



# Documentation to Amend Drinking Water Health Advisory in Zone A2

Joint Base Pearl Harbor Hickam (JBPHH)  
O‘ahu, Hawai‘i

Interagency Drinking Water System Team  
Zone A2 Removal Action Report  
February 2022

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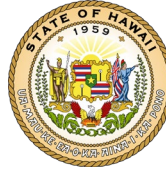
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Interagency Drinking Water System Team  
Zone A2 Removal Action Report  
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**Line of Evidence 0**

**Introduction**

# DOH Checklist to Amend the Public Health Advisory in Flushing Zone A2



## Zone A2 Checklist to Amend the Public Health Advisory initiated November 29, 2021 for Joint Base Pearl Harbor -Hickam Public Water System No. 360 HEER Incident Case No.: 20211128-1848

**Purpose:** This checklist identifies the documentation and review that the Hawaii Department of Health (DOH) conducted to **amend** the Public Health Advisory (Advisory) in each Zone under the *DOH's Guidance on the Approach to Amending the Drinking Water Health Advisory*, dated December 30, 2021. This review was conducted as an oversight role in addition to the review conducted as a part of the Interagency Drinking Water System Team (IDWST).

DOH's priority is to protect the public health and environment of the people of Hawaii. DOH will evaluate the "lines of evidence" that must be met before amending the health advisory and issuing notices that the water can be used for all purposes including drinking. The Navy must also commit to following the long-term monitoring (LTM) of system water quality for this incident under the IDWST Drinking Water Sampling Plan, as amended.

**Background:** A chemical release of petroleum, which is a hazardous substance, entered the Joint Base Pearl Harbor-Hickam (JBPHH) drinking water distribution system and the Red Hill Shaft. This release triggered an

emergency response and DOH issuance of an Advisory on November 29, 2021 for the entire JBPHH Public Water System No. 360. State and Federal Drinking Water (DW) Maximum Contaminant Levels (MCLs) under the Safe Drinking Water Act do not adequately address petroleum contamination of drinking water. DOH has established Environmental Action Levels (EALs) and Incident Specific Parameters (ISPs) to more comprehensively monitor and respond to petroleum contaminated drinking water. Any contaminants that exceed the State and Federal DW MCLs, EALs, or ISPs require additional action prior to amending the Advisory. Satisfaction of the lines of evidence will be achieved by evaluating the data generated during the investigation conducted by the IDWST. The data will be assessed for each Zone of the Drinking Water Distribution System Recovery Plan. All lines of evidence will require documentation.

**DOH Project Screening Levels:** State and Federal Drinking Water MCLs, specified State EALs, and ISPs are considered in development of Project Screening Levels. The actions for the thresholds for each contaminant are listed in *DOH's Guidance on the Approach to Amending the Drinking Water Health Advisory*.

## DOH Checklist to Amend the Public Health Advisory in Flushing Zone A2



### Objective 0 - Introduction to Lines of Evidence Under Evaluation / Document Summary

Reference	Status	Documentation
Tab 0	Complete	DOH Checklist to Amend the Drinking Water Health Advisory.
Tab 0.1	Complete	<ul style="list-style-type: none"> <li>Executive Summary Memo for Zone A2 Removal Action Report</li> <li>Signed statement by the Owner/Operator Representative of the Water System, that asserts that all lines of evidence have been met, including the following statement with a signature: "I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the submitted information is true, accurate, and complete."</li> </ul>

### Objective 1a – Line of Evidence: Reported sources of contamination are isolated and contained.

Incident Specific Criteria - Contamination from **Red Hill Shaft** is isolated from Navy's water distribution system.

Reference	Status	Documentation
Tab 1a.0	Complete	Executive Summary Memo.
Tab 1a.1	Complete	Memorandum for Record documenting that the Red Hill Shaft has been physically disconnected from the NAVFAC system.
Tab 1a.2	Complete	Memo for Record showing SCADA data that Waiawa Shaft is the single source of water for the NAVFAC system since 03 December 2021.
Tab 1a.3	Complete	Photograph of concrete blocking between air gapped isolation flanges.

### Objective 1b – Line of Evidence: The regulated public water system's water quality data is compliant.

Incident Specific Criteria - Data does not exceed Federal DW MCLs, specified State EALs, and ISPs for **Waiawa Shaft (only source of the drinking water)**.

Reference	Status	Documentation
Tab 1b.0	Complete	Executive Summary Memo.
Tab 1b.1	Complete	<ul style="list-style-type: none"> <li>Sample Results for Waiawa Shaft (the source) taken 1/13/2022 Level 4 Validated Laboratory Report for EPA Methods 8260 (VOCs), 8270 (SVOCs), 8015 (TPH-G, TPH-D, TPH-O) plus Tentatively Identified Compounds (TICs)</li> <li>Level 4 Validated Laboratory Report for EPA Methods 8260 (VOCs), 8270 (SVOCs), 8015 (TPH-G, TPH-D, TPH-O) plus Tentatively Identified Compounds (TICs)</li> <li>Sample Results of Waiawa Shaft Entry Point (after treatment) taken 1/11/2022 Level 4 Validated Laboratory Report for Sampling Plan Addendum 1, Table 3a: Distribution Sampling (Step 2b) Summary Drinking Water Analytical Methods, Analytes, Action Levels, and Method Detection Limits</li> <li>Level 4 Validated Laboratory Report for Sampling Plan Addendum 1, Table 3a: Distribution Sampling (Step 2b) Summary Drinking Water Analytical Methods, Analytes, Action Levels, and Method Detection Limits</li> </ul>

## DOH Checklist to Amend the Public Health Advisory in Flushing Zone A2



### Objective 1c – Line of Evidence: No additional contamination through the distribution system is occurring.

Incident Specific Criteria - Cross Connection Control investigation shows distribution system is protected, resulting in no additional sources of contamination.

Reference	Status	Documentation
Tab 1c.0	Complete	Executive Summary Memo.
Tab 1c.1	Complete	<p>Certificate Regarding Cross-Connection Control Review and Confirmation – Zone A2, verifying that building and service connections with petroleum activities are protected from backflow risks with the following documentation:</p> <ul style="list-style-type: none"> <li>A “gap analysis” of the petroleum related activities versus appropriate device inventory (i.e., inappropriate device, missing Cross-Connection Control protection, untested device, etc.).</li> <li>A map that includes: All facilities with petroleum activities; locations of existing backflow prevention devices; and Water system infrastructure.</li> <li>An inventory database: A list of petroleum-related activities and identified appropriate cross connection control (CCC) devices at these activities, as required, i.e., if there was human consumptive use and where cross connection potential or hazard was identified.</li> </ul>
Tab 1c.2	Complete	COMNAVREG HAWAII INSTRUCTION 11330.2D, dated 19 Sep 2016, Backflow Prevention and Cross-Connection Control Program

### Objective 2a – Line of Evidence: Water within the distribution system does not exceed State and Federal DW MCLs, specified State EALs, and

ISPs.

Incident Specific Criteria –

- Zone flushing plan demonstrates entire distribution system is flushed.
- Sample results show the water in distribution system does not exceed State and Federal DW MCLs, specified State EALs, and ISPs. (Guidance Table 2 and Table 3)
- Drinking water does not show sheen, olfactory evidence, or other qualitative methods of petroleum.

Reference	Status	Documentation
Tab 2a.0	Complete	Executive Summary Memo.
Tab 2a.1	Complete	<p>Memorandum for the Record of the Distribution System Recovery Plan Addendum – Zone A2 Analysis which includes:</p> <ul style="list-style-type: none"> <li>Hydraulic model that exhibits and flushing line map(s) and plan to show that the flushing approach will achieve directional flushing.</li> <li>A one-page high resolution zonal flushing map should be provided.</li> <li>Narrative of assumptions in the development of their flushing model inclusive of any simulations that they ran.</li> </ul>
Tab 2a.2	Complete	Summary with documentation from Dr. Whelton discussing flushing goals providing validity of volumetric exchange model.

## DOH Checklist to Amend the Public Health Advisory in Flushing Zone A2



### Objective 2a – Line of Evidence: Water within the distribution system does not exceed State and Federal DW MCLs, specified State EALs, and

#### ISPs.

##### Incident Specific Criteria –

- Zone flushing plan demonstrates entire distribution system is flushed.
- Sample results show the water in distribution system does not exceed State and Federal DW MCLs, specified State EALs, and ISPs. (Guidance Table 2 and Table 3)
- Drinking water does not show sheen, olfactory evidence, or other qualitative methods of petroleum.

Reference	Status	Documentation
Tab 2a.3	Complete	Identification of consecutive flushing zones and flushing phasing order. Time based contaminant slug model showing possible migration of contaminant from Red Hill Shaft used to identify zones requiring additional volumetric flushing (Hydraulic Model)
Tab 2a.4	Complete	Table showing volumetric goals and recorded flushing volumes that occurred in the field for the distribution system.
Tab 2a.5	Complete	Certification of Water Storage Facilities and Water Source for Zone A2 with Water Storage Tanks S1 and S2 Flushing Report.
Tab 2a.6	Complete	<ul style="list-style-type: none"> <li>• Distribution System Exceedance Investigation Summary and Results.</li> <li>• Drinking Water Distribution System Recovery Plan: Stage 2 Sampling Results for Zone A2, JBP HH.</li> </ul>

### Objective 2b – Line of Evidence: Water in premise plumbing of homes/buildings does not exceed State and Federal DW MCLs, specified State

#### EALs, and ISPs.

##### Incident Specific Criteria –

- Flushing Plan includes procedures to ensure no service connections will re-contaminate the distribution system.
- Sample Plan includes 72-hour stagnation to account for leaching of contaminants from premise plumbing.
- Sample results show water in premise plumbing of homes/buildings does not exceed State and Federal DW MCLs, specified State EALs, and ISPs.

Reference	Status	Documentation
Tab 2b.0	Complete	Executive Summary Memo.
Tab 2b.1	Complete	Records of Completed Residential and Non-Residential Flushing Zone A2 with: <ul style="list-style-type: none"> <li>• EDMS Residential Flushing Records Zone A2</li> <li>• EDMS Non-Residential Flushing Records Zone A2</li> <li>• NAVFAC SCADA Data Zone A2 28 Dec 2021 to 12 Jan 2022 (for the Distribution System pressure logs during flushing and confirmation that the 30 psi within the distribution system was maintained).</li> </ul>
Tab 2b.2	Complete	Sample Results, Level 2 and Level 4 Validated as required by Sampling Plan Section 6.0, report from EDMS.
Tab 2b.3	Complete	Exceedance Investigation Summary and Results Zone A2.
Tab 2b.4	Complete	Memorandum for Record showing that irrigation flushing is complete.

# DOH Checklist to Amend the Public Health Advisory in Flushing Zone A2



<b>Objective 2b – Line of Evidence: Water in premise plumbing of homes/buildings does not exceed State and Federal DW MCLs, specified State EALs, and ISPs.</b>		
Incident Specific Criteria –		
<ul style="list-style-type: none"> <li>Flushing Plan includes procedures to ensure no service connections will re-contaminate the distribution system.</li> <li>Sample Plan includes 72-hour stagnation to account for leaching of contaminants from premise plumbing.</li> <li>Sample results show water in premise plumbing of homes/buildings does not exceed State and Federal DW MCLs, specified State EALs, and ISPs.</li> </ul>		
Reference	Status	Documentation
Tab 2b.5	Complete	DOH Guidance for Active Irrigation Line Purging and Flushing



February 20, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: ZONE A2 REMOVAL ACTION REPORT

Ref: (a) Drinking Water Sampling Plan, December 2021  
(b) Drinking Water Distribution System Recovery Plan, December 2021  
(c) Single Family Home Flushing Plan Checklist and Standard Operating Procedures, December 23, 2021  
(d) Non-Residential Facility Flushing Plan Checklist and Standard Operating Procedures, January 4, 2022  
(e) DOH's Guidance on the Approach to Amending the Drinking Water Health Advisory, December 30, 2021; HEER Incident Case No.: 20211128-1848  
(f) DOH Checklist to Amend the Drinking Water Health Advisory

Encl: (1) Zone A2 Removal Action Report

1. The enclosed report documents completion of the requirements outlined in references (a) through (f). This is in response to HEER Incident Case No.: 20211128-1848 involving the Joint Base Pearl Harbor Hickam (JBPHH) Public Water System No. 360.

2. On November 20<sup>th</sup>, 2021, a spill of jet fuel, specifically JP-5 jet fuel, occurred at the Red Hill Bulk Fuel Storage Facility in an access tunnel that provides fire suppression and service lines for the facility. The fuel spill was cleaned up. On the 23<sup>rd</sup> of November, Admiral Paparo directed an independent investigation of the spill event and ordered the investigating officer to determine any connection between the 20 November event and the spill that occurred on May 6<sup>th</sup>, 2021. The results of the investigation are pending public release.

On November 27<sup>th</sup>, the Commander, Navy Region Hawaii, RDML Tim Kott, met with the Fleet Logistics Center Commander, who operates The Red Hill Fuel Storage Facility for the Navy. They jointly made the decision to stop Red Hill Tank fuel transfer operations based on the ongoing investigation into the recent spills.

On November 28<sup>th</sup>, the JBPHH HQs and Hawaii Department of Health (HDOH) began receiving phone calls from military residents reporting a chemical or petroleum taste and smell to the water in the Navy's drinking water system. As more calls were received, it became clear that the reports were clustered around neighborhoods fed by the Red Hill Shaft Well. On the evening of the 28<sup>th</sup>, the Navy shut down that well and stood up the Region's Emergency Operations Center to handle the issue. More reports of contaminated water continued to come in over the next 24 hours. On November 29<sup>th</sup>, Admiral Paparo, the senior Navy commander in Hawaii, ordered the establishment of a Joint Crisis Action Team, and the Navy immediately began flushing its potable water distribution system.

On December 8<sup>th</sup>, HDOH issued Directive One which provided requirements for flushing of the Navy Water System. The Navy began working with HDOH and the U.S. Environmental Protection Agency (EPA) to meet the requirements of this directive and resume flushing of the potable water system.

On December 14<sup>th</sup>, HDOH, the U.S. Navy, the U.S. Army and the EPA signed the Joint Drinking Water Sampling Plan. On December 17<sup>th</sup>, the parties established an Interagency Drinking Water System (IDWS) Team to restore safe drinking water to affected JBPHH housing communities. The working group was established to ensure that the agencies were coordinated in actions to restore safe drinking water to Navy water system users and that they had a clear, coordinated source of information as work continued to restore safe drinking water. On the same day, the U.S. Navy, U.S. Army, HDOH, and the EPA members of the IDWS Team jointly signed the Water Distribution System Recovery Plan agreement.

The flushing of the water distribution lines resumed on December 20, 2021. Residential and non-residential facilities were flushed and sampled after the completion of flushing and testing of the distribution system of a specific Zone. This report specifically documents the requirements outlined in references (a) through (f) for Zone A2.

3. The removal action report (RAR) for Zone A2 documents two specific lines of evidence necessary to amend the drinking water health advisory for Zone A2 as provided by HDOH. The two lines of evidence under evaluation included:

- i. Ensure no contamination is entering the water system.
- ii. Ensure no contamination remains in the system and water chemistry concerns are addressed.

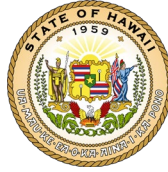
Each line of evidence has several objectives with specific lines of evidence and incident specific criteria required to be met. Achievement of the criteria will be described and supported with documentation in the subsequent sections of the RAR.

4. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and the submitted information is true, accurate, and complete.

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EL.WAYNE.JR. YNEJR.1088310035  
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M. W. Meno  
CAPT, CEC, USN





Interagency Drinking Water System Team  
Zone A2 Removal Action Report  
February 2022

**Line of Evidence 1a**

**All Reported Sources of Contamination Are Isolated and Contained**

**Table 1: Lines of Evidence Under Evaluation – Ensure no contamination is entering the water system.**

**Objective 1a** - All reported sources of contamination are isolated and contained.

Incident Specific Criteria - Contamination from **Red Hill Shaft** is isolated from Navy's water distribution system.

Lines of Evidence	Completion Status	Outstanding Items
Navy confirmation that Red Hill Shaft is isolated from the Navy's water distribution system.	Complete.	<ul style="list-style-type: none"><li>• None.</li></ul>

February 19, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: SUMMARY OF LINE OF EVIDENCE OBJECTIVE 1A – ALL REPORTED SOURCES OF CONTAMINATION ARE ISOLATED AND CONTAINED

Encl: (1) 1a.1 Memorandum for Record with Isolation Date  
(2) 1a.2 Summary of Operator Logs and SCADA Data  
(3) 1a.3 Photograph of Concrete Blocking Between Air Gapped Isolation Flanges

1. Enclosures (1), (2), and (3) document completion of Line of Evidence objective 1a, all reported sources of contamination are isolated and contained. On the evening of November 28, 2021, the Red Hill Shaft was secured from operation and all pumping operations ceased. The Aiea/Halawa shaft briefly served as the secondary source starting on November 28, 2021, but it was shut down on December 3, 2021 to prevent potential westward contaminant migration in the aquifer and because there were concerns over high chloride concentrations caused by saltwater intrusion. Since December 3, 2021, the Waiawa Shaft has been the sole water source providing potable water to the distribution network. It is located 5.5 miles west of the Red Hill Fuel Facility, and testing has not detected any water quality issues at this source. The Red Hill Shaft discharge pipes were physically re-arranged and encased in concrete on December 24, 2021 as shown in Enclosure (1) and (3), thereby isolating the system as required by Line of Evidence 1a. The Supervisory Control and Data Acquisition (SCADA) data in Enclosure (2) shows the previous statement to be true. All reported sources of contamination are isolated and contained.

2. The Red Hill Shaft pumps are now being used to control the spread of contamination by creating a capture zone in the aquifer by pumping to a 5 million gallons/day Granular Activated Carbon (GAC) system which discharges into the Halawa Stream. The new piping from the pumps to the GAC treatment came from the 20" header where the 20x24 reducer was removed on 24 DEC 2021. A thrust block was poured at this location around the existing blinded wye fitting as shown in Enclosure (3).

3. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and I believe the submitted information is true, accurate, and complete.

WETZEL.CHRISTOPHE  
R.JAMES.1540194862

Digitally signed by  
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C. J. Wetzel  
LT, CEC, USN

04 JANUARY 2022

MEMORANDUM FOR RECORD

SUBJECT: Red Hill Potable Water Pumping Station

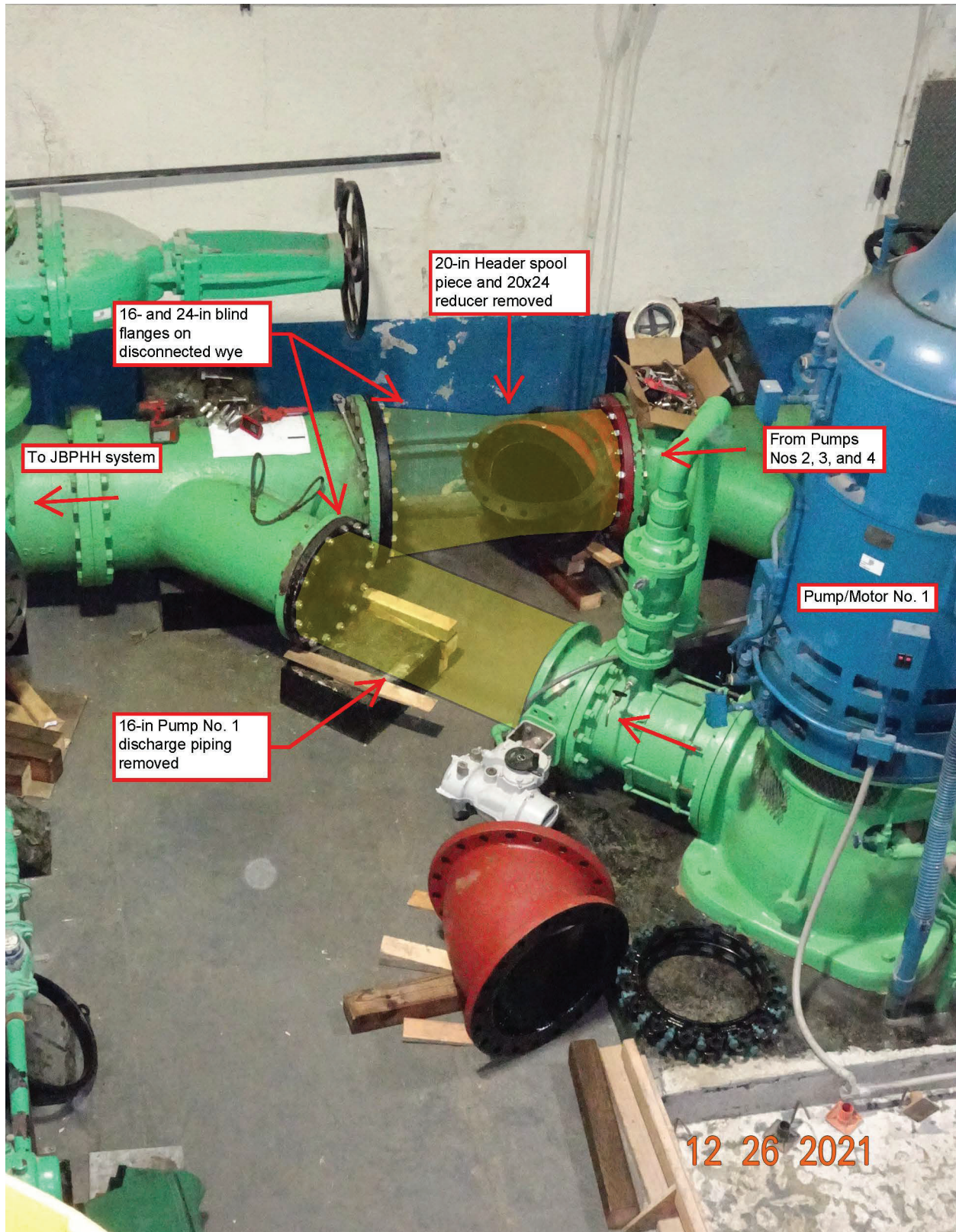
ENC: (1) Red Hill Pump Station Photographs, Post Pump Isolation dated 12/26/2021  
(2) JBPHH Potable Water LOTO Log

1. This Memorandum For Record (MFR) is to document the Red Hill Shaft pump status in relation to the Joint Base Pearl Harbor Hickam Potable Water System.
2. In response to fuel contaminants found in the Red Hill Shaft aquifer/development tunnel, the main Red Hill Pumping Station pumps were secured from the Potable Water system. On 3 December 2021, all four Red Hill pumps were electrically Locked Out, Tagged Out (LOTO), see Enclosure (2). (Note: Pump #1 was LOTO on 10 June 2020 due to an unrelated pump issue, and is still out of service, LOTO.) After initially being shut down operationally, and LOTO electrically, the Red Hill pumps were physically isolated from the Potable Water system on 24 December 2021.
3. Physical isolation was performed with in-house NAVFAC forces, with a completion date of 24 December 2022. This work was performed by isolating the system from the pumps at the "wye" fitting adjacent to Red Hill Pump #1. The wye fitting is shown on Enclosure (1). A blind flange was placed on the main header and the wye branch.
4. The 24" blind flange on the main header physically air-gapped and isolated Red Hill pumps #2, #3, and #4. The 16" blind flange in the wye branch physically air-gapped and isolated Red Hill pump #1. This work is shown on Enclosure 1.
5. The work the NAVFAC in-house forces performed removed any source or pathway from the Red Hill aquifer to the JBPHH Potable Water system.

