U	76 U	310 U	76 U
Makalapa Clinic	Generator building atU.S. Pacific Fleet Headquarters corporate offices	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm	ERH1990	11/30/2021	13:10	ERH1999	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	310 U	77 U	310 U	77 U
FISC/NAVSUP Area	near base of NAVSUP FLC flag pole	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm	ERH1991	11/30/2021	13:35	ERH1999	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	340 U	85 U	340 U	85 U
Submarine Base	Pier Side Child Development Center	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm	ERH1992	11/30/2021	14:00	ERH1999	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	310 U	**24 J**	310 U	76 U
Officer Field (Hickam Community) - Hickam Officer Housing	Hickam Officer's Club	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm	ERH1995	11/30/2021	14:30	ERH1999	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	310 U	78 U	310 U	78 U
Bishop Point	Community barbecue pit	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm	ERH1996	11/30/2021	14:35	ERH1999	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	310 U	77 U	310 U	77 U
Shipyard	West end of Bldg. 167	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm	ERH1997	11/30/2021	14:10	ERH1999	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	310 U	77 U	310 U	77 U
Field QC	—	—	ERH1999	11/30/2021	12:00	—	Trip Blank	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	—	—	—	—
Officer Field (Hickam Community)	15th Wing Headquarters (Bldg. 1110) hose bib on left side of building entrance	Sampling Point PID: 0.0 ppm, no odor detected	ERH2021	12/2/2021	13:55	ERH2031, ERH2032	Normal	0.50 UQ	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	300 U	75 U	300 U	75 UQ
Hale Moku / Hokulani	Pass and ID Office, hose bib on left side of main door	Sampling Point PID: 0.0 ppm, no odor detected	ERH2022	12/2/2021	13:15	ERH2031, ERH2032	Normal	0.50 UQ	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	71 U	290 U	71 UQ
Onizuka (Hickam Community)	Bldg. 5500 hose bib on right side of building near entrance	Sampling Point PID: 0.0 ppm, no odor detected	ERH2023	12/2/2021	14:10	ERH2031, ERH2032	Normal	0.50 UQ	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	71 U	290 U	71 UQ
Hale Nakoa (Hickam Community)	Hose bib on south side of Bldg. 1723	Sampling Point PID: 0.0 ppm, no odor detected	ERH2024	12/2/2021	14:25	ERH2031, ERH2032	Normal	0.50 UQ	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	300 U	74 U	300 U	74 UQ
Halsey Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.4 ppm, no odor detected	ERH2025	12/2/2021	12:05	ERH2031, ERH2032	Normal	0.50 UQ	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	72 U	290 U	72 UQ

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							Analyte	Benzene	Ethylbenzene	Toluene	Xylenes	Naphthalene	TPH-g (C6-C12)	TPH-d (C9-C25) [b]	TPH-d (C9-C25) with Silica Gel Cleanup	TPH-o (C24-C40) [b]	TPH-o (C24-C40) with Silica Gel Cleanup
							CAS No.	71-43-2	100-41-4	108-88-3	1330-20-7	91-20-3	PHCC6C10	PHCC10C24	PHCC10C24SGC	PHCC24C40	PHCC24C40SGC
							Method	8260B	8260B	8260B	8260B	8260B	8260B	8015B_E	8015B_E	8015B_E	8015B_E
							DOH Tier 1 EAL	5	30	40	20	17	300	400	—	500	—
							EPA MCL	5	700	1000	10000	—	—	—	—	—	—
							Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location (General Location / Building)	**Specific Location**	**Field Observations**	**Sample ID**	**Sampling Date**	**Sampling Time**	**Associated Trip Blank**	**Type**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Catlin Park	Community Center hose bib on side of building	Sampling Point PID: 0.4 ppm, no odor detected	ERH2026	12/2/2021	12:25	ERH2031, ERH2032	Normal	0.50 UQ	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	**23 J**	290 U	72 UQ
Radford Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected	ERH2027	12/2/2021	11:00	ERH2031, ERH2032	Normal	0.50 UQ	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	72 U	290 U	72 UQ
Waiawa PS Pre-Chlorination	swagelok faucet	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2028	12/2/2021	12:30	ERH2031, ERH2032	Normal	0.50 UQ	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	72 U	290 U	72 UQ
Earhart (Hickam Community)	Chapel (Bldg. 1750) hose bib on left side of building.	Sampling Point PID: 0.0 ppm, no odor detected	ERH2029	12/2/2021	14:35	ERH2031, ERH2032	Normal	0.50 UQ	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	72 U	290 U	72 UQ
Waiawa PS Post-Chlorination	faucet inside chlorination room	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2030	12/2/2021	12:45	ERH2031, ERH2032	Normal	0.50 UQ	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	71 U	290 U	**70 JQ**
Field QC	—	—	ERH2031	12/2/2021	10:50	—	Trip Blank	0.50 UQ	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	—	—	—	—
Field QC	—	—	ERH2032	12/2/2021	10:55	—	Trip Blank	0.50 UQ	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	—	—	—	—
Moanalua Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected	ERH2033	12/2/2021	12:55	ERH2031, ERH2032	Normal	0.50 UQ	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	310 U	77 U	310 U	77 UQ
Doris Miller Park	Hunt Military Community Center - southside of building hose bib near picnic tables	Sampling Point PID: 0.3 ppm, no odor detected	ERH2034	12/2/2021	11:35	ERH2031, ERH2032	Normal	0.50 UQ	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	310 U	78 U	310 U	78 UQ
NEX Commissary	Bldg. 607 hose bib backside of building	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2035	12/3/2021	11:30	ERH2044	Normal	0.50 UQ	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	73 U	290 U	73 UQ
Shipyard Clinic	Bldg. 1750 hose bib on side of building	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2036	12/3/2021	11:06	ERH2044	Normal	0.50 UQ	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	73 U	290 U	73 UQ
Makalapa Clinic	Bldg. 1407 hose bib on side of building	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2037	12/3/2021	10:45	ERH2044	Normal	0.50 UQ	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	72 U	290 U	72 UQ
SUBASE Lockwood Hall	hose bib at entrance of hotel	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2038	12/3/2021	10:30	ERH2044	Normal	0.50 UQ	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	72 U	290 U	72 UQ
Ford Island CDC	hose bib on side of building	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2039	12/3/2021	9:55	ERH2044	Normal	0.50 UQ	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	72 U	290 U	72 UQ
Navy Aiea-Halawa Shaft PS Pre-chlorination	left spigot	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2040	12/3/2021	9:45	ERH2044	Normal	0.50 UQ	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	72 U	290 U	72 UQ
Navy Aiea-Halawa Shaft PS Post-Chlorination	right spigot	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2041	12/3/2021	10:00	ERH2044	Normal	0.50 UQ	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	300 U	**48 J**	300 U	74 UQ
Red Hill HSG Storage Tank	Green tank spigot (swagelok faucet installed by NAVFAC)	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2042	12/3/2021	11:00	ERH2044	Normal	0.50 UQ	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	**31 J**	290 U	72 UQ
Field QC	—	—	ERH2043	12/3/2021	11:58	—	Trip Blank	0.50 UQ	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	—	—	—	—
Field QC	—	—	ERH2044	12/3/2021	9:50	—	Trip Blank	0.50 UQ	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	—	—	—	—
S1/S2 Tank	Overflow/Storage Tank S2	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2045	12/3/2021	12:25	ERH2043	Normal	0.50 UQ	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	72 U	290 U	72 UQ
Aliamanu MR	AMR AAFES Aliamanu Express/Gas Station Area	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2046	12/3/2021	12:02	ERH2043	Normal	0.50 UQ	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	72 U	290 U	72 UQ
Red Hill Mauka	Bldg. 73140 Community Center hose bib on side of building	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2047	12/3/2021	13:05	ERH2043	Normal	0.50 UQ	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	**33 J**	290 U	72 UQ
S1/S2 Tank	Overflow/Storage Tank S1	No visual indication of sheen, no odor, no Multirae available for PID readings	ERH2048	12/3/2021	12:38	ERH2043	Normal	0.50 UQ	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	72 U	290 U	72 UQ
Field QC	—	—	ERH2049	12/3/2021	14:25	—	Trip Blank	0.50 U	0.80 U	0.80 U	**1.1 J**	2.0 UQ	80 U	—	**—**	—	—
Field QC	—	—	ERH2053	12/4/2021	14:10	—	Trip Blank	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	—	**—**	—	—
Field QC	—	—	ERH2054	12/4/2021	10:10	—	Trip Blank	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	—	—	—	—
Officer Field (Hickam Community)	15th Wing Headquarters (Bldg. 1110) hose bib on left side of building entrance	Sampling Point PID: 0.0 ppm, no odor detected	ERH2055	12/4/2021	15:10	ERH2053	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	**54 J**	**30 JQ**	**120 J**	**37 J**
Onizuka (Hickam Community)	Bldg. 5500 hose bib on right side of building near entrance	Sampling Point PID: 0.0 ppm, no odor detected	ERH2056	12/4/2021	15:46	ERH2053	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	160 U	**29 JQ**	160 U	39 U
Hale Nakoa (Hickam Community)	Hose bib on south side of Bldg. 1723	Sampling Point PID: 0.0 ppm, no odor detected	ERH2057	12/4/2021	16:10	ERH2053	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	150 U	**27 JQ**	150 U	39 U
Waiawa PS Pre-Chlorination	swagelok faucet	Sampling Point PID: 0.0 ppm, no odor detected	ERH2058	12/4/2021	17:30	ERH2053	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	320 U	**25 J**	320 U	79 U
Earhart (Hickam Community)	Chapel (Bldg. 1750) hose bib on left side of building.	Sampling Point PID: 0.0 ppm, no odor detected	ERH2059	12/4/2021	16:35	ERH2053	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	310 U	**51 J**	310 U	78 U
Waiawa PS Post-Chlorination	faucet inside chlorination room	Sampling Point PID: 0.0 ppm, no odor detected	ERH2060	12/4/2021	17:35	ERH2053	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	310 U	**45 J**	310 U	77 U
Hale Moku / Hokulani	Pass and ID Office, hose bib on left side of main door	Sampling Point PID: 0.0 ppm, no odor detected	ERH2061	12/4/2021	14:15	ERH2053	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	310 U	**36 J**	310 U	76 U
Catlin Park	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected	ERH2062	12/4/2021	13:18	ERH2054	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	320 U	**40 J**	320 U	79 U
Doris Miller Park	hose bib out back of a mini mart	Sampling Point PID: 0.0 ppm, no odor detected	ERH2063	12/4/2021	12:45	ERH2054	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	320 U	**58 J**	320 U	79 U
Moanalua Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected	ERH2064	12/4/2021	13:50	ERH2054	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	310 U	**41 J**	310 U	77 U
Halsey Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected	ERH2065	12/4/2021	11:50	ERH2054	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	310 U	**47 J**	310 U	77 U
Radford Terrace	Community Center hose bib on side of building	chemical odor coming from nitrile glovesUsed to collect sample	ERH2066	12/4/2021	10:20	ERH2054	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	300 U	**38 J**	300 U	76 U

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							Analyte	Benzene	Ethylbenzene	Toluene	Xylenes	Naphthalene	TPH-g (C6-C12)	TPH-d (C9-C25) [b]	TPH-d (C9-C25) with Silica Gel Cleanup	TPH-o (C24-C40) [b]	TPH-o (C24-C40) with Silica Gel Cleanup
							CAS No.	71-43-2	100-41-4	108-88-3	1330-20-7	91-20-3	PHCC6C10	PHCC10C24	PHCC10C24SGC	PHCC24C40	PHCC24C40SGC
							Method	8260B	8260B	8260B	8260B	8260B	8260B	8015B_E	8015B_E	8015B_E	8015B_E
							DOH Tier 1 EAL	5	30	40	20	17	300	400	—	500	—
							EPA MCL	5	700	1000	10000	—	—	—	—	—	—
							Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location (General Location / Building)	**Specific Location**	**Field Observations**	**Sample ID**	**Sampling Date**	**Sampling Time**	**Associated Trip Blank**	**Type**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Field QC	—	—	ERH2067	12/5/2021	15:10	—	Trip Blank	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	—	—	—	—
Field QC	—	—	ERH2068	12/5/2021	10:55	—	Trip Blank	0.50 U	0.80 U	0.80 U	0.80 U	2.0 UQ	80 U	—	—	—	—
SUBASE Lockwood Hall	hose bib at entrance of hotel	Ambient PID: 0.6 ppm, Sampling Point PID: 0.6 ppm	ERH2069	12/5/2021	11:56	ERH2068	Normal	0.50 U	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	160 U	**17 JQ**	160 U	39 U
Ford Island CDC	hose bib on side of building	Ambient PID: 1.8 ppm, Sampling Point PID: 1.8 ppm	ERH2070	12/5/2021	11:00	ERH2068	Normal	0.50 U	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	150 U	**17 JQ**	150 U	38 U
Shipyard Clinic	Bldg. 1750 hose bib on side of building	Sampling Point PID: 0.0 ppm	ERH2071	12/5/2021	12:43	ERH2068	Normal	0.50 U	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	150 U	**19 JQ**	150 U	38 U
Makalapa Clinic	Bldg. 1407 hose bib on side of building	Sampling Point PID: 0.0 ppm	ERH2072	12/5/2021	12:20	ERH2068	Normal	0.50 U	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	160 U	**20 JQ**	160 U	39 U
Red Hill Mauka	Bldg. 73140 Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm	ERH2073	12/5/2021	14:49	ERH2068	Normal	0.50 U	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	160 U	**29 JQ**	160 U	40 U
[1] Navy Aiea-Halawa Shaft PS Pre-chlorination	left spigot	Sampling Point PID: 0.0 ppm	ERH2074	12/5/2021	15:31	ERH2067	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	**920**	**700 Q**	150 U	39 U
Navy Aiea-Halawa Shaft PS Post-Chlorination	right spigot	Sampling Point PID: 0.0 ppm	ERH2075	12/5/2021	15:31	ERH2067	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	**68 J**	**39 JQ**	150 U	38 U
NEX Commissary	Bldg. 607 hose bib backside of building	Sampling Point PID: 0.0 ppm	ERH2077	12/5/2021	13:23	ERH2068	Normal	0.50 U	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	160 U	**20 JQ**	160 U	39 U
S1/S2 Tank	Overflow/Storage Tank S2	Sampling Point PID: 0.0 ppm	ERH2078	12/5/2021	13:51	ERH2068	Normal	0.50 U	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	160 U	**29 JQ**	160 U	39 U
S1/S2 Tank	Overflow/Storage Tank S1	Sampling Point PID: 0.0 ppm	ERH2079	12/5/2021	14:02	ERH2068	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	160 U	**20 JQ**	160 U	39 U
Aliamanu MR	AMR AAFES Aliamanu Express/Gas Station Area	Sampling Point PID: 0.0 ppm	ERH2080	12/5/2021	14:25	ERH2068	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	140 U	**16 JQ**	140 U	36 U
Field QC	—	—	ERH2081	12/6/2021	10:03	—	Trip Blank	0.50 U	**0.51 J**	0.80 U	**3.5**	2.0 U	80 U	—	—	—	—
Field QC	—	—	ERH2082	12/6/2021	10:15	—	Trip Blank	0.50 U	0.80 U	0.80 U	**3.3**	2.0 U	80 U	—	—	—	—
Halsey Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2083	12/6/2021	10:36	ERH2081	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	310 U	79 U	310 U	79 U
Radford Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2084	12/6/2021	10:08	ERH2081	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	320 U	81 U	320 U	81 U
Catlin Park	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2085	12/6/2021	11:43	ERH2081	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	330 U	83 U	330 U	**53 J**
Doris Miller Park	hose bib out back of a mini mart	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2086	12/6/2021	11:12	ERH2081	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	310 U	78 U	310 U	78 U
Moanalua Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2087	12/6/2021	12:10	ERH2081	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	310 U	79 U	310 U	79 U
Hale Moku / Hokulani	Pass and ID Office, hose bib on left side of main door	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2088	12/6/2021	12:40	ERH2081	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	320 U	81 U	320 U	81 U
Waiawa PS Pre-Chlorination	swagelok faucet	Ambient PID: 1.2 ppm, Sampling Point PID: 1.2 ppm, no odor detected, no visual indication of sheen	ERH2089	12/6/2021	12:55	ERH2082	Normal	0.50 U	**0.88 J**	0.80 U	**4.8**	2.0 U	80 U	300 U	76 U	300 U	76 U
Waiawa PS Post-Chlorination	faucet inside chlorination room	Ambient PID: 1.2, Sampling Point PID: 1.2 ppm, no odor detected, no visual indication of sheen	ERH2090	12/6/2021	12:45	ERH2082	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	310 U	79 U	310 U	79 U
Earhart (Hickam Community)	Chapel (Bldg. 1750) hose bib on left side of building.	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2091	12/6/2021	10:20	ERH2082	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	310 U	79 U	310 U	79 U
Hale Nakoa (Hickam Community)	Hose bib on south side of Bldg. 1723	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2092	12/6/2021	11:05	ERH2082	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	310 U	76 U	310 U	76 U
Officer Field (Hickam Community)	15th Wing Headquarters (Bldg. 1110) hose bib on left side of building entrance	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2093	12/6/2021	11:25	ERH2082	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	320 U	79 U	320 U	79 U
Onizuka (Hickam Community)	Bldg. 5500 hose bib on right side of building near entrance	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2094	12/6/2021	11:40	ERH2082	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	330 U	83 U	330 U	83 U
Red Hill Elementary Cafeteria	Spigot on south side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2104	12/6/2021	13:43	ERH2081	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	310 U	78 U	310 U	78 U
Field QC	—	—	ERH2129	12/5/2021	13:00	—	Trip Blank	0.50 U	0.80 U	0.80 U	**3.8**	2.0 UQ	80 U	—	—	—	—
Red Hill Elementary Girls Restroom	Restroom Sink	Sampling Point PID: 0.0 ppm, very faint odor detected, no visual indication of sheen	ERH2131	12/6/2021	13:40	ERH2181	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	300 U	75 U	300 U	75 U
Ford Island CDC	hose bib on side of building	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2132	12/7/2021	10:57	ERH2146	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	72 U	290 U	72 U
SUBASE Lockwood Hall	hose bib at entrance of hotel	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2133	12/7/2021	12:52	ERH2146	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	72 U	290 U	72 U
Makalapa Clinic	Bldg. 1407 hose bib on side of building	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2134	12/7/2021	12:26	ERH2146	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	72 U	290 U	**49 J**
Shipyard Clinic	Bldg. 1750 hose bib on side of building	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2135	12/7/2021	12:00	ERH2146	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	310 U	78 U	310 U	78 U