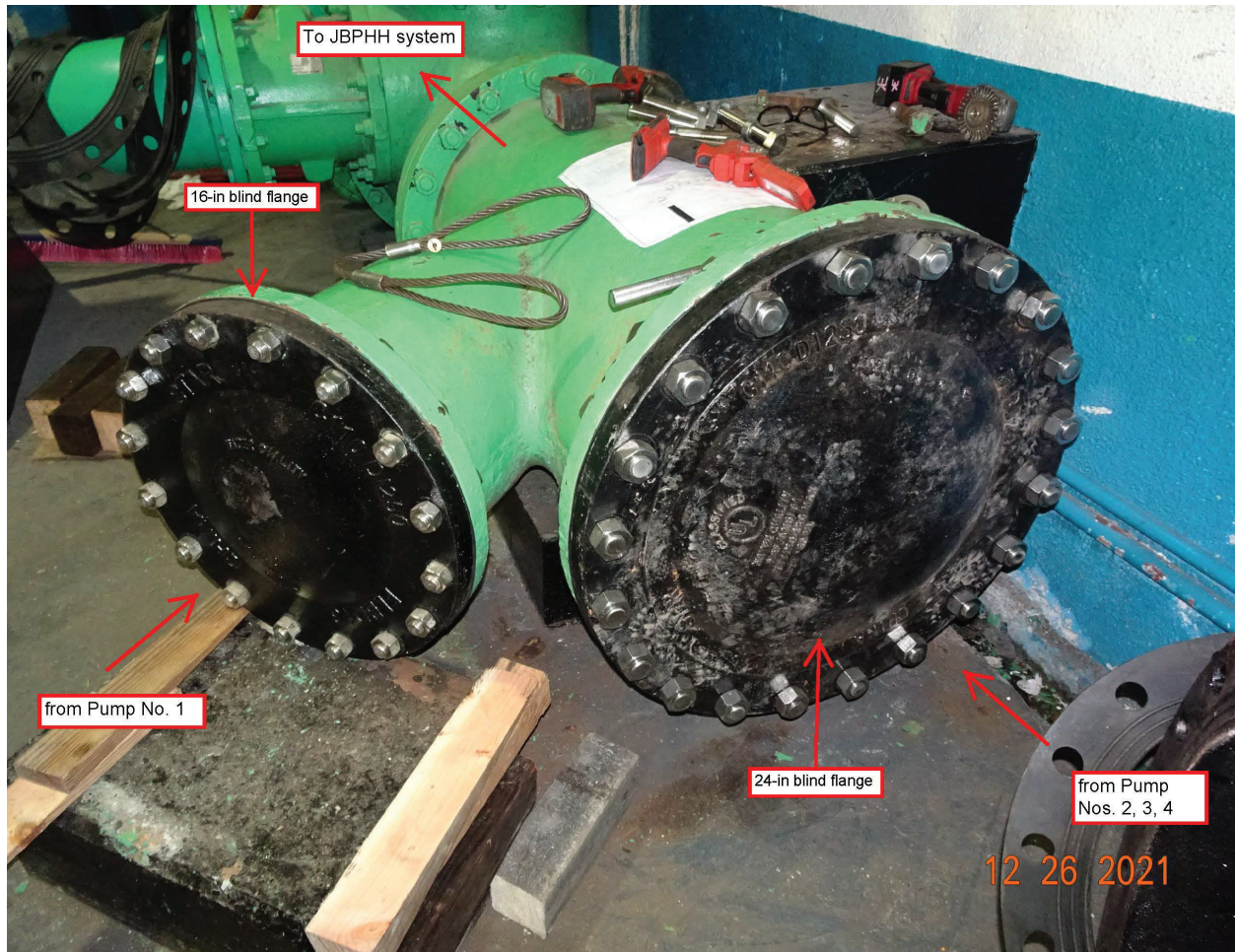
MITCHELL.JEREMY.W.1395400700  
J. MITCHELL  
Deputy Public Works Officer  
Joint Base Pearl Harbor Hickam

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# NAVFAC Hawaii - Potable Water Utilities Lock Out Tag Out (LOTO) Form



Locked Out		Back in Service		Location	Circuit / Equipment being LOTO	Reason for LOTO	Lock No.	Tag No.	Authorized Employee
Date	Time	Date	Time						
18 MAR 20	0930			REDHILL	MP#1	Pump overhaul		010	Dykky
5 JUN 20		20 MAR 21	1200	WAIANUA	CD #20	FAULT IN OVERHAUL		1	
10 JUN 20	0900			REDHILL	PUMP CONTROL MP#1	PUMP OVERHAUL		011	Dykky
10 JUN 20	0900			REDHILL	NCC MP#1	PUMP OVERHAUL		012	Dykky
10 JUN 20	0945			WAIANUA	CD #40	FAULT-PUMP CONTROLS		2	AN
10 MAY 21				HALANUA	NCC#1	MOTOR FAULT		3	AN
2 JUN 21	0800			WAIANUA	CD#80	FAULT PUMP CONTROLS		5	AN
2 JUN 21	0800	30 JUN 21	2030	WAIANUA	CD#100	HECO OUTAGE		4	AN
2 JUN 21	0900			HALANUA	NCC#2	PUMP REMOVED		6	AN
30 JUN 21	2330	7 JUL 21	1900	WAIANUA	CD#10	FAIL TO CLOSE		8	AN
19 JUL 21	0745	19 JUN	0900	HALANUA	EXHAUST FAN	REPLACE OIL			DS
17 NOV 21	1230			HALANUA	PUMP #1	PUMP FAIL			AN
17 NOV 21	1230			WAIANUA	PUMP #2	MOTOR FAIL			AN
30 DEC 21	0925			REDHILL	NCC MP#2	COMPRESSOR INTERFERE WELK IN WELL			AN



[illegible]



February 10, 2022

## SUMMARY OF OPERATOR LOGS AND SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) DATA

1. OBJECTIVE: Provide a description of water sources that supplied the Joint Base Pearl Harbor Hickam (JBPHH) potable water system (system) prior-to and after the fuel contamination incident that occurred in late November 2021.

### 2. BACKGROUND:

2.1. Portions of the Navy water distribution system serving JBPHH and surrounding areas were exposed to low levels of fuel contamination with initial indications in the form of smell reports occurring on or about 28 November 2021.

2.2. Prior to the aquifer contamination incident, water users connected to the Navy's system were supplied by three Navy owned water sources, Red Hill Shaft, Aiea/Halawa Shaft and Waiawa Shaft. In the time period prior to the incident, Waiawa Shaft was the main water source supplying water to the JBPHH system with at least one pump operating full time (100%). A single Red Hill Shaft pump was operated intermittently as a secondary source to the system. The Aiea/Halawa shaft was not being operated due to concerns over high chloride concentrations caused by saltwater intrusion into the aquifer.

2.3. On the evening of 28 November 2021, the Red Hill Shaft was secured and all pumping operations ceased. The Aiea/Halawa shaft briefly served as the secondary source starting on 28 November 2021 but was shut down on 03 December 2021 to prevent westward contaminant migration in the aquifer.

2.4. Since 03 December 2021, Waiawa Shaft has been the sole water source providing potable water to the distribution network. It is located 5.5 miles west of the Red Hill Fuel Facility and testing has not found any water quality issues at this source.

3. DATA INTERPERETATION: The Supervisory Control and Data Acquisition (SCADA) data provided in reference (a) includes tabular and graphical depictions of flow from the three source pump stations, aquifer water surface elevations above mean sea level (MSL) and the water level in the 6 million gallon (MG) S1 and S2 water storage tanks. The data was provided as a daily average (i.e. data was averaged over the 24 hours of each day from 00:00 to 23:59) and ranges from 01 November 2021 to 08 January 2022.

3.1 WAIAWA SHAFT/PUMP STATION: Prior to 28 November, The Waiawa Pump Station (PS) was supplying an average of 16.6 million gallons per day (MGD) of potable water to the system. After 28 November, demand reductions from turning off irrigation and smaller residential demand reduced the water supplied by the Waiawa PS to an average of 15.5 MGD. This was 76% of the 22 MGD total system demand prior to 28 November 2021.

There was an inverse correlation between the aquifer water surface elevation and water pumped out of the aquifer. When Waiawa PS was pumping between 16 and 18 MGD, the aquifer water surface elevation dropped to between 8.0 and 10.0 feet MSL. When pumping was reduced between 15 and 16 MGD, the aquifer water surface was raised to between 15.0 and 17.0 feet

above MSL. See Figure 1 below for a graphical depiction of the daily average aquifer water surface elevation and pumps flows from Waiawa Shaft.

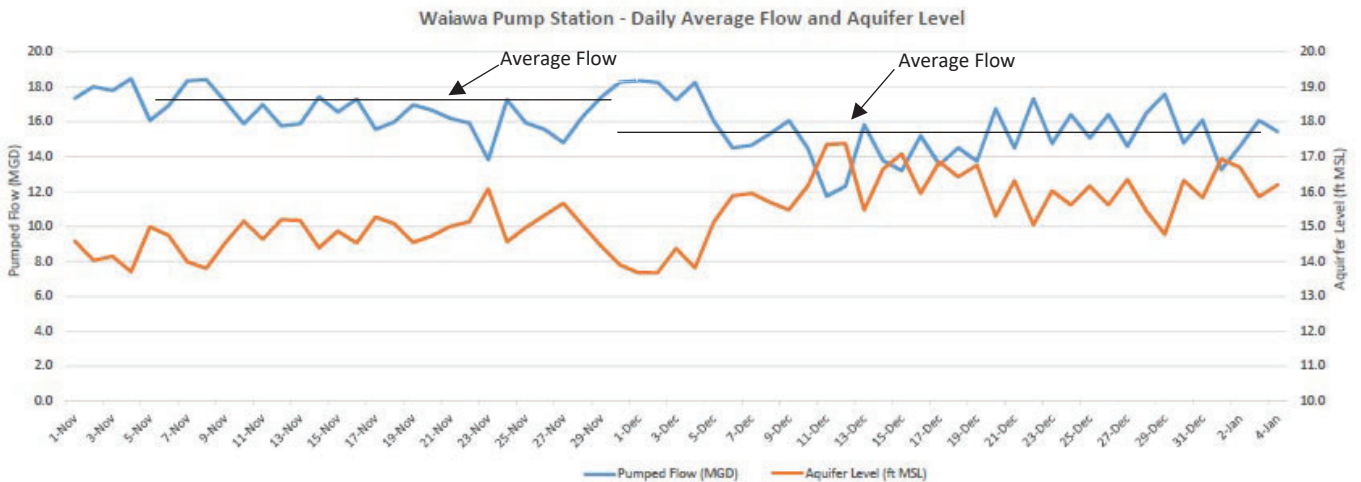


Figure 1. Waiawa Shaft Daily Average Flows and Aquifer Water Surface Elevation

**3.2 RED HILL SHAFT/PUMP STATION:** Prior to being shut down on 28 November 2021, the Red Hill PS was supplying an average of 5.3 MGD to the system. The represented 24% of the 22 MGD total system demand. As shown in Figure 2, the Red Hill Pump Station has not been operated since 28 November 2021.

Since pumping ceased, the aquifer water surface elevation has raised from approximately 2 ft MSL to almost 6 ft MSL

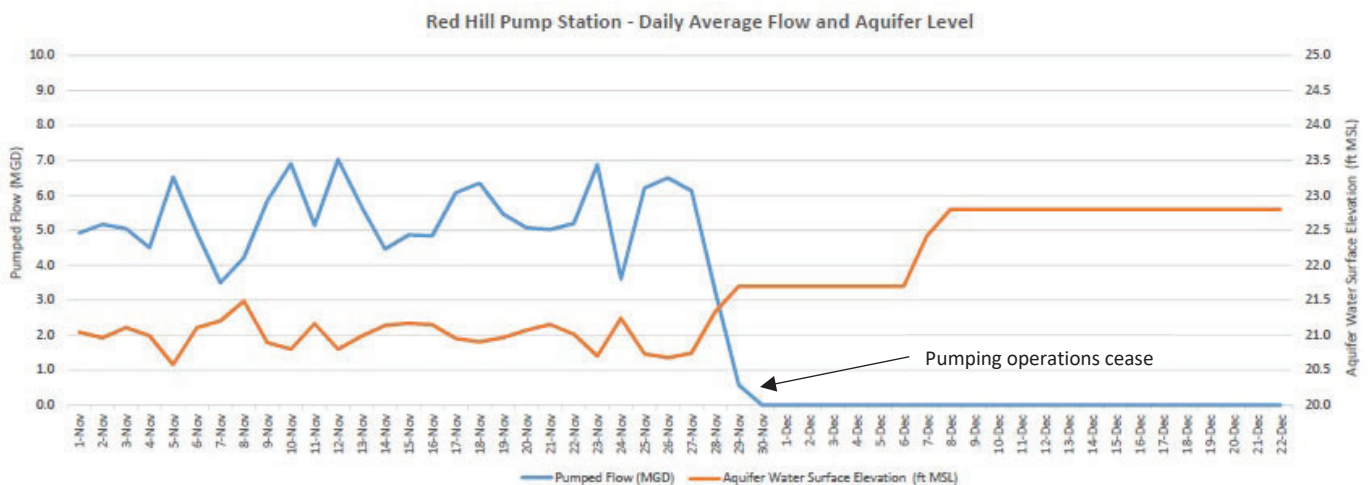


Figure 2. Red Hill Shaft Daily Average Flows and Aquifer Water Surface Elevation

**3.3 HALAWA/AIEA SHAFT/PUMP STATION:** Halawa Shaft was briefly operated from 28 November to 03 December 2021. The reasons for shutdown are as follows:

1. Demand reductions made it so that Waiawa Shaft could supply 100% of the water to the system,

2. there were concerns over westward plume migration from Red Hill if Halawa remained active,
3. water system operators had advised that high chloride concentrations in the Halawa/Aiea Shaft had caused water quality problems in the past.

The aquifer water surface elevation was around 12.0 ft MSL prior to turning the pumps on at the Halawa/Aiea PS. After the pumping ceased, the aquifer recovered to around 12.8 ft MSL.

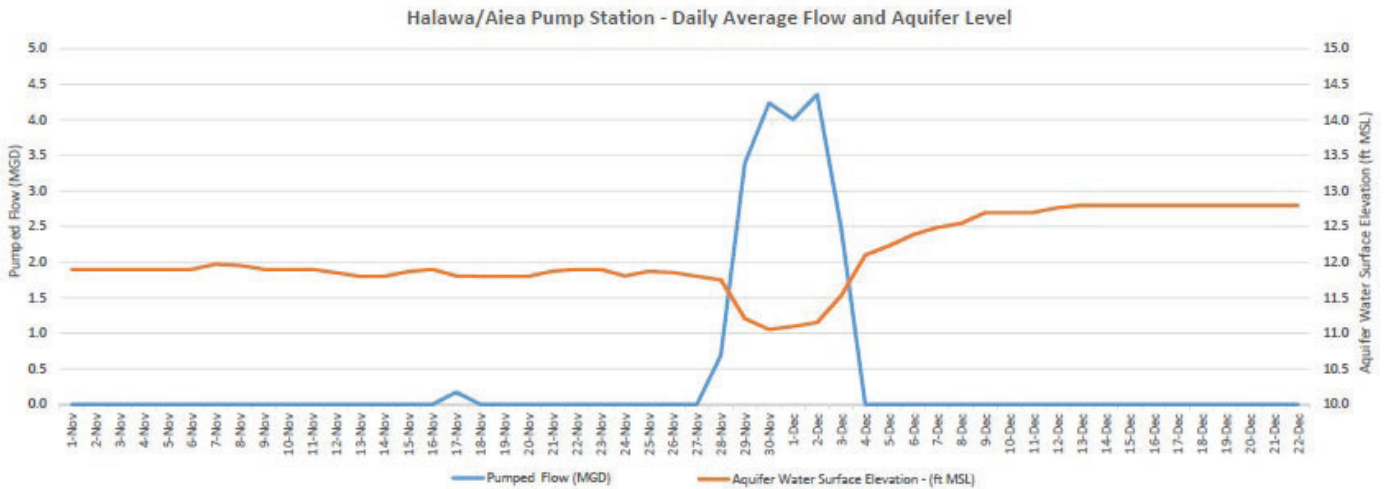
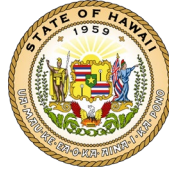


Figure 2. Halawa/Aiea Shaft Daily Average Flows and Aquifer Water Surface Elevation

**Photograph of Concrete Blocking Between  
Air-gapped Isolation Flange**







Interagency Drinking Water System Team  
Zone A2 Removal Action Report  
February 2022

**Line of Evidence 1b**

**Regulated Public Water System's Water Quality Data is  
Compliant**

**Table 1: Lines of Evidence Under Evaluation – Ensure no contamination is entering the water system.**

**Objective 1b** - The regulated public water system's water quality data is compliant.

Incident Specific Criteria - Data does not exceed Federal DW MCLs, specified State EALs, and ISPs for **Waiawa Shaft**.

Lines of Evidence	Completion Status	Outstanding Items
Date Sample Taken at Step 0 of the Sampling Plan Addendum 1	Complete	<ul style="list-style-type: none"><li>None.</li></ul>
Date Sample Taken at Entry Point to Distribution	Complete	<ul style="list-style-type: none"><li>None.</li></ul>

February 17, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: SUMMARY OF LINE OF EVIDENCE OBJECTIVE 1B – THE REGULATED PUBLIC WATER SYSTEM’S WATER QUALITY IS COMPLIANT

Encl: (1) 1b.1 Source Water and Entry Point of Distribution Sample

1. Enclosure (1) documents completion of Line of Evidence 1b, the regulated public water system’s water quality is compliant. On the evening of November 28, 2021, the Red Hill Shaft was secured from operation and all pumping operations ceased. The Aiea/Halawa shaft briefly served as the secondary source starting on November 28, 2021, but it was shut down on December 3, 2021 to prevent potential westward contaminant migration in the aquifer and because there were concerns over high chloride concentrations caused by saltwater intrusion. Since December 3, 2021, the Waiawa Shaft has been the sole water source providing potable water to the distribution network. It is located 5.5 miles west of the Red Hill Fuel Facility, and testing has not detected any water quality issues at this source.
2. On January 11, 2022, water from the Waiawa shaft was sampled at the entry point to the distribution system (EPD). The results of the analysis are presented in Enclosure (1), Field Sample ID 20111-WS-ZT01. On January 13, 2022, additional samples were taken at the Waiawa shaft source. The results of these samples are also presented in Enclosure (1), Field Sample IDs 220113-WS-ZT01 and 220113-WS-ZT03. This data shows that the water from the Waiawa shaft does not exceed State of Hawaii and Federal Drinking Water standards, Maximum Contaminate Levels, Environmental Action Levels and Incident Specific Parameters, and the regulated public water system’s water quality is complaint.
3. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and I believe the submitted information is true, accurate, and complete.

RODRIGUEZ.ALBERTO  
.MAURICIO.13963161  
68  
A. M. Rodriguez  
LT, CEC, USN

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RODRIGUEZ.ALBERTO.MAURICIO.  
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1b.1 Source Water and Entry Point of Distribution Sample

Well Shaft Sampling

Chemistry Results

Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	I1-SHFTWAIA		I1-SHFTWAIA		I1-SHFTWAIA	
Location Type:	Well		Well		Well	
Residence:	Waiawa Shaft		Waiawa Shaft		Waiawa Shaft	
Field Sample ID:	220111-WS-ZT01		220113-WS-ZT01		220113-WS-ZT03	
Sample Date:	2022-01-11		2022-01-13		2022-01-13	
Sample Type:	N (PostChlorination Sample)		N (PreChlorination Sample)		N (PreChlorination Sample)	

GENCHEM (mg/L)	Incident Specific Parameters	Environmental		DOH Safe Drinking		Environmental	
		Action Levels	Water Branch (SDWB)	Water Branch (SDWB)	Protection Agency Maximum	Protection Agency Maximum	
		Groundwater	Regulatory	Regulatory	Contaminant Levels	Contaminant Levels	SDG:
		Action Levels	Constituents	Constituents			810121191
Total Organic Carbon	2	None	None	None	None	None	0.250 U

HC (µg/L)	Incident Specific Parameters	Environmental		DOH Safe Drinking		Environmental	
		Action Levels	Water Branch (SDWB)	Water Branch (SDWB)	Protection Agency Maximum	Protection Agency Maximum	
		Groundwater	Regulatory	Regulatory	Contaminant Levels	Contaminant Levels	SDG:
		Action Levels	Constituents	Constituents			5801092421
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	None	None	91.0 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	None	None	31.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	None	None	180 U

HERB (µg/L)	Incident Specific Parameters	Environmental		DOH Safe Drinking		Environmental	
		Action Levels	Water Branch (SDWB)	Water Branch (SDWB)	Protection Agency Maximum	Protection Agency Maximum	
		Groundwater	Regulatory	Regulatory	Contaminant Levels	Contaminant Levels	SDG:
		Action Levels	Constituents	Constituents			980559
Pentachlorophenol	None	None	None	None	None	None	0.0200 U

HG (µg/L)	Incident Specific Parameters	Environmental		DOH Safe Drinking		Environmental	
		Action Levels	Water Branch (SDWB)	Water Branch (SDWB)	Protection Agency Maximum	Protection Agency Maximum	
		Groundwater	Regulatory	Regulatory	Contaminant Levels	Contaminant Levels	SDG:
		Action Levels	Constituents	Constituents			2A12046
Mercury	0.025	0.025	2	2	0.0170 U	2	--

METAL (µg/L)	Incident Specific Parameters	Environmental		DOH Safe Drinking		Environmental	
		Action Levels	Water Branch (SDWB)	Water Branch (SDWB)	Protection Agency Maximum	Protection Agency Maximum	
		Groundwater	Regulatory	Regulatory	Contaminant Levels	Contaminant Levels	SDG:
		Action Levels	Constituents	Constituents			980559
Antimony	6	6	6	6	0.0915 J	6	0.110 U
Arsenic	10	10	10	10	0.207 J	10	0.210 U
Barium	220	220	2000	2000	1.72	2000	1.80 J
Beryllium	0.66	0.66	4	4	0.0624 U	4	0.0910 U
Cadmium	3	3	5	5	0.0416 U	5	0.0290 U
Chromium	11	11	100	100	1.46	100	1.50
Copper	2.9	2.9	1300	1300	21.2	1300	46.0
Lead	15	5.6	15	15	0.265	15	0.0630 J
Selenium	5	5	50	50	0.704	50	0.350 J
Thallium	2	2	2	2	0.0210 U	2	0.0410 U

SVOC (µg/L)	Incident Specific Parameters	Environmental		DOH Safe Drinking		Environmental	
		Action Levels	Water Branch (SDWB)	Water Branch (SDWB)	Protection Agency Maximum	Protection Agency Maximum	
		Groundwater	Regulatory	Regulatory	Contaminant Levels	Contaminant Levels	SDG:
		Action Levels	Constituents	Constituents			5801092721
							810121191



1b.1 Source Water and Entry Point of Distribution Sample

Well Shaft Sampling

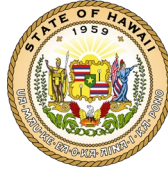
Chemistry Results

Drinking Water Sampling, JBPHH, Oahu Hawaii

	70	70	70	70	70	EPD	Shaft	Shaft
1,2,4-Trichlorobenzene						--	0.0930 U	--
1,2-Dichlorobenzene	10	10	600	600		--	0.0520 U	--
1,3-Dichlorobenzene	None	None	None	None		--	0.0410 U	--
1,4-Dichlorobenzene	5	5	75	None	None	--	0.0410 U	--
1-Methylnaphthalene	2.1	10	None	None	0.00801 U	--		0.0190 U
2,4,5-Trichlorophenol	None	None	None	None	--	--	0.100 U	--
2,4,6-Trichlorophenol	None	None	None	None	--	--	0.100 U	--
2,4-Dichlorophenol	None	None	None	None	--	--	0.210 U	--
2,4-Dimethylphenol	None	None	None	None	--	--	0.170 U	--
2,4-Dinitrophenol	None	None	None	None	--	--	1.70 U	--
2,4-Dinitrotoluene	None	None	None	None	--	--	0.100 U	--
2,6-Dinitrotoluene	None	None	None	None	--	--	0.100 U	--
2-Chloronaphthalene	None	None	None	None	--	--	0.0720 U	--
2-Chlorophenol	None	None	None	None	--	--	0.0520 U	--
2-Ethylhexyl adipate	None	None	None	None	0.00962 U	--	--	--
2-Methylnaphthalene	4.7	10	None	None	0.00904 U	--	--	0.0190 U
2-Methylphenol (o-Cresol)	None	None	None	None	--	--	0.0520 U	--
2-Nitroaniline	None	None	None	None	--	--	0.100 U	--
3,3'-Dichlorobenzidine	None	None	None	None	--	--	0.270 U	--
3-Nitroaniline	None	None	None	None	--	--	0.170 U	--
4,6-Dinitro-2-methylphenol	None	None	None	None	--	--	0.570 U	--
4-Bromophenyl phenyl ether	None	None	None	None	--	--	0.0620 U	--
4-Chloro-3-methylphenol	None	None	None	None	--	--	0.130 U	--
4-Chloroaniline	None	None	None	None	--	--	0.610 U	--
4-Chlorophenyl phenyl ether	None	None	None	None	--	--	0.0520 U	--
4-Nitroaniline	None	None	None	None	--	--	0.220 U	--
4-Nitrophenol	None	None	None	None	--	--	1.80 U	--
Acenaphthene	None	None	None	None	--	--	0.0520 U	--
Acenaphthylene	None	None	None	None	--	--	0.0620 U	--
Alachlor	None	None	None	None	0.0110 U	--	--	0.0480 U
Anthracene	None	None	None	None	--	--	0.0520 U	--
Atrazine	None	None	None	None	0.00734 U	--	--	0.0290 U
Benzo(a)anthracene	None	None	None	None	--	--	0.0520 U	--
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.0117 UJ		0.0410 U	0.00960 U
Benzo(b)fluoranthene	None	None	None	None	--	--	0.0410 U	--
Benzo(g,h,i)perylene	None	None	None	None	--	--	0.0410 U	--
Benzo(k)fluoranthene	None	None	None	None	--	--	0.0520 U	--
Benzyl butyl phthalate	None	None	None	None	--	--	0.280 U	--
Bis(2-chloroethoxy)methane	None	None	None	None	--	--	0.0520 U	--
Bis(2-chloroethyl) ether (2-Chloroethyl ether)	None	None	None	None	--	--	0.0310 U	--
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.437 U		0.770 U	0.580 U
Carbazole	None	None	None	None	--	--	0.100 U	--
Chlordane	None	None	None	None	0.0669 U		--	0.0320 U
Chrysene	None	None	None	None	--	--	0.0410 U	--







Interagency Drinking Water System Team  
Zone A2 Removal Action Report  
February 2022

**Line of Evidence 1c**

**No Additional Contamination through the Distribution  
System is Occurring**

**Table 1: Lines of Evidence Under Evaluation – Ensure no contamination is entering the water system.**

**Objective 1c** - No additional contamination through the distribution system is occurring.

Incident Specific Criteria - Cross Connection Control investigation shows distribution system is protected, resulting in no additional sources of contamination.

Lines of Evidence	Completion Status	Outstanding Items
No contamination of the distribution system is occurring from cross-connections with other petroleum sources during this incident	Complete	<ul style="list-style-type: none"><li>• None.</li></ul>
Cross Connection Control/Backflow Program-related documents	Complete	<ul style="list-style-type: none"><li>• None.</li></ul>

February 19, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: SUMMARY OF LINE OF EVIDENCE OBJECTIVE 1C – NO ADDITIONAL  
CONTAMINATION THROUGH THE DISTRIBUTION SYSTEM IS OCCURRING

Encl: (1) 1c.1 Certification of Inventory and Petroleum Facility Locations with Associated  
Backflow Preventers.  
(2) 1c.2 Backflow Prevention and Cross-Connection Control Program Instruction

1. Enclosures (1) and (2) document completion of Line of Evidence 1c, no additional contamination through the distribution system is occurring. On the evening of November 28, 2021, the Red Hill Shaft was secured from operation and all pumping operations ceased. The Aiea/Halawa shaft briefly served as the secondary source starting on November 28, 2021, but it was shut down on December 3, 2021 to prevent potential westward contaminant migration in the aquifer and because there were concerns over high chloride concentrations caused by saltwater intrusion. Since December 3, 2021, the Waiawa Shaft has been the sole water source providing potable water to the distribution network. It is located 5.5 miles west of the Red Hill Fuel Facility, and testing has not detected any water quality issues at this source.

2. Enclosure (1) identifies all water service connections where petroleum activities exist and documents adequate backflow prevention devices installed at those petroleum service activities. Enclosure (2) provides the governing instructions for backflow prevention devices referenced in Enclosure (1). This data shows that no additional contamination through the water distribution system is occurring.

3. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and I believe the submitted information is true, accurate, and complete.

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A. M. Rodriguez  
LT, CEC, USN



**DEPARTMENT OF THE NAVY**  
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND, HAWAII  
400 MARSHALL ROAD  
JBPHH, HAWAII 96860-3139

11000  
Ser PWO/0078  
February 17, 2022

Director of the State of Hawaii  
Department of Health (DOH)

Dear DOH Director:

**SUBJECT: CERTIFICATE REGARDING CROSS CONNECTION CONTROL REVIEW  
AND CONFIRMATION – ZONE A2**

Enclosure: [1] ZONE A2: POL Activities Backflow Prevention Devices  
[2] ZONE A2: POL Activities Map

On behalf of the United States Department of the Navy, operator of the Joint Base Pearl Harbor-Hickam Public Water System (PWS ID No. 360 Water System), and in connection with and pursuant to the removal action required by the DOH Hazard Evaluation and Emergency Response Office Incident Case No. 20211128-1848, the undersigned certifies that the Navy has made all necessary inquiry into their Water System and represents and warrants as set forth below.

All service connections where petroleum activities exist in the Water System, **Zone A2**, are identified in Enclosure [1], “Zone A2: POL Activities Backflow Prevention Devices.” Petroleum activities include, but are not limited to, operating or having gas stations, fuel storage, facilities with aboveground or underground storage tanks (>100-gallon capacity), fuel transfer, motor pools, vehicle maintenance facilities, fuel recovery pits, waste oil collection facilities or systems.

All service connections where petroleum activities exist, as identified in Enclosure [1] have adequate backflow protection as recommended by and in accordance with COMNAVREGHIINST 11330.2D, BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL PROGRAM. Adequate backflow protection includes installation of devices appropriate to the identified hazard condition, correct design and installation of the device, timely testing by a certified tester, and regular maintenance/repair/replacement.

All facilities identified with adequate backflow protection have had their assemblies tested by a DOH-approved certified tester in the past year in accordance with Hawaii Administrative Rules, Title 11-21-8(b) Maintenance requirements.

The Navy has committed to the funding and performance in FY2022 of a comprehensive cross connection control survey of the entire JBPHH water system per the December 2021 AH Engineers & Scientists Water Quality CAT Memorandum.

SUBJECT: CERTIFICATE REGARDING CROSS CONNECTION CONTROL REVIEW  
AND CONFIRMATION – ZONE A2

The undersigned has due authority to deliver to DOH this Certification on behalf of the Navy.

Sincerely,

HARMEYER.RANDALL  
.ERNEST.1186692663

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HARMEYER.RANDALL.ERNEST.11866  
92663  
Date: 2022.02.17 13:55:43 -10'00'

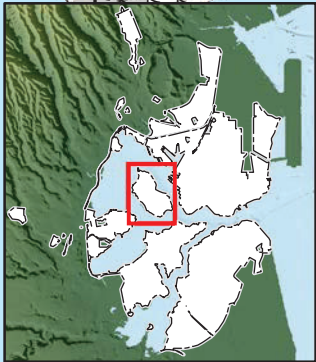
R. E. HARMEYER  
Captain, CEC, U.S. Navy  
Public Works Officer  
By Direction of the  
Commanding Officer



## Enclosure [1] - ZONE A2: POL Activities Backflow Prevention Devices

POL Activities Backflow Prevention Devices										Zone: A2	
ASSET NAME	Location (Bldg. #)	Description of petroleum -related activity	BFP Manufacturer	BFP Model	BFP Size	Serial # or VIN #	Reference Location	Installation Date or In Service Date	Changed (Replacement) Date	Last Tested Date	Last Repaired Date
SA-FWS 12910	860	AST C-59 / 194 GAL DIESEL	WATTS	009M3	0.75	219046	STATION 48	1/1/2000	N/A	7/28/2021	N/A
SA-FWS 1101	859	AST C-58 / 74 GAL DIESEL	WATTS	009M3	0.75	19075	STATION 47	1/1/2008	N/A	7/29/2021	N/A
SA-FWS 12909	858	AST C-57 / 194 GAL DIESEL	WATTS	009M3	0.75	220668	STATION 46	1/1/2000	N/A	7/28/2021	N/A
SA-FWS 2831	451	AST C-13 / 500 GAL DIESEL	WATTS	909	1.5	234360	STATION 42	36161	N/A	44433	N/A
SA-FWS 12911	833	AST C-54 / 194 GAL DIESEL	WATTS	009M3	0.75	220665	STATION 43	36526	N/A	44405	N/A
SA-FWS 1471	838	AST C-55 / 75 GAL DIESEL	WATTS	909	0.75	220669	STATION 44	1/1/2001	N/A	7/16/2021	N/A
SA-FWS 12912	856	AST C-56 / 194 GAL DIESEL	WATTS	909	0.75	656731	STATION 45	1/1/2000	N/A	7/28/2021	N/A
SA-FWS 0109BP	454	FI-454-1 / 8,000 GAL DIESEL	FEBCO	825Y	1.5	113980	IRRIGATION	1/1/2001	N/A	7/16/2021	N/A
	FI-454-2 / 8,000 GAL DIESEL										
	FI-454-3 / 5,200 GAL DIESEL										
SA-FWS 3BP	217	HAZMAT	WATTS	909	2	17972	HAZMAT STORAGE	9/29/2018	N/A	8/24/2021	N/A
NO BFP ASSETS ONLY	42	HOSE BIB w/ Vacuum Breaker	HOSE BIB	AVB	0.75	N/A	GENERATOR BLDG	N/A	N/A	N/A	N/A
NO BFP ASSETS ONLY		HOSE BIB w/ Vacuum Breaker	HOSE BIB	AVB	0.75	N/A	STORAGE	N/A	N/A	N/A	N/A
NO BFP ASSETS ONLY 1		HOSE BIB	HOSE BIB	AVB	0.75	N/A	GENERATOR BLDG	N/A	N/A	N/A	N/A
NO BFP ASSETS ONLY	75	AST FI-75-1 / 2,000 GAL DIESEL	HOSE BIB	AVB	0.75	N/A	GENERATOR BLDG	N/A	N/A	N/A	N/A
SA-FWS 601	462	AST FI-462 / 1,200 GAL DIESEL	WATTS	909	1.5	217803	GENERATOR BLDG	1/1/1991	N/A	7/16/2021	N/A
SA-FWS 0125	77	AST FI-77-1 / 10,000 GAL DIESEL	WATTS	709	6	130216	GENERATOR BLDG	1/1/2001	N/A	7/16/2021	N/A
		AST FI-77-2 / 10,000 GAL DIESEL									
		AST FI-77-SG-3 / 500 GAL DIESEL									
		AST FI-77-SG-4 / 500 GAL DIESEL									
AST FI-77-SG-5 / 500 GAL DIESEL											
NO BFP ASSETS ONLY	176	AST FI / 8,000 GAL DIESEL	HOSE BIB	AVB	0.75	N/A	NOAA BLDG GENERATOR ROOM	N/A	N/A	N/A	N/A

## A2 Flushing Zone Petroleum Facilities



## Location Map - Pearl Harbor

Legend

Petroleum Facility Flushing Zone



## DEPARTMENT OF THE NAVY

COMMANDER  
NAVY REGION HAWAII  
850 TICONDEROGA ST STE 110  
JBPHH HI 96860-5101

COMNAVREGHIINST 11330.2D

N4

19 Sep 2016

### COMNAVREG HAWAII INSTRUCTION 11330.2D

From: Commander, Navy Region Hawaii

Subj: BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL PROGRAM

Ref: (a) Recommended Practice for Backflow Prevention and Cross-Connection Control, (AWWA Manual M14), American Water Works Association  
(b) MIL-HDBK-I 005/7, Military Handbook Water Supply Systems  
(c) State of Hawaii, Department of Health, Administrative Rules Title 11, Chapter 21, Cross-Connection and Backflow Control  
(d) NAVFACINST 11330.11E  
(e) Manual of Cross-Connection Control, Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California  
(f) NAVFAC MO-210, Maintenance and Operation of Water Supply, Treatment, and Distribution Systems

1. Purpose. To supplement current Navy directives pertaining to the protection of the Base potable water supply.

2. Cancellation. COMNAVREGHIINST 11330.2C.

3. Definitions. References (a) through (c) define technical terms used herein as follows:

a. Backflow. The reversal of the normal flow of water caused by either backpressure or back-siphonage.

b. Back-pressure. The flow of water or other liquids, mixtures or substances under pressure into the distribution pipes of a potable water supply system from any source or sources other than the intended source.

c. Back-siphonage. The flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply system from any source other than its intended source caused by the sudden reduction of pressure in the potable water supply system.

d. Backflow Preventer. A device or means designated to prevent backflow. These include:

(1) Air Gap. The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device and the flood level rim of said vessel. An approved air-gap must be at least double the diameter of the supply pipe, measured vertically, above the top of the overflow rim of the vessel, and in no case less than six inches.



(2) Reduced Pressure Principle Device. An approved assembly of two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure relief valve located between the check valves, as described in reference (b) and specified in reference (d).

(3) Double Check Valve Assembly. An approved assembly of two independently operating approved check valves with tightly closing shut-off valves on each end of the check valves, plus properly located test cocks for the testing of each check valve.

(4) Atmospheric Vacuum Breaker. A device designed to not subject to static line pressure and contains a check valve and an air-let valve.

(5) Pressure Vacuum Breaker. A device that is designed to operate under conditions of static line pressure and contains one or two independently operating, spring-loaded air-inlet valves located on the discharge side of the check valve (or valves), plus properly located test cocks, and tightly closing shut-off valves.

e. Certified Tester. A certified tester means three classes of certified testers:

(1) A limited tester - A person trained and qualified to perform periodic testing, inspection, and repairs on the specific devices contained within a specific plant or institution. This person is usually an employee of the plant or institution and assigned the duty of taking care of the backflow prevention equipment as part of his or her overall plant duties, and does not extend to backflow prevention devices that are not part of the specific plant or institution.

(2) A general tester - A person trained and qualified to perform the periodic testing, inspection, and repairs on all devices that are on the market. This person may be an employee of a water agency, an employee of a municipal agency, or an individual operating a backflow device testing service.

(3) A manufacturer's agent - A person who is an employee of a manufacturer of backflow prevention equipment and is thoroughly familiar with the backflow prevention devices produced by his/her employer. This person maybe familiar with other makes and models of backflow prevention devices but is restricted to only his/her employer's products. The Director of the Department of Health, State of Hawaii or his duly authorized representative, must approve all certified testers.

f. Cross-Connection. Any physical connection or arrangement of piping or fixtures between two otherwise separate piping systems, one of which contains potable water for human consumption and the other water for irrigation, fire protection, industrial and other uses, or non-potable water or industrial fluids of questionable safety, through which, or because of which, backflow may occur into the potable water system. This would include bypass arrangements, jumper connections, removable sections, swivel or changeover devices, and any other temporary or permanent devices through which, or because of which backflow could occur.



#### 4. Background

a. Reference (b) presents requirements for the design of water supply systems for naval shore activities. Reference (b) indicates the design requirements for protecting the potable system from contamination by cross-connections with non-potable supplies and units containing polluted water. Reference (b) further indicates the need to protect the potable system from contamination by irrigation systems.

b. Reference (d) sets forth criteria for specifying backflow preventers of the reduced pressure principle type. It requires that such devices have a current Certificate of Approval and provides a list of approved backflow prevention devices.

c. Reference (e) cites methods and devices by which hazards may be eliminated without interfering with the functions of plumbing or water supply distribution systems. It is a comprehensive reference, and covers all aspects of cross-connection control.

d. Reference (f) provides technical guidance for the operation and maintenance of water supply systems at naval shore activities. Chapter 8 of reference (f) describes how the water system becomes contaminated. Chapter 9 reference (f) further requires that approved backflow preventers be installed according to the degree of the hazard involved and indicates the need for periodic testing and inspection of the devices by certified personnel. It also suggests a time interval for inspection and indicates that all devices be tested according to the manufacturer's service instructions. It further points out the requirements for record keeping.

e. To assure the quality of the water at the customer's tap, both the customer and Navy Facilities Engineering Command, Hawaii (NAVFAC HI), the water supplier, must participate in a backflow prevention and cross-connection control program.

5. Policy. Protect the existing potable water system at all times from hazardous cross-connections by the installation, operation, and maintenance of approved backflow preventers. Backflow prevention and cross-connection control measures must be in accordance with the recommendations and requirements of references (a) through (f).

#### 6. Discussion

a. The objectives of the backflow prevention and cross-connection control program are to achieve the following:

- (1) Protection of the quality of the base water supply.
- (2) Elimination of existing hazards.
- (3) Prevention of future unprotected cross-connections.

b. The backflow prevention and cross-connection control program requires the following:

- (1) The survey all existing cross-connections to determine they are adequately protected.
- (2) The recording of data on all existing backflow preventers to enable up-to-date monitoring. The data must include at least the following information:
  - (a) Activity name.
  - (b) Building number (if appropriate).
  - (c) Sketch of approximate location of backflow preventer.
  - (d) Size, type, model number, and manufacturer of the backflow preventer.
  - (e) Date installed (if known).
  - (f) Type of Hazard.
- (3) Operate, maintained and repair all known existing backflow preventers to ensure their proper operation for the protection of the water system.
- (4) Inspect and test all existing backflow preventers at the minimum time intervals to determine their effectiveness as shown in the table. If successive tests on a backflow preventer indicate repeated failures, test preventer at more frequent interval to be determined by NAVFAC HI Utilities and Energy Management Department, Potable Water Division (OPC61). All testing must be performed in accordance with the manufacturer's instruction.

<u>METHOD OR DEVICE</u>	<u>3</u> <u>MONTHS</u>	<u>6</u> <u>MONTHS</u>	<u>12</u> <u>MONTHS</u>
Pressure Type Vacuum Breaker			X
Double Check Valve Assembly			X
Reduce Pressure Principle devices used for shore-to ship connections	X		



<u>METHOD OR DEVICE</u>	<u>3 MONTHS</u>	<u>6 MONTHS</u>	<u>12 MONTHS</u>
Other Reduced Pressure Principle device		X	
Air Gap			X
Reduced Pressure Principle devices used to separate the Navy's potable water system from another agency's potable water system			X

(5) Review all plans and specifications or sketches and material description for new connections to NAVFAC HI Potable Water Systems by NAVFAC HI OPC61 to verify the safety of the cross-connections.

(6) Report all known or suspected accidental contamination immediately to NAVFAC HI OPC61 to enable corrective action, and avoid widespread contamination of the water system.

7. Implementation. Maintain the following provisions of the backflow prevention and cross-connection control program by the shore activities as indicated below:

a. All shore activities and other agencies who receive potable water from water systems owned and operated by NAVFAC HI must:

(1) Conduct a Cross-Connection Control and Backflow Prevention Survey of the areas under their jurisdiction including building plumbing, fire protection, exterior hose bibs, lawn irrigation systems, etc. The survey must include an inspection of the consumer's premises for hazards noted in references (a) and (e) and document any findings observed during the survey. The survey must also document all existing backflow preventers. The activity is responsible for funding the survey.

(2) Conduct follow-up surveys of the areas under their jurisdiction within 5 years after the initial survey to update the status of the initial findings and provide new information, findings, and recommendations as required. The activity funds the follow-up surveys as a lump sum amount or incremental amounts of the cost determined by NAVFAC HI OPC61.

(3) Take immediate action to eliminate hazards if the survey indicates that there are cross-connection hazards.

(4) Forward copy of all surveys to NAVFAC HI OPC61.

(5) The activity may submit a work request to have NAVFAC HI conduct the survey.

b. All shore activities and other agencies who have existing backflow preventers that do not conform to the requirements of reference (e) and the NAVFAC HI OPC61 and, who receive water from systems owned and operated by NAVFAC HI, must provide funding to have their backflow preventers tested and certified by certified testers from NAVFAC HI OPC61.

c. All shore activities and other agencies who have requirements for new backflow preventers and who receive water from systems owned and operated by NAVFAC HI must:

(1) Provide funding to have their backflow preventers installed, tested, and certified.

(2) Provide funding for the re-testing and re-certification of the backflow preventer should the backflow preventer fail the initial test.

(3) Ensure initial certification and all re-certification is performed by NAVFAC HI OPC61. Certification by other agencies is not accepted.

d. All shore activities and other agencies who have existing backflow preventers registered with NAVFAC HI OPC61 will have their devices inspected, maintained, and certified by NAVFAC HI funding for the inspection, maintenance, and certification must be provided by NAVFAC HI OPC61.

e. The activities who are responsible for the design of the connection to a NAVFAC HI Potable Water System must submit construction drawings and specifications for the connection to NAVFAC HI OPC61 for approval, prior to its construction.

f. NAVFAC HI job planners must obtain approval for the connection to the NAVFAC HI Potable Water System from NAVFAC HI OPC61, if NAVFAC HI is to perform the work and construction drawings are not required for the connection.

g. The activity who requires the connection to NAVFAC HI Potable Water System must obtain approval for the connection from NAVFAC HI OPC61 prior to construction of the connection.

h. All shore activities who install backflow preventers or administer contracts for their installation NAVFAC HI must ensure that all newly installed backflow preventers are tested and inspected by a certified tester from NAVFAC HI OPC61 at the same time that the water outage occurs for the connection to the water system. Backflow preventer must pass all tests prior to supplying potable water.



19 Sep 2016

i. All activities that suspect that the potable water system may have been contaminated must call NAVFAC HI OPC61 Steam/Air/Potable Water Division Manager, telephone number 473-0388. In addition, warn all personnel in the area of the possible contamination to stop drinking the water.

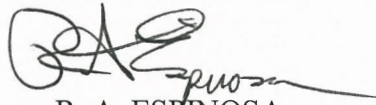
8. Responsibility

a. Commanding Officers and Officers-in-Charge of shore activities must ensure that hazards from cross-connections are eliminated and that new connections are approved.

b. Commanding Officers and Officers-in-Charge of shore activities in doubt as to the proper methods of backflow prevention and cross-connection control may request engineering and technical assistance from NAVFAC HI (Code 431), Long Range Maintenance Planning Branch, telephone number (808) 474-3700.

9. Records Management. Manage all records created by this instruction, regardless of media or format per SECNAV Manual 5210.1 of January 2012.

10. Review and Effective Date. Per OPNAVINST 5215.17A of 26 May 2016, the Facilities and Environmental (N4) will review this instruction annually on the anniversary of its issuance date to ensure applicability, currency, and consistency with Federal, DoD, SECNAV, and Navy policy and statutory authority using OPNAV 5215/40. This instruction will automatically expire 5 years after its issuance date unless reissued or canceled prior to the 5-year anniversary date, or an extension has been granted.

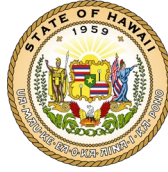


R. A. ESPINOSA  
Chief of Staff  
Acting

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Interagency Drinking Water System Team  
Zone A2 Removal Action Report  
February 2022

**Line of Evidence 2a**

**Water within the Distribution System does not exceed State and Federal Drinking Water MCLs, Specified State EALs, and ISPs**

**Table 1: Lines of Evidence Under Evaluation – Ensure no contamination remains in the system and water chemistry concerns are addressed.**

**Objective 2a** - Water within the distribution system does not exceed State and Federal DW MCLs, specified State EALs, and ISPs.

Incident Specific Criteria –

- Zone flushing plan demonstrates entire distribution system is flushed.
- Sample results show the water in distribution system does not exceed State and Federal DW MCLs, specified State EALs, and ISPs. (Guidance Table 2 and Table 3)
- Drinking water does not show sheen, olfactory evidence, or other qualitative methods of petroleum.