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							Analyte	Benzene	Ethylbenzene	Toluene	Xylenes	Naphthalene	TPH-g (C6-C12)	TPH-d (C9-C25) [b]	TPH-d (C9-C25) with Silica Gel Cleanup	TPH-o (C24-C40) [b]	TPH-o (C24-C40) with Silica Gel Cleanup
							CAS No.	71-43-2	100-41-4	108-88-3	1330-20-7	91-20-3	PHCC6C10	PHCC10C24	PHCC10C24SGC	PHCC24C40	PHCC24C40SGC
							Method	8260B	8260B	8260B	8260B	8260B	8260B	8015B_E	8015B_E	8015B_E	8015B_E
							DOH Tier 1 EAL	5	30	40	20	17	300	400	—	500	—
							EPA MCL	5	700	1000	10000	—	—	—	—	—	—
							Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location (General Location / Building)	**Specific Location**	**Field Observations**	**Sample ID**	**Sampling Date**	**Sampling Time**	**Associated Trip Blank**	**Type**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
NEX Commissary	Bldg. 607 hose bib backside of building	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2136	12/7/2021	13:32	ERH2146	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	320 U	81 U	320 U	81 U
[1] Navy Aiea-Halawa Shaft PS Pre-chlorination	left spigot	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2137	12/7/2021	10:10	ERH2147	Normal	0.50 UQ	0.80 UQ	0.80 UQ	0.80 UQ	2.0 UQ	80 U	**730**	**420**	320 U	81 U
Navy Aiea-Halawa Shaft PS Post-Chlorination	right spigot	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2138	12/7/2021	10:15	ERH2147	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	**23 J**	290 U	72 U
S1/S2 Tank	Overflow/Storage Tank S2	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2139	12/7/2021	10:45	ERH2147	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	280 U	71 U	280 U	71 U
S1/S2 Tank	Overflow/Storage Tank S1	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2140	12/7/2021	11:00	ERH2147	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	73 U	290 U	73 U
Red Hill HSG Storage Tank	Green tank spigot (swagelok faucet installed by NAVFAC)	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2141	12/7/2021	11:30	ERH2147	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	310 U	78 U	310 U	78 U
Red Hill Mauka	Bldg. 73140 Community Center hose bib on side of building	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2142	12/7/2021	11:45	ERH2147	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 UQ	80 U	290 U	73 U	290 U	73 U
Aliamanu MR	AMR AAFES Aliamanu Express/Gas Station Area	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2143	12/7/2021	12:05	ERH2147	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	72 U	290 U	72 U
Red Hill HSG Storage Tank	Green tank spigot (swagelok faucet installed by NAVFAC)	Sampling Point PID: 0.0 ppm	ERH2144	12/5/2021	15:15	ERH2067	Normal	0.50 U	0.80 U	0.80 U	0.80 UQ	2.0 UQ	80 U	160 U	**27 JQ**	160 U	**75**
Field QC	—	—	ERH2146	12/7/2021	13:22	—	Trip Blank	0.50 U	0.80 U	0.80 U	**0.76 J**	2.0 UQ	80 U	—	—	—	—
Field QC	—	—	ERH2147	12/7/2021	10:05	—	Trip Blank	0.50 U	0.80 U	0.80 U	**0.89 J**	2.0 UQ	80 U	—	—	—	—
Navy Aiea-Halawa Shaft PS Pre-Chlorination Pump Room	Pump Room tap	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2150	12/8/2021	11:57	ERH4001	Normal	0.50 UQ	0.80 UQ	0.80 UQ	0.80 UQ	2.0 UQ	**56 J**	**620**	**440**	300 U	74 U
Navy Aiea-Halawa Shaft PS Post-Chlorination	right spigot	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2151	12/8/2021	11:31	ERH4001	Normal	0.50 UQ	0.80 UQ	0.80 UQ	0.80 UQ	2.0 UQ	**54 J**	290 U	**26 J**	290 U	72 U
Waiawa PS Pre-Chlorination	swagelok faucet	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected	ERH2209	12/7/2021	13:00	ERH2147	Normal	0.50 U	0.80 U	0.80 U	**0.69 J**	2.0 UQ	80 U	290 U	73 U	290 U	**61 J**
Waiawa PS Post-Chlorination	faucet inside chlorination room	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected	ERH2211	12/7/2021	13:10	ERH2147	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 UQ	80 U	290 U	71 U	290 U	71 U
Field QC	—	—	ERH4000	12/8/2021	9:50	—	Trip Blank	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	—	—	—	—
Field QC	—	—	ERH4001	12/8/2021	9:50	—	Trip Blank	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	—	—	—	—
Halsey Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4002	12/8/2021	10:19	ERH4001	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	300 U	**29 J**	300 U	74 U
Radford Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4003	12/8/2021	9:53	ERH4001	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	290 U	**23 J**	290 U	72 U
Catlin Park	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4004	12/8/2021	13:38	ERH4001	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	300 U	**26 J**	300 U	74 U
Doris Miller Park	hose bib out back of a mini mart	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4005	12/8/2021	10:43	ERH4001	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	280 U	**34 J**	280 U	71 U
Moanalua Terrace	Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4006	12/8/2021	13:13	ERH4001	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	290 U	**28 J**	290 U	74 U
Hale Moku / Hokulani	Pass and ID Office, hose bib on left side of main door	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4007	12/8/2021	12:42	ERH4001	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	290 U	**27 J**	290 U	73 U
Waiawa PS Pre-Chlorination	swagelok faucet	Ambient PID: 1.2 ppm, Sampling Point PID: 1.2 ppm, no odor detected, no visual indication of sheen	ERH4008	12/8/2021	12:40	ERH4000	Normal	0.50 U	0.80 U	0.80 U	0.80 U	2.0 U	80 U	290 U	73 U	290 U	73 U
Waiawa PS Post-Chlorination	faucet inside chlorination room	Ambient PID: 1.2, Sampling Point PID: 1.2 ppm, no odor detected, no visual indication of sheen	ERH4009	12/8/2021	12:45	ERH4000	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	290 U	**25 J**	290 U	72 U
Earhart (Hickam Community)	Chapel (Bldg. 1750) hose bib on left side of building.	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4010	12/8/2021	11:55	ERH4000	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	290 U	**33 J**	290 U	72 U
Hale Nakoa (Hickam Community)	Hose bib on south side of Bldg. 1723	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4011	12/8/2021	11:50	ERH4000	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	300 U	**49 J**	300 U	74 U
Officer Field (Hickam Community)	15th Wing Headquarters (Bldg. 1110) hose bib on left side of building entrance	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4012	12/8/2021	11:05	ERH4000	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	300 U	**30 J**	300 U	74 U
Onizuka (Hickam Community)	Bldg. 5500 hose bib on right side of building near entrance	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4013	12/8/2021	10:45	ERH4000	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	290 U	**28 J**	290 U	72 U
Red Hill Elementary Cafeteria	Spigot on south side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4014	12/8/2021	10:20	ERH4000	Normal	0.50 U	0.80 UQ	0.80 U	0.80 UQ	2.0 U	80 U	290 U	**30 J**	290 U	74 U
Red Hill Elementary Girls Restroom	Restroom Sink	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4015	12/8/2021	9:55	ERH4000	Normal	0.50 UQ	0.80 UQ	0.80 UQ	0.80 UQ	2.0 UQ	80 U	290 U	**29 J**	290 U	74 U

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							Analyte	Benzene	Ethylbenzene	Toluene	Xylenes	Naphthalene	TPH-g (C6-C12)	TPH-d (C9-C25) [b]	TPH-d (C9-C25) with Silica Gel Cleanup	TPH-o (C24-C40) [b]	TPH-o (C24-C40) with Silica Gel Cleanup
							CAS No.	71-43-2	100-41-4	108-88-3	1330-20-7	91-20-3	PHCC6C10	PHCC10C24	PHCC10C24SGC	PHCC24C40	PHCC24C40SGC
							Method	8260B	8260B	8260B	8260B	8260B	8260B	8015B_E	8015B_E	8015B_E	8015B_E
							DOH Tier 1 EAL	5	30	40	20	17	300	400	—	500	—
							EPA MCL	5	700	1000	10000	—	—	—	—	—	—
							Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location (General Location / Building)	**Specific Location**	**Field Observations**	**Sample ID**	**Sampling Date**	**Sampling Time**	**Associated Trip Blank**	**Type**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
[1] Navy Aiea-Halawa Shaft PS Pre-chlorination	left spigot	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH2149	12/8/2021	11:30	ERH4001	Normal	0.50 UQ	0.80 UQ	0.80 UQ	0.80 UQ	2.0 UQ	80 U	**550**	**380**	290 U	72 U

Joint Base Pearl Harbor Hickam Drinking Water Issue
Weck Laboratory Results - Drinking Water - Non-Well Results

Analyte									Mercury	TPH-g	TPH-d	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethene	1,2,4-Trichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Benzene	Carbon tetrachloride	Chlorobenzene	o-Dichlorobenzene	p-Dichlorobenzene	Ethylbenzene	Methylene chloride	Styrene	Tetrachloroethene	Toluene	Trichloroethene	Vinyl chloride	m,p-Xylene	o-Xylene	Dibromochloromethane	Bromoform	THM (total)
CAS No.									7439-97-6	8032-32-4	DRO	71-55-6	79-00-5	75-35-4	120-82-1	107-06-2	78-87-5	156-59-2	156-60-5	71-43-2	56-23-5	108-90-7	95-50-1	106-46-7	100-41-4	75-09-2	100-42-5	127-18-4	108-88-3	79-01-6	75-01-4	179601-23-1	95-47-6	124-48-1	75-25-2	75-25-2
Method									245.1	8260	8015 (Weck)	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2
DOH Tier 1 EAL									2	300	400	200	5	7	70	5	5	70	100	5	5	50	10	5	30	5	10	5	40	5	2	20	20	0.93	80	-
DOH MCL									2	—	—	200	5	7	70	5	5	70	100	5	5	100	600	75	700	5	100	5	1000	5	2	10000	10000	-	80	-
EPA MCL									2	—	—	200	5	7	70	5	5	70	100	5	5	100	600	-	700	5	100	5	1000	5	2	10000	10000	-	-	-
Unit									µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location (General Location / Building)	Specific Location	Field Observations	Sample ID	Sampling Date	Sampling Time	Associated Trip Blank	Type	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result			
Aliamanu MR	AMR AAFES Aliamanu Express/Gas Station Area	Ambient PID 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4016	12/9/2021	11:45	ERH4038	Normal	0.050 U	100 U	**94 J**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
Red Hill Mauka	Bldg. 73140 Community Center hose bib on side of building	Ambient PID: 0.1 ppm, Sampling Point PID: 0.1 ppm, no odor detected, no visual indication of sheen	ERH4017	12/9/2021	11:15	ERH4038	Normal	0.050 U	100 U	**85 J**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
DOH Split-Storage Tank #1	top of tank #1	Ambient PID: 0.0 ppm, Sampling Point PID:0.0 ppm, no odor detected, no visual indication of sheen, no HCl in VOA vials, used a bailer to sampler	ERH4018	12/9/2021	14:00	ERH4042	Normal																													
Navy Aiea-Halawa Shaft PS Post-Chlorination	right spigot	Sampling Point PID: 0.0 ppm Chlorine odor, no visual indication of sheen	ERH4019	12/9/2021	13:30	ERH4038	Normal				0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
DOH Split-Storage Tank #2	top of tank #2	Ambient PID: 0.0 ppm, Sampling Point PID:0.0 ppm, no odor detected, no visual indication of sheen, no HCl in VOA vials, used a bailer to sampler	ERH4020	12/9/2021	14:20	ERH4042	Normal																													
S1/S2 Tank	Overflow/Storage Tank S1	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4021	12/9/2021	12:25	ERH4038	Normal	0.050 U	100 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
S1/S2 Tank	Overflow/Storage Tank S2	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4022	12/9/2021	12:50	ERH4038	Normal		100 U																											
Red Hill HSG Storage Tank	Green tank spigot (swagelok faucet installed by NAVFAC)	Ambient PID: 0.2 ppm, Sampling Point PID: 0.2 ppm, no odor detected, no visual indication of sheen	ERH4023	12/9/2021	10:03	ERH4038	Normal		100 U																											
Shipyard Clinic	Bldg. 1750 hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4024	12/9/2021	12:25	ERH4039	Normal	0.050 U	100 U	**84 J**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
SUBASE Lockwood Hall	hose bib at entrance of hotel	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4025	12/9/2021	11:10	ERH4039	Normal	0.050 U	100 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
Ford Island CDC	hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4026	12/9/2021	10:10	ERH4039	Normal	0.050 U	100 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
Makalapa Clinic	Bldg. 1407 hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4027	12/9/2021	11:45	ERH4039	Normal	0.050 U	100 U	**86 J**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
NEX Commissary	Bldg. 607 hose bib backside of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4028	12/9/2021	13:10	ERH4039	Normal	0.050 U	100 U	**96 J**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
Navy Aiea-Halawa Shaft PS Post-Chlorination	right spigot	Sampling Point PID: 0.0 ppm, Chlorine odor, no visual indication of sheen	ERH4029	12/9/2021	13:50	ERH4038	Normal	0.050 U	100 U	**86 J**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
DOH Split-6181 Ibis Ave	silver spigot located on south side of residence	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen, water appears bubbly	ERH4031	12/9/2021	10:59	ERH4040	Normal		100 U																											
DOH Split-6181 Ibis Ave	silver spigot located on south side of residence	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen, water appears bubbly	ERH4032	12/9/2021	11:13	ERH4040	Field Duplicate		100 U																											
DOH Split-6674 106th Street	outside spigot	Sampling Point PID:0.0 ppm, no odor detected, no visual indication of sheen	ERH4036	12/9/2021	13:08	ERH4041	Normal	0.050 U	100 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
Field QC	—	—	ERH4038	12/9/2021	10:00	—	Trip Blank	—																											
Field QC	—	—	ERH4039	12/9/2021	10:00	—	Trip Blank	—	100 U																											
Field QC	—	—	ERH4040	12/9/2021	11:01	—	Trip Blank	—	100 U																											
Field QC	—	—	ERH4041	12/9/2021	11:08	—	Trip Blank	—																											
Field QC	—	—	ERH4042	12/9/2021	10:00	—	Trip Blank	—	100 U																											
Field QC	—	—	ERH4043	12/9/2021	11:43	—	Trip Blank	—																											
DOH Split-5534 Bittern Avenue	tub faucet	Sampling Point PID:0.0 ppm, no odor detected, no visual indication of sheen	ERH4044	12/9/2021	11:51	ERH4041	Normal	0.050 U	100 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
DOH Split-5673 Dovekie Avenue	tub faucet	Sampling Point PID:0.0 ppm, no odor detected, no visual indication of sheen	ERH4045	12/9/2021	12:25	ERH4041	Normal	0.050 U		**83 J**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
DOH Split-5669A Dovekie Avenue	outside spigot	Sampling Point PID:0.0 ppm, no odor detected, no visual indication of sheen	ERH4046	12/9/2021	13:08	ERH4041	Normal	0.050 U		**93 J**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
DOH Split-4908 Mokupea Place Apt. B	tub faucet	Ambient PID: 1.2 ppm, Sampling Point PID:1.2 ppm, no odor detected, no visual indication of sheen, home had odor that smelled of gas, outside of home ambient PID was 0.0 ppm	ERH4047	12/9/2021	10:53	ERH4041	Normal	0.050 U		**85 J**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
Navy Aiea-Halawa Shaft PS Pre-Chlorination Pump Room	Pump Room tap	Ambient PID: 0.0 ppm, Sampling Point PID:0.0 ppm, no odor detected, no visual indication of sheen, no HCl in VOA vials, unable to collect amber 1 L samples and metals	ERH4049	12/9/2021	10:50	ERH4042	Normal	0.050 U	100 U	**94 J**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
Navy Aiea-Halawa Shaft PS Post-Chlorination	right spigot	Ambient PID: 0.0 ppm, Sampling Point PID:0.0 ppm, no odor detected, no visual indication of sheen, no HCl in VOA vials	ERH4050	12/9/2021	11:45	ERH4042	Normal		100 U	**95 J**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
Field QC	—	—	ERH2161	12/10/2021	8:35	—	Trip Blank	—																											
Field QC	—	—	ERH2167	12/10/2021	8:35	—	Trip Blank	—																											
DOH Split-5682 Dovekie Avenue	Vacant, outdoor tap	Sampling Point PID: 0.1 ppm, no odor detected, no visual indication of sheen	ERH4053	12/10/2021	9:33	ERH4082	Normal	0.050 U	100 U																											
DOH Split-5012A Iroquois Ave	Occupied, outdoor tap	Sampling Point PID: 0.7 ppm, no odor detected, no visual indication of sheen	ERH4054	12/10/2021	9:51	ERH4082	Normal	0.050 U	100 U																											
DOH Split-5012A Iroquois Ave	Occupied, outdoor tap	Sampling Point PID: 0.7 ppm, no odor detected, no visual indication of sheen	ERH4055	12/10/2021	10:00	ERH4082	Field Duplicate	0.050 U	100 U																											
DOH Split-5861 Fulmar Avenue	Vacant, outdoor tap	Sampling Point PID: 0.7 ppm, no odor detected, no visual indication of sheen	ERH4056	12/10/2021	10:19	ERH4082	Normal		100 U																											
DOH Split-5856B Fulmar Avenue	Occupied, outdoor tap	Sampling Point PID: 0.4 ppm, no odor detected, no visual indication of sheen	ERH4057	12/10/2021	10:05	ERH4082	Normal	0.050 U	100 U																											
DOH Split-5869 Fulmar Avenue	Vacant, outdoor tap	Sampling Point PID: 0.6 ppm, no odor detected, no visual indication of sheen	ERH4058	12/10/2021	10:45	ERH4082	Normal	0.050 U	100 U																											
DOH Split-4976 Kela Place Apt B	Occupied, outdoor tap	Sampling Point PID: 0.5 ppm, no odor detected, no visual indication of sheen	ERH4059	12/10/2021	11:05	ERH4082	Normal		100 U																											
DOH Split-7273 Elm Place	2nd floor laundry room sink	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4060	12/10/2021	9:16	ERH4083	Normal																													
DOH Split-7273 Elm Place	2nd floor laundry room sink	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4061	12/10/2021	9:16	ERH4083	Field Duplicate																													
DOH Split-3763 Elm Drive	kitchen sink	Sampling Point PID: 2.5 ppm, no odor detected, no visual indication of sheen	ERH4062	12/10/2021	9:47	ERH4083	Normal	0.050 U																												
DOH Split-5321 Cedar Drive	tap on east side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4063	12/10/2021	10:12	ERH4083	Normal	0.050 U																												
DOH Split-7257 Birch Circle	kitchen sink	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4064	12/10/2021	10:54	ERH4083	Normal	0.050 U																												
DOH Split-7236 Birch Circle	kitchen sink	Sampling Point PID: 0.5 ppm, no odor detected, no visual indication of sheen	ERH4065	12/10/2021	11:15	ERH4083	Normal	0.050 U																												
Halsey Terrace	spigot on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4066	12/10/2021	9:05	ERH4084	Normal	0.050 U	100 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Radford Terrace	spigot on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4067	12/10/2021	9:55	ERH4084	Normal	0.050 U	100 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.7**	**2.3**	0.50 U
Catlin Park	spigot on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4068	12/10/2021	10:36	ERH4084	Normal	0.050 U	100 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Doris Miller Park	spigot on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4069	12/10/2021	11:45	ERH4084	Normal	0.050 U	100 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.52	2.8	0.50 U
Moanalua Terrace	spigot on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4070	12/10/2021	13:20	ERH4084	Normal	0.050 U	100 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Hale Moku / Hokulani	spigot on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4071	12/10/2021	12:25	ERH4084	Normal	0.050 U	100 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Waiawa PS Pre-Chlorination	left swagelok tap	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4072	12/10/2021	14:40	ERH4085	Normal	0.050 U			0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.32**	**1.4**	**1.4**
Waiawa PS Pre-Chlorination	left swagelok tap	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4073	12/10/2021	14:40	ERH4085	Normal	0.050 U			0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Waiawa PS Post-Chlorination	faucet inside chlorination room	Sampling Point PID: 0.0 ppm, chlorine odor detected, no visual indication of sheen, tap running slow	ERH4074	12/10/2021	15:00	ERH4085	Normal	0.050 U	100 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Earhart (Hickam Community)	beige tap right hand side	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4075	12/10/2021	9:10	ERH4085	Normal	0.050 U			0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Hale Nakoa (Hickam Community)	Hose bib on south side of Bldg. 1723	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4076	12/10/2021	9:55	ERH4085	Normal	0.050 U	100 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Officer Field (Hickam Community)	left of entrance, behind bushes	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4077	12/10/2021	11:10	ERH4085	Normal	0.050 U	100 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Officer Field (Hickam Community)	left of entrance, behind bushes	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4078	12/10/2021	11:15	ERH4085	Field Duplicate	0.050 U	100 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Onizuka (Hickam Community)	right side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4079	12/10/2021	10:40	ERH4085	Normal																													
Red Hill Elementary Cafeteria	right sink, cold tap	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4080	12/10/2021	13:13	ERH4085	Normal																													

Joint Base Pearl Harbor Hickam Drinking Water Issue
Weck Laboratory Results - Drinking Water - Non-Well Results

Analyte									Mercury	TPH-g	TPH-d	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethene	1,2,4-Trichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Benzene	Carbon tetrachloride	Chlorobenzene	o-Dichlorobenzene	p-Dichlorobenzene	Ethylbenzene	Methylene chloride	Styrene	Tetrachloroethene	Toluene	Trichloroethene	Vinyl chloride	m,p-Xylene	o-Xylene	Dibromochloromethane	Bromoform	THM (total)
CAS No.									7439-97-6	8032-32-4	DRO	71-55-6	79-00-5	75-35-4	120-82-1	107-06-2	78-87-5	156-59-2	156-60-5	71-43-2	56-23-5	108-90-7	95-50-1	106-46-7	100-41-4	75-09-2	100-42-5	127-18-4	108-88-3	79-01-6	75-01-4	179601-23-1	95-47-6	124-48-1	75-25-2	75-25-2
Method									245.1	8260	8015 (Weck)	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2
DOH Tier 1 EAL									2	300	400	200	5	7	70	5	5	70	100	5	5	50	10	5	30	5	10	5	40	5	2	20	20	0.93	80	-
DOH MCL									2	—	—	200	5	7	70	5	5	70	100	5	5	100	600	75	700	5	100	5	1000	5	2	10000	10000	-	80	-
EPA MCL									2	—	—	200	5	7	70	5	5	70	100	5	5	100	600	-	700	5	100	5	1000	5	2	10000	10000	-	-	-
Unit									µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location (General Location / Building)	**Specific Location**	**Field Observations**	**Sample ID**	**Sampling Date**	**Sampling Time**	**Associated Trip Blank**	**Type**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**			
Red Hill Elementary Girl's Restroom	sink tap	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4081	12/10/2021	13:15	ERH4085	Normal																													
Field QC	—	—	ERH4083	12/10/2021	9:11	—	Trip Blank	—																													
Field QC	—	—	ERH4084	12/10/2021	9:00	—	Trip Blank	—																													
Field QC	—	—	ERH4086	12/10/2021	9:00	—	Reagent Blank	—																													
Field QC	—	—	ERH4087	12/10/2021	9:11	—	Reagent Blank	—																													
Field QC	—	—	ERH4088	12/10/2021	9:00	—	Reagent Blank	—																													
Field QC	—	—	ERH4124	12/11/2021	19:00	—	Field QC	—																													
Field QC	—	—	ERH4126	12/11/2021	19:00	—	Reagent Blank	—																													
Aliamanu MR	AMR AAFES Aliamanu Express/Gas Station Area	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4092	12/11/2021	12:20	ERH4124 / ERH4126	Normal	0.050 U																													
Red Hill Mauka	Bldg. 73140 Community Center hose bib on side of building	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4093	12/11/2021	11:35	ERH4124 / ERH4126	Normal	0.050 U																													
Navy Aiea-Halawa Shaft PS Post-Chlorination	right spigot	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4095	12/11/2021	9:10	ERH4124 / ERH4126	Normal	0.050 U																													
Navy Aiea-Halawa Shaft PS Post-Chlorination	right spigot	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4096	12/11/2021	9:10	ERH4124 / ERH4126	Field Duplicate	0.050 U																													
S1/S2 Tank	Overflow/Storage Tank S1	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4099	12/11/2021	13:05	ERH4124 / ERH4126	Normal	0.050 U																													
S1/S2 Tank	Overflow/Storage Tank S2	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4100	12/11/2021	13:45	ERH4124 / ERH4126	Normal	0.050 U																													
Red Hill HSG Storage Tank	Green tank spigot (swagelok faucet installed by NAVFAC)	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4101	12/11/2021	10:50	ERH4124 / ERH4126	Normal	0.050 U																													
Field QC	-	-	ERH4125	12/11/2021	8:50	-	Field QC	—																													
Field QC	-	did not go out with the field	ERH4127	12/11/2021	19:00	-	Reagent Blank	—																													
Shipyard Clinic	Bldg. 1750 hose bib on side of building	Sampling Point PID: 0.5 ppm, no odor detected, no visual indication of sheen	ERH4102	12/11/2021	10:58	ERH4102 / ERH4127	Normal	0.050 U																													
SUBASE Lockwood Hall	hose bib at entrance of hotel	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4103	12/11/2021	12:30	ERH4102 / ERH4127	Normal	0.050 U																													
Ford Island CDC	hose bib on side of building	Sampling Point PID: 0.3 ppm, no odor detected, no visual indication of sheen	ERH4104	12/11/2021	10:13	ERH4102 / ERH4127	Normal	0.050 U																													
Makalapa Clinic	Bldg. 1407 hose bib on side of building	Sampling Point PID: 0.0 ppm, odor detected, no visual indication of sheen	ERH4105	12/11/2021	12:05	ERH4102 / ERH4127	Normal	0.050 U																													
NEX Commissary	Bldg. 607 hose bib backside of building	Sampling Point PID: 0.2 ppm, no odor detected, no visual indication of sheen	ERH4106	12/11/2021	11:35	ERH4102 / ERH4127	Normal	0.050 U																													
Field QC	-	-	ERH4162	12/12/2021	17:15	-	Trip Blank	—																													
Field QC	-	-	ERH4164	12/12/2021	17:15	-	Reagent Blank	—																													
Manana Housing	backflow preventer at connecting point with BWS	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4134	12/12/2021	17:20	ERH4162 / ERH4164	Normal																													
Manana Housing	backflow preventer at connecting point with BWS	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4135	12/12/2021	17:20	ERH4162 / ERH4165	Field Duplicate																													
Field QC	-	-	ERH4157	12/12/2021	12:30	-	Trip Blank	—																													
Field QC	-	-	ERH4159	12/12/2021	12:30	-	Reagent Blank	—																													
Halawa ST1	bottom of tank	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4144	12/12/2021	12:45	ERH4157 / ERH4159	Normal																													
Halawa ST1	bailer sampler taken from hatch on top of tank	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4165	12/12/2021	12:45	ERH4157 / ERH4159	Normal																													
Halawa ST2	bottom of tank	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4145	12/12/2021	12:50	ERH4157 / ERH4159	Normal																													
Halawa ST2	bailer sampler taken from hatch on top of tank	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4166	12/12/2021	12:50	ERH4157 / ERH4159	Normal																													
Red Hill ST1	blue tank	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4146	12/12/2021	15:00	ERH4157 / ERH4159	Normal																													
Red Hill ST2	bottom of green tank	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4147	12/12/2021	15:00	ERH4157 / ERH4159	Normal																													
Red Hill ST2	bailer sampler taken from hatch on top of green tank	Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4167	12/12/2021	15:00	ERH4157 / ERH4159	Normal																													

Joint Base Pearl Harbor Hickam Drinking Water Issue

Weck Laboratory Results - Drinking Water - Non-Navy Water System Sample Results

Analyte	Mercury	TPH-g	TPH-d	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethene	1,2,4-Trichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Benzene	Carbon tetrachloride	Chlorobenzene	o-Dichlorobenzene	p-Dichlorobenzene	Ethylbenzene	Methylene chloride	Styrene	Tetrachloroethene	Toluene	Trichloroethene	Vinyl chloride	m,p-Xylene	o-Xylene
CAS No.	7439-97-6	8032-32-4	DRO	71-55-6	79-00-5	75-35-4	120-82-1	107-06-2	78-87-5	156-59-2	156-60-5	71-43-2	56-23-5	108-90-7	95-50-1	106-46-7	100-41-4	75-09-2	100-42-5	127-18-4	108-88-3	79-01-6	75-01-4	179601-23-1	95-47-6
Method	245.1	8260	8015 (Weck)	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2	524.2
DOH Tier 1 EAL	2	300	400	200	5	7	70	5	5	70	100	5	5	50	10	5	30	5	10	5	40	5	2	20	20
DOH MCL	2	—	—	200	5	7	70	5	5	70	100	5	5	100	600	75	700	5	100	5	1000	5	2	10000	10000
EPA MCL	2	—	—	200	5	7	70	5	5	70	100	5	5	100	600	-	700	5	100	5	1000	5	2	10000	10000
Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

Location (General Location / Building)	Specific Location	Field Observations	Sample ID	Sampling Date	Sampling Time	Associated Trip Blank	Type	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Halawa Correctional Facility	spigot on side of building	Ambient PID: 0.0 ppm, Sampling Point PID: 0.0 ppm, no odor detected, no visual indication of sheen	ERH4052	12/9/2021	11:40	ERH4043	Normal	0.050 U		**90 J**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

Joint Base Pearl Harbor Hickam Drinking Water Issue

Total Organic Carborn Screening Data

Value - Detected at a measurable level (>0.5 ppm)

Trace - Detected at a measurable level, but below the Lower Reportable Level

Non-Detect - Not at a detectable level (<0.2 ppm)

Lower reportable limit = 0.5 ppm

Lower detectable limit = 0.2 ppm

LabNumber	SampleDate	SampleID	Results (PPM)
22-01067	12/1/2021	569 DEWART LN	10.6
22-01269	12/2/2021	1028 MEAE ST	9.8
22-01343	12/2/2021	4013 NONNAN ST	8.7
22-01345	12/2/2021	1676 NYE CIR	6.6
22-01101	12/1/2021	2853C KAEE LP	4.6
22-01574	12/2/2021	CV18F0126 RHSF RHMW15-05, NAVY	3.5
22-01573	12/2/2021	CV18F0126 RHSF RHMW15-05, NAVY	3.4
22-01924	**12/8/2021**	*PEARL HARBOR COMMISSARY	3.0
22-01104	12/1/2021	4015 NOONAN LP	2.8
22-01014	12/1/2021	RHMW02 DUPLICATE	2.6
22-01014	**12/1/2021**	RHMW02	2.6
22-02090	**12/10/2021**	*PEARL HARBOR COMMISSARY	1.6
22-01011	12/1/2021	RHMW03	1.4
22-01011	12/1/2021	RHMW03 DUPLICATE	1.4
22-01032	12/1/2021	5300 CATLIN LN DUPLICATE	1.0
22-01556	12/4/2021	*CAMP SMITH CLINIC	1.0
22-01097	12/1/2021	2873 A HAPUE LP	0.9
22-01032	12/1/2021	5300 CATLIN LN	0.9
22-02002	12/9/2021	*NEX COMMISSARY	0.8
22-02031	12/9/2021	DOH 6666 B 106TH ST	0.8
22-01028	12/1/2021	3188 GILLESPIE LN	0.8
22-01245	12/2/2021	2599 STOWELL CIR	0.8
22-01589	12/5/2021	232 MERCURY ST	0.7
22-01240	12/2/2021	2603 STOWELL CIR	0.7
22-01057	12/1/2021	5307 HAMMOND LN	0.7
22-01095	12/1/2021	4037 ENGER ST	0.7
22-01091	12/1/2021	2269 DORRISMILLER LP APT D	0.7
22-01061	12/1/2021	5306 HAMMOND LN	0.7
22-01013	12/1/2021	CV18F0126 RHSF RHMW01R, NAVY	0.7
22-01081	12/1/2021	2271 DORRISMILLER LP	0.6
22-01558	12/4/2021	*KING HALL	0.6
22-01230	12/2/2021	165 OHANA NUI CIR	0.6
22-01239	12/2/2021	2618 STOWELL CIR	0.6
22-01575	12/1/2021	CV18F0126 RHSF RHMW08, NAVY	0.6
22-02082	12/10/2021	*MCGREW COMM CTR	0.6
22-02079	12/10/2021	*KING HALL	0.6
22-01010	12/1/2021	RHBFSF, OWDF MWC1	0.6
22-00973	11/30/2021	2466 PUAKIKA	0.6
22-02004	12/9/2021	*HALSEY TERRACE COMM CTR	0.6
22-01465	12/3/2021	*LOWER ACCESS TUNNEL SHAFT	0.6
22-01053	12/1/2021	17 MAKALAPA DR	0.5
22-01092	12/1/2021	4014 NOONAN ST	0.5
22-01392	12/2/2021	2711 STOWELL CIR	TRACE
22-01099	12/1/2021	2269 DORRISMILLER LP APT C	TRACE
22-00873	11/30/2021	822 HALSEY TERRACE	TRACE
22-01094	12/1/2021	4165 PINCHER ST	TRACE
22-01155	12/2/2021	2081 GIPPIA LP	TRACE
22-01394	12/2/2021	5011 KIDD ST	TRACE
22-01402	12/2/2021	3102 MOREELL DR	TRACE
22-01103	12/1/2021	2864 A HAPUE LP	TRACE
22-01029	12/1/2021	3181 GILLESPIE LN	TRACE
22-01056	12/1/2021	3296 SALUIT ST	TRACE
22-01086	12/1/2021	3027 ANDERSON AVE	TRACE
22-01063	12/1/2021	5227 CATLIN LN	TRACE
22-01075	12/1/2021	5438 KILMER LN	TRACE
22-01852	12/7/2021	BLDG 41 GUEST HOUSE	TRACE
22-01720	12/6/2021	27 HALAWA DR	TRACE
22-00958	11/30/2021	3307 JALIUT LN	TRACE
22-01397	12/2/2021	5402 MCMORRIS DR	TRACE
22-01576	12/1/2021	CV18F0126 RHSF RHMW08, NAVY	TRACE
22-01051	12/1/2021	5032 KIDD ST	TRACE
22-01102	12/1/2021	2269 DORRISMILLER LP APT A	TRACE
22-00978	11/30/2021	3142 SNYDER CT	TRACE
22-01157	12/2/2021	142 MURRAY DR	TRACE
22-01033	12/1/2021	3296 JALIUT LN	TRACE
22-01275	12/2/2021	315 MALIA ST	TRACE
22-01263	12/2/2021	2873 A HAPUE LP	TRACE
22-01411	12/2/2021	2775 SCHMITT PKY	TRACE
22-02157	12/11/2021	*MCGREW COMM CTR	TRACE
22-02039	12/9/2021	*SMITH HALL	TRACE
22-01062	12/1/2021	5300 CATLIN LN	TRACE
22-01250	12/2/2021	4152 TINCHER ST	TRACE
22-01068	12/1/2021	3264 MALOELAP ST	TRACE
22-01265	12/2/2021	132 KOKOMALEI ST	TRACE
22-01079	12/1/2021	585 PAUL LN	TRACE
22-01412	12/2/2021	964 MURRAY DR	TRACE

Joint Base Pearl Harbor Hickam Drinking Water Issue

Total Organic Carborn Screening Data

Value - Detected at a measurable level (>0.5 ppm)

Trace - Detected at a measurable level, but below the Lower Reportable Level

Non-Detect - Not at a detectable level (<0.2 ppm)