Lines of Evidence	Completion Status	Outstanding Items
JBPHH water system's approach to flushing and their metrics for success.	Complete	<ul style="list-style-type: none"> <li>• None.</li> </ul>
Validity of the volumetric exchange model	Complete	<ul style="list-style-type: none"> <li>• None.</li> </ul>
Verification that the entire distribution system is flushed volumetrically.	Complete	<ul style="list-style-type: none"> <li>• None.</li> </ul>
Residential Sampling Report for Flushing Zone (Risk Management Summary)	Complete	<ul style="list-style-type: none"> <li>• None.</li> </ul>

February 20, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: SUMMARY OF LINE OF EVIDENCE OBJECTIVE 2A – WATER WITHIN THE DISTRIBUTION SYSTEM DOES NOT EXCEED STATE AND FEDERAL DW MCLs, SPECIFIED STATE EALs, AND ISPs

Encl: (1) 2a.1 Memorandum for Record  
(2) 2a.2 Validity and Application of Volumetric Exchange Method  
(3) 2a.3 Hydraulic Model  
(4) 2a.4 Records of Completed Volumetric Exchanges  
(5) 2a.5 Water Source and Water Storage Facilities  
(6) 2a.6 Distribution System Exceedance Investigation Summary and Results

1. Enclosures (1) through (6) document completion of Line of Evidence 2a, that water within the Zone A2 distribution system does not exceed State of Hawaii and Federal Drinking Water standards, Maximum Contaminate Levels, Environmental Action Levels and Incident Specific Parameters. On the evening of November 28, 2021, the Red Hill Shaft was secured from operation and all pumping operations ceased. The Aiea/Halawa shaft briefly served as the secondary source starting on November 28, 2021, but it was shut down on December 3, 2021 to prevent potential westward contaminant migration in the aquifer and because there were concerns over high chloride concentrations caused by saltwater intrusion. Since December 3, 2021, the Waiawa Shaft has been the sole water source providing potable water to the Joint Base Pearl Harbor-Hickam (JBPHH) distribution network. Zone A2 is part of the JBPHH Drinking Water system that is operated and maintained by the United States Navy. Flushing operations for Zone A2 are summarized in Enclosure (1), signed by LCDR Carl Chase, team lead for the Drinking Water Distribution System Recovery Team.

2. Details on the drinking water system and flushing operations and protocols are provided in Enclosures (1), (3), and (5). The guidance provided by Dr. Whelton on the recommended volume exchanges to be flushed in the distribution system is provided in Enclosure (2).

3. The records of the distribution system volumetric exchanges flushed are provided in Enclosure (4). Level 2 sampling data collected after distribution flushing is summarized in Enclosure (6).

4. Sample results with analyte detections exceeding the prescribed MCL, EAL, or ISP are documented in Enclosure (6). The follow-on investigation summary and additional sampling results are also documented in Enclosure (6).

5. The information provided in Section 2a, including the flushing process followed and the subsequent sampling results, demonstrate that water within the Zone A2 distribution system does not exceed State of Hawaii and Federal Drinking Water standards, Maximum Contaminate Levels, Environmental Action Levels and Incident Specific Parameters.

6. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and I believe the submitted information is true, accurate, and complete.

WETZEL.CHRISTOPHER.JAMES.1540194862  
HER.JAMES.1540194862  
4862

Digitally signed by  
WETZEL.CHRISTOPHER.JAMES.1540194862  
Date: 2022.02.20 17:46:42 -08'00'

C. J. Wetzel  
LT, CEC, USN

22 Feb 2022

MEMORANDUM FOR THE RECORD

From: LCDR Carl Chase, JBPHH Drinking Water Distribution System Recovery Team  
To: Interagency Drinking Water System Team

Subj: DISTRIBUTION SYSTEM RECOVERY PLAN ADDENDUM – ZONE A2 ANALYSIS

Ref: (a) Memorandum for the Record from LCDR John Daly regarding the Distribution System Zone Flushing, December 28, 2021  
(b) State of Hawaii Department of Health, Directive One– Flushing Requirements Navy Water System Incident, Case No.: 20211128-1848 (HI Directive One, dated 08 December, 2021)  
(c) Drinking Water Distribution System Recovery Plan, 17 December 2021  
(d) Incident Specific Criteria to Meet Lines of Evidence Objectives 1c and 2a, dated 05 January 2022

Encl: (1) Ford Island/Shipyards Water Transmission Line Status

1. OBJECTIVE: The Drinking Water Distribution System Recovery Plan (DWDSRP) was signed by the Interagency Working Group on 17 December 2021. This addendum provides additional technical information to document the system flushing methodology and engineering approach used to restore Flushing Zone A2 to service as requested by the State of Hawaii Department of Health (HI DoH) in reference (d).

2. BACKGROUND:

2.1. Portions of the Navy water distribution system serving JBPHH and surrounding areas were exposed to low levels of fuel contamination with initial indications in the form of smell reports occurring on or about 28 November 2021.

2.2. Prior to the aquifer contamination incident (incident), water users connected to the Navy's system were supplied by three Navy owned water sources, Red Hill Shaft, Aiea/Halawa Shaft and Waiawa Shaft. In the time period prior to the incident, Waiawa Shaft was the main water source supplying approximately 16 million gallons per day (MGD) to the JBPHH system with at least one pump operating full time (100%). A single Red Hill Shaft pump was operated intermittently as a secondary source to supply approximately 5.5 MGD to the system. The Aiea/Halawa shaft was not being operated due to concerns over high chloride concentrations caused by saltwater intrusion into the aquifer.

2.3. On the evening of 28 November 2021, the Red Hill Shaft was secured and all pumping operations ceased. The Aiea/Halawa shaft briefly served as the secondary source starting on 28 November 2021 but was shut down on 03 December 2021 to prevent westward contaminant migration in the aquifer.

2.4. Since 03 December 2021, Waiawa Shaft has been the sole water source providing potable water to the distribution network. It is located 5.5 miles west of the Red Hill Fuel Facility and testing has not found any water quality issues at this source.

3. ENGINEERING ANALYSIS AND TOOLS: DWDSRP development utilized engineering judgement informed by existing tools and data sources such as ArcGIS, Supervisory Control and Data Acquisition

(SCADA) system historic/current data, hydraulic models, and input from water system infrastructure contamination subject matter experts (SMEs).

3.1. ArcGIS was the primary tool used for mapping, volumetric calculations, and spatial analysis of the JBPHH utility systems.

3.2. System flows were measured by meters at key points within the distribution system. Data was recorded and stored by the Navy's SCADA system historian. SCADA is also monitored 24/7 by water system operators.

3.3. A hydraulic model was developed in 2014 and calibrated to conditions at the time. It is a skeletonized model depicting major transmission lines to many areas of the base. It does not include all mainline pipes, the Hickam area, or laterals feeding residence and non-residence facilities. The model was considered to be of limited use in determining the effectiveness of system flushing. It was primarily used to determine areas that were most likely impacted by the contamination event. The results directly correlated with initial reporting from impacted residents.

3.4 Dr. Andrew Whelton, a Purdue University associate professor of civil, environmental, and ecological engineering and recognized for his expertise in disaster response and recovery, provided recommendations to the US Navy based on his research and experience. His work is often cited in EPA literature and he is a leading expert in the field of recovering contaminated drinking water plumbing. His recommendations were incorporated into the DWDSRP.

4. CONSTRAINTS: In addition to Section 1.3 of the DWDSRP, the following constraints were considered during development of the plan:

4.1. Waiawa Shaft pumps are capable of pumping 19 MGD with 2 pumps running at full speed. There are 4 pumps at Waiawa Shaft, 2 are operational, one is standby, and one is down for maintenance. Average daily demand at JBPHH since the incident has ranged from 11 to 14 MGD. Maximum potable water system flushing flows were limited to 5 MGD to avoid excessive drawdown of the S1/S2 tanks and stay within the capacity of Waiawa Shaft pumps.

4.2. The two 6 million gallon (each) tanks, S1 and S1 could not be drawn down below the 28-foot level. This constraint was imposed by the water system operators who wanted to avoid low water system pressures that would be caused by S1/S2 drawdown below 28-feet.

4.3. Discharge to the Navy's sanitary sewer system and the Fort Kamehameha Wastewater Treatment Plant (Ft. Kam WWTP) was limited to 1 MGD by wastewater operations staff. Much of the infrastructure at the Ft. Kam WWTP was considered to be in poor condition and some process elements do not have a backup unit. The direct discharge of too much potable water to the plant was also thought to pose the risk of "wash out" of the microbes that provide secondary treatment.

4.4. Discharges of potable water to land or storm sewers were required by HI Directive One to be treated prior to discharge. Treatment was provided through 1 MGD mobile granular activated carbon (GAC) units. The units had several constraints on their use including site access, adequate staging areas that were level with sufficient area for the units and support crews, impacts to the community, traffic control, and distance to discharge. Each GAC was kept in a single location for at least 24 hours due to labor and time required for unit setup and breakdown.

4.5. Water service was required be maintained to residents and JBPHH tenants. Many families have remained in their homes and mission essential Government activities require continuous water service.

4.6. JBPHH did not have an established unidirectional flushing plan developed prior to the incident. Unidirectional flushing typically involves inducing one-way flow through each pipe segment in a water distribution system by closing mainline isolation valves and opening hydrants for a short period of time. The number of hydrants required would be determined by the pipe size and the minimum water velocity required to flush sediments and other contaminants from the pipe segment. True unidirectional flushing of the system was determined not to be a feasible method for flushing the JBPHH potable water system for the following reasons:

4.6.1. Per section 1.2 of the DWDSRP, the distribution system was to be recovered with critical urgency. Additionally, SMEs advised that the longer contaminants remained in the system, the more likely it was that they would migrate into plastics, gaskets, sediments, etc. A unidirectional flushing program would take several months to develop and implement and the timeline was not considered feasible for a return to service.

4.6.2. Water system operators indicated that many mainline isolation valves would not properly close and could not be relied upon to isolate pipe segments.

4.7. Dr. Whelton recommended three volumetric turnovers for impacted pipe networks. Flushing zones with higher risk of contamination were identified and prioritized using water user complaint history, testing results, the hydraulic model, and the hydraulic proximity to Red Hill Shaft. A factor of safety was applied to the highest priority zones by specifying a minimum of five volumetric turnovers. Zones where the hydraulic modelling indicated that contamination may have travelled, were in close hydraulic proximity to Red Hill Shaft, and had few complaints were flushed with the recommended three volumetric turnovers. Low priority was given to zones where SCADA data indicated that water was fed solely from Waiawa Shaft before and after the incident. To reduce water waste, flush zones with lower risk of contamination were volumetrically turned over a minimum of once or twice.

5. Following Dr. Whelton's recommendation, the DWDSRP was designed with a directional flush of the distribution system starting from the clean water source and moving systematically through the entire system. The limited water source capacity at Waiawa Shaft and disposal constraints required that the system be broken down into smaller flush zones. 19 total zones were established that could be independently flushed without adverse hydraulic or water quality impacts to previously flushed zones. Section 2.4 of the DWDSRP depicts the network diagram and zone relationships.

## 6. FLUSH ZONE A2:

6.1. DESCRIPTION OF FLOW: Zone A2 is fed from Zone A1 (Pearl City Peninsula) via a single 24-inch transmission main. It is also connected to Zone B1 (Point McGrew/Museum Area) to the east via a 24-inch transmission main running parallel to the Ford Island Bridge. The predominant direction of flow is from Zone A1. Water then flows in an easterly direction through the Zone A2 pipe network to the 30-inch transmission main running through Zone B1. Per Enclosure (1), the 24-inch transmission main connecting Zone A2 to Zone C3 (Hospital Point/Ship Yard) was damaged prior to the incident on 15 June 2021 and has been isolated with closed valves. See Figure 1 for a schematic depiction of Zone A2, relevant flow meters, and the transmission mains connecting the zone to the system.





administrative facilities. The zone also includes a child daycare center (CDC). Museums include the USS Missouri and the Pacific Aviation Museum. Major operational tenant facilities include the National Oceanic and Atmospheric Administration (NOAA) facility, a Defense Information Systems Agency (DISA) facility and a submarine training facility.

6.3. PIPE VOLUME: Per section 2.5.1.1. of the DWDSRP, Flush Zone A2 has a mainline pipe volume of 580 thousand gallons (KGal) and a minimum turnover volume of 580 KGal. With the exception of the 2 parallel 24-inch transmission main pipelines running through the zone, mainline pipes in the zone are 4 to 12-inches in diameter.

6.4. PRIORITY: Zone A2 was included in Phase #4 with one volumetric turnover recommended for flushing. As described in Section 6.1 above, Waiawa Shaft was likely the sole source of water to Zone A2 and for this reason, the likelihood of contamination entering the zone was expected to be low.

6.5. HYDRANT SELECTION: Nine geographically and hydraulically dispersed flushing hydrants were selected to flush Zone A2. Hydrants were selected so that water would be pulled through the smaller mains serving residences and facilities.

6.6. DEAD-END LINES: It is possible that flushing was not induced in some small neighborhood loops or longer dead-end lines serving facilities or piers. To address this concern, additional distribution water line samples were taken in locations selected in a joint effort by the Navy, DoH, and EPA. These samples are representative of other dead-end lines within the zone.

6.7. FLUSHING ACTUALS: Water was simultaneously discharged through:

1-3			Shift			Flush Time			Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log				
30-Dec	8:00	20:00	18:40		1:20	20211230 0800-2000	N/A				
30-Dec	20:00	8:00			12:00	20211230 2000-0800	N/A				
31-Dec	8:00	20:00		10:35	2:35	20211231 0800-2000	N/A				
<div> <b>TOTAL RUN @ FLOW of 200</b>  TIME 15:55  VOLUME 176675 Gallons </div>											

2-7			Shift			Flush Time			Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log				
28-Dec	8:00	20:00	16:47		3:13	20211228 0800-2000	N/A				
28-Dec	20:00	8:00			12:00	20211228 2000-0800	N/A				
29-Dec	8:00	20:00		12:23	7:37	20211229 0800-2000	N/A				
<div> <b>TOTAL RUN @ FLOW of 300</b>  TIME 22:50  VOLUME 253450 Gallons </div>											

1-14			Shift			Flush Time			Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log				
30-Dec	8:00	20:00	17:11		2:49	20211230 0800-2000	N/A				
30-Dec	20:00	8:00			12:00	20211230 2000-0800	N/A				
31-Dec	8:00	20:00		9:50	1:50	20211231 0800-2000	N/A				
<div> <b>TOTAL RUN @ FLOW of 200</b>  TIME 16:39  VOLUME 184815 Gallons </div>											

3-1			Shift			Flush Time			Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log				
29-Dec	8:00	20:00	17:40		2:20	20211229 0800-2000	N/A				
29-Dec	20:00	8:00			12:00	20211229 2000-0800	N/A				
30-Dec	8:00	20:00		8:46	0:46	20211230 0800-2000	N/A				
<div> <b>TOTAL RUN @ FLOW of 200</b>  TIME 15:06  VOLUME 167610 Gallons </div>											

1-15			Shift			Flush Time			Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log				
29-Dec	8:00	20:00	19:51		0:09	20211229 0800-2000	N/A				
29-Dec	20:00	8:00			12:00	20211229 2000-0800	N/A				
30-Dec	8:00	20:00		9:00	1:08	20211230 0800-2000	N/A				
<div> <b>TOTAL RUN @ FLOW of 200</b>  TIME 13:17  VOLUME 147445 Gallons </div>											

4-6			Shift			Flush Time			Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log				
29-Dec	8:00	20:00	18:12		1:48	20211229 0800-2000	N/A				
29-Dec	20:00	8:00			12:00	20211229 2000-0800	N/A				
30-Dec	8:00	20:00		9:35	1:35	20211230 0800-2000	N/A				
<div> <b>TOTAL RUN @ FLOW of 200</b>  TIME 15:23  VOLUME 170755 Gallons </div>											

8-7	Shift		Flush Time			Documentation	
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log
29-Dec	8:00	20:00	17:25			2:35	20211230 0800-2000 N/A
29-Dec	20:00	8:00				12:00	20211230 2000-0800 N/A
30-Dec	8:00	20:00	9:38			1:38	20211231 0800-2000 N/A

<b>TOTAL RUN @ FLOW of 200</b>	
TIME	16:13
VOLUME	180005 Gallons

Hydrant	Volume
1-3	176,675
1-14	184,815
1-15	147,445
2-7	253,450
3-1	167,610
4-6	170,755
5-16	179,820
7-1	235,135
8-7	180,005
<b>TOTAL</b>	<b>1,695,710</b>

6.7.1. The total volume flushed through the system was 1,696 KGal for 2.9 volumetric turnovers. Actual volumetric turnovers exceeded the minimum requirement.

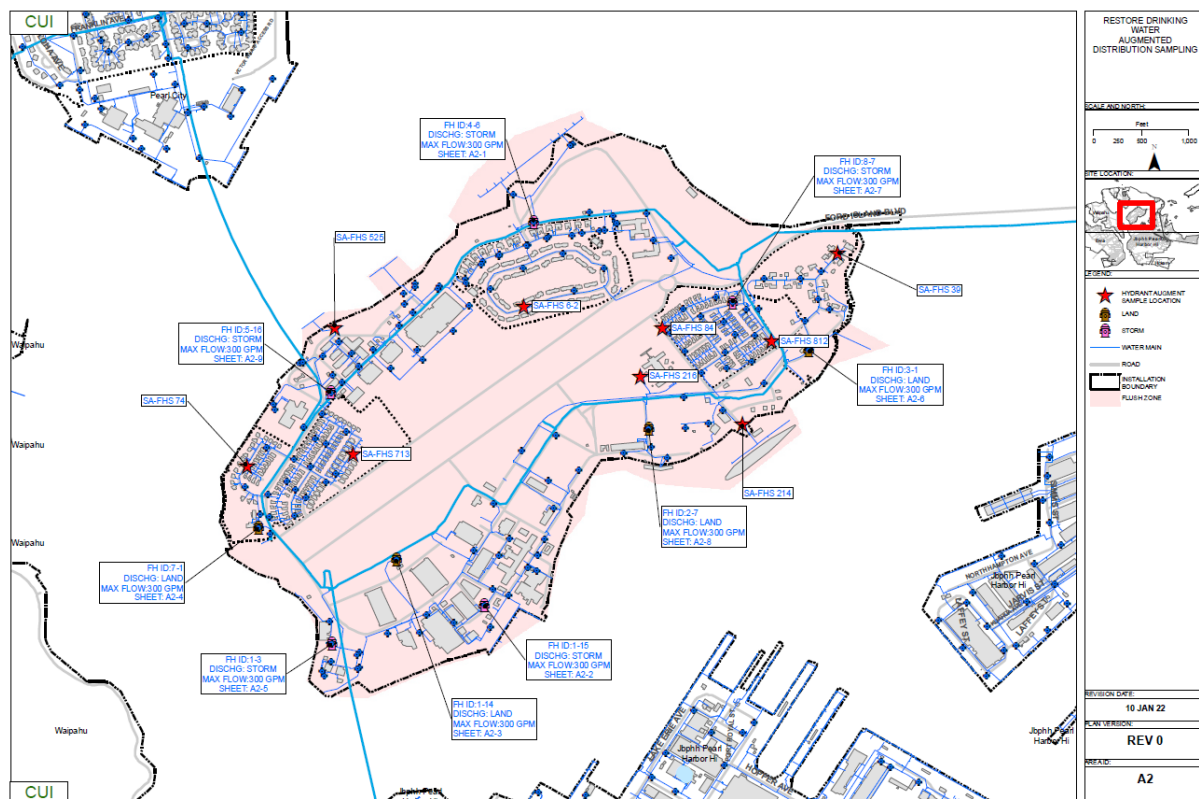


Figure 2: Flush Zone A2

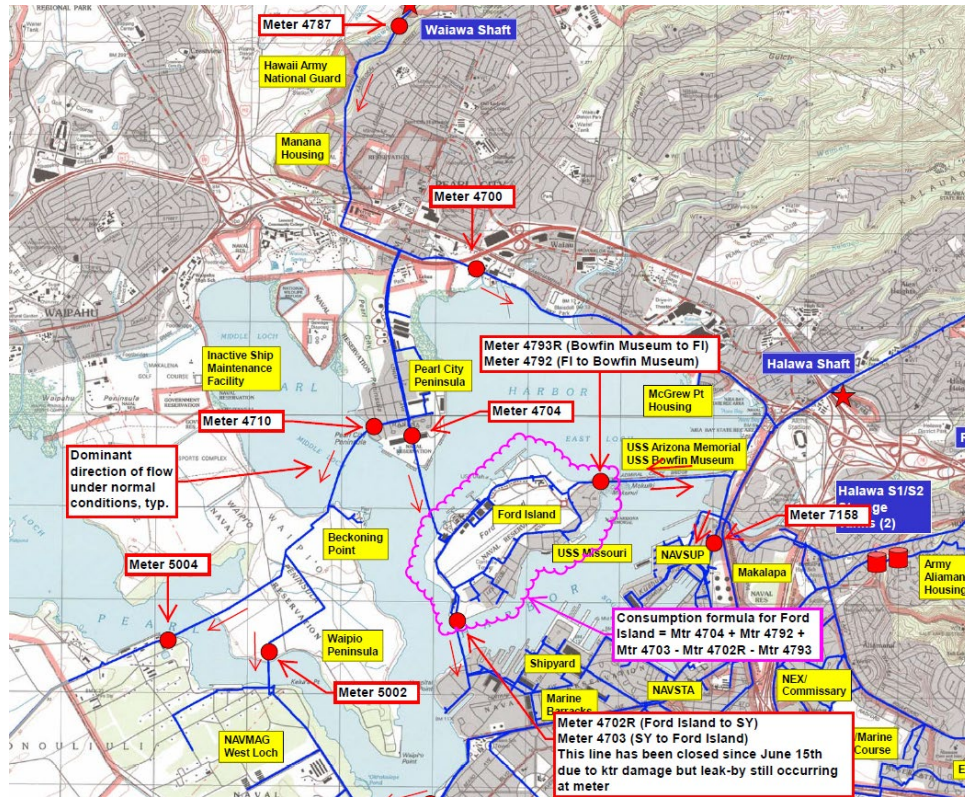


Figure 3: SCADA Meter Locations

6.8. SCADA DATA: Daily average flow data collected between 20 November 2021 and 09 January 2022 is shown in Figure 4 below.

6.8.1. Ford Island has 3 master meters recording flows to and from the island (see Figures 1 and 2). PCP to Ford Island (4704), from Ford Island flowing east to the transmission mains running east of the Bowfin Museum (4792) and the reverse meter measuring flows from the east to Ford Island (4793R).

6.8.2. Meter 4704 (PCP to Ford Island) flowed an average of 4.62 MGD from Zone A1 from 20 November 2021 to 09 January 2022. Between these dates, over 235 MG has entered the Ford Island water system. The average flow of meters 4700, 4704 and 4710 was subtracted from Meter 4787 (Waiawa Shaft) to estimate average day demand (ADD) in Zone A1 (PCP). This resulted in an estimated ADD within Zone A1 of 3.93 MGD which was significantly higher than the 0.5 MGD estimate of ADD published in the 2015 Utility System Assessment. The 30-minute average data of Meter 4704 shows that the meter frequently reads 0 MGD which is highly unlikely given that over 9 MGD is entering Zone A1. For this reason the actual flow through the meter is suspected to be greater than recorded by the SCADA system. Additional investigation into this meter is recommended to confirm that recorded data is valid.

6.8.3. The direction of flow through Meters 4792/4793R was from west to east, off the island towards the transmission main running through Zone B1. The average flow recorded by Meter 4792 was 1.9 MGD between 20 November 2021 to 09 January 2022 and a total volume 98.68 MG was recorded during this time period. The average flow recorded by Meter 4792 was subtracted from Meter 4704 to estimate ADD in Zone A2.

This resulted in an estimated ADD within Zone A2 of 2.64 MGD which was significantly higher than the 1 MGD estimate of average day demand (ADD) published in the 2015 Utility System Assessment. The 30-minute average data of Meter 4792 shows that the meter frequently reads 0 MGD. For this reason the actual flow through the meter is suspected to be greater than recorded by the SCADA system. Additional investigation into this meter is recommended to confirm that recorded data is valid.

6.8.4. As discussed in Section 6.1 above, the data recorded by 4793R was suspected to be faulty and further investigation is recommended to confirm that the data recorded by this flow meter was valid.

6.8.5. Meters 4702R and 4703 are located on the 24-inch transmission main connecting the shipyard to Ford Island. This line has been isolated since 15 Jun 2021 due to damage and flows recorded by these meters was considered to be invalid.

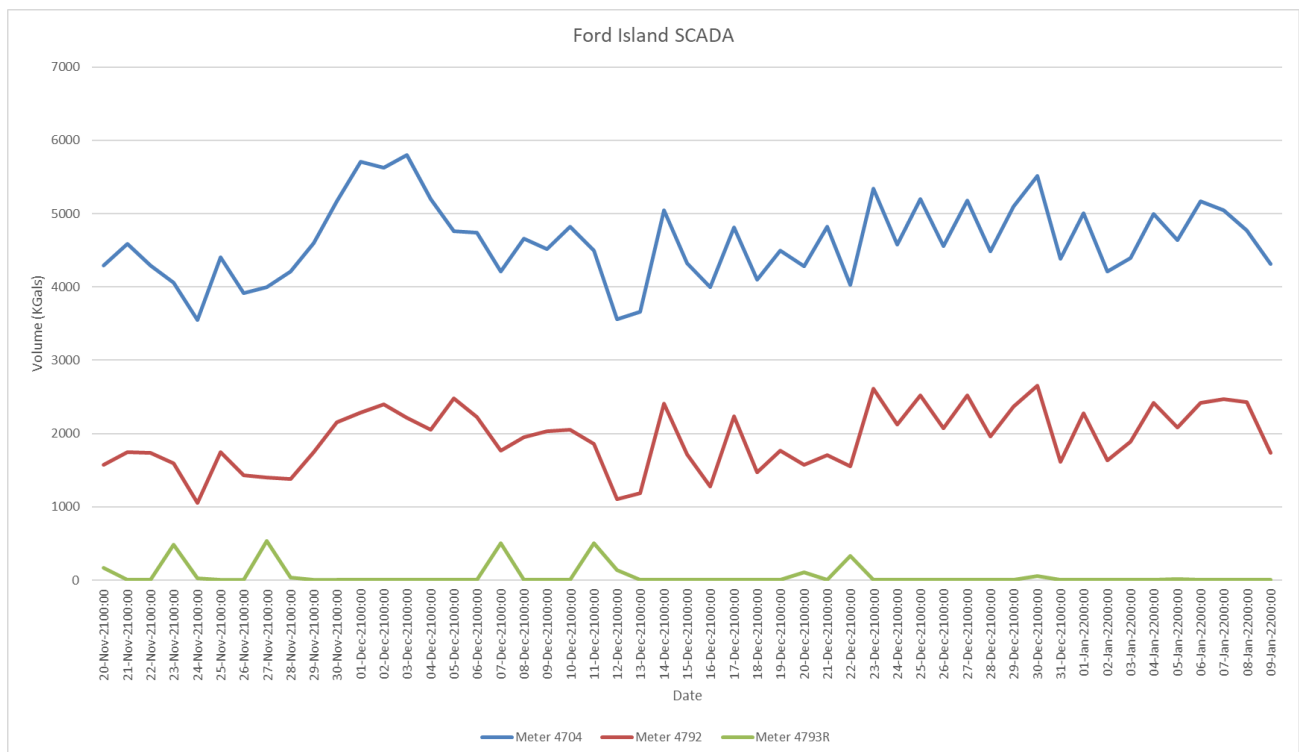


Figure 4: SCADA Daily Meter Totals 20Nov21 – 09Jan22

*C. C. Chase*  
C. C. CHASE, UFW

C. C. CHASE



22 February 2022

MEMORANDUM FOR RECORD

SUBJECT: Ford Island/Shipyard Water Transmission Line Status

1. This Memorandum for Record (MFR) is to document the status of the underwater crossing water transmission line (pipe) that connects the Ford Island and Shipyard areas of the Joint Base Pearl Harbor-Hickam Potable Water System.
2. As part of the P-209 Dry Dock 3 Replacement design effort, a contractor was performing soil borings at Hospital Point near the Shipyard. The contractor damaged the 24-inch underwater crossing during one of their borings on 15 June 21, by drilling through the casing and pipe.
3. JBPHH has begun plans for repairing or replacing this damaged line. A Design consultant is scheduled to start the design on the repairs in March of 2022. Construction funds for the repair are allocated for Fiscal Year 2023.
4. The water transmission line was secured from the JBPHH system via an isolation valve on the Ford Island side, and physical pipe removal on the Shipyard side. Enclosure [1] is a picture taken on 22 January 2022 of the physical pipe removal at Hospital Point.
5. The Ford Island isolation valve is less than 5 years old, and PWD personnel have verified in the field that there are no indications of leak-by, via audible tests and noting the lack of vibrations.
6. a pitot-style flow meter that has been sending false readings is located in the currently isolated section is, as there is no water flow in this not-in-service piping. Isolation was performed with in-house NAVFAC forces on 5 Dec 2022. PWD has not explored the root cause of the false reading, as the piping is isolated, and the meter is not used for any other purposes. Possible cause of the flow readings may be air trapped in the lines that shows pressure differentials as tide changes.

HARMEYER.RA  
NDALL.ERNES  
T.1186692663

Digitally signed by  
HARMEYER.RANDALL.ER  
NEST.1186692663  
Date: 2022.02.22  
17:19:23 -10'00'

CAPT R. Harmeyer  
Public Works Officer  
Joint Base Pearl Harbor Hickam



February 15, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: VALIDITY AND APPLICATION OF VOLUMETRIC EXCHANGE METHOD

Ref: (a) Drinking Water Distribution System Recovery Plan, December 2021

Encl: (1) Dr. Whelton email documenting volumetric exchange method dtd 08 JAN 22

1. This letter documents the basis of the volumetric exchange method used in the development of reference (a). The basis of the flushing method was based on two key recommendations from Dr. Whelton, who served as the Navy's consultant in the early stages of the incident. Enclosure (1) documents key recommendations from Dr. Whelton which included flushing from a clean source, systematically moving through the entire system, and flushing at least three times the pipe volume. Rules of three is what Dr. Whelton generally recommends.

2. Reference (a) incorporated the recommendations from Dr. Whelton by creating a flushing sequence that began with clean water from the Waiawa shaft and flushing systematically through the entire system. The volumetric exchanges for each zone and zone flushing sequence plan was developed by Navy engineers. This is outlined in table 2.4, Distribution System Recovery Plan Diagram, and section 2.5, Flushing Plan Phasing, of reference (a). A safety factor was applied to the rule of three to obtain five volumetric turnovers for the phase 1 zone areas. Phase 2 zone areas had three volumetric turnovers. Phase 3 zone area had two volumetric turnovers and phase 4 zone areas had one volumetric turnover. The phase 3 and phase 4 zone volumetric turnover determinations were made after considering the up-gradient zone flushing volumes and the non-potable use of water in the zones.

3. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and the submitted information is true, accurate, and complete.

MENO.MICHAEL.WAYNE.JR. Digitally signed by  
MENO.MICHAEL.WAYNE.JR.  
1088310035 Date: 2022.02.15  
07:17:55 -10'00'

M. W. Meno  
Captain, U.S. Navy Civil Engineer Corps



**From:** Whelton, Andrew J <awhelton@purdue.edu>  
**Sent:** Saturday, January 8, 2022 4:58 AM  
**To:** Lee, Andre K (NAVFAC HI BD) CIV USN NAVFAC HAWAII PEARL (USA) <andre.k.lee4.civ@us.navy.mil>  
**Cc:** Isaacson, Kristofer P <isaacsok@purdue.edu>; Proctor, Caitlin Rose <proctoc@purdue.edu>  
**Subject:** [URL Verdict: Neutral][Non-DoD Source] RE: Cross Connection Control Plan and Flushing Plan documentation requirements for DoH

LCDR Daly,

I am free to talk later this afternoon today if you want. I'm Mountain Standard Time.  
Below is some information.

Andy  


#### FEEDBACK

1. You applied unidirectional flushing and if you opened hydrants fully you likely maximized velocity in the pipes you were flushing. The issue they seem to be getting at is scouring velocity which you identify. This is used for removing sediment (typical cleaning of water pipes) as you know. There is no SOP for water contamination response and recovery, so you applied standard water distribution system maintenance practice of unidirectional flushing. This is good. The state I think invoked water main disinfection standard which, to my knowledge isn't applicable here unless you conducted shock disinfection.
  - a. For perspective, per a Water Research Foundation study: Microbial Control Strategies for Main Breaks and Depressurization, Project 4307. Published 2014. Denver, Colorado.
    1. Scouring velocity helps removed sediment from water mains/pipes. To achieve 2.5 to 3 log removal of sand particles for 4-to-16-inch diameter PVC pipes, 3 ft/s is needed.
    2. In that report, to achieve this removal for a 6-inch diameter PVC pipe, Q was 308 GPM
    3. In that report, to achieve this removal for 4-inch diameter PVC pipe, Q was 137 GPM
  - b. We recommended starting flushing from the clean water source and moving systematically through the entire system in a unidirectional way. If you all did this, be sure to explain that. That helps minimize the change residual "old" water gets untouched, or is left in the system.
  - c. You could calculate scouring velocities in each of the areas. If any are lower than desired you can go back and just keep repeat flushing giving an added level of safely.
  - d. The state's interest in scouring velocity may be of concern that (JP-5?) free product adsorbed to sediment/scales and they want to be certain it got scoured out. If it didn't, it could dissolve it's constituents into water over time.
  - e. Dead-ends are really important. You need to specifically address how you will get that water out. In West Virginia, many weeks after the spill and utility had flushed out the black-licorice smelling contaminated water out someone in a distal part of the system complained about odor. To my recollection the utility thought it was psychological, but it turned out there was a dead-end they didn't flush. Somehow that contaminated water got drawn into a nearby home and someone was exposed.

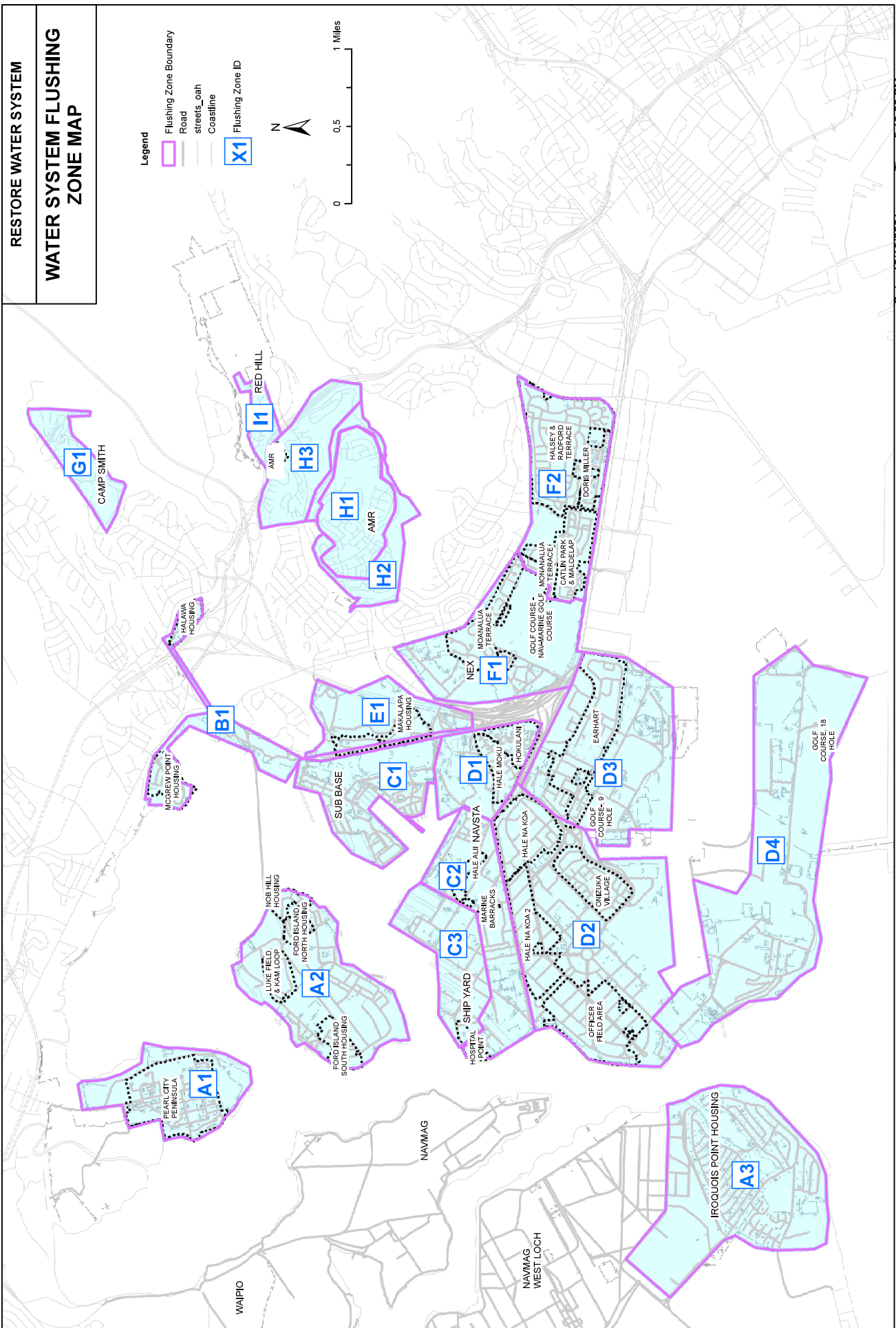
- f. Question: How long was each hydrant open typically?
  - g. I think we mentioned flushing 3 times the pipe volume. Rules of three is what I often recommend. Flushing velocity is certainly important. I vaguely remember NAVFAC had contracted a consultant to create the flushing plan.
2. JP-5 isn't a single contaminant which we've talked about before. It's a mixture of 100s-1000s of individual chemicals. Even if JP-5 itself is hydrophobic and primarily found in emulsions or floating on the surface, some of these constituents will still diffuse into the water itself. The question they are likely after is how do you know you removed all parts of JP-5 that may have gotten entrained in the water system? This goes back to what chemicals are you testing for in the water distribution system. JP-5 constituents have different water solubility and octanol-water partitioning coefficients (Log Kow = How much they like to be in biofilm and plastics, not water). Additionally, the different materials (Metal vs PVC vs HDPE vs. gaskets) may be more prone to soaking up some JP-5 contaminants and not others depending on their characteristics. For example, PVC has been shown to be less susceptible to soaking up some crude oil-based contaminants than HDPE pipes (Huang et al. study with Whelton). Ultimately, the fate of the chemicals in the drinking water system will not be the same for all JP-5 constituents. Remember the drawing I drew on the whiteboard when meeting with CDR Chase, NAVFAC, COE, and Army? It showed different constituents may be in different parts of the water system. That's what DOH is likely after. Question to you: What wide screen testing have you done in the water distribution system since December 22? This can help you hunt down that the contaminants are present or gone.
  3. Escalation should be based on how much flushing you are okay with trying. If you want to remove and replace infrastructure (that has sometimes happened after other contamination events on the mainland and overseas), it's a viable but laborious option. As an extreme example, following the Camp Fire it was estimated it would take over a year of continuous flushing to return some contaminated pipes to safe use, so for some conditions they removed and replaced pipes. However, this flushing timeline will vary significantly depending on the water distribution systems and water testing results – AND chemicals or individual JP-5 constituents present. If I knew what the chemicals were still being found and what was done to try to get rid of them, I could give a more informed opinion. Food grade surfactants were used in Israel after a drinking water contamination incident...BUT using surfactants is not trivial and can cause all sorts of damage to water system components and leave residual. This probably isn't an email, but more discussion. Happy to talk. If you decide you want to go this way we should be more engaged technically in what this means. It's not likely an email response/effort, but more involved.
  4. Here's a paper where we reviewed petroleum (and other material) drinking water distribution and plumbing contamination incidents and flushing [Decontaminating chemically contaminated residential premise plumbing systems by flushing - Environmental Science: Water Research & Technology \(RSC Publishing\) DOI:10.1039/C5EW00118H](https://doi.org/10.1039/C5EW00118H). Unfortunately, when we went to

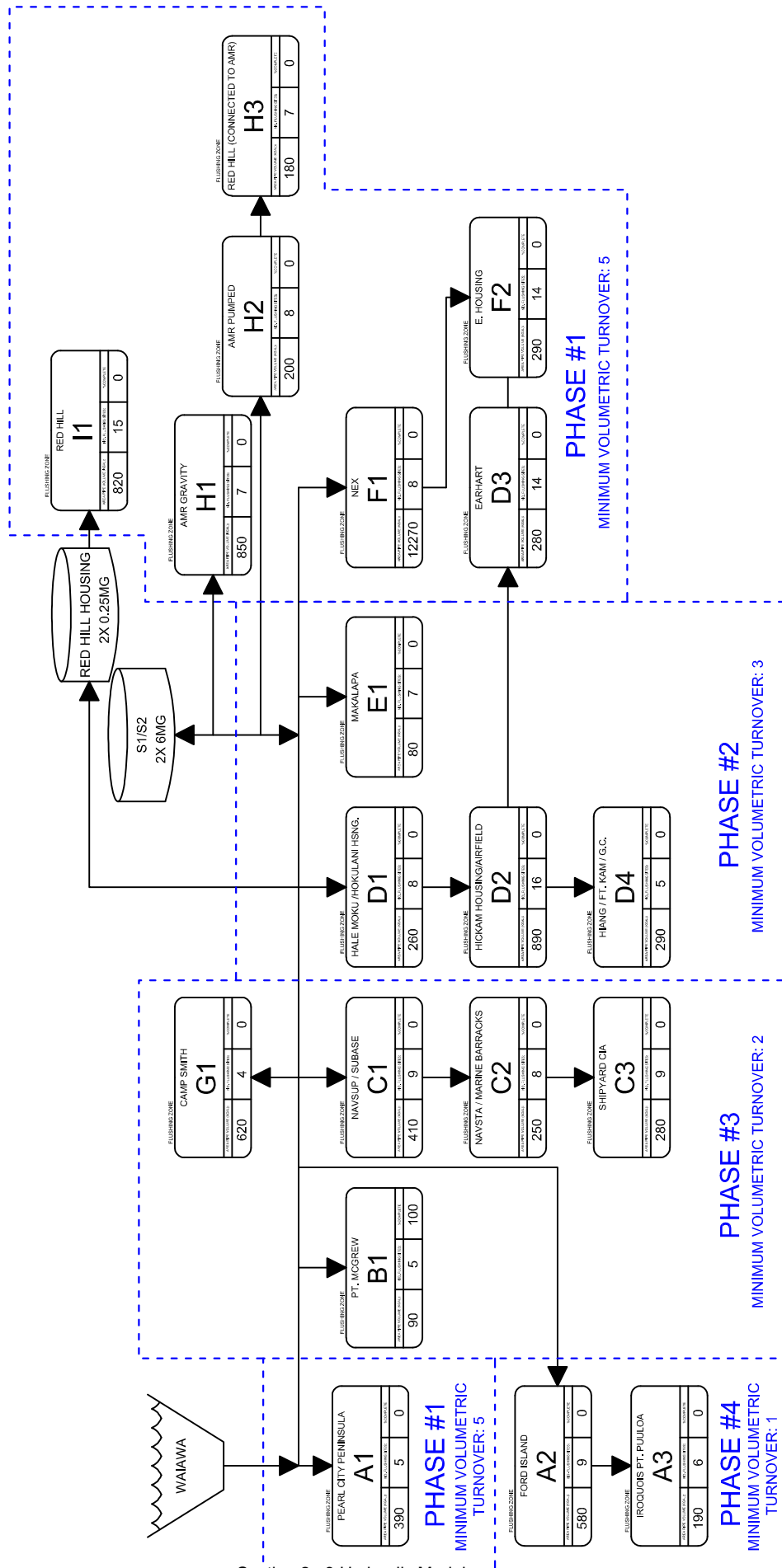
review the underlying evidence of each incident, often the utility and state didn't document much. Even incidents overseas had little documentation. It seems groups simply tried something, it did or didn't work, and they moved on. They also didn't sample much and rarely it an entire water distribution system that was affected.

Again, I can get on a zoom call or phone this afternoon MST to connect. I was called into the Colorado wildfires to help the communities identify and design water sampling and recovery plans. We're getting data every day and meeting with state and federal agencies. This is the Marshall Fire and Middle Fork Fire. I apologize for the delayed response.

Andy

Cell/text: [REDACTED]