Lower reportable limit = 0.5 ppm

Lower detectable limit = 0.2 ppm

LabNumber	SampleDate	SampleID	Results (PPM)
22-01241	12/2/2021	2573 STOWELL CIR	TRACE
22-01417	12/2/2021	1626 NYE CIR	TRACE
22-01031	**12/1/2021**	5225 CATLIN LN	TRACE
22-01058	12/1/2021	5223 CATLIN LN	TRACE
22-01034	12/1/2021	3291 JALUIT LN	TRACE
22-01001	12/1/2021	915 NORTH DR BLDG 1655	TRACE
22-01054	12/1/2021	604 MEYERKORA LP	TRACE
22-01236	12/2/2021	1060 H ST	TRACE
22-01074	12/1/2021	5324 SHELDS ST	TRACE
22-01070	12/1/2021	567 DEWART LN	TRACE
22-01399	12/2/2021	4338 FLAHERTY CIR	TRACE
22-01035	12/1/2021	3237 DEWERT LN	TRACE
22-00897	11/30/2021	4326 FLAHERTY CIR	TRACE
22-01055	12/1/2021	5268 CATLIN LN	TRACE
22-01096	12/1/2021	2997 DRISKELL DR	TRACE
22-01071	12/1/2021	3253 MALOELAP ST	TRACE
22-01047	12/1/2021	848 MURRAY DR	TRACE
22-01400	12/2/2021	5477 MCMORRIS DR	TRACE
22-01134	12/2/2021	4055 NOONAN	TRACE
22-01133	12/2/2021	3072 ARIZONA RD	TRACE
22-01060	12/1/2021	3424 MEYEKKREL PL DUPLICATE	TRACE
22-01153	12/2/2021	764 MURRAY DR	TRACE
22-01003	12/1/2021	623 JULIAN WY	TRACE
22-01261	12/2/2021	2856 D KOKIO LP	TRACE
22-01150	12/2/2021	1650 FLAMBAGO CT	TRACE
22-02179	12/12/2021	*HALSEY TERRACE COMM CTR	TRACE
22-01082	12/1/2021	1303 MCMORTY	TRACE
22-01098	12/1/2021	4081 NOONAN ST	TRACE
22-01043	12/1/2021	822 HAYS ST	TRACE
22-01396	12/2/2021	3146 MUREELL ST	TRACE
22-01066	12/1/2021	5318 SHIELBS ST	TRACE
22-01000	12/1/2021	530 PCLTIER AVE BLDG 1928	TRACE
22-01233	12/2/2021	311 LEHUA LN	TRACE
22-01080	12/1/2021	3241 GILLESPIE LN	TRACE
22-01012	12/1/2021	CV18F0126 RHSF RHMW05, NAVY	TRACE
22-01027	12/1/2021	3192 GILLESPIE LN	TRACE
22-01084	12/1/2021	2568 D KOKOS LP	TRACE
22-01090	12/1/2021	3136 SNYDER CT	TRACE
22-01249	12/2/2021	2978 ANDERSON AVE	TRACE
22-00968	11/30/2021	3144 SNYDER CT	TRACE
22-01593	12/5/2021	*LOWER ACCESS TUNNEL SHAFT	TRACE
22-01077	12/1/2021	3240 GILLESPIE LN	TRACE
22-01928	12/8/2021	*HALSEY TERRACE COMM CTR	TRACE
22-01064	12/1/2021	575 DICKSON LN	TRACE
22-01341	12/2/2021	2913 ARIZONA RD	TRACE
22-01131	12/2/2021	735 SIBLEY ST	TRACE
22-01048	12/1/2021	2765 ARIZONA RD	TRACE
22-01395	12/2/2021	5559 BENNION DR	TRACE
22-01049	12/1/2021	3225 TOMICH	TRACE
22-01183	12/2/2021	2583 STOWELL PL	TRACE
22-01073	12/1/2021	577 MALOELAP LN	TRACE
22-01100	12/1/2021	3142 SNYDER CR	TRACE
22-01030	12/1/2021	5227 CATLIN LN	TRACE
22-01204	12/2/2021	4115 COLGROVE	TRACE
22-01376	12/2/2021	128 1ST ST	TRACE
22-01129	12/2/2021	813 HAYS ST	TRACE
22-01425	12/2/2021	6212 CIGAR LN	TRACE
22-01002	12/1/2021	170 KUNTZ AVE BLDG 1654	TRACE
22-01413	12/2/2021	933 MURRAY DR	TRACE
22-01024	12/1/2021	OKANE BLVD BLDG 1597	TRACE
22-01999	12/8/2021	*LOCK WOOD HALL	TRACE
22-00918	11/30/2021	5437 KILMER LN	TRACE
22-01004	12/1/2021	1 OHANA NUI WAY	TRACE
22-01085	12/1/2021	2637 GORDON ST	TRACE
22-01243	12/2/2021	1932 NYE PL	TRACE
22-01154	12/2/2021	2783 ARIZONA RD	TRACE
22-00894	11/30/2021	5150 WARDEN CT	TRACE
22-01389	12/2/2021	860 MURRAY DR	TRACE
22-01089	12/1/2021	3222 PETERSON CT	TRACE
22-01381	12/2/2021	1802 FISHER CT	TRACE
22-01040	12/1/2021	811 RODGERS ST	TRACE
22-01059	12/1/2021	3221 DEWERT LN	TRACE
22-01248	12/2/2021	2681 GORDON ST	TRACE
22-01159	12/2/2021	4071 NOONAN ST	TRACE
22-01052	12/1/2021	5433 MCMORRIS DR	TRACE
22-01072	12/1/2021	5254 SHIELDS	TRACE

Joint Base Pearl Harbor Hickam Drinking Water Issue

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Lower detectable limit = 0.2 ppm

LabNumber	SampleDate	SampleID	Results (PPM)
22-01543	12/4/2021	*LOWER ACCESS TUNNEL SHAFT	TRACE
22-01026	12/1/2021	3187 GLILLESPIE LN	TRACE
22-01036	12/1/2021	5441 BENFOLD LN	TRACE
22-01398	12/2/2021	3136 MOREELL	TRACE
22-01401	12/2/2021	5013 KIDD ST	TRACE
22-02003	12/9/2021	*MFLC	TRACE
22-01151	12/2/2021	769 MURRAY DR	TRACE
22-01093	12/1/2021	4833 KAMEHAMEHA LP	TRACE
22-01050	12/1/2021	4611 SCOTT	TRACE
22-02148	12/11/2021	*MAKALAPA NGIS	TRACE
22-01247	12/2/2021	738 HIBISCUS ST	TRACE
22-01076	12/1/2021	3219 GILLESPIE LN	TRACE
22-01246	12/2/2021	724 SIBLEY ST	TRACE
22-01384	12/2/2021	208 2ND ST	TRACE
22-01259	12/2/2021	2865 HAPUE LP	TRACE
22-01078	12/1/2021	3232 DEWERT LN	TRACE
22-01835	12/7/2021	*SMITH HALL	TRACE
22-01690	12/6/2021	*PUMP STATION BLDG 408 PRE C12	TRACE
22-01045	12/1/2021	1958 OCALLAHAN	TRACE
22-01244	12/2/2021	2595 STOWELL CIR	TRACE
22-01135	12/2/2021	4116 FINCHER ST	TRACE
22-01041	12/1/2021	831 HAMMERBURG ST	TRACE
22-01088	12/1/2021	2269 DORRISMILLER LP APT B	TRACE
22-01083	12/1/2021	3178 SNYDER CT	TRACE
22-00920	11/30/2021	905 OHANA NIU CIR	TRACE
22-01158	12/2/2021	1732 TEARC CT	TRACE
22-01008	12/1/2021	726 POOL ST	TRACE
22-01044	12/1/2021	4040 NOONAN	TRACE
22-01006	12/1/2021	80 UUWAI ST BLDG 1597	TRACE
22-01256	12/2/2021	4015 NOONAN ST	TRACE
22-01042	12/1/2021	822 HAMMERBURG ST	TRACE
22-01156	12/2/2021	910 MURRAY DR	TRACE
22-01087	12/1/2021	4671 NOONAN ST	TRACE
22-01038	12/1/2021	817 ROGERS ST	TRACE
22-00883	11/30/2021	2645 GORDON ST	TRACE
22-00999	12/1/2021	522 CENTER DR	TRACE
22-01375	12/2/2021	3267 MALOELAP ST	TRACE
22-01379	12/2/2021	330 LEVATO	TRACE
22-00910	11/30/2021	141 KOKOMALEI ST	TRACE
22-02194	12/12/2021	BLDG 303, BEQ	TRACE
22-00949	11/30/2021	822 MAYES ST	TRACE
22-02185	12/12/2021	*UNIFORM NEX	TRACE
22-01585	12/5/2021	*NEX COMMISSARY	TRACE
22-01316	12/2/2021	*PUMP STATION BLDG 408 POST C12	TRACE
22-01267	12/2/2021	936 OHANA NUI CIR	TRACE
22-02123	12/10/2021	DOH 7236 BIRCH CIR	TRACE
22-02203	12/12/2021	MANANA PUMP STATION	TRACE
22-02205	12/12/2021	7334 BIRCH CIR	TRACE
22-01228	12/2/2021	212 E 13TH ST	TRACE
22-02186	12/12/2021	*MAKALAPA NGIS	TRACE
22-01187	12/2/2021	5150 MAREELL DR	TRACE
22-01138	12/2/2021	2720 GORDON ST	TRACE
22-01535	12/4/2021	*UNIFORM NEX	TRACE
22-00952	11/30/2021	5424 SHELTS ST	TRACE
22-01258	12/2/2021	1303 MCMURTRY CT	TRACE
22-02153	12/11/2021	*CAMP SMITH CLINIC	TRACE
22-02155	12/11/2021	*LOCK WOOD HALL	TRACE
22-01184	12/2/2021	1309 EAGLE CIR	TRACE
22-01196	12/2/2021	5556 BENINTON DR	TRACE
22-01203	12/2/2021	3083 ANDERSON AVE	TRACE
22-01998	12/8/2021	*SILVER DOLPHIN BISTRO	TRACE
22-01225	12/2/2021	3011 MOREELL CIR	TRACE
22-00957	11/30/2021	5224 SHIELDS ST	TRACE
22-02180	12/12/2021	*MFLC	TRACE
22-00880	11/30/2021	4076 ENGER ST	TRACE
22-02121	12/10/2021	DOH 7257 BIRCH CIR	TRACE
22-01763	12/7/2021	3424 MEYERKOREL PL	TRACE
22-02008	12/9/2021	DOH AIEA HALAWA SHAFT	TRACE
22-01046	12/1/2021	1960 OCALLAHAN	TRACE
22-01443	12/3/2021	*AMR NEX	TRACE
22-01037	12/1/2021	740 POOL ST	TRACE
22-00901	11/30/2021	1059 MUCERY PL	NON DETECT
22-02035	12/9/2021	*CAMP SMITH CLINIC	NON DETECT
22-01448	12/3/2021	*PUMP STATION BLDG 408 PRE C12	NON DETECT
22-01188	12/2/2021	3181 TOMICH CT	NON DETECT
22-00948	11/30/2021	3085 ARIZONA RD	NON DETECT

Joint Base Pearl Harbor Hickam Drinking Water Issue

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LabNumber	SampleDate	SampleID	Results (PPM)
22-00895	11/30/2021	4625 SCOTT LP	NON DETECT
22-01579	12/4/2021	*S1 TANK/AMR	NON DETECT
22-01418	12/2/2021	758 MURRAY DR	NON DETECT
22-01221	12/2/2021	5033 KIDD ST	NON DETECT
22-01232	12/2/2021	777 OHANA NUI CIR	NON DETECT
22-01578	12/4/2021	RH LOWER TANK	NON DETECT
22-02204	12/12/2021	7397 BIRCH CIR	NON DETECT
22-01385	12/2/2021	666 MURRAY DR	NON DETECT
22-02193	12/12/2021	BLDG 300, BLOCK A BEQ	NON DETECT
22-01642	12/6/2021	*LOCK WOOD HALL	NON DETECT
22-01388	12/2/2021	870 MURRAY DR	NON DETECT
22-02088	12/10/2021	*UNIFORM NEX	NON DETECT
22-01194	12/2/2021	4933 KIDO CT	NON DETECT
22-01597	12/5/2021	*PUMP STATION BLDG 408 PRE C12	NON DETECT
22-00951	11/30/2021	4073 NOUNAN ST	NON DETECT
22-01386	12/2/2021	2580 STOWELL CIR	NON DETECT
22-02160	12/11/2021	*SMITH HALL	NON DETECT
22-01308	12/2/2021	*AMR NEX	NON DETECT
22-01314	12/2/2021	*PUMP STATION BLDG 408 PRE C12	NON DETECT
22-01227	12/2/2021	4334 FLAHERTY CIR	NON DETECT
22-00943	11/30/2021	2748 GOLDON ST	NON DETECT
22-01407	12/2/2021	2873 HAPUE LP	NON DETECT
22-01226	12/2/2021	5109 WARDEN CT	NON DETECT
22-01152	12/2/2021	1928 OCALLAHAN	NON DETECT
22-00953	11/30/2021	2872 ARIZONA RD	NON DETECT
22-01253	12/2/2021	2834 GORDON ST	NON DETECT
22-00864	11/30/2021	4032 MOFFET ST	NON DETECT
22-02005	12/9/2021	*NGIS	NON DETECT
22-01447	12/3/2021	*PUMP STATION BLDG 408 POST C12	NON DETECT
22-00954	11/30/2021	2682 OKAWARA ST	NON DETECT
22-01371	12/2/2021	3046 ANDERSON AVE	NON DETECT
22-02000	12/8/2021	*UNIFORM NEX	NON DETECT
22-01192	12/2/2021	3444 TAYLOR ST	NON DETECT
22-01005	12/1/2021	BLDG 930 CENTER DR	NON DETECT
22-01390	12/2/2021	1978 O'CALLAHAN ST	NON DETECT
22-02007	12/9/2021	DOH AMR S-2	NON DETECT
22-01255	12/2/2021	713 SIDLEY ST	NON DETECT
22-01310	12/2/2021	*UNIFORM NEX	NON DETECT
22-01559	12/4/2021	MATHIES HALL BLDG 1854	NON DETECT
22-00898	11/30/2021	4337 FLAHERTY CIR	NON DETECT
22-01065	12/1/2021	DECA	NON DETECT
22-00921	11/30/2021	615 GEMINI AVE	NON DETECT
22-00932	11/30/2021	5268 SHIELDS LN	NON DETECT
22-00893	11/30/2021	4733 REEVES LP	NON DETECT
22-01368	12/2/2021	786 SIBLEY ST	NON DETECT
22-01177	12/2/2021	1511 BUTTOWOOD PL	NON DETECT
22-01380	12/2/2021	868 MURRAY DR	NON DETECT
22-01444	12/3/2021	*NEX COMMISSARY	NON DETECT
22-00879	11/30/2021	2665 GORDON ST	NON DETECT
22-01340	12/2/2021	4119 HAMPTON ST	NON DETECT
22-00878	**11/30/2021**	2876 ANDERSON AVE	NON DETECT
22-01007	12/1/2021	718 SIBLEY ST	NON DETECT
22-01178	12/2/2021	1835 MYDRONA PL	NON DETECT
22-01761	12/7/2021	*HALSEY TERRACE COMM CTR	NON DETECT
22-01284	12/2/2021	5302 HAMMOND LN	NON DETECT
22-01374	12/2/2021	2944 ANDERSON AVE	NON DETECT
22-01403	12/2/2021	5405 MCMORRIS DR	NON DETECT
22-02181	12/12/2021	*PEARL HARBOR COMMISSARY	NON DETECT
22-01166	12/2/2021	3027 ANDERSON AVE	NON DETECT
22-00964	11/30/2021	4749 REEVES LP	NON DETECT
22-00965	11/30/2021	643 POOL ST	NON DETECT
22-00966	11/30/2021	817 ROGERS ST	NON DETECT
22-02078	12/10/2021	*CAMP SMITH CLINIC	NON DETECT
22-01168	12/2/2021	6231 NAUPAKA ST	NON DETECT
22-01025	12/1/2021	3199 GILLESPIE LN	NON DETECT
22-00963	11/30/2021	829 RAMAGE ST	NON DETECT
22-01215	12/2/2021	4076 ENGER ST	NON DETECT
22-01185	12/2/2021	1828 MADRONA PL	NON DETECT
22-00876	11/30/2021	2815 ARIZONA RD	NON DETECT
22-00950	11/30/2021	4113 HAMPTON ST	NON DETECT
22-01180	12/2/2021	866 MURRAY DR	NON DETECT
22-01361	12/2/2021	4639 KE ST	NON DETECT
22-01370	12/2/2021	2863 ARIZONA RD	NON DETECT
22-01373	12/2/2021	3008 ARIZONA RD	NON DETECT
22-01557	12/4/2021	*SMITH HALL	NON DETECT
22-00946	11/30/2021	814 RAMALE ST	NON DETECT

Joint Base Pearl Harbor Hickam Drinking Water Issue

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LabNumber	SampleDate	SampleID	Results (PPM)
22-00874	11/30/2021	4044 ENGER ST	NON DETECT
22-01548	12/4/2021	*PUMP STATION BLDG 408 PRE C12	NON DETECT
22-01137	12/2/2021	2820 GORDON ST	NON DETECT
22-01318	12/2/2021	*RED HILL CC HOSE BIB	NON DETECT
22-00891	11/30/2021	177 BOWER PL	NON DETECT
22-01356	12/2/2021	2962 ANDERSON AVE	NON DETECT
22-01383	12/2/2021	2425 CHALLENGER PL	NON DETECT
22-00900	11/30/2021	862 MURRAY DR	NON DETECT
22-00927	11/30/2021	5308 HAMMOND LN	NON DETECT
22-00945	11/30/2021	4114 CROMSBURY ST	NON DETECT
22-00967	11/30/2021	2844 GORDON ST	NON DETECT
22-00974	11/30/2021	3086 HAILEY CT	NON DETECT
22-01346	12/2/2021	719 SANDERS CIR	NON DETECT
22-01409	12/2/2021	5117 WARDEN CT	NON DETECT
22-02175	12/12/2021	*KING HALL	NON DETECT
22-00913	11/30/2021	758 OHANA NUI CIR	NON DETECT
22-01186	12/2/2021	1502 BUTTOWOOD PL	NON DETECT
22-00903	11/30/2021	840 MURRAY DR	NON DETECT
22-01359	12/2/2021	6213 NAUPAKA ST	NON DETECT
22-02172	12/12/2021	*CAMP SMITH CLINIC	NON DETECT
22-02087	12/10/2021	*LOCK WOOD HALL	NON DETECT
22-01179	12/2/2021	1610 COWSLIP LN	NON DETECT
22-01181	12/2/2021	1225 HUDSON CIR	NON DETECT
22-00955	11/30/2021	4040 NEOMAN ST	NON DETECT
22-00887	11/30/2021	2332 POMELIAKIST	NON DETECT
22-00944	11/30/2021	4019 NOUNAN ST	NON DETECT

DEPARTMENT OF HEALTH

DAVID Y. IGE
GOVERNOR

ELIZABETH A. CHAR, MD
DIRECTOR

FOR IMMEDIATE RELEASE
December 15, 2021 21-181

Hawai‘i Department of Health releases 27 new Navy Water System test results

Trace contamination detected at residences in Iroquois Point & McGrew Point

HONOLULU – The Hawai‘i Department of Health (DOH) released 27 new laboratory reports related to the Navy water system incident.

Five of the 27 results, located in the Iroquois Point and McGrew Point communities, detected trace levels of petroleum product well below the DOH Environmental Action Level. All five samples tested positive for oil range organics below the drinking water threshold.

Samples collected from twenty-two locations did not detect petroleum products. These results include samples collected from Iroquois Point Elementary School, the Navy’s Aiea Halawa Shaft, the Navy’s Halawa Storage tank and private residences. Out of an abundance of caution, testing was performed at Halawa Correctional Facility, and no petroleum was detected.

Click here to view the laboratory reports. Samples were collected between December 7 and December 9.

The samples for all 27 reports were collected by DOH and analyzed by Eurofins Scientific in California. DOH received the detailed lab reports last night. The reports were immediately analyzed by DOH staff.