Section 2a.3 Hydraulic Model





# JBP HH Hydraulic Model

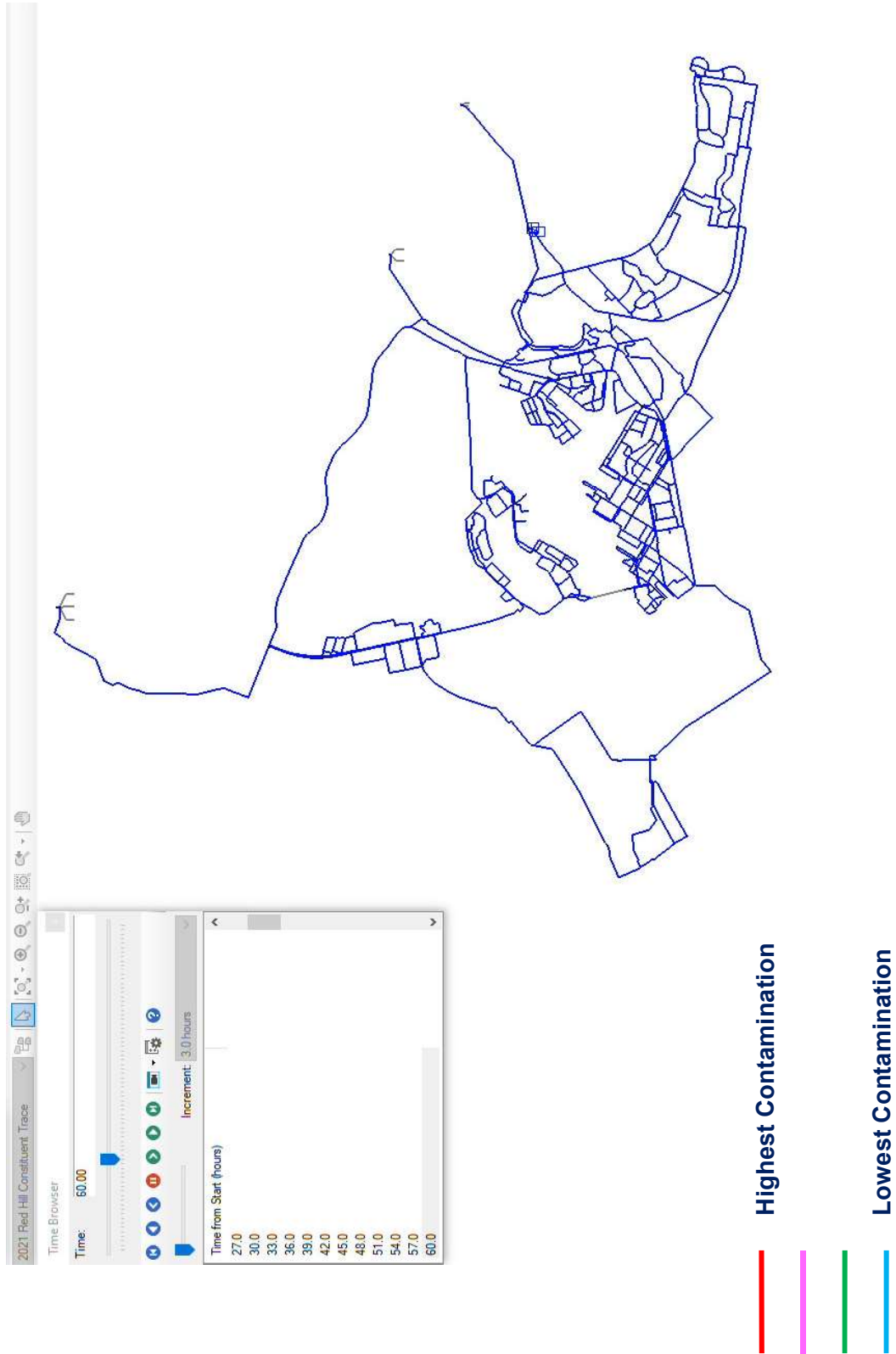
Interagency Drinking Water Supply Team

*18 January 2022*

CONTROLLED UNCLASSIFIED INFORMATION//CUI

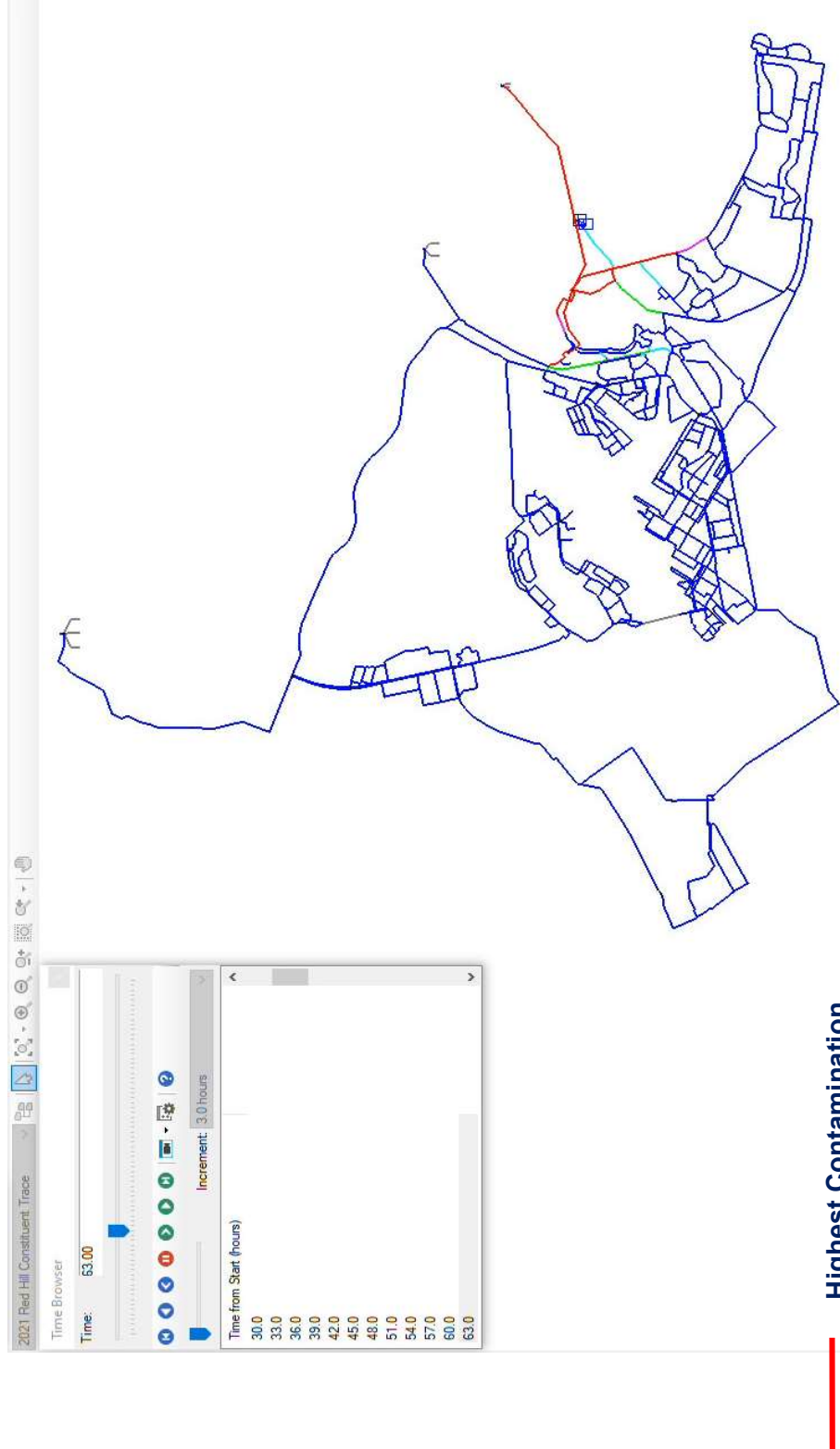


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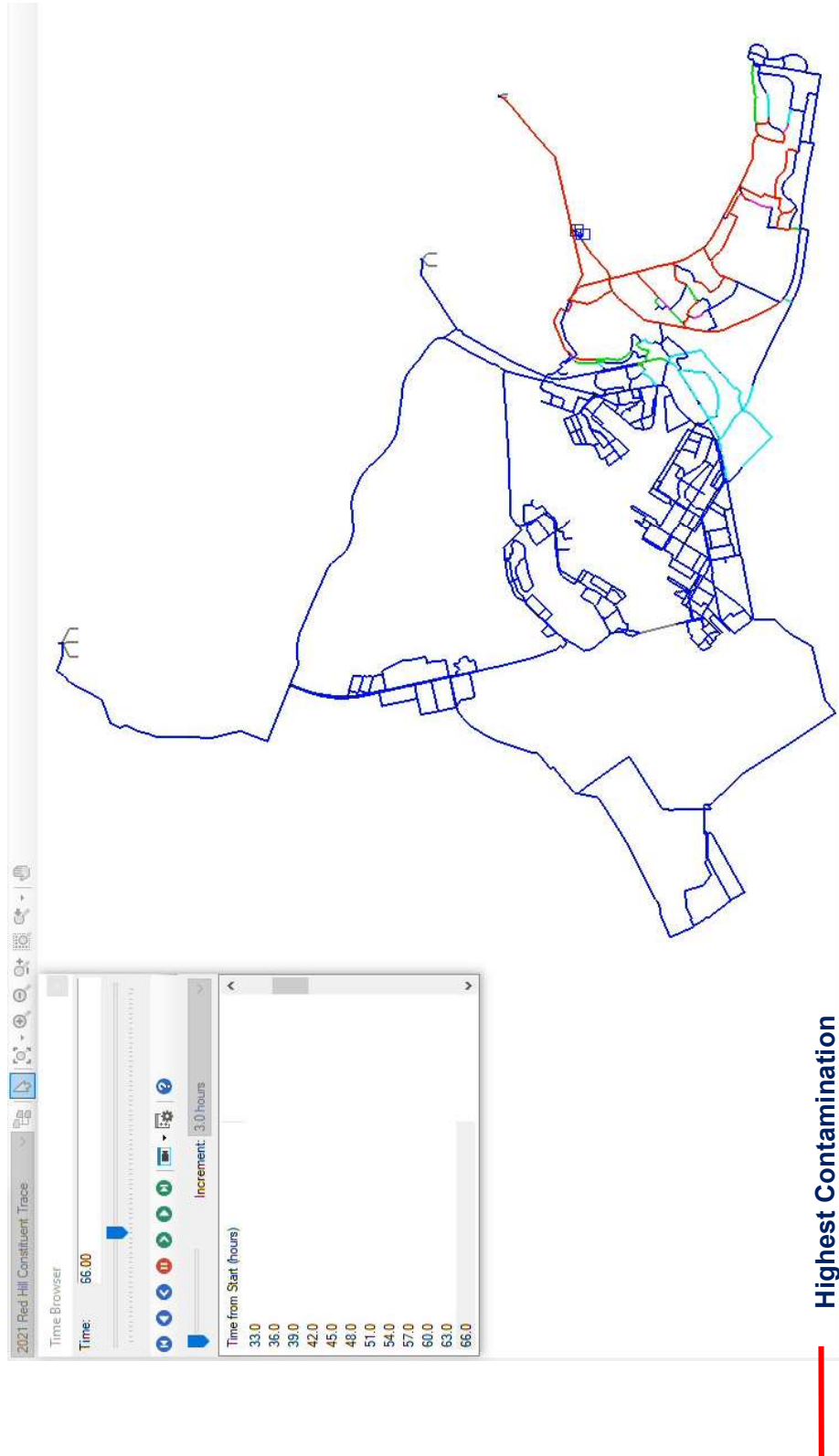


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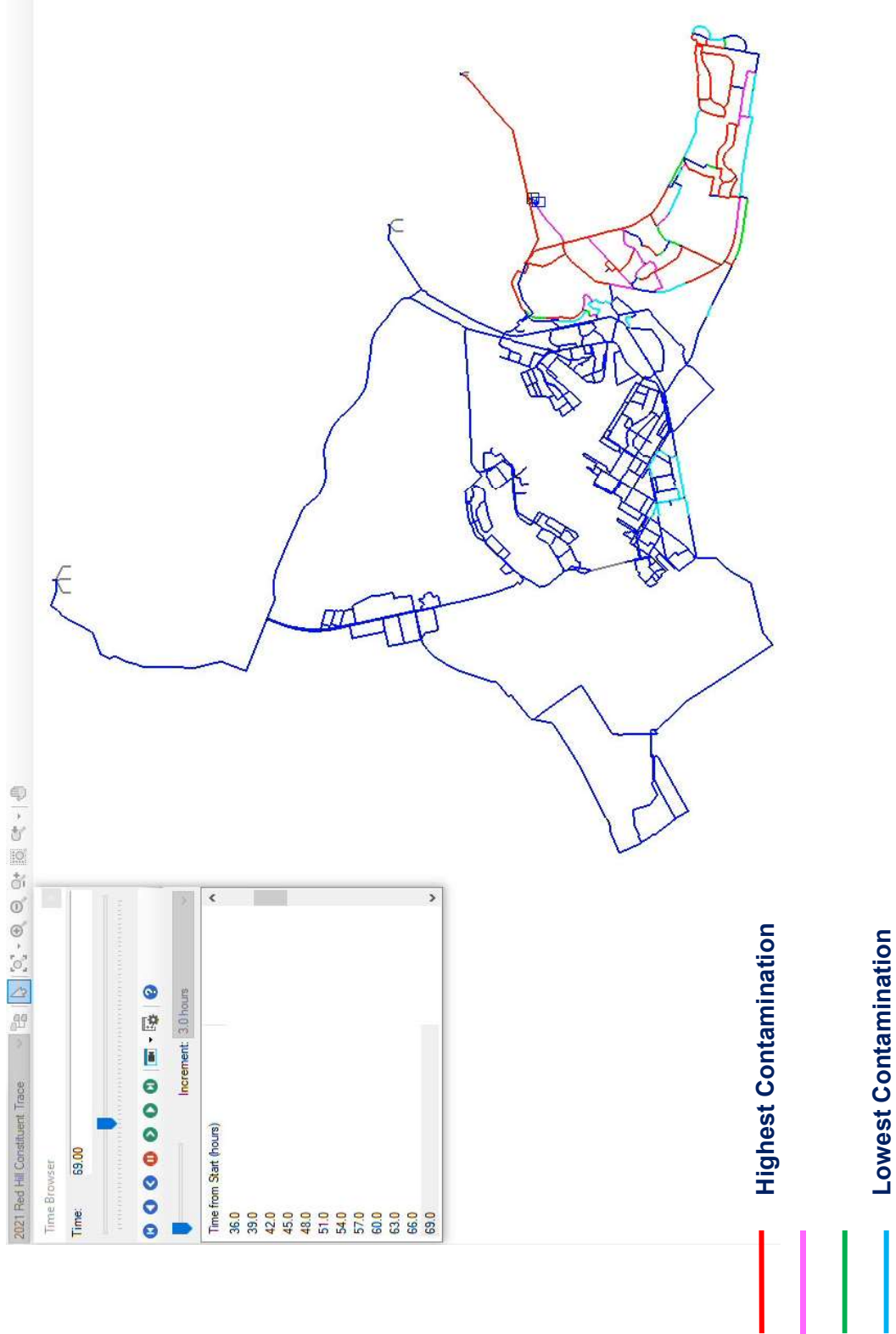


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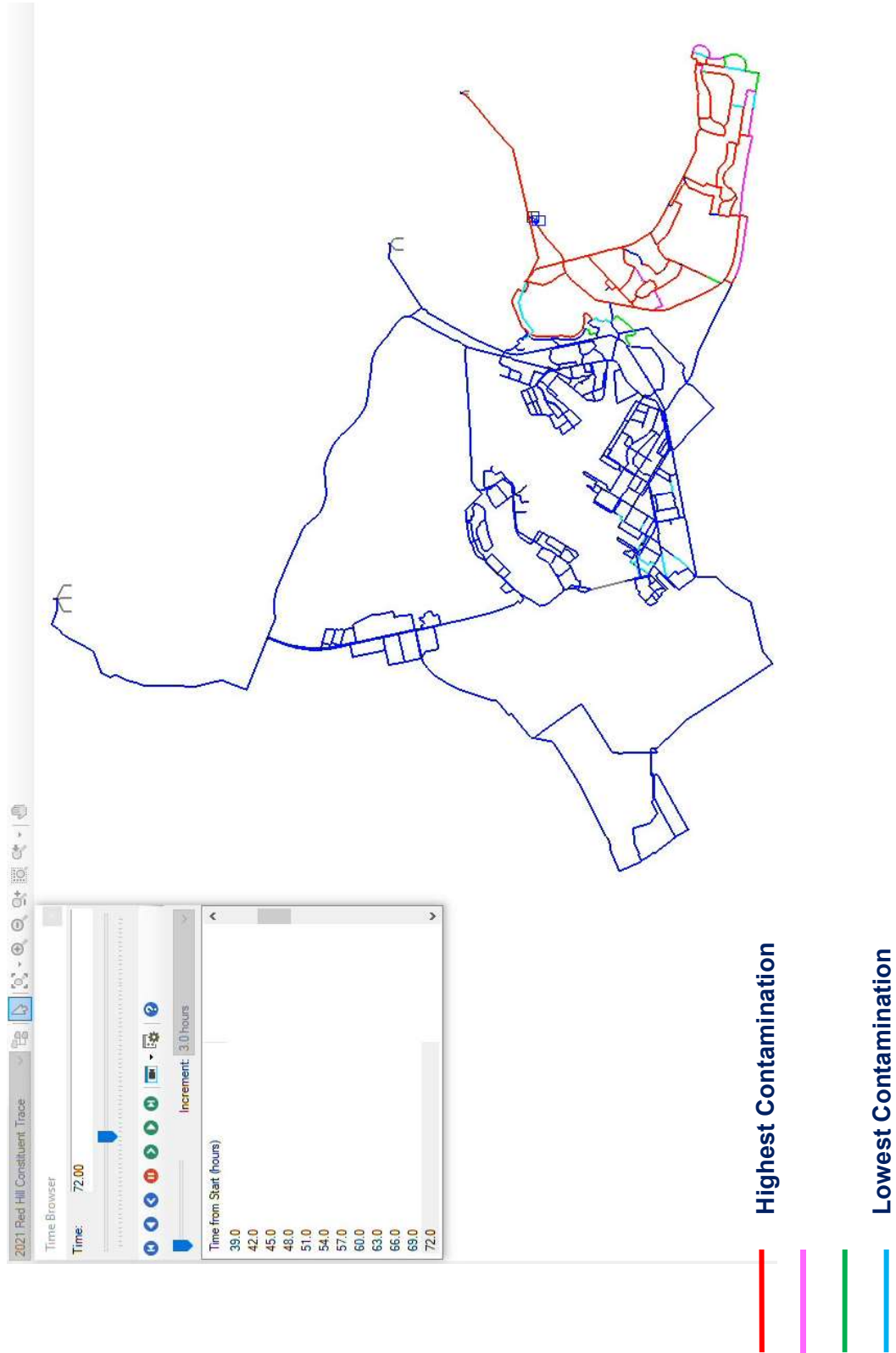


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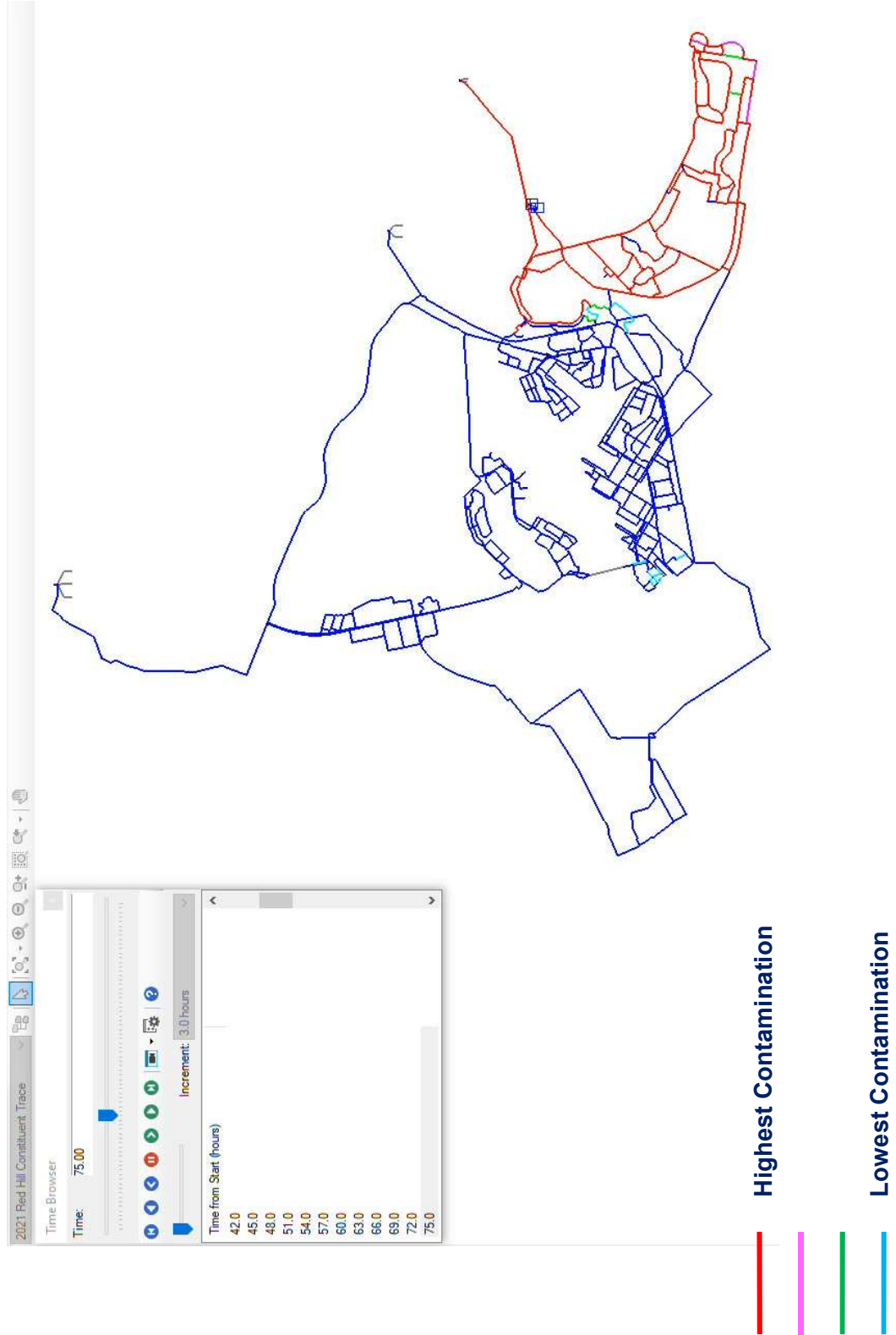
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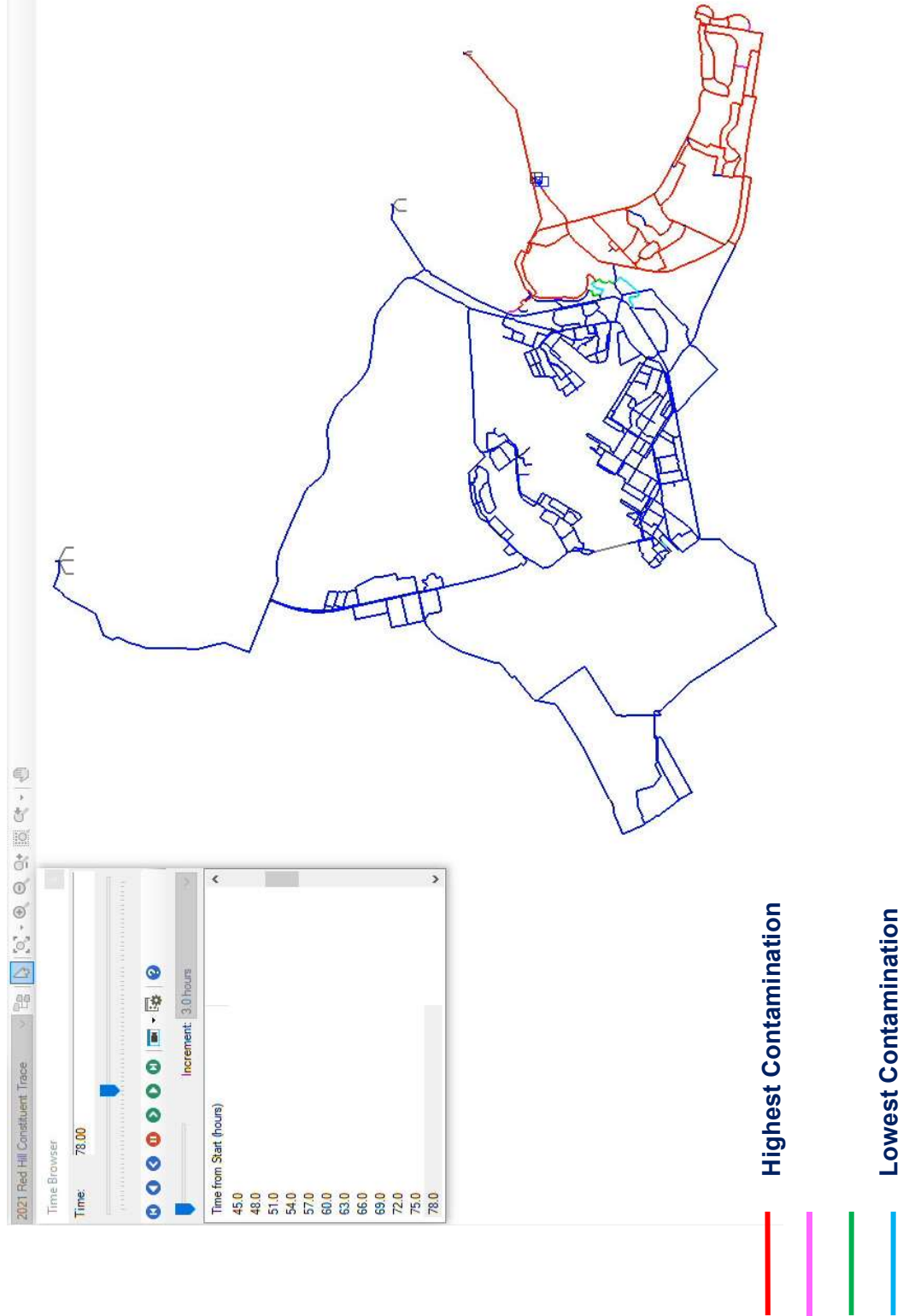


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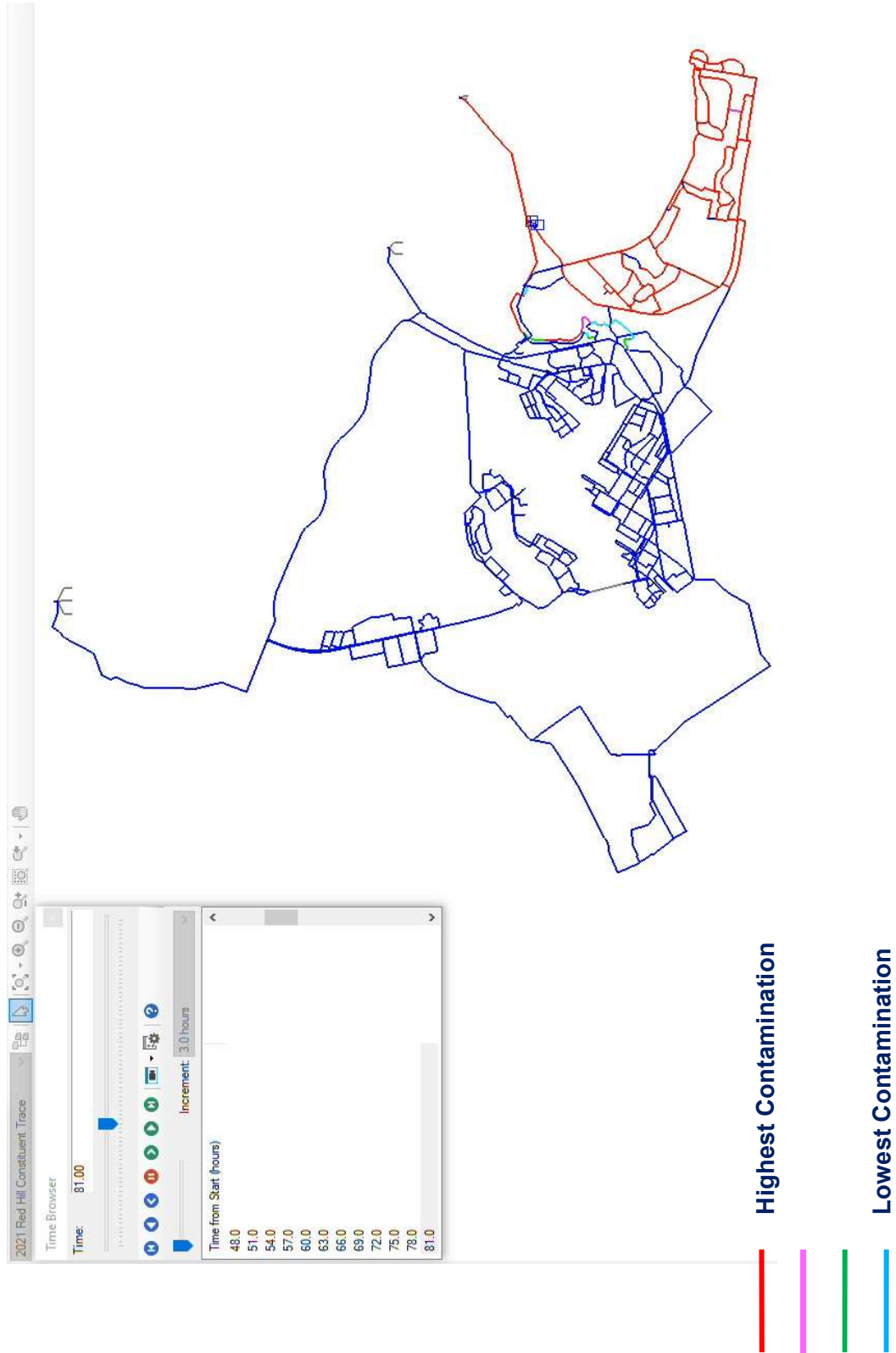


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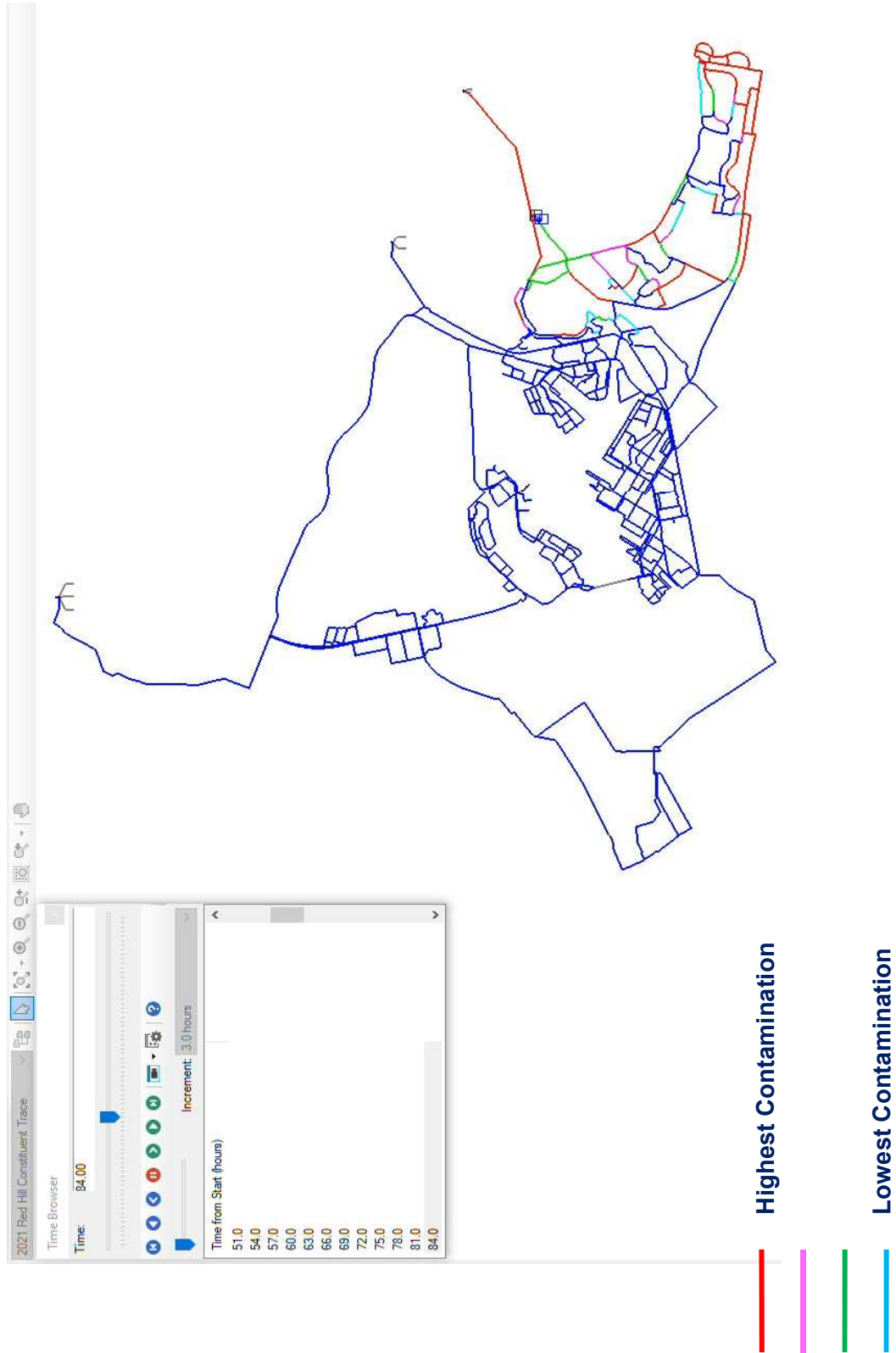


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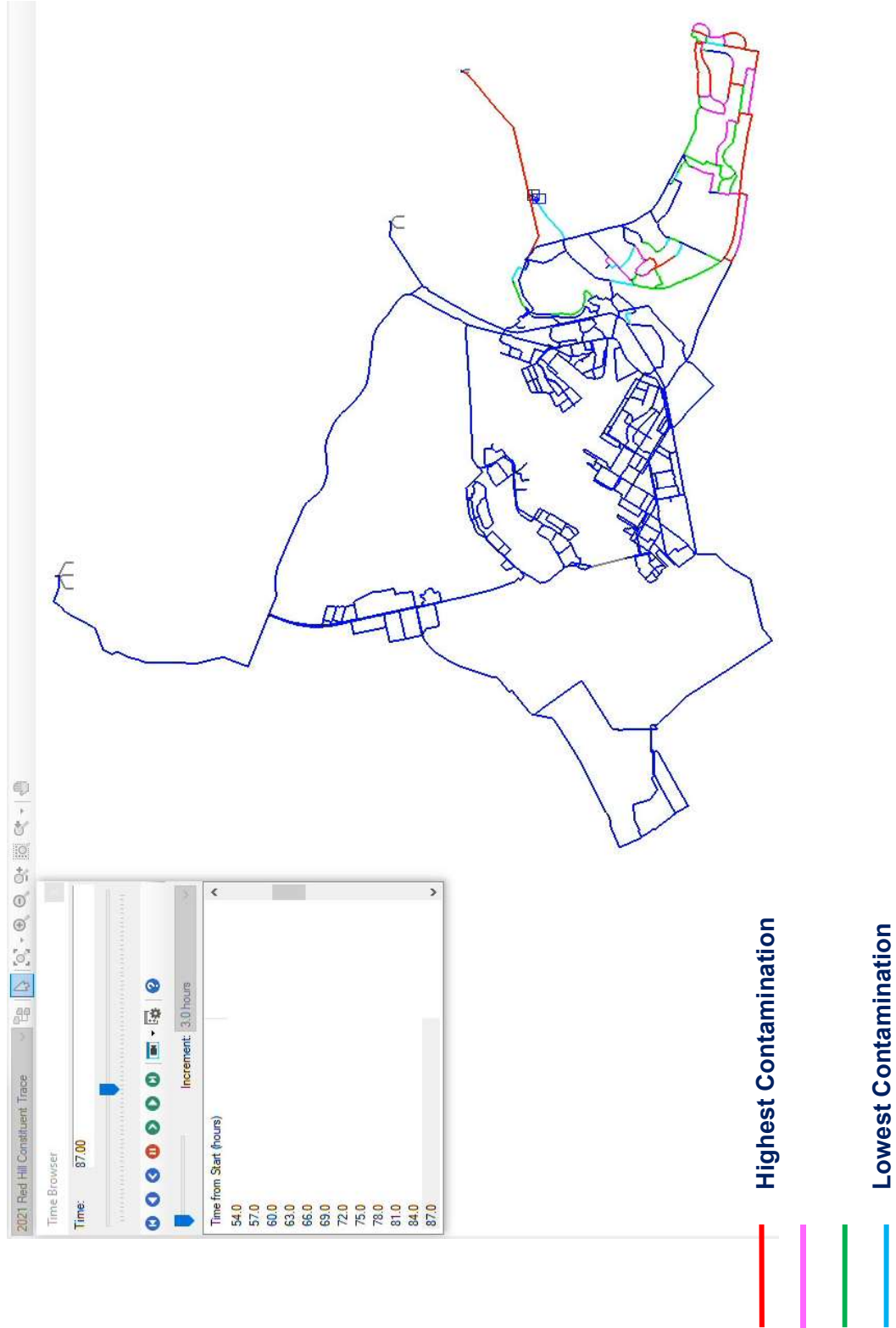


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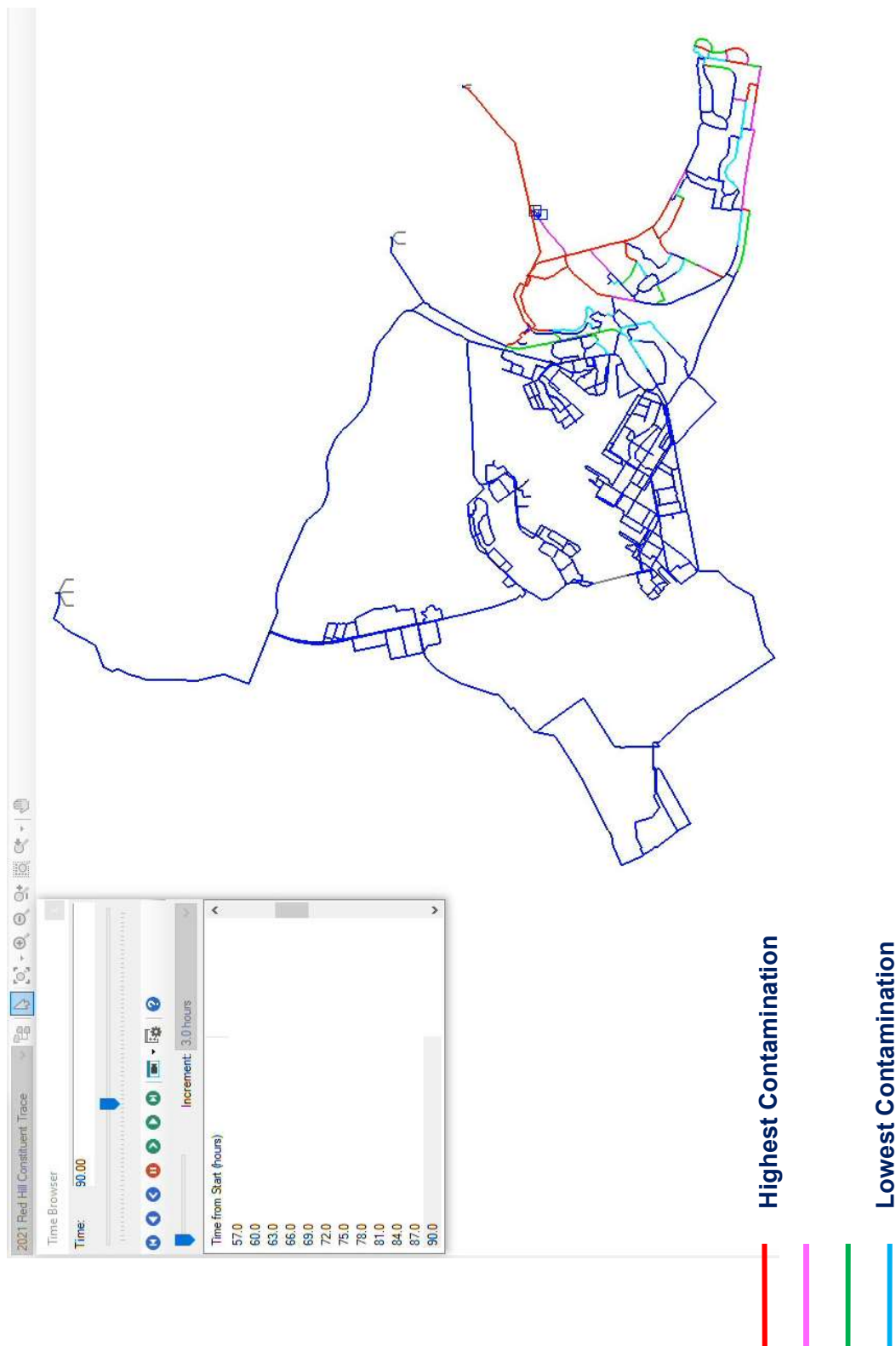


# JBP HH Hydraulic Model





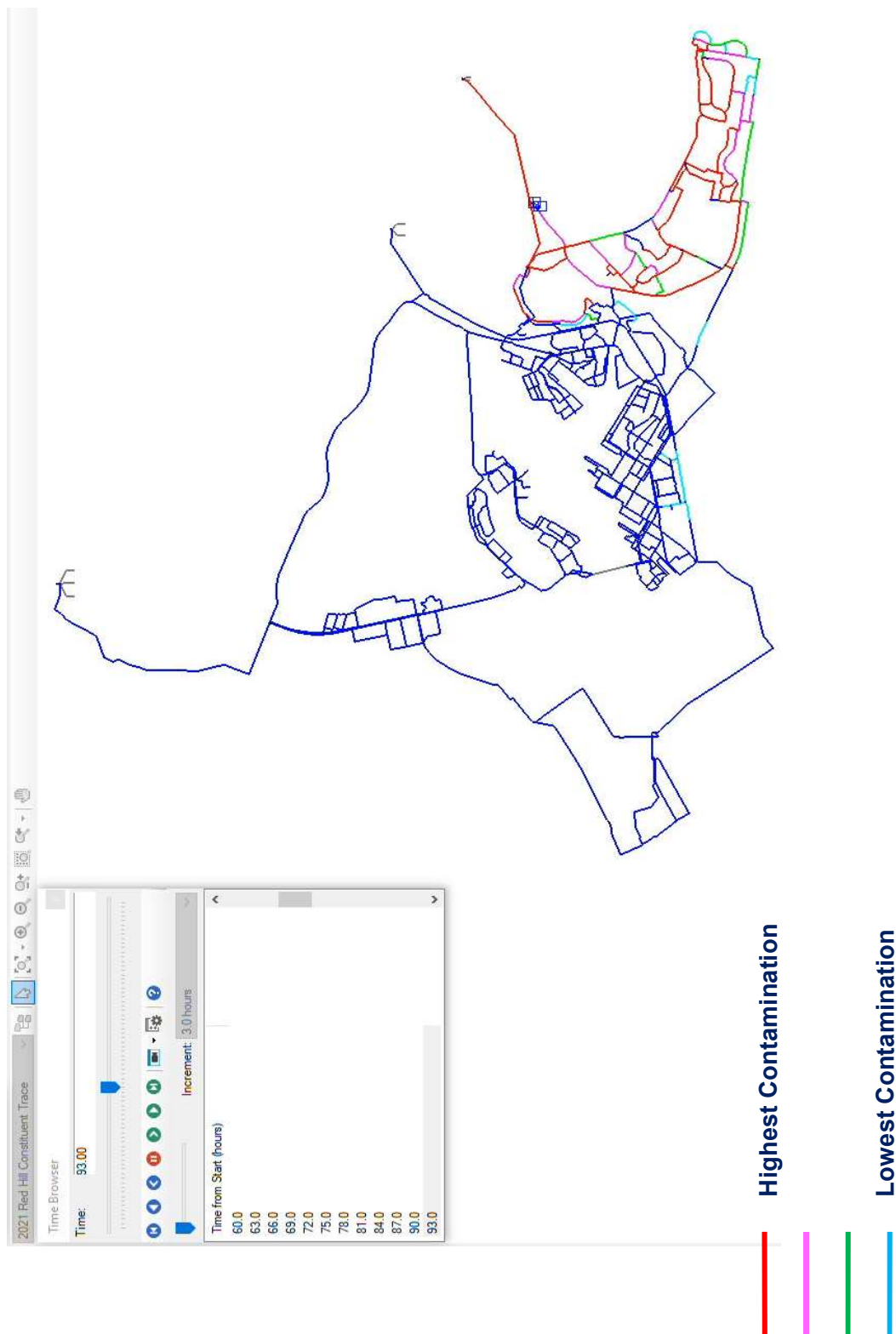
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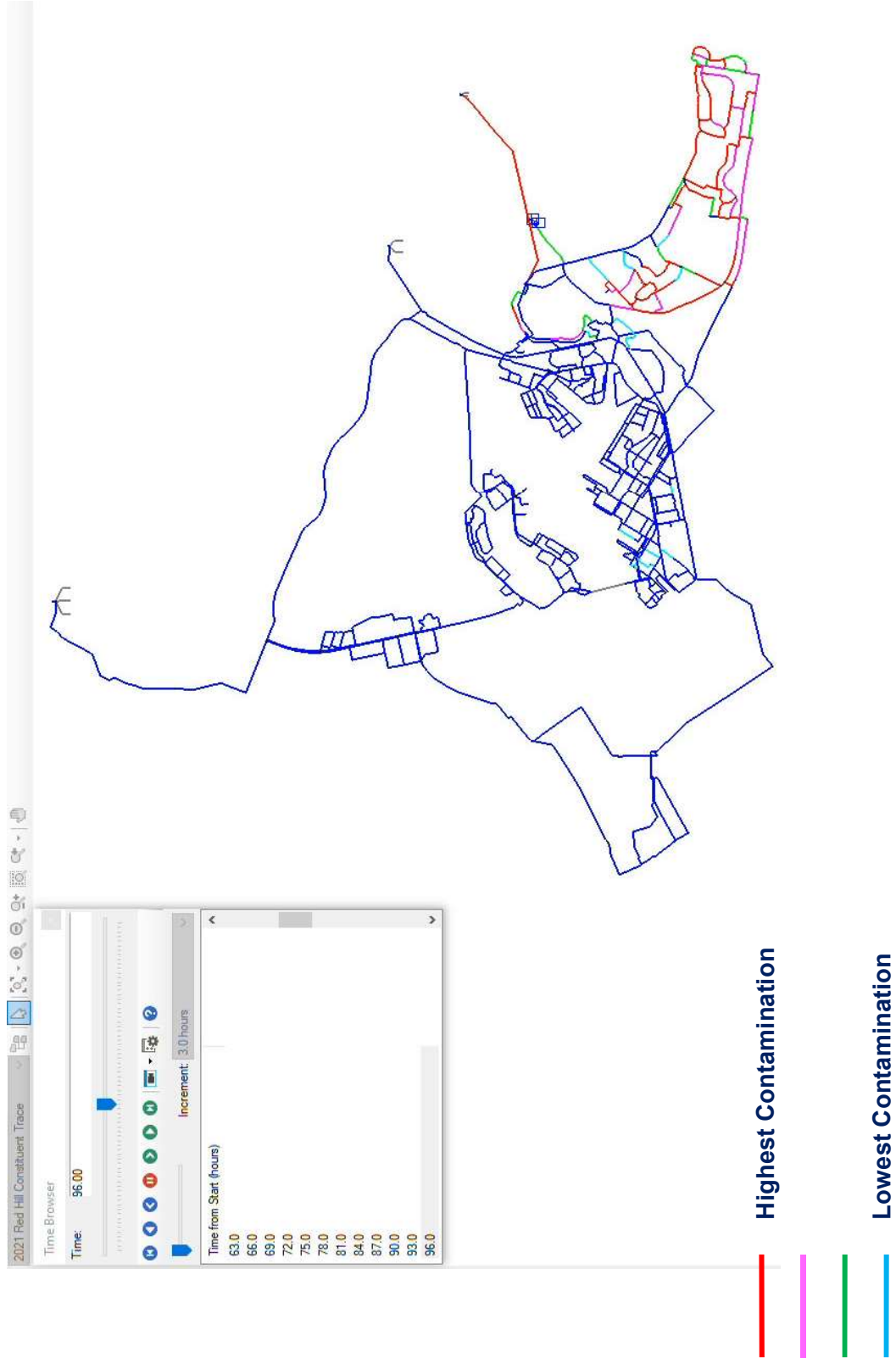