Sampling only captures contaminant levels at a point in time and these results will not change DOH’s do-not-consume recommendation.

DOH recommends Navy water system users should avoid using the water for drinking, cooking or oral hygiene. This includes consumption by pets. Navy water system users who detect a fuel-

like odor from their water should avoid using the water for drinking, cooking, bathing, dishwashing, laundry or oral hygiene. This recommendation applies to users of the Navy's Joint Base Pearl Harbor-Hickam (JBPHH) water system.

DOH updates are posted at health.hawaii.gov/navywater.

# # #

Drinking Water Sampling Plan
JBPHH, O'ahu, Hawai'i

December 2021

Sherri R. Eng, N45
Commander, Navy Region Hawaii
By Direction of the Commander

Kathleen S. Ho
Deputy Director of Environmental Health
Hawaii Department of Health

Ben Castellana
On-Scene Coordinator
U.S. EPA Region 9

David K. Brixius
Chief of Environmental Division
U.S. Army Garrison Hawaii

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Drinking Water Sampling Plan

JBPHH, O‘ahu, Hawai‘i

December 2021

This Sampling Plan was prepared by the Navy, Army, State of Hawaii Department of Health, and the United States Environmental Protection Agency.

N62742-17-D-1800
CTO N6274218F0126
N00362

Exhibit N-3D

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Appendices

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Acronyms and Abbreviations

°C	degree Celsius
µg/L	micrograms per liter
COC	chain of custody
CTO	contract task order
DOH	State of Hawai‘i Department of Health
EAL	Environmental Action Level
EPA	United States Environmental Protection Agency
HCl	hydrochloric acid
HNO_3	nitric acid
JBPHH	Joint Base Pearl Harbor-Hickam
MCL	Maximum Contaminant Level
MDL	method detection limit
mg	milligram
mL	milliliter
NAVFAC	Naval Facilities Engineering Systems Command
QC	quality control
RL	reporting limit
SDWB	Safe Drinking Water Branch, State of Hawai‘i Department of Health
SGC	silica gel cleanup
SO_3	sulfur trioxide
SOP	standard operating procedure
TBD	to be determined
TPH	total petroleum hydrocarbons
VOA	volatile organic analysis

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1.0 Introduction and Purpose

This Preliminary Sampling Plan is provided to support the sampling of the Joint Base Pearl Harbor-Hickam (JBPHH) drinking water system (System) for analyses of petroleum hydrocarbons impacts from the Red Hill Shaft (one of the three water sources for JBPHH) that began on November 20, 2021. The purpose of this sampling is to support the effort to determine if the drinking water within the areas impacted by the release comply with State of Hawaii/United States Environmental Protection Agency Drinking Water standards. Multiple efforts (e.g., the hydraulic capture zone analysis, water-line flushing) are currently underway and this sampling effort is one of multiple lines of evidence that will be used to determine when it is appropriate for residents to return home. This Sampling Plan is prepared under Contract N62742-17-D-1800, Contract Task Order (CTO) N6274218F0126.

This plan was developed in conjunction with the Navy, Army, Hawaii Department of Health, and United States Environmental Protection Agency (i.e., JBPHH DOD/Regulatory Agency Focus Group) and reflects the consensus approach (that was developed during Face-to-Face meetings between all parties on 12/10/21, 12/11/21, and 12/13/21) for collecting and analyzing drinking water samples in response to the release at the Red Hill Shaft with the overarching goal of returning residents to their homes and/or workplaces SAFELY and as quickly as possible.

It should be noted that this SAP is evergreen – Meaning that it may/will be updated/revised as analytical data (and/or) other information are obtained that indicate that it should be adjusted to ensure protection of human health.

1.1 Sampling Plan Overview

This section provides an overview of the primary steps that comprise this SAP and reflects the multiple lines of evidence approach that will be used to evaluate the data obtained from samples collected using this plan to make health-protective decisions regarding drinking water and the ability of families to return to their homes. The significant steps of the plan are outlined below (and are discussed in detail in Section 2):

- **Step 0** – Collect Shaft water samples from the Waiawa Shaft, Halawa Shaft, and Red Hill Shaft to characterize concentrations of constituents in the source water.

- **Step 1** – Identify and Prioritize Contaminated Locations (Flush Zones) in the DOD Water Distribution System.

- **Step 2a** – Collect screening water samples from locations where flushing has been tentatively completed and; therefore, requires confirmation sampling. Note: These samples will be directly from the flushing point without any treatment/modification (e.g., GAC filtration will not be performed). The samples will be analyzed for EPA Methods 8260 (VOCs), 8270 (SVOCs), 8015 (TPH-G, TPH-D, TPH-O).
- **Step 2b** – Collect screening water samples from locations where flushing has been tentatively completed; therefore, requires confirmation sampling. Note: These samples will be directly from the flushing point without any treatment/modification (e.g., GAC

filtration will not be performed). The samples will be analyzed for EPA Methods 524.2, 524.3, 524.2M, 525.2, 200.8/245.1, supplemented with 8015 (TPH-G, TPH-D, TPH-O).

- **Step 3** – Perform House/Building Specific Flushing for all structures located down gradient of the Node(s) that were flushed in Step 2. This approach will follow the House/Building Flushing Plan that is currently under development by the Navy Team.
- **Step 4 –** Collect drinking water samples from the taps in 10% of the homes in a Flushing Zone will be sampled, with a minimum of 15 homes sampled in each Flushing Zone. of homes/building located down gradient of the Flushing Station. These homes/buildings will be geographically distributed throughout the area to provide spatial coverage along the water supply line. In addition, the list of homes may be augmented based on additional information (e.g., homes that reported specific health impacts, homes that are referred to the team by medical providers) may also be sampled.
- **Step 5 –** Long term drinking water monitoring:
    - **0 to 3 months after initial drinking water sampling**. Long-Term Monitoring drinking water samples will be collected every month from 5% of the LTM homes in a Flushing Zone, with a minimum of 5 homes sampled in each Flushing Zone.
    - **4 to 24 months after initial drinking water sampling**. Long-Term Monitoring drinking water samples will be collected every six months from 10% of the LTM homes in a Flushing Zone, with a minimum of 15 homes sampled in each Flushing Zone.

2.0 Sampling Locations and Schedules

2.1 Return to Home/Normal Drinking Water Use Sampling Plan

This section discusses the primary steps that comprise this SAP and reflects the multiple lines of evidence approach that will be used to evaluate the data obtained from samples collected using this plan to make health-protective decisions regarding drinking water and the ability of families to return to their homes. The significant steps of the plan are outlined below (see Flow-Chart 1 for more detail):

- **Step 0** – Collect Shaft water samples from the Waiawa Shaft, Halawa Shaft, and Red Hill Shaft to characterize concentrations of constituents in the source water. These samples will be analyzed via EPA Methods 8260 (VOCs), 8270 (SVOCs), 8015 (TPH-G, TPH-D, TPH-O) – plus Tentatively Identified Compounds (TICs).

- **Purpose and Use of this information:** This information will be used to identify/isolate constituents of potential concern (COPCs) that will be used in subsequent sampling and analyses. COPCs in the source water will be the focus of the subsequent screening/investigation steps that are summarized below.

- **Step 1** – Identify and Prioritize Contaminated Locations (Flush Zones) in the DOD Water Distribution System.
    - This will incorporate information from:
        - Wide-spread, rapid Total Organic Carbon Testing Results
        - Results of phone calls/complaints of odors and other health related issues
        - Evaluating hydraulic transport information (Modeling) of the JPBHH water system to determine areas/locations of concern based on the location of the release and probable transport and ultimate fate in the water system.

- **Purpose and Use of this information:** This information will be used to identify the primary sample locations on the JBPHH water system (i.e., sample locations located off of specific water distribution lines that have been identified as potential concern (more details presented later in this SAP regarding these locations) and where line flushing will be performed.

- **Step 2a** – Collect screening water samples from Node(s) where flushing has been tentatively completed and; therefore, requires confirmation sampling. Note: These samples will be collected directly from the flushing point without any treatment/modification (i.e., GAC filtration will not be performed). Generally, a minimum of 1 to 3 volumes of water will be flushed with clean water from the Waiawa Shaft in a designated Flushing Zone prior to collecting screening samples (however, some areas may be flushed with more volumes of water). One screening sample will be collected, post-flushing and will be analyzed for:

- EPA Methods 8260 (VOCs), 8270 (SVOCs), 8015 (TPH-G, TPH-D, TPH-O).[1]

- **Purpose and Use of this information:** This information will be screened against USEPA MCLs, HDOH Tier 1 EALs, HDOH Aquatic Ecological Screening Levels (Flush Water Screening Levels [FWSLs]). If the results of the sample comply with the FWSLs then this location will proceed to Step 3. If the results do not comply with the FWSLs then additional flushing will be performed and the site will be re-tested.

- **Step 2b** – Collect screening water samples from Node(s) where flushing has been tentatively completed; therefore, requires confirmation sampling. Note: These samples will be directly from the flushing point without any treatment/modification (e.g., GAC filtration will not be performed). Generally, a minimum of 1 to 3 volumes of water will be flushed with clean water from the Waiawa Shaft in a designated Flushing Zone prior to collecting screening samples. One screening sample will be collected, post-flushing and will be analyzed for:

  - EPA Methods 524.2, 524.3, 524.2M, 525.2, 200.8/245.1, supplemented with 8015 (TPH-G, TPH-D, TPH-O).[1]

- **Purpose and Use of this information:** This information will be screened against USEPA MCLs, HDOH Tier 1 EALs, HDOH Aquatic Ecological Screening Levels (Flush Water Screening Levels [FWSLs]). If the results of the sample comply with the FWSLs then this location will proceed to Step 3. If the results do not comply with the FWSLs then additional flushing will be performed and the site will be re-tested.

- **Step 3** – Perform House/Building Specific Flushing for all structures located down gradient of the point that was flushed in Step 1. This approach will follow the House/Building Flushing Plan that is currently under development by the Navy Team.

- **Purpose of this information:** The purpose of this step is to ensure that all water stored in pipes, tanks, appliances, et cetera, have been thoroughly flushed with clean water from the Waiawa Shaft prior to collecting drinking water samples in Step 5.

- **Step 4 –** Collect drinking water samples from the taps in 10% of the homes in a Flushing Zone will be sampled, with a minimum of 15 homes sampled in each Flushing Zone. of homes/building located down gradient of the Flushing Station and analyze for (Methods 524.2, 524.3, 524.2M, 525.2, 200.8/245.1, supplemented with 8015 (TPH-G, TPH-D, TPH-O).[1] These homes/buildings will be geographically distributed throughout the area to provide spatial coverage along the water supply line. In addition, the list of homes may be augmented based on additional information (e.g., homes that reported specific health impacts, homes that are referred to the team by medical providers) may also be sampled.

- **Purpose and Use of this information:** The purpose of this step is to confirm that the water in the homes located in this area is safe to drink and that residents/occupants may

[1] This list will be modified/adjusted based on the results of the Shaft Samples.

return home (if they left) and the drinking water if fit for human consumption as defined by EPA. A single drinking water sample will be collected from each of the homes selected for sampling in this area. If the drinking water results collected from all of the representative homes that were sampled comply with MCLs and Tier 1 EALs, then all residents/occupants within this designated area may return home and the drinking water if fit for human consumption. If the drinking water results collected from all of representative homes that were sampled does not comply with MCLs and Tier 1 EALs, then the residents/occupants will not be allowed to return home and/or use the drinking water in their house (in instances where they have not left home). In addition, the Navy, Army, HDOH, and EPA will determine next steps for this Flushing Zone (e.g., performing additional flushing, performing targeted/flushing at specific homes). The houses would be tested again after remedial actions have been implemented.

- **Step 5 –** Long term drinking water monitoring:
    - **0 to 3 months after initial drinking water sampling**. Long-Term Monitoring drinking water samples will be collected every month from 5% of the LTM homes in a Flushing Zone, with a minimum of 5 homes sampled in each Flushing Zone. New homes should be sampled, if possible – to achieve more robust spatial/geographic coverage. Drinking water samples will be collected from the taps in these homes/structures and analyzed for (Methods 524.2, 524.3, 524.2M, 525.2, 200.8/245.1, supplemented with 8015 (TPH-G, TPH-D, TPH-O).[1] These homes/buildings will be geographically distributed throughout the area to provide spatial coverage along the water supply line and may or may not be the same homes that were sampled in Step 4.
    - **4 to 24 months after initial drinking water sampling**. Long-Term Monitoring drinking water samples will be collected every six months from 10% of the LTM homes in a Flushing Zone, with a minimum of 15 homes sampled in each Flushing Zone. New homes should be sampled, if possible – to achieve more robust spatial/geographic coverage. Drinking water samples will be collected from the taps in these homes/structures and analyzed for (Methods 524.2, 524.3, 524.2M, 525.2, 200.8/245.1, supplemented with 8015 (TPH-G, TPH-D, TPH-O).[1] These homes/buildings will be geographically distributed throughout the area to provide spatial coverage along the water supply line and may or may not be the same homes that were sampled in Step 4.
- **Purpose and Use of this information:** The purpose of this step is to confirm that the water in the homes located in this Flushing Zone continues to be FFHC. A single tap water sample will be collected from each of the homes selected for sampling in this Flushing Zone. If the tap water results collected from all of the representative homes that were sampled comply with MCLs and Tier 1 EALs, then then it will be confirmed that the drinking water this area remains FFHC. If the drinking water results collected from all of representative homes that were sampled does not comply with MCLs and Tier 1 EALs,

then the residents/occupants will not be allowed to return home and/or use the drinking water in their house (in instances where they have not left home). In addition, the Navy, Army, HDOH, and EPA will determine next steps for this Flushing Zone (e.g., performing additional flushing, performing targeted/flushing at specific homes). The houses would be tested again after remedial actions have been implemented.

Flow-Chart 1: JBPHH Drinking Water Investigation/Decision Flow-Chart <<See PDF>>

2.2 Continuity Sampling Plan

This section presents the Continuity Sampling plan that has been in place since approximately, December 10 2021. The purpose of this sampling was to provide an initial indication of the concentrations of constituents in the JBPHH water distribution system prior to implementing the 2.1 Return to Home/Normal Drinking Water Use Sampling Plan that is presented in Section 2.1. The Continuity Sampling Plan may be discontinued and/or modified after implementation of the Return to Home/Normal Drinking Water Use Sampling Plan begins. Table 1 and Figure 1 present sampling locations, including spigots, faucets, or other sampling ports within the drinking water system that will be sampled on a regular schedule. Drinking water sampling locations have been divided into Group A and Group B for Navy specific sampling in addition to the Hawai'i Department of Health (DOH). These locations are representative of the water system network and residential areas that may have been impacted by the November 20, 2021 release. Drinking water samples will be collected daily beginning with Sample Group A on Day 1 and Sample Group B on Day 2; sampling will continue with samples collected from each group on alternating days. Sampling will follow a tiered approach following the full-spectrum testing of the three Navy water shafts. After the first week of sampling, Navy will evaluate data and determine if the sampling locations need to be modified. Otherwise, sampling at these locations will continue for another 2 to 3 weeks until further assessments can be made. Based on the initial tier, additional sampling may follow with a more JP-5-focused[2] analyte list in locations to be determined.

This sampling plan also incorporates the initial 59 sampling 59 locations proposed by State of Hawaii Drinking Water Branch (Appendix A) to mimic their approach in evaluating the water quality of their locations. This list does not include all State of Hawai'i locations in or around JBPHH; additional sampling locations will be identified prior to the completion of sampling of currently identified locations.

In addition to the Group A, Group B, and DOH sampling locations, the localized sampling points may be identified to follow the Navy's phased flushing plan. These additional sampling locations

[2] Sampling that was performed by Hawai'i Department of Health (DOH) and the Navy. The results demonstrated that JP-5 was the petroleum hydrocarbon that was responsible for the impacts to Red Hill Shaft in November 2021.

will help the Navy target identified sections of the distribution system that may require further flushing.

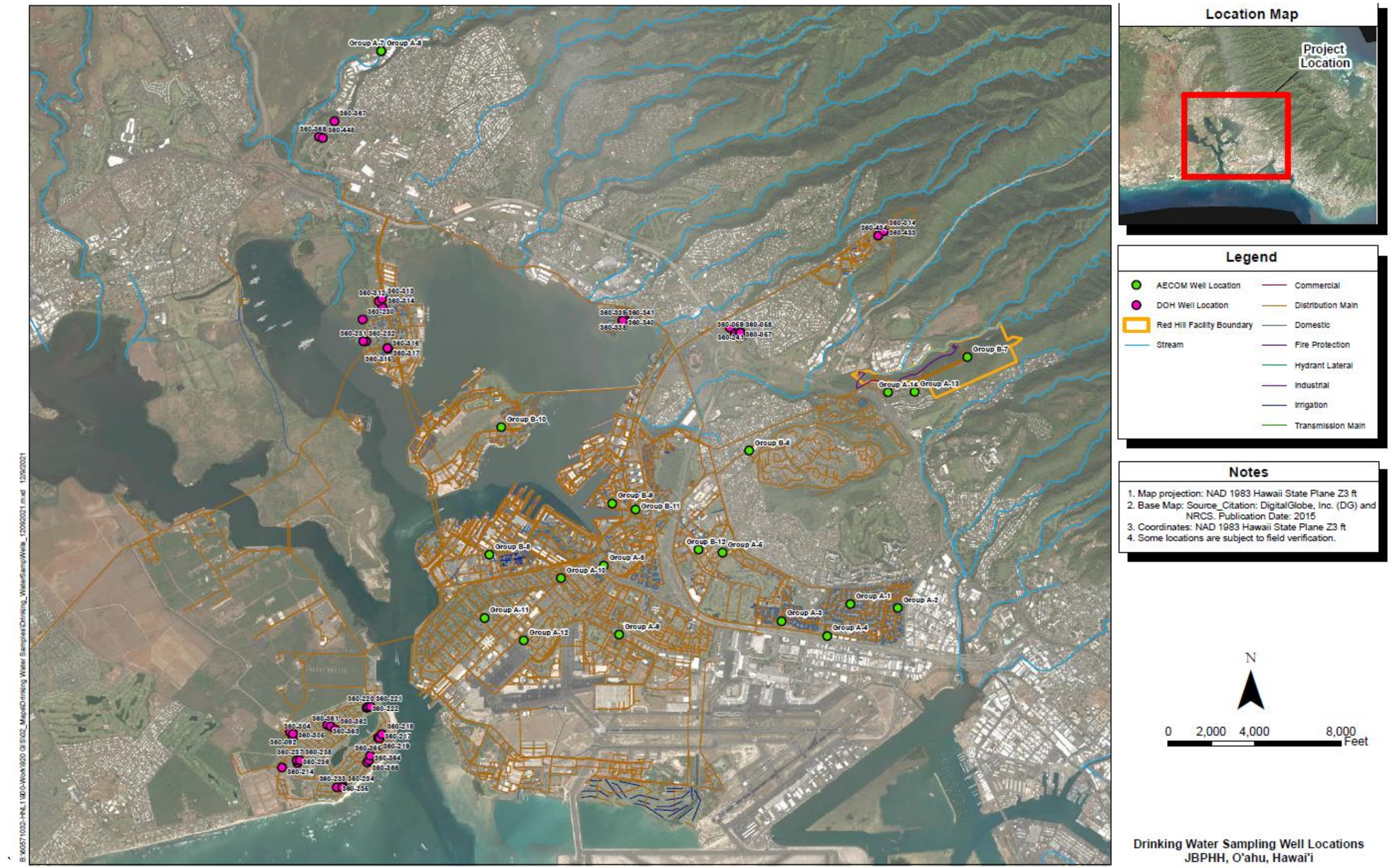
For scheduling purposes, Day 1 is assumed to be December 2, 2021; the start date can be adjusted as appropriate. The proposed project schedule is presented in Appendix A.

For scheduling purposes, Day 1 is assumed to be December 2, 2021; the start date can be adjusted as appropriate. The proposed project schedule is presented in Appendix B.

Table 1: Sample Locations by Grouping, Navy Sampling Points

Location	Coordinates	Testing Method
Group A Recurring:		
1. Halsey Terrace	21°20'28.89"N, 157°54'31.36"W	
2. Radford Terrace	21°20'27.09"N, 157°54'8.20"W	
3. Catlin Park	21°20'21.03"N, 157°55'5.03"W	
4. Doris Miller Park	21°20'14.16"N, 157°54'42.65"W	
5. Moanalua Terrace	21°20'52.75"N, 157°55'33.93"W	
6. Hale Moku / Hokulani	21°20'46.73"N, 157°56'31.99"W	
7. Waiawa PS Pre-Chlorination	Not Applicable	
8. Waiawa PS Post-Chlorination	Not Applicable	
9. Earhart (Hickam Community)	21°20'14.86"N, 157°56'24.42"W	
10. Hale Nakoa (Hickam Community)	21°20'40.93"N, 157°56'52.88"W	
11. Officer Field (Hickam Community)	21°20'22.53"N, 157°57'30.25"W	
12. Onizuka (Hickam Community)	21°20'12.25"N, 157°57'11.08"W	
13. Red Hill Elementary (Cafeteria)	21°22'6.78"N, 157°53'59.86"W	
14. Red Hill Elementary (Girl’s Restroom at Cafeteria Building)	21°22'6.78"N, 157°53'59.86"W	
Group B Recurring:		
1. Aliamanu MR	21°21'40.39"N, 157°55'1.99"W	
2. Red Hill Housing	21°22'8.64"N, 157°54'17.85"W	
3. Halawa PS Pre-Chlorination	Not Applicable	
4. Halawa PS Post-Chlorination	Not Applicable	
5. Red Hill PS Pre-Chlorination/Aquifer	Not Applicable	
6. S1/S2 Tank	21°21'39.73"N, 157°55'20.83"W	

Location	Coordinates	Testing Method
7. Red Hill HSG Storage Tank	21°22'23.31"N, 157°53'33.86"W	
8. Shipyard Clinic	21°20'51.73"N, 157°57'28.02"W	
9. SUBASE Lockwood Hall	21°21'15.34"N, 157°56'27.85"W	
10. Ford Island CDC	21°21'50.59"N, 157°57'22.05"W	
11. Makalapa Clinic	21°21'12.02"N, 157°56'15.96"W	
12. NEX Commissary	21°20'54.10"N, 157°55'45.62"W	
13. Pearl City – PCP Mini NEX	To be updated	
14. Iroquois Point Pre-School	To be updated	
15. Manana - Birch Circle	To be updated	
16. McGrew Point Community Center	To be updated	
17. TBD Phased Flushing Targeted Locations	To be updated	
Group C Recurring:		
1. AMR	To be updated	
2. Red Hill	To be updated	
3. Additional Sites	To be updated	
Standalone Sample:		
Waiawa Water Shaft		
Halawa Water Shaft		
Red Hill Water Shaft		



Location Map

Legend

- AECOM Well Location
- DOH Well Location
- Red Hill Facility Boundary
- Stream
- Commercial
- Distribution Main
- Domestic
- Fire Protection
- Hydrant Lateral
- Industrial
- Irrigation
- Transmission Main

Notes

1. Map projection: NAD 1983 Hawaii State Plane Z3 ft
2. Base Map: Source_Citation: DigitalGlobe, Inc. (DG) and NRCS. Publication Date: 2015
3. Coordinates: NAD 1983 Hawaii State Plane Z3 ft
4. Some locations are subject to field verification.

N

0 2,000 4,000 8,000 Feet

Drinking Water Sampling Well Locations
JBPHH, O'ahu, Hawai'i

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Figure 1: Sampling Location Map

3.0 Sample Control Procedures

Prior to sampling, the field team will inspect all supplies and consumables to ensure that they are acceptable for use. Table 2 and Table 3 lists, for each analyte group for Tier I and Tier II sampling respectively, the sample containers, preservatives, and applicable hold times as required by SW-846 and applicable state and federal drinking water methods. The analytical laboratories selected for the site characterization will provide the required sample containers. Chain-of-custody (COC) documentation will be maintained for samples during all phases of sample collection, transport, and receipt and internal transfer within the laboratory.

Table 2: Sample Containers, Preservatives, and Holding Times – Tier I System Flushing Sampling

Parameter	Analytical Method	Container	Preservative	Holding Time
Analytical Methods				
Benzene Ethylbenzene Toluene Xylenes	524.2	3 x 40 mL Glass VOA	0.5 mL HCl (Unchlorinated); 25 mg Ascorbic / 3 drops HCl (Chlorinated)	14 days
Naphthalene 1-Methylnaphthalene 2-Methylnaphthalene Phenol 2-(2-methoxyethoxy) ethanol	525.2	2 x 1 L Amber Glass	2 mL HCl (unchlorinated); 45 mg Sodium Sulfite / 2 mL HCl (chlorinated)	14 days
TPH-Gasoline (C6–C10)	8260C	3 x 40 mL VOA	100 µl HCl	14 days
TPH-Diesel/Oil	8015	2 x 250 mL Amber Glass	0.5 mL HCl	7 days
Lead	200.8	250 mL Poly	Nitric acid, pH <2	6 months

Note:
All samples will be chilled to < 6°C.
This list may be modified/adjusted based on the results of the Shaft Samples.

Table 3: Sample Containers, Preservatives, and Holding Times- Tier II Compliance Sampling

Parameter	Analytical Method	Container	Preservative	Holding Time
Hawaii Department of Health Safe Drinking Water Branch Compliance Methods				
Volatile Organic Chemicals	524.2	3 x 40 mL Glass VOA	0.5 mL HCl (Unchlorinated); 25 mg Ascorbic / 3 drops HCl (Chlorinated)	14 days
EDB and DBCP	524.3	3 x 40 ml Amber Glass VOA	25 mg Ascorbic / 25 mg Maleic	14 days
1,2,3-Trichloropropane (TCP)	524.2M	3 x 40 mL VOA	25 mg Ascorbic	14 days
Synthetic Organic Chemicals	525.2	2 x 1 L Amber Glass	2 mL HCl (unchlorinated); 45 mg Sodium Sulfite / 2 mL HCl (chlorinated)	14 days
Metals/Mercury	200.8/245.1	250 mL Poly	1 mL HNO_3, pH<2	6 months /28 days

Note:
All samples will be chilled to < 6°C.
This list may be modified/adjusted based on the results of the Shaft Samples.

4.0 Laboratory Analytical Methods

Analytical activities will be separated into two phases 1) system flushing assessment phase and 2) drinking water compliance phase.

1) System flushing will be performed in a phased approach moving from west to east across JBPHH progressing through the primary impacted areas. Analytical samples will be collected during the system flushing to assess progress towards clearing the system of residual JP-5. These samples will be analyzed for a JP-5-focused analyte list via SW-846 analytical methods for rapid assessment of the how the flush program is progressing. In general, an impacted area will move to the compliance phase after a minimum of three volumes[3] of water has been flushed through the specific impacted area.

[3] The flushing volume may be adjusted up or down based on site-specific information. For example, potentially impacted areas located more westerly in the system will generally require less flushing than potentially impacted areas located in the eastern area of the system.

2) During the compliance portion of the assessment (i.e., following System flushing and purification/decontamination of system piping and appurtenances), drinking water samples will be analyzed by United States Environmental Protection Agency (EPA) drinking water compliance methods and will include SW-846 methods for total petroleum hydrocarbons (TPH).
3) Will need to identify the different flushing requirements between plumbing materials, residential/office/industrial systems and equipment. May need to expand to include estimated times.

Table 4 and Table 5 present the analytical methods and associated analytes, reporting limits (RLs), and method detection limits (MDLs) along with regulatory standards, including the Federal and State of Hawaii Maximum Contaminant Levels (MCLs) and the State of Hawaii Environmental Action Levels (EALs), for drinking water and SW-846 analytical methods, respectively.

Weck Laboratories Inc. (Weck) is the primary laboratory providing analytical services for this drinking water effort. Weck is certified by the State of Hawai‘i to analyze drinking water samples for EPA Methods 524.2, 525.2, 200.8 and 245.1. While Weck does not hold drinking water certification in Hawai‘i for Method 524.2M, they are accredited for this method in the State of California (CA). Weck is a Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP) accredited laboratory, however they are not accredited for TPH-g by 8260 and TPH-d/o by 8015 by this program. The laboratory maintains CA ELAP accreditation for those methods. The laboratory address is:

Weck Laboratories Inc.
14895 Clark Ave.
Industry, CA 91745
POC - Agustin Pierri, Technical Director 626.336.2139x128

All analytical required supplies, sample containers and preservatives and shipping supplies shall be provided by the analytical laboratory.

Table 4: Summary of Drinking Water Analytical Methods, Analytes, Action Levels, and Detection Limits

Analytical Method	Analyte	CAS_RN	DOH SDWB / EPA MCL (µg/L)	DOH EAL (µg/L)	Project Screening Level (µg/L)	Weck RL (TBD) (µg/L)	Weck MDL (TBD) (µg/L)
524.2	Benzene	71-43-2	5/5	5	5	TBD	TBD
524.2	Ethylbenzene	100-41-4	700/700	7.3	7.3	TBD	TBD
524.2	Toluene	108-88-3	1000/1000	9.8	9.8	TBD	TBD
524.2	m,p-Xylenes	1330-20-7	10000/10000	13	13	TBD	TBD
524.2	o-Xylenes	95-47-6	10000/10000	13	13	TBD	TBD
525.2	1-Methylnaphthaele	90-12-0	—	10	10	TBD	TBD
525.2	2-Methylnaphthaele	91-57-6	—	10	10	TBD	TBD

Analytical Method	Analyte	CAS_RN	DOH SDWB / EPA MCL (µg/L)	DOH EAL (µg/L)	Project Screening Level (µg/L)	Weck RL (TBD) (µg/L)	Weck MDL (TBD) (µg/L)
525.2	Naphthalene	91-20-3	—	17	17	TBD	TBD
200.8	Lead	7439-92-1	15	5.6	5.6	TBD	TBD
TBD	2-(2-methoxyethoxy) ethanol	111-77-3	80[a]	—	80	TBD	TBD
8260	TPH-Gasoline	Gas	—	300	300	TBD	TBD
8015	TPH-Diesel	Diesel	—	400	400	TBD	TBD
8015	TPH-Oil	Oil	—	500	500	TBD	TBD

Notes:

[a.] 2-(2-methoxyethoxy) ethanol does not have an MCL or EAL, the value provided is the USEPA Regional Screening Level

MCLs: DOH Safe Drinking Water Branch (SDWB) regulatory constituents

DOH EALs: Table D-1a (Drinking Water, Surface Water <150 meters) (DOH 2017)

This list may be modified/adjusted based on the results of the Shaft Samples.

Table 5: Summary Drinking Water Analytical Methods, Analytes, Action Levels, and Detection Limits

Analytical Method	Analyte	CAS_RN	DOH SDWB / EPA MCL (µg/L)	DOH EAL (µg/L)	Project Screening Level (µg/L)	Weck MDL (TBD)	Weck RL (TBD)
More information to be provided when it becomes available.							
524.3	Dibromochloropropane (DBCP)	96-12-8	0.2/0.2	0.04	0.04	TBD	TBD
524.3	Ethylene dibromide (EDB)	106-93-4	0.05/NA	0.04	0.04	0.0029	0.02
524M	1,2,3-Trichloropropane (TCP)	96-18-4	0.6/NA	0.6	0.6	0.0012	0.005
524.2	1,1,1-Trichloroethane	71-55-6	200/200	11	11	0.26	0.5
524.2	1,1,2-Trichloroethane	79-00-5	5/3	5	5	0.19	0.5
524.2	1,1-Dichloroethylene	75-35-4	7/7	7	7	0.27	0.5
524.2	1,2,4-Trichlorobenzene	120-82-1	70/70	70	70	0.17	0.5
524.2	1,2-Dichlorobenzene	95-50-1	600/600	10	10	TBD	TBD
524.2	1,2-Dichloroethane	107-06-2	5/5	5	5	0.24	0.5
524.2	1,2-Dichloropropane	78-87-5	5/5	5	5	0.13	0.5
524.2	1,4-Dichlorobenzene	106-46-7	75/NA	5	5	TBD	TBD
524.2	Benzene	71-43-2	5/5	5	5	0.15	0.5
524.2	Carbon tetrachloride	56-23-5	5/5	5	5	0.27	0.5
524.2	Chlorobenzene	108-90-7	100/100	25	25	0.15	0.5
524.2	cis-Dichloroethylene	156-59-2	70/70	70	70	0.25	0.5
524.2	Dichloromethane	75-09-2	5/5	5	5	0.3	0.5
524.2	Ethylbenzene	100-41-4	700/700	7.3	7.3	0.21	0.5
524.2	Styrene	100-42-5	100/100	10	10	0.19	0.5
524.2	Tetrachloroethylene	127-18-4	5/5	5	5	0.18	0.5
524.2	Toluene	108-88-3	1000/1000	9.8	9.8	0.29	0.5
524.2	trans-Dichloroethylene	156-60-5	100/100	100	100	0.26	0.5
524.2	Trichloroethylene	79-01-6	5/5	5	5	0.18	0.5
524.2	Vinyl chloride	75-01-4	2/2	2	2	0.18	0.5
524.2	m,p-Xylenes	1330-20-7	10000/10000	13	13	0.33	0.52
524.2	o-Xylenes	95-47-6	10000/10000	13	13	0.2	0.52
525.2	Alachlor	15972-60-8	2/2	—	2	TBD	TBD
525.2	Atrazine	1912-24-9	3/3	3	3	TBD	TBD
525.2	Benzo[a]pyrene	50-32-8	0.2/0.2	0.06	0.06	TBD	TBD
525.2	Chlordane	12789-03-6	2/2	0.004	0.004	TBD	TBD
525.2	Di(2-ethylhexyl)adipate	103-23-1	400/400	—	400	TBD	TBD
525.2	Di(2-ethylhexyl)phthalate	117-81-7	6/6	3	3	TBD	TBD
525.2	Endrin	72-20-8	2/2	0.0023	0.0023	TBD	TBD
525.2	Heptachlor	76-44-8	0.4/0.4	0.0036	0.0036	TBD	TBD

Analytical Method	Analyte	CAS_RN	DOH SDWB / EPA MCL (µg/L)	DOH EAL (µg/L)	Project Screening Level (µg/L)	Weck MDL (TBD)	Weck RL (TBD)
More information to be provided when it becomes available.							
525.2	Heptachlor Epoxide	1024-57-3	0.2/0.2	0.0036	0.0036	TBD	TBD
525.2	Hexachlorobenzene	118-74-1	1/1	0.0003	0.0003	TBD	TBD
525.2	Hexachlorocyclopentadiene	77-47-4	50/50	—	50	TBD	TBD
525.2	Lindane	58-89-9	0.2/0.2	0.063	0.063	TBD	TBD
525.2	Methoxychlor	72-43-5	40/40	0.03	0.03	TBD	TBD
525.2	PCBs (as Aroclors)	1336-36-3	0.5/0.5	—	0.5	TBD	TBD
525.2	Pentachlorophenol	87-86-5	1/1	1	1	TBD	TBD
525.2	Simazine	122-34-9	4/4	4	4	TBD	TBD
200.8	Antimony	7440-36-0	6	6	6	0.09	0.5
200.8	Arsenic	7440-38-2	10	10	10	0.07	0.4
200.8	Barium	7440-39-3	2000	220	220	0.14	1
200.8	Beryllium	7440-41-7	4	0.66	0.66	0.06	0.1
200.8	Cadmium	7440-43-9	5	3	3	0.04	0.2
200.8	Chromium	7440-47-3	100	11	11	TBD	TBD
200.8	Copper	7440-50-8	1300	2.9	2.9	0.23	0.5
200.8	Lead	7439-92-1	15	5.6	5.6	0.8	0.2
245.1	Mercury	7487-94-7	2	0.025	0.025Met	TBD	TBD
200.8	Selenium	7782-49-2	50	5	5	0.07	0.4
200.8	Thallium	7440-28-0	2	2	2	0.02	0.2

Notes:
This list may be modified/adjusted based on the results of the Shaft Samples.

Table 6: Summary SW-846: 8260 Analytical Methods, Analytes, Action Levels, and Detection Limits

Analytical Method	Analyte	CAS_RN	DOH SDWB / EPA MCL (µg/L)	DOH EAL (µg/L)	Project Screening Level (µg/L)	Limit of Detection (µg/L)	Limit of Quantification (µg/L)
8260	Acetone	67-64-1					
8260	Benzene	71-43-2					
8260	Bromodichloromethane	75-27-4					
8260	Bromoform	75-25-2					
8260	Bromomethane	74-83-9					

8260	Carbon Disulfide	75-15-0					
8260	Carbon Tetrachloride	56-23-5					
8260	Chlorobenzene	108-90-7					
8260	Chloroform	67-66-3					
8260	Chloromethane	74-87-3					
8260	Dibromochloromethane	124-48-1					
8260	Dichloroethane, 1,1-	75-34-3					
8260	Dichloroethane, 1,2-	107-06-2					
8260	Dichloroethene, 1,1-	75-35-4					
8260	Dichloroethylene, 1,2- (Mixed Isomers)	540-59-0					
8260	Dichloromethane	75-09-2					
8260	Dichloropropane, 1,2-	78-87-5					
8260	Dichloropropene, Cis-1,3-	10061-01-5					
8260	Dichloropropene, Trans-1,3-	10061-02-6					
8260	Ethyl Benzene	100-41-4					
8260	Ethyl Chloride	75-00-3					
8260	Hexanone, 2-	591-78-6					
8260	Methyl Ethyl Ketone	78-93-3					
8260	Methyl Isobutyl Ketone	108-10-1					
8260	Styrene	100-42-5					
8260	Tetrachloroethane, 1,1,2,2-	79-34-5					
8260	Tetrachloroethylene	127-18-4					
8260	Toluene	108-88-3					
8260	Trichloroethane, 1,1,1-	71-55-6					
8260	Trichloroethane, 1,1,2-	79-00-5					
8260	Trichloroethylene	79-01-6					
8260	Vinyl Chloride	75-01-4					
8260	Xylenes	1330-20-7					

Notes:
This list may be modified/adjusted based on the results of the Shaft Samples.

Table 7: Summary SW-846: 8270 Analytical Methods, Analytes, Action Levels, and Detection Limits

Analytical Method	Analyte	CAS_RN	DOH SDWB / EPA MCL (µg/L)	DOH EAL (µg/L)	Project Screening Level (µg/L)	Limit of Detection (µg/L)	Limit of Quantification (µg/L)
8270	Acenaphthene	83-32-9					
8270	Acenaphthylene	208-96-8					
8270	Anthracene	120-12-7					
8270	Benzo(a)anthracene	56-55-3					
8270	Benzo(a)pyrene	50-32-8					
8270	Benzo(b)fluoranthene	205-99-2					
8270	Benzo(g,h,i)perylene	191-24-2					
8270	Benzo(k)fluoranthene	207-08-9					
8270	Bis(2-Chloroethoxy)methane	111-91-1					
8270	Bis(2-ethylhexyl)Phthalate (DEHP)	117-81-7					
8270	Bis(Chloroethyl)ether	111-44-4					
8270	Bromodiphenyl ether, 4-	101-55-3					
8270	Butyl Benzyl Phthalate, N-	85-68-7					
8270	Carbazole	86-74-8					
8270	Chloro-3-methylphenol, 4-	59-50-7					
8270	Chloroaniline, 4-	106-47-8					
8270	Chloronaphthalene, 2-	91-58-7					
8270	Chlorophenol, 2-	95-57-8					
8270	Chlorophenyl-phenyl ether, 4-	7005-72-3					
8270	Chrysene	218-01-9					
8270	Dibenz(a,h)anthracene	53-70-3					
8270	Dibenzofuran	132-64-9					
8270	Dibutyl Phthalate	84-74-2					
8270	Dichlorobenzene, 1,2-	95-50-1					
8270	Dichlorobenzene, 1,3-	541-73-1					
8270	Dichlorobenzene, 1,4-	106-46-7					
8270	Dichlorobenzidine, 3,3'	91-94-1					

8270	Dichlorophenol, 2,4-	120-83-2					
8270	Diethyl Phthalate	84-66-2					
8270	Dimethyl Phthalate	131-11-3					
8270	Dimethylphenol, 2,4-	105-67-9					
8270	Dinitro-o-Cresol, 4,6-	534-52-1					
8270	Dinitrophenol, 2,4-	51-28-5					
8270	Dinitrotoluene, 2,4-	121-14-2					
8270	Dinitrotoluene, 2,6-	606-20-2					
8270	Di-n-Octylphthalate	117-84-0					
8270	Fluoranthene	206-44-0					
8270	Fluorene	86-73-7					
8270	Hexachlorobenzene	118-74-1					
8270	Hexachlorobutadiene	87-68-3					
8270	Hexachlorocyclopentadiene	77-47-4					
8270	Hexachloroethane	67-72-1					
8270	Indeno(1,2,3-cd)pyrene	193-39-5					
8270	Isophorone	78-59-1					
8270	Methylphenol, 2-	95-48-7					
8270	Methylphenol, 4-	106-44-5					
8270	Naphthalene	91-20-3					
8270	Nitroaniline, 2-	88-74-4					
8270	Nitroaniline, 3-	99-09-2					
8270	Nitroaniline, 4-	100-01-6					
8270	Nitrobenzene	98-95-3					
8270	Nitrophenol, 4-	100-02-7					
8270	Nitrosodi-N-propylamine, N-	621-64-7					
8270	Nitrosodiphenylamine, N-	86-30-6					
8270	Pentachlorophenol	87-86-5					
8270	Phenanthrene	85-01-8					
8270	Phenol	108-95-2					
8270	Pyrene	129-00-0					
8270	Trichlorobenzene, 1,2,4-	120-82-1					

8270	Trichlorophenol, 2,4,5-	95-95-4					
8270	Trichlorophenol, 2,4,6-	88-06-2					

Notes:
This list may be modified/adjusted based on the results of the Shaft Samples.

5.0 Field Sampling Standard Operating Procedures

These sampling activities shall be conducted in accordance with standard operating procedures (SOPs) presented in Appendix C.

6.0 Data Quality

Field quality control (QC) samples will be collected during each sampling event to include field duplicates, field reagent blanks, and trip blanks. Field duplicates will be collected at a frequency of 10 percent the number of the normal samples and field reagent blanks, and trip blanks will be collected for daily for each sampling event in accordance to the procedures described in NAVFAC Pacific Environmental Restoration Program Project Procedure III-B, *Field QC Samples* (Water, Soil) (DON 2015) and as specified in the respective Drinking Water methods.

The analytical laboratory will report non-detected results to the method reporting limit and detections down to the method detection limit.

Level 4 data validation packages will be provided by the laboratory for all samples that are collected. Ten (10%) of the Drinking Water Compliance samples will undergo Level 4 data validation by an independent validated (i.e., the validator will be independent of the laboratory who performed the analyses). This percentage of samples requiring Level 4 validation may be increased if depending on the number, type, and severity of corrective actions that are identified by the data validator.

7.0 References

Department of Health, State of Hawaii (DOH). 2017. *Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater, Hawai‘i Edition*. Hazard Evaluation and Emergency Response. Revised 2017. Fall.

Department of the Navy (DON). 2015. *Final Project Procedures Manual, U.S. Navy Environmental Restoration Program, NAVFAC Pacific*. JBPHH HI: Naval Facilities Engineering Command, Pacific. May.

Appendix A - Sampling Locations

Sampling Locations

NAVFAC HI SITE NO.	STATE ID NO.	SDWIS Sample Pt ID	Address, location	Area	SAMPLE DATES	DAY OF THE WEEK
A200	360-336	TC336	1191 Honu Loop	McGrew Point	12/09/21	Thursday
A200D	360-338	TC338	1207 Honu Loop	McGrew Point	12/09/21	Thursday
A200U	360-337	TC337	1177 Honu Loop	McGrew Point	12/09/21	Thursday
A201	360-339	TC339	657 McGrew Loop	McGrew Point	12/09/21	Thursday
A201D	360-341	TC341	679 McGrew Loop	McGrew Point	12/09/21	Thursday
A201U	360-340	TC340	635 McGrew Loop	McGrew Point	12/09/21	Thursday
A101	360-304	TC304	6181 Ibis Ave	Iroquois Point	12/10/21	Friday
A101D	360-305	TC305	5019 Iroquois Pt	Iroquois Point	12/10/21	Friday
A104	360-361	TC361	6666B 106th Street	Iroquois Point	12/10/21	Friday
A104D	360-363	TC363	6660B 106th Street	Iroquois Point	12/10/21	Friday
A104U	360-362	TC362	6674 106th Street	Iroquois Point	12/10/21	Friday
A107D	360-235	TC235	5534 Bittern Avenue	Iroquois Point	12/10/21	Friday
A109	360-364	TC364	5673 Dovekie Avenue	Iroquois Point	12/10/21	Friday
A109D	360-366	TC366	5669A Dovekie Avenue	Iroquois Point	12/10/21	Friday
A109U	360-365	TC365	5682 Dovekie Avenue	Iroquois Point	12/10/21	Friday
A101U	360-092	TC092	5012A Iroquois Ave	Iroquois Point	12/13/21	Monday
A102	360-217	TC217	5861 Fulmar Avenue	Iroquois Point	12/13/21	Monday
A102D	360-219	TC219	5856B Fulmar Avenue	Iroquois Point	12/13/21	Monday
A102U	360-218	TC218	5869 Fulmar Avenue	Iroquois Point	12/13/21	Monday
A103	360-220	TC220	6176 Heron Avenue	Iroquois Point	12/13/21	Monday
A103D	360-222	TC222	6168 Heron Avenue	Iroquois Point	12/13/21	Monday
A103U	360-221	TC221	6365 Ibis Avenue	Iroquois Point	12/13/21	Monday
A107	360-233	TC233	5537 Bittern Avenue	Iroquois Point	12/13/21	Monday
A107U	360-234	TC234	5548 Bittern Avenue	Iroquois Point	12/13/21	Monday
A100	360-171	TC171	Bldg. 300, Block-A, BEQ	Puuloa	12/14/21	Tuesday
A100D	360-215	TC215	Bldg 303, BEQ	Puuloa	12/14/21	Tuesday
A100U	360-214	TC214	4755D East Ekahi Way	Puuloa	12/14/21	Tuesday
A108	360-236	TC236	4973B Kela Place	Puuloa	12/14/21	Tuesday
A108D	360-238	TC238	4976D Kela Place	Puuloa	12/14/21	Tuesday
A108U	360-237	TC237	4974D Kela Place	Puuloa	12/14/21	Tuesday
A150	360-368	TC368	7377 Birch Circle	Manana	12/15/21	Wednesday
A150D	360-367	TC367	7370 Birch Circle	Manana	12/15/21	Wednesday
A150U	360-448	TC448	7384 Birch Circle Bldg	Manana	12/15/21	Wednesday
A352D	360-449	TC449	444 Kuahua Avenue	Manana	12/15/21	Wednesday
A400U	360-450	TC450	Building 1338 Fitness Center	Manana	12/15/21	Wednesday
A154	360-230	TC230	1402 Laniwai Avenue	Pearl City	12/16/21	Thursday
A154D	360-232	TC232	1619 Aloha Avenue	Pearl City	12/16/21	Thursday
A154U	360-231	TC231	1406 Laniwai Avenue	Pearl City	12/16/21	Thursday
A155	360-312	TC312	1824 Palm Avenue	Pearl City	12/16/21	Thursday
A155D	360-314	TC314	1813 Palm Avenue	Pearl City	12/16/21	Thursday
A155U	360-313	TC313	1838 Palm Avenue	Pearl City	12/16/21	Thursday

A156	360-315	TC315	128 Ley Court	Pearl City	12/16/21	Thursday
A156D	360-317	TC317	134 Ley Court	Pearl City	12/16/21	Thursday
A156U	360-316	TC316	148 Ley Court	Pearl City	12/16/21	Thursday
A202	360-240	TC240	2891D Makuu Loop	Halawa Hsg	12/17/21	Friday
A202D	360-242	TC242	2899C Makuu Loop	Halawa Hsg	12/17/21	Friday
A202U	360-241	TC241	2879A Hapue Loop	Halawa Hsg	12/17/21	Friday
A203	360-057	TC057	2856A Kokio Loop	Halawa Hsg	12/17/21	Friday
A203D	360-059	TC059	2862A Kokio Loop	Halawa Hsg	12/17/21	Friday
A203U	360-058	TC058	2850A Kokio Loop	Halawa Hsg	12/17/21	Friday
A304	360-433	TC433	2165 Baugh Road	Camp Smith	12/18/21	Monday
A304D	360-434	TC434	739 Anderson Road	Camp Smith	12/18/21	Monday
A304U	360-014	TC014	2173 Baugh Road	Camp Smith	12/18/21	Monday
A305	360-252	TC252	Bldg 1B	Camp Smith	12/18/21	Monday
A305D	360-374	TC374	Bldg 612, Fire Station	Camp Smith	12/18/21	Monday
A305U	360-373	TC373	Bldg 4	Camp Smith	12/18/21	Monday
A306	360-254	TC254	Bldg 20	Camp Smith	12/18/21	Monday
A306D	360-255	TC255	Across Bldg 2C	Camp Smith	12/18/21	Monday
A306U	360-011	TC011	Bldg. 601 (PMO) Elrod Road	Camp Smith	12/18/21	Monday

Appendix B – Project Schedule

12/9/2021
Team 1
6181 Ibis Ave
5019 Iroquois Point
6666B 106th Street
6660B 106th Street
5424 Edgewater Drive

Team 2
6674 106th Street
5534 Bittern Avenue
5673 Dovekie Avenue
4908 Mokupea Place Apt. B

Team 3
Aiea Halawa Shaft
Storage Tank #1
Storage Tank #2

Team 4
Halawa Correctional Facility

12/10/2021
Team 1
5682 Dovekie Avenue
5012A Iroquois Avenue
5861 Fulmar Avenue
5869 Fulmar Avenue
4976 Kela Place Apt B

Team 2
7273 Elm Place
3763 Elm Drive
5321 Cedar Drive
7257 Birch Circle
7236 Birch Circle

12/11/2021
Team 1
6176 Heron Avenue
6168 Heron Avenue
6365 Ibis Avenue
5537 Bittern Avenue
5548 Bittern Avenue

Team 2
4906 Wasp Boulevard
4682 Oklahoma Avenue
2031 Fox Boulevard
4623 Scott Loop
732 Sibley Street
767 Sibley Street

12/12/2021
Team 1
Bldg. 300, Block-A, BEQ
4755D East Ekahi Way
4973B Kela Place
4975D Kela Place
4974D Kela Place

Team 2
7377 Birch Circle
7370 Birch Circle
7384 Birch Circle
444 Kuahau Avenue
Bldg. 1338 Fitness Center

Appendix C - Standard Operating Procedures

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1.0 TITLE: SOP 016 – Sampling Drinking Water for Volatile Organic Compounds (VOCs) and Total Trihalomethanes (TTHMs)

2.0 REFERENCE MATERIALS:

2.1 "DoD Environmental Field Sampling Handbook." Revision 1.0. April 2013.

2.2 40 CFR 141, National Primary Drinking Water Regulations

2.3 U.S. EPA. 2016. "Quick Guide to Drinking Water Sample Collection," 2nd Edition, Update. Golden, CO.

2.4 U.S. EPA. 1995. "Method 524.2: Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry." Revision 4.1. Cincinnati, OH.

3.0 SCOPE:

This procedure describes the sampling procedure for the analysis of drinking water by EPA Method 524.2, revision 4.1, for volatile organic compounds (VOCs) and total trihalomethanes (TTHMs). If other analytical methods are to be used by a laboratory, sampling requirements such as bottle type, preservation, and hold time must be verified with the laboratory. This procedure is written to the most stringent sampling requirements as a precaution.

4.0 PRESERVATION AND HOLDING TIME:

Samples must be collected in three 40 mL amber volatile organic analysis (VOA) glass vials with Teflon®-coated septum-caps. Vials received from the laboratory must contain ascorbic acid to dechlorinate the sample. DO NOT rinse the bottles prior to sample collection. A small bottle or vial containing hydrochloric acid (HCl) must accompany the sample bottle to the field so the pH can be adjusted to < 2 immediately following collection of the sample and dissolution of the ascorbic acid. Collected samples must contain no headspace prior to shipping. Samples must be protected from light and chilled to 4 °C prior to shipping. If properly preserved, the sample holding time is 14 days from the time of sampling to analysis.

5.0 SHIPPING:

Samples must be chilled during shipment to maintain a temperature of 4 °C during transit. Ensure the chain of custody is properly filled out, sealed in a sealable bag, and taped to the inside of the cooler with the samples. Coolers should be lined generously with packing materials. All sample bottles should have an affixed label and wrapped in bubble wrap for shipping. After samples are placed in the cooler, pack all remaining space inside the cooler with ice to maintain temperature. Prior to sampling, coordinate with the laboratory to verify hours of operations to ensure compliance with holding times once shipped. DO NOT sample if the laboratory is unable to receive sample shipment. Notify the laboratory to confirm shipment. For internal use, maintain tracking numbers to verify shipment arrival and compliance with the holding time. Samples should not be frozen at any point during sampling, shipment, and storage at the laboratory.

6.0 EQUIPMENT AND SUPPLIES:

6.1 Sample vials – three 40 mL amber VOA glass vials with Teflon®-coated septum-caps, containing ascorbic acid with an affixed label

6.2 Small bottles/vials containing 1:1 HCl

NOTE: HCl is an acid and should be handled with extreme care and using personal protective equipment. Consult the MSDS for additional handling information.

6.3 Indelible Ink Pen

6.4 Disposable Pipets

6.5 Field Logbook

6.6 Clipboard

6.7 Gloves

6.8 Safety Glasses

6.9 Chain of Custody

6.10 Chain of Custody Seals

6.11 Bubble Wrap

6.12 Packing Tape

6.13 Cooler

6.14 Frozen Ice Packs, frozen for two days prior to use

6.15 Paper Towels

6.16 Sealable Bags – i.e., Ziploc®

7.0 PROCEDURE:

7.1 Prior to the Day of Sampling:

7.1.1 At least two days prior to sample collection, place the ice packs in the freezer.

7.1.2 Ensure that all items in Section 6.0 have been obtained and are ready for transport into the field. Verify the number of vials available is equal to the number of samples to be collected x3, plus six additional vials for quality control samples. Additionally, extra sample vials should be included to account for sampling errors that may occur in the field.

7.1.3 Confirm that the sample vials contain ascorbic acid.

7.1.4 Ensure there are equal numbers of bottles/vials of HCl for each sample bottle to be collected.

7.1.5 Verify that all sample coolers are lined generously with packing material.

7.1.6 Coordinate with the laboratory to verify hours of operation to ensure compliance with holding times once shipped. Notify the laboratory to confirm shipment.

7.1.7 Verify there is a packet of bubble wrapped triplicate blanks in the cooler in which these samples will be sent. DO NOT OPEN THIS PACKET.

7.2 Day of Sampling:

7.2.1 Sampling personnel must wear safety glasses and gloves during the sampling process.

7.2.2 Remove the faucet aerator, strainer, or hose prior to turning on the faucet for sampling. Before collecting the sample, purge the faucet using the cold water spigot for a minimum of 10 minutes to allow the temperature to stabilize.

7.2.3 Adjust the flow rate to approximately 500 mL/minute (approximately 1/8th inch diameter stream or the width of a pencil). Do not change the water flow once sample collection has begun.

7.2.4 Collection of VOC Samples:

7.2.4.1 Select the sample vials identified for "VOC" on the affixed label. These are three 40 mL amber VOA glass vials with Teflon®-coated septum-caps containing ascorbic acid. Each sample is collected in triplicate.

7.2.4.2 Do not remove the septum-cap until immediately before sampling. Remove the septum-cap avoiding contact with the rim or inside of the vial. Do not set the septum-cap, open side down, on any surface or put it in a pocket. It is best to hold the cap in a gloved hand while sampling. DO NOT RINSE THE SAMPLE VIAL PRIOR TO USE.

7.2.4.3 Hold the open end of the vial away from you and place the vial under the spigot tilted so that the sample runs down the inside of the vial. Fill the vial to the top, but with a concave meniscus, NOT CONVEX. Do not allow the vial to overflow or spill over and do not agitate. Be aware of any unusual odor or physical characteristics (e.g., particulate, color) associated with the water coming from the spigot.

7.2.4.4 Replace the septum-cap securely on the vial and gently tip the vial several times to dissolve the ascorbic acid in the sample. Ensure the ascorbic acid is completely dissolved and the sample is thoroughly mixed before continuing.

7.2.4.5 Using a disposable pipet, add two drops of 1:1 HCl to the vial. If the meniscus is not convex, add more sample to create a convex meniscus, but do not overflow the sample.

7.2.4.6 If the sample foams vigorously after adding HCl, discard that sample and collect three new samples without adding the HCl. Notate this on the chain of custody form and the affixed label.

7.2.4.7 Immediately cap the vial so that the Teflon®-coated septum-cap contacts the sample. Some samples may overflow while tightening the cap. Tip the vial gently two or three times to distribute the HCl.

7.2.4.8 Turn the vial over and tap it to check for the presence of bubbles (headspace).

7.2.4.8.1 If bubbles are present, and the total volume of the bubbles is < 5 mm in diameter (roughly the size of a pea), the sample may be submitted.

7.2.4.8.2 If the total volume of the bubbles is > 5 mm in diameter, discard the vial and repeat steps 7.2.4.1 to 7.2.4.8.

7.2.4.9 Repeat Steps 7.2.4.1 through 7.2.4.8 two more times, resulting in a total of three 40 mL vials for one sample.

7.2.4.10 Rubber band the three vials together for each location. For each set of three vials, label the vials 1 of 3, 2 of 3, and 3 of 3. This set of three vials is one sample.

7.2.5 Collection of TTHM Samples:

7.2.5.1 Select the sample vials identified for "TTHM" on the affixed label. These are three 40 mL amber VOA glass vials with Teflon®-coated septum-caps containing ascorbic acid. Each sample is collected in triplicate.

7.2.5.2 Follow steps 7.2.4.2 through 7.2.4.10 for the collection of TTHM samples.

7.2.6 Dry the exterior surface of the collected sample using a clean paper towel.

7.2.7 Fill out the vial labels with the sample ID (limited to 20 characters including dashes and spaces), sample location, sampler's initials, and date and time of collection. Record the collection date as Day/Month (three letter abbreviation)/Year (four digits) (e.g., 01 Jan 2020). Time must be recorded as coordinated universal time (UTC) ± *x* hours depending on the time zone. Record all of this information in the field logbook as well.

7.2.8 Complete the chain of custody form. It is recommended, but not required, that a chain of custody seal is affixed to the vials and caps. This is required only if

samples are sent via commercial carrier without being accompanied by a formal chain of custody form. Note any observations on the chain of custody form and field logbook such as any unusual odors or physical characteristics of the sample.

7.2.9 Wrap the sample with bubble wrap and tape. Place each sample in its own sealable bag. Immediately place the collected sample into a cooler that has been adequately lined with packing material and contains ice. Close cooler to ensure temperature stability. Keep the cooler closed at all times when samples are not being added.

Repeat Steps 7.2.4 through 7.2.9 for any additional samples or quality control samples. At a minimum, one location per sampling event will be designated as the location for an additional six samples to be collected. These are quality control samples and are taken in exactly the same manner as the other samples.

1.0 TITLE: SOP 006 – Sampling Drinking Water for Semi-volatiles

2.0 REFERENCE MATERIALS:

2.1 DoD Environmental Field Sampling Handbook

2.2 40 CFR 141, National Primary Drinking Water Regulations

2.3 U.S. EPA. 1995. "Method 525.2: Determination of Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary Column Gas Chromatography/Mass Spectrometry," Revision 2.0. Cincinnati, OH.

3.0 SCOPE:

This procedure describes the sampling procedure for the analysis of drinking water by EPA Method 525.2, Revision 2.0, for semi-volatiles. If other analytical methods are to be used by a laboratory, sampling requirements such as bottle type, preservation, and hold time must be verified with the laboratory. This procedure is written to the most stringent sampling requirements as a precaution.

4.0 PRESERVATION AND HOLDING TIME:

Samples must be collected in 1 L amber glass bottles fitted with Teflon®-lined caps. Bottles received from the laboratory must contain sodium sulfite to dechlorinate the sample. DO NOT rinse the bottles prior to sample collection. A small bottle or vial containing 5 mL of 6 N hydrochloric acid (HCl) must accompany the sample bottle to the field so the pH can be adjusted to <2 immediately following collection of the sample and dissolution of the sodium sulfite. Samples must be protected from light and chilled to 4 °C prior to shipping. If properly preserved, the sample holding time is 14 days from the time of sampling to analysis with the exception of the following analytes: carboxin, diazinon, disulfoton, disulfoton sulfoxide, fenamiphos, and terbufos. If the sample is to be analyzed for any of the analytes previously listed, the sample must be extracted immediately after collection and preservation.

If the sample is to be analyzed for cyanazine, a separate sample must be collected. Samples for cyanazine analysis must be collected in 1 L amber glass bottles fitted with Teflon®-lined caps that DO NOT contain sodium sulfite and are not preserved with HCl. The cyanazine sample must be protected from light and chilled to 4 °C prior to shipping. The sample holding time is 14 days from the time of sampling to analysis.

If the sample is to be analyzed for atraton and/or prometon, a separate sample must be collected. Samples for atraton and/or prometon analysis must be collected in 1 L amber glass bottles fitted with Teflon®-lined caps that contain sodium sulfite but are NOT preserved with HCl. The atraton and/or prometon sample must be protected from light and chilled to 4 °C prior to shipping. The sample holding time is 14 days from the time of sampling to analysis.

5.0 SHIPPING:

Samples must be chilled during shipment to maintain a temperature of 4 °C during transit. Ensure the chain of custody is properly filled out, sealed in a sealable bag, and taped to the inside of the cooler with the samples. Coolers should be lined generously with packing materials. All sample bottles should have an affixed label and wrapped in bubble wrap for shipping. After samples are placed in the cooler, pack all remaining space inside the cooler with ice to maintain temperature. Prior to sampling, coordinate with the laboratory to verify hours of operations to ensure compliance with holding times once shipped. DO NOT sample if the laboratory is unable to receive sample shipment. Notify the laboratory to confirm shipment. For internal use, maintain tracking numbers to verify shipment arrival and compliance with the holding time. Samples should not be frozen at any point during sampling, shipment, and storage at the laboratory.

6.0 EQUIPMENT AND SUPPLIES:

6.1 Samples for cyanazine analysis: 1 L amber glass bottles fitted with Teflon®-lined caps that have an affixed label and DO NOT contain sodium sulfite

6.2 Samples for all other semi-volatiles: 1 L amber glass bottles fitted with Teflon®-lined caps that contain sodium sulfite and an affixed label

6.3 Small bottles/vials containing 5 mL of 6 N hydrochloric acid (HCl)

6.4 Indelible Ink Pen

6.5 Field Logbook

6.6 Clipboard

6.7 Gloves

6.8 Safety Glasses

6.9 Chain of Custody

6.10 Chain of Custody Seals

6.11 Bubble Wrap

6.12 Packing Tape

6.13 Cooler

6.14 Frozen Ice Packs, frozen for two days prior to use

6.15 Paper Towels

6.16 Sealable Bags – i.e., Ziploc®

7.0 PROCEDURE:

7.1 Prior to the day of sampling:

7.1.1 At least two days prior to sample collection, place the ice packs in the freezer.

7.1.2 Ensure that all items in Section 6.0 have been obtained and are ready for transport into the field. Verify the number of bottles available is equal to the number of samples to be collected x2, plus four additional bottles for quality control samples. Additionally, extra sample bottles should be included to account for sampling errors that may occur in the field.

7.1.3 Confirm that the sample bottles contain sodium sulfite. If sampling for cyanazine, be sure to take samples bottles that DO NOT contain sodium sulfite.

7.1.4 Ensure there are equal numbers of bottles of HCl for each sample bottle to be collected.

7.1.5 Verify that all sample coolers are lined generously with packing material.

7.1.6 Coordinate with the laboratory to verify hours of operation to ensure compliance with holding times once shipped. Notify the laboratory to confirm shipment.

7.2 Day of sampling:

7.2.1 Sampling personnel must wear safety glasses and gloves during the sampling process.

7.2.2 Remove the faucet aerator, strainer, or hose prior to turning on the faucet for sampling. Before collecting the sample, purge the faucet using the cold water spigot for a minimum of 5 minutes to allow the temperature to stabilize.

7.2.3 Adjust the flow rate to approximately 500 mL/minute (approximately 1/8th inch diameter stream). Do not change the water flow once sample collection has begun.

7.2.4 Select the appropriate sample bottle identified by the affixed label. This is a 1 L amber glass bottle with a Teflon®-lined screw cap containing sodium sulfite (with the exception of samples collected for cyanazine, see Section 6.1).

7.2.5 Do not remove the screw cap until immediately before sampling. Remove the bottle cap avoiding contact with the rim or inside of the bottle. Do not set the cap, open side down, on any surface or put it in a pocket. It is best to hold the cap in gloved hand while sampling. DO NOT RINSE THE SAMPLE BOTTLE PRIOR TO USE.

7.2.6 Hold the open end of the bottle away from you and place the bottle under the spigot tilted so that the sample runs down the inside wall of the bottle. Fill the bottle to within one to two inches from the top (typically this is to the bottom of the bottle neck). Do not allow the bottle to overflow or spill over and do not agitate. Be aware of any odor or physical characteristics (e.g., particulate, color) associated with the water coming from the spigot.

7.2.7 Replace the screw cap securely on the bottle. If sodium sulfite is in the sample bottle, gently tip the bottle several times to dissolve the sodium sulfite in the

sample. Ensure the sodium sulfite is completely dissolved and the sample is thoroughly mixed before continuing.

7.2.8 Dry the exterior surface of the bottle using a clean paper towel.

7.2.9 Fill out the bottle labels with the sample ID (limited to 20 characters including dashes and spaces), sample location, sampler's initials, and date and time of collection. Record the collection date as Day/Month (three letter abbreviation)/Year (four digits) (e.g., 01 Jan 2020). Time must be recorded as coordinated universal time (UTC) ± *x* hours depending on the time zone. Record all of this information in the field logbook as well.

7.2.10 If the collected sample is for cyanazine, atraton, and/or prometon analysis, skip this step and move on to 7.2.11. Otherwise, remove the cap from the sample bottle and pour the entire contents of the small vial containing 5 mL of 6 N hydrochloric acid into the sample. Record the amount added in the field logbook and on the chain of custody form. Cap tightly and invert several times.

7.2.11 Complete the chain of custody form. It is recommended, but not required, that a chain of custody seal is affixed to the bottles and lids. This is required only if samples are sent via commercial carrier without being accompanied by a formal chain of custody form. Note any observations on the chain of custody form and field logbook such as any unusual odors or physical characteristics of the sample.

7.2.12 Wrap sample with bubble wrap and tape. Place each sample in its own zip lock bag. Immediately place collected sample into cooler that has been adequately lined with packing material and contains ice. Close cooler to ensure temperature stability. Keep the cooler closed at all times when samples are not being added.

7.2.13 Repeat Steps 7.2.4 through 7.2.12 for any additional samples or Quality Control samples. At a minimum, one location per sampling event will be designated as the location for an additional two samples to be collected. These

are quality control samples and are taken in exactly the same manner as the other samples.

1.0 TITLE: SOP 001 – Sampling Drinking Water for Metals and Hardness

2.0 REFERENCE MATERIALS:

2.1 "DoD Environmental Field Sampling Handbook." Revision 1.0. April 2013.

2.2 40 CFR 141, National Primary Drinking Water Regulations

2.3 U.S. EPA. 1994. "Method 200.8: Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry," Revision 5.4. Cincinnati, OH. EPA/600/R-94/111.

2.4 U.S. EPA. 1994. "Method 200.7: Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry," Revision 4.4. Cincinnati, OH

2.5 U.S. EPA. 1982. "Method 130.2: Hardness, Total (mg/L as $CaCO_3$) (Titrimetric, EDTA)," Editorial Revision. Cincinnati, OH.

3.0 SCOPE:

This SOP describes the sampling procedure for drinking water samples that will be analyzed by EPA Method 200.8, revision 5.4, for aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, iron, manganese, nickel, selenium, silver, sodium, thallium, and zinc, EPA Method 200.7 for boron, and EPA Method 130.2, editorial revision, for hardness. If other analytical methods are to be used by a laboratory, sampling requirements such as bottle type, preservation, and hold time, must be verified with the laboratory. This method is not to be used for samples that contain lead or copper. This procedure is written to the most stringent sampling requirements as a precaution.

4.0 PRESERVATION AND HOLDING TIME:

Samples must be collected in a 1 L polyethylene (PE) bottle with PE screw caps. Bottles received from the laboratory for sampling will contain nitric acid (HNO_3) to preserve the sample at a pH of < 2. DO NOT rinse the bottles prior to sample collection. If properly acid preserved, samples for metals analysis can be held up to 6 months, at room temperature, before analysis. Samples for metals analysis are not required to be chilled prior to shipping but the

laboratory may require this. Please verify with the laboratory prior to sample collection. If samples require total hardness analysis, then samples must be stored at 4 ℃ following collection.

5.0 SHIPPING:

Samples should be chilled during shipment to maintain a temperature of 1-4 ℃ during transit (omit if not required by the laboratory). Ensure the chain of custody is properly filled out, sealed in a sealable bag, and taped to the inside of the cooler with the samples. Coolers should be lined generously with packing materials. All sample bottles should have an affixed label and wrapped in bubble wrap for shipping. After samples are placed in the cooler, pack all remaining space inside the cooler with ice to maintain temperature (omit if not required by the laboratory). Prior to sampling, coordinate with the laboratory to verify hours of operations to ensure compliance with holding times once shipped. DO NOT sample if the laboratory is unable to receive sample shipment. Notify the laboratory to confirm shipment. For internal use, maintain tracking numbers to verify shipment arrival and compliance with the holding time.

6.0 EQUIPMENT AND SUPPLIES:

6.1 1 L PE bottles with PE screw caps, containing HNO_3 and an affixed label
6.2 Indelible Ink Pen
6.3 Field Logbook
6.4 Clipboard
6.5 Gloves
6.6 Safety Glasses
6.7 Chain of Custody
6.8 Chain of Custody Seals
6.9 Bubble Wrap
6.10 Packing Tape
6.11 Frozen Ice Packs, frozen for two days prior to use
6.12 Cooler
6.13 Sealable Bags – i.e., Ziploc®

6.14 Paper Towels

7.0 PROCEDURE:

7.1 Prior to the day of sampling:

7.1.1 At least two days prior to sample collection, place the ice packs in the freezer.

7.1.2 Ensure that all items in Section 6.0 have been obtained and are ready for transport into the field. Verify the number of bottles available is equal to or greater than the number of samples to be collected plus two additional bottles for quality control samples. Additionally, extra sample bottles should be included to account for sampling errors that may occur in the field.

7.1.3 Confirm that the sample bottles to be used contain preservative and the affixed labels indicate that 5 mL HNO_3 has been added to the bottle.

7.1.4 Verify that all sample coolers are lined generously with packing material.

7.1.5 Coordinate with the laboratory to verify hours of operation to ensure compliance with holding times once shipped. Notify the laboratory to confirm shipment.

7.2 Day of sampling:

7.2.1 Sampling personnel must wear safety glasses and gloves during the sampling process.

7.2.2 Remove the faucet aerator, strainer, or hose prior to turning on the faucet for sampling. Before collecting the sample, purge the faucet using the cold-water spigot for a minimum of 5 minutes to allow the temperature to stabilize.

7.2.3 Adjust the flow rate to approximately 500 mL/minute (approximately $1/8^{th}$ inch diameter stream or the width of a pencil). Do not change the water flow once sample collection has begun.

7.2.4 Select the appropriate sample bottle identified by the affixed label. This bottle is a 1 L PE bottle with a PE screw cap containing HNO_3.

NOTE: The bottle contains acid which is corrosive and can burn; therefore, when filling the bottle, hold the opening of the bottle away from you prior to and during sampling.

7.2.5 Remove the bottle cap while avoiding all contact with the rim or inside of the bottle. Do not set the cap, open side down, on any surface or put it in a pocket. It is best to hold the cap in a gloved hand while sampling. DO NOT RINSE SAMPLE BOTTLES.

7.2.6 Hold the open end of the bottle away from you and place the bottle under the spigot tilted so that the sample runs down the inside wall of the bottle. Fill the bottle to within one to two inches from the top (typically this is to the bottom of the bottle neck). Do not allow the bottle to overflow or spill over and do not agitate. Be aware of any odor or physical characteristics (e.g., particulate, color) associated with the water coming from the spigot.

7.2.7 Replace the screw cap securely on the bottle and gently tip the bottle several times to mix the preservative with the sample.

7.2.8 Dry the exterior surface of the bottle using a clean paper towel.

7.2.9 Fill out the bottle labels with the sample ID (limited to 20 characters including dashes and spaces), sample location, sampler's initials, and date and time of collection. Record the collection date as Day/Month (three letter abbreviation)/Year (four digits) (e.g., 01 Jan 2020). Time must be recorded as coordinated universal time (UTC) ± *x* hours depending on the time zone. Record all of this information in the field logbook as well.

7.2.10 Complete the chain of custody form. It is recommended, but not required, that a chain of custody seal is affixed to the bottles and lids. This is required only if samples are sent via commercial carrier without being accompanied by a formal chain of custody form. Note any observations on the chain of custody and field logbook such as any unusual odors or physical characteristics of the sample.

7.2.11 Wrap the sample with bubble wrap and tape. Place each sample in its own sealable bag. Immediately place collected sample into cooler that has been adequately lined with packing material and contains ice (omit if not required by the laboratory). Close cooler to ensure temperature stability. Keep the cooler closed at all times when samples are not being added.

7.2.12 Repeat Steps 7.2.4 through 7.2.11 for any additional samples or quality control samples. At a minimum, one location per sampling event will be designated as the location for an additional two samples to be collected. These are quality control samples and are taken in exactly the same manner as the other samples.