# JBP HH Hydraulic Model





# JBP HH Hydraulic Model



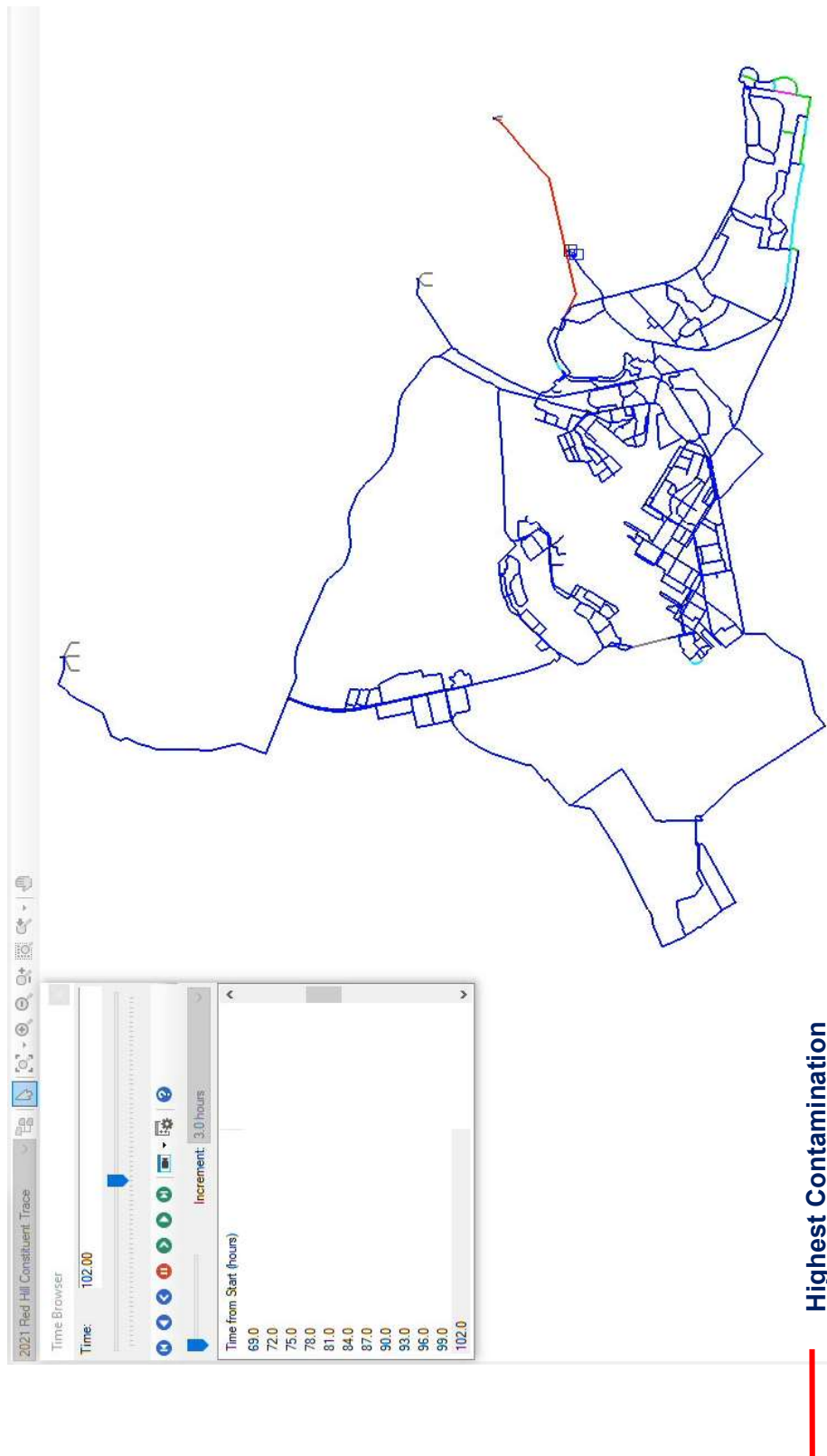


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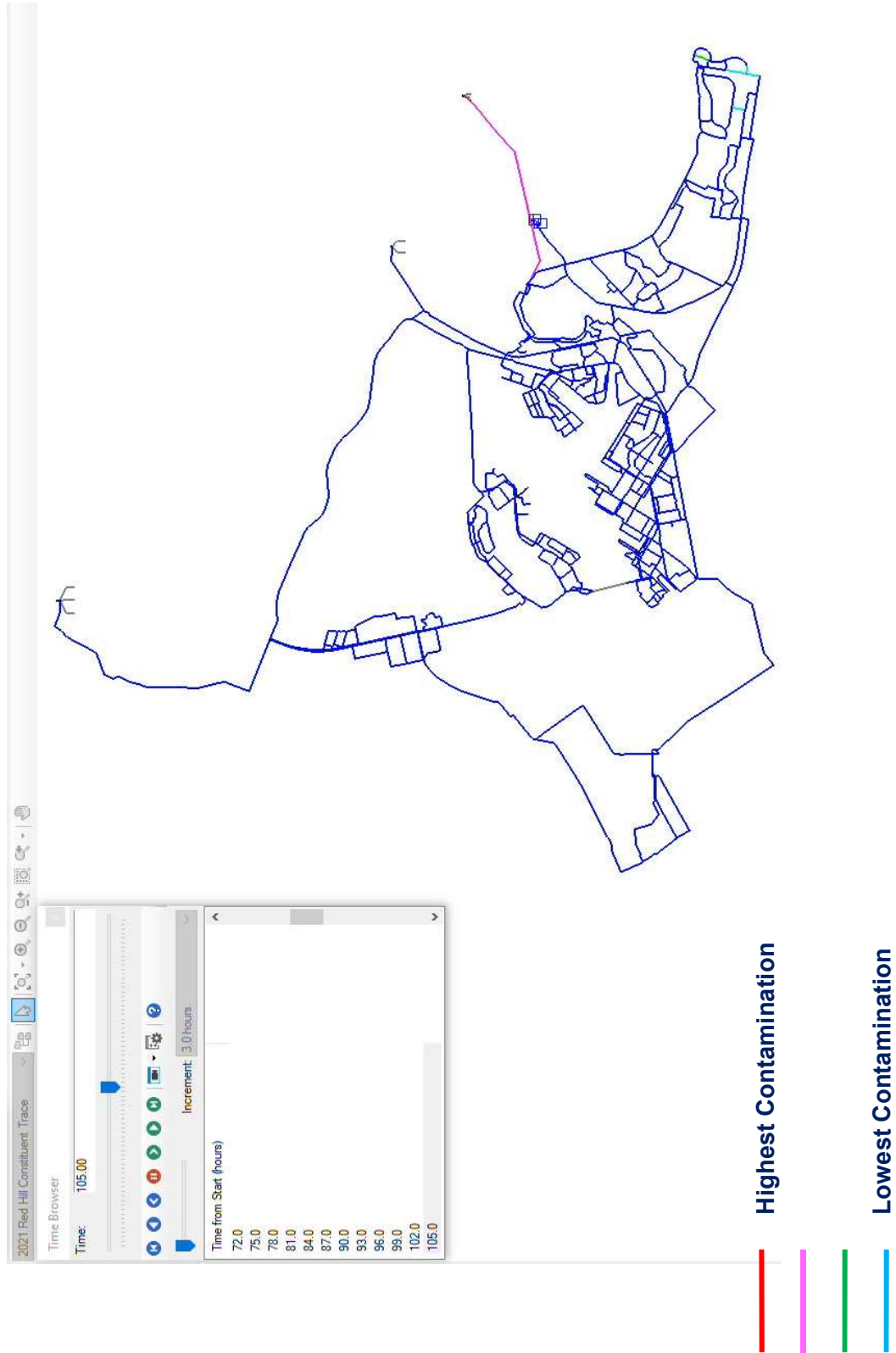


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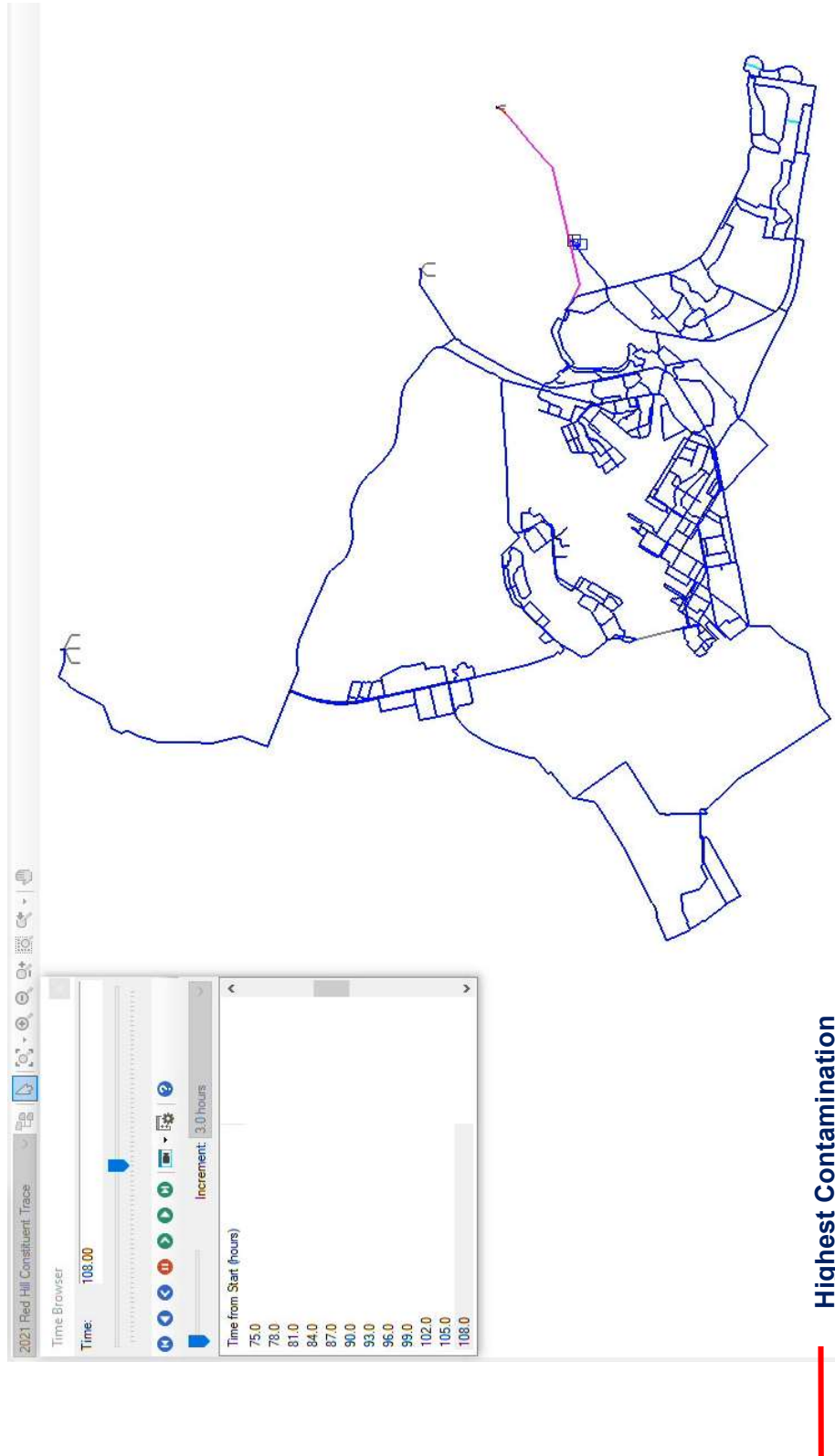
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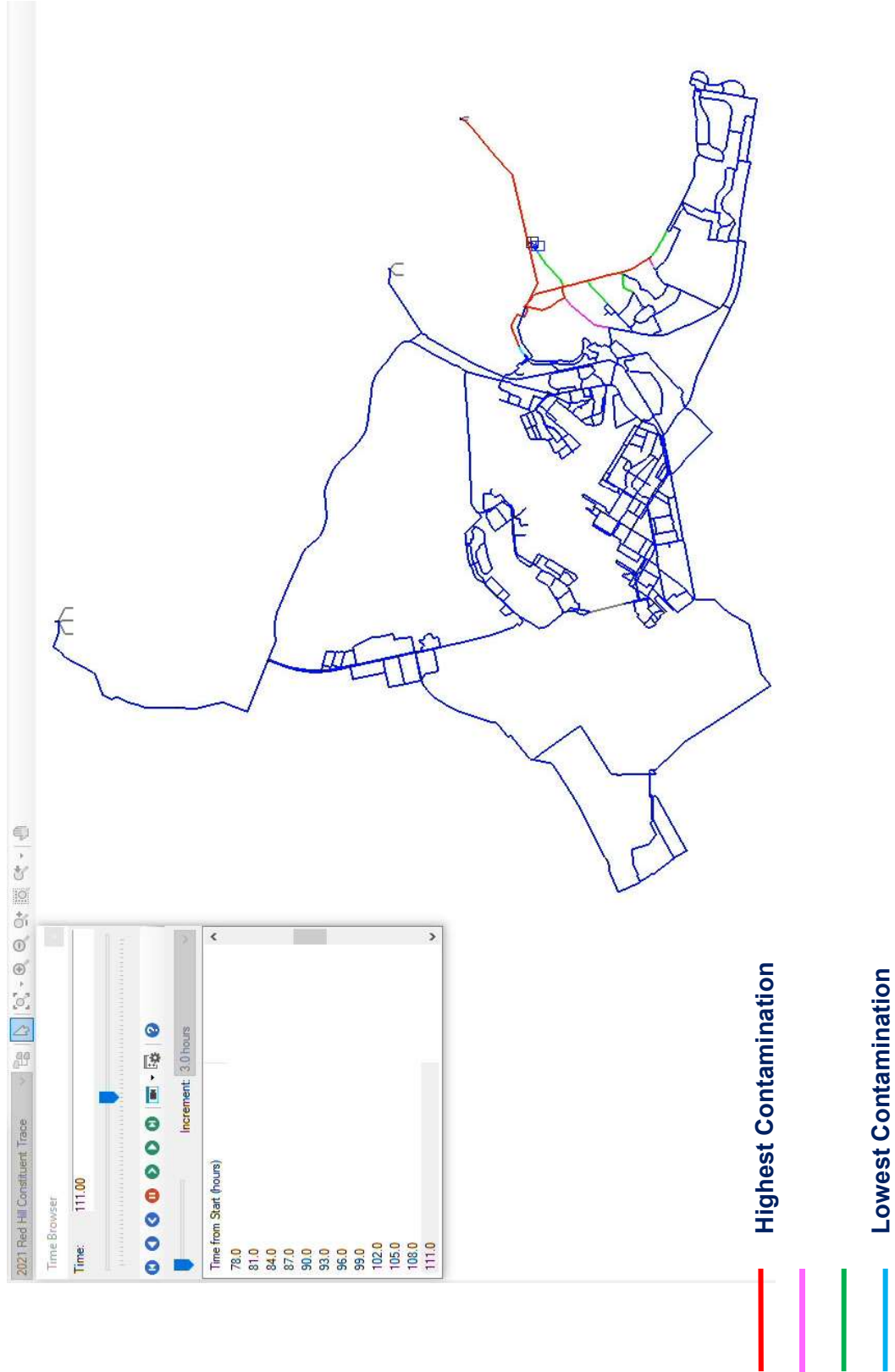


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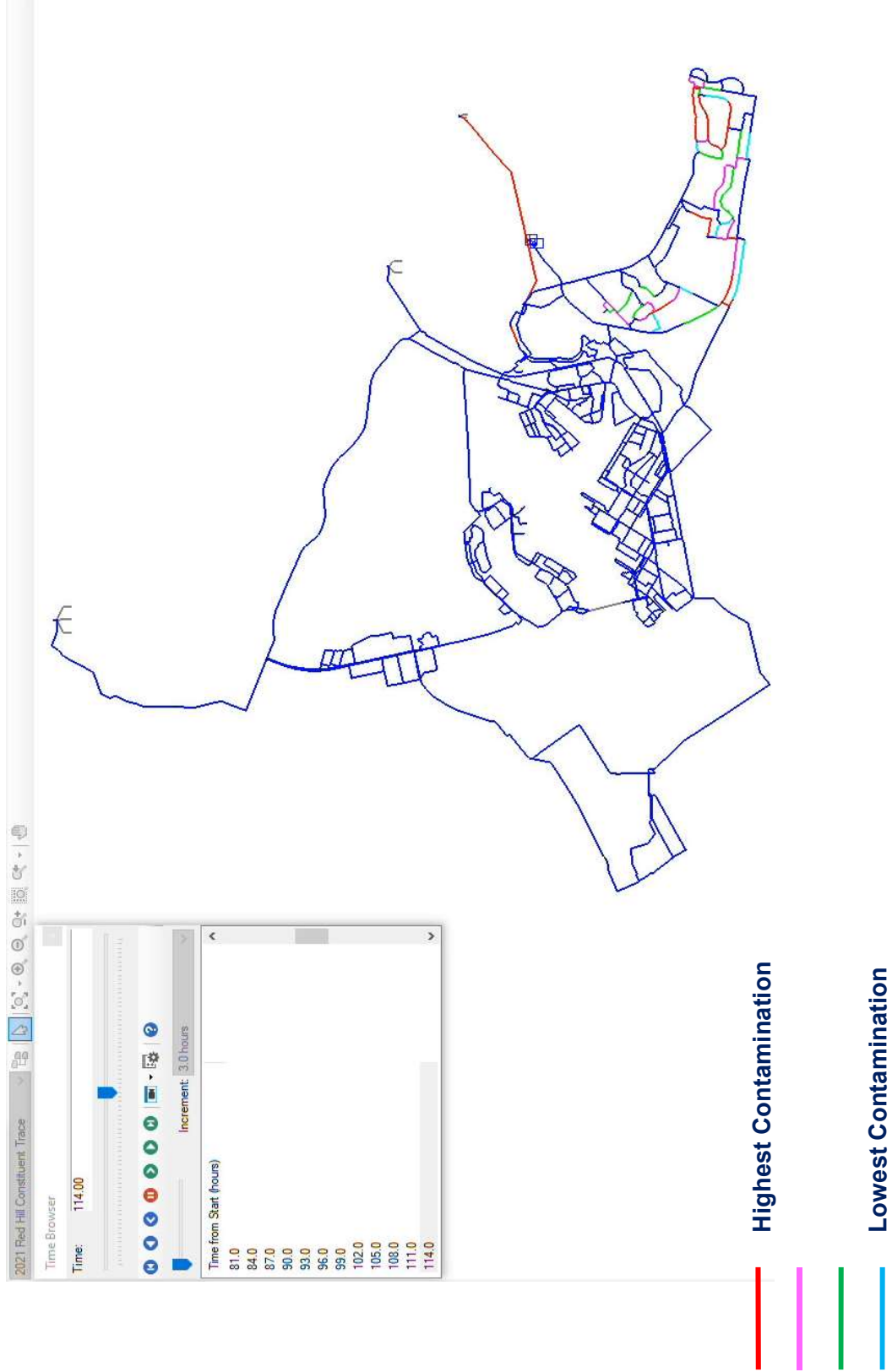




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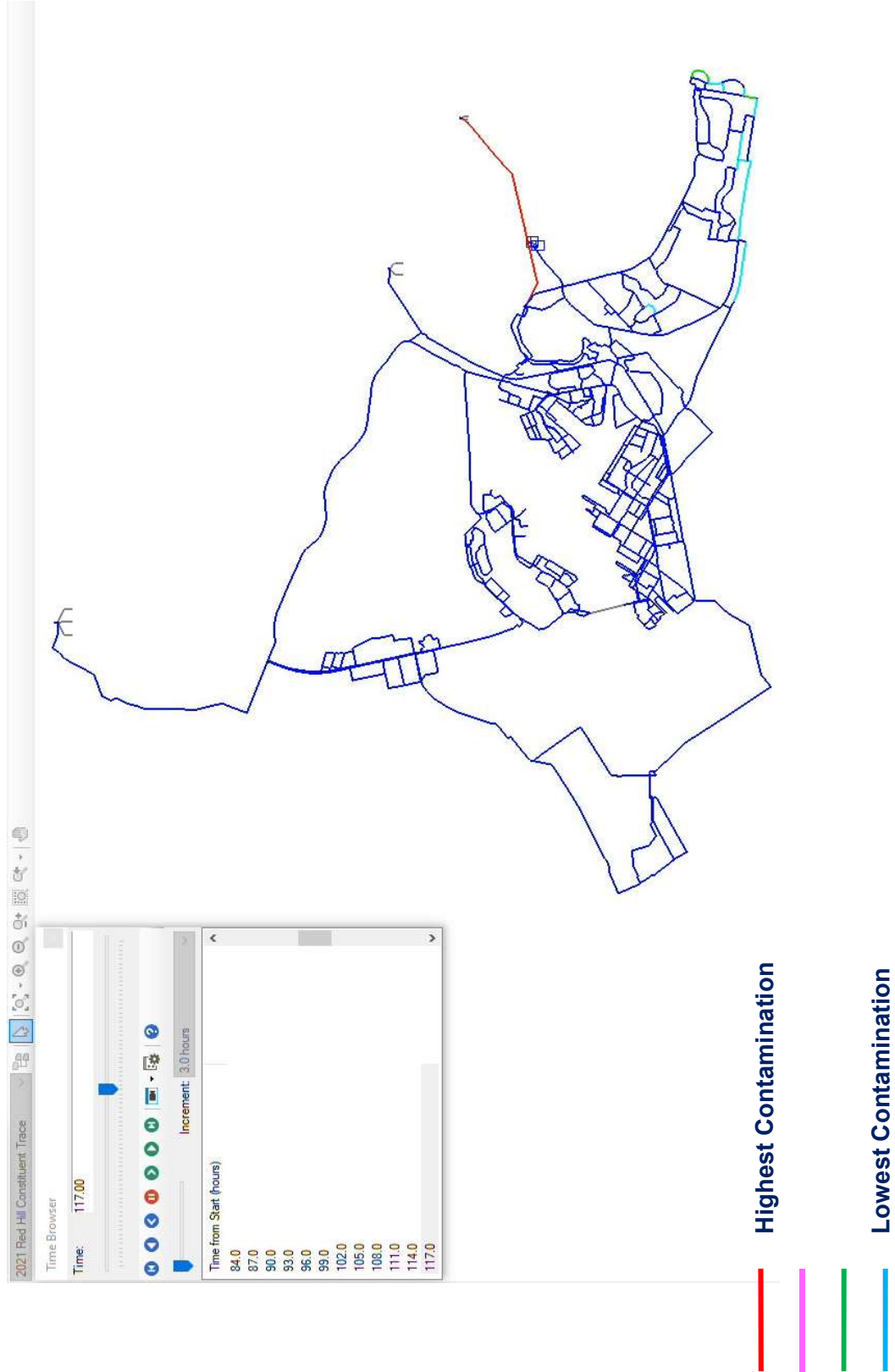


# JBP HH Hydraulic Model



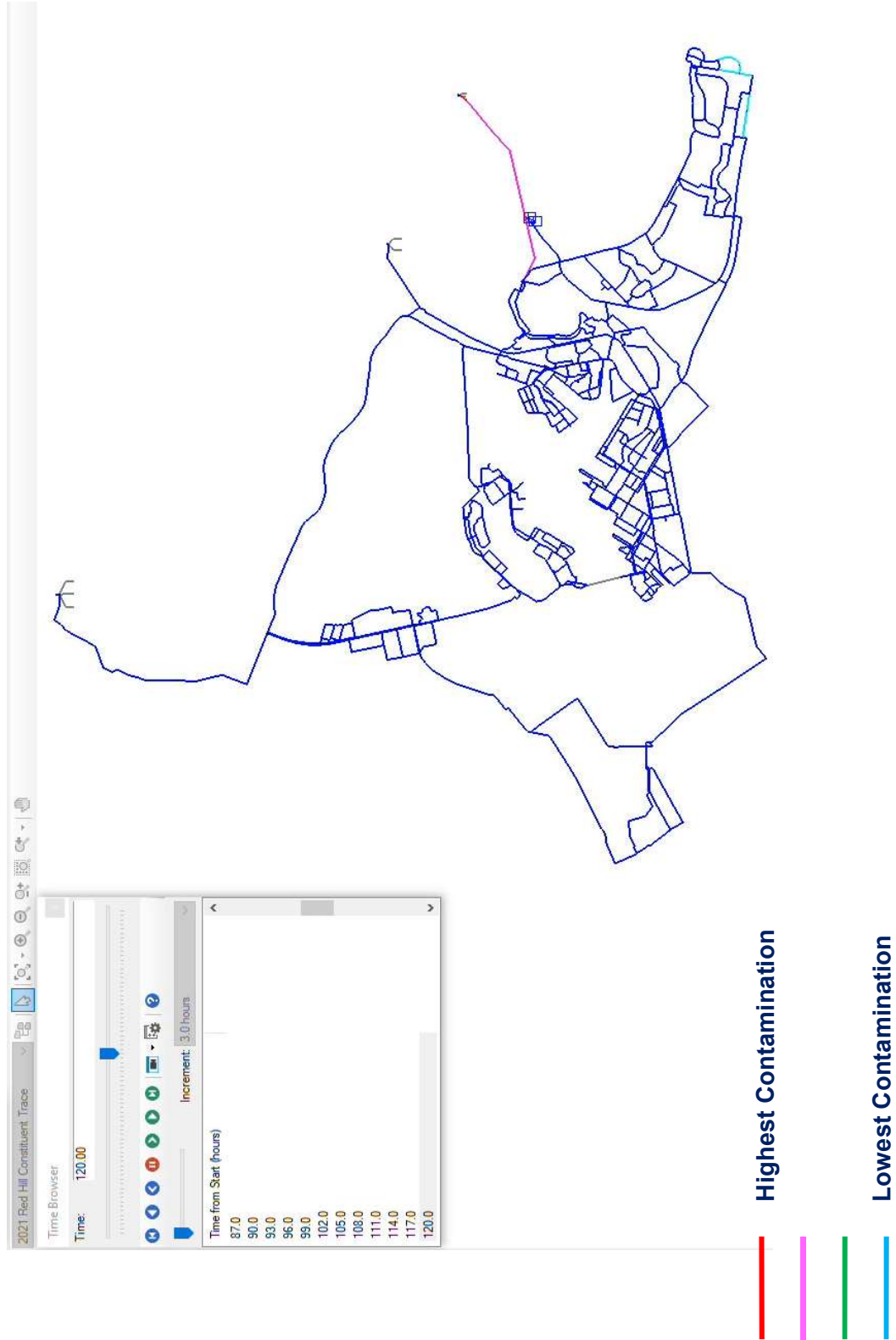


# JBP HH Hydraulic Model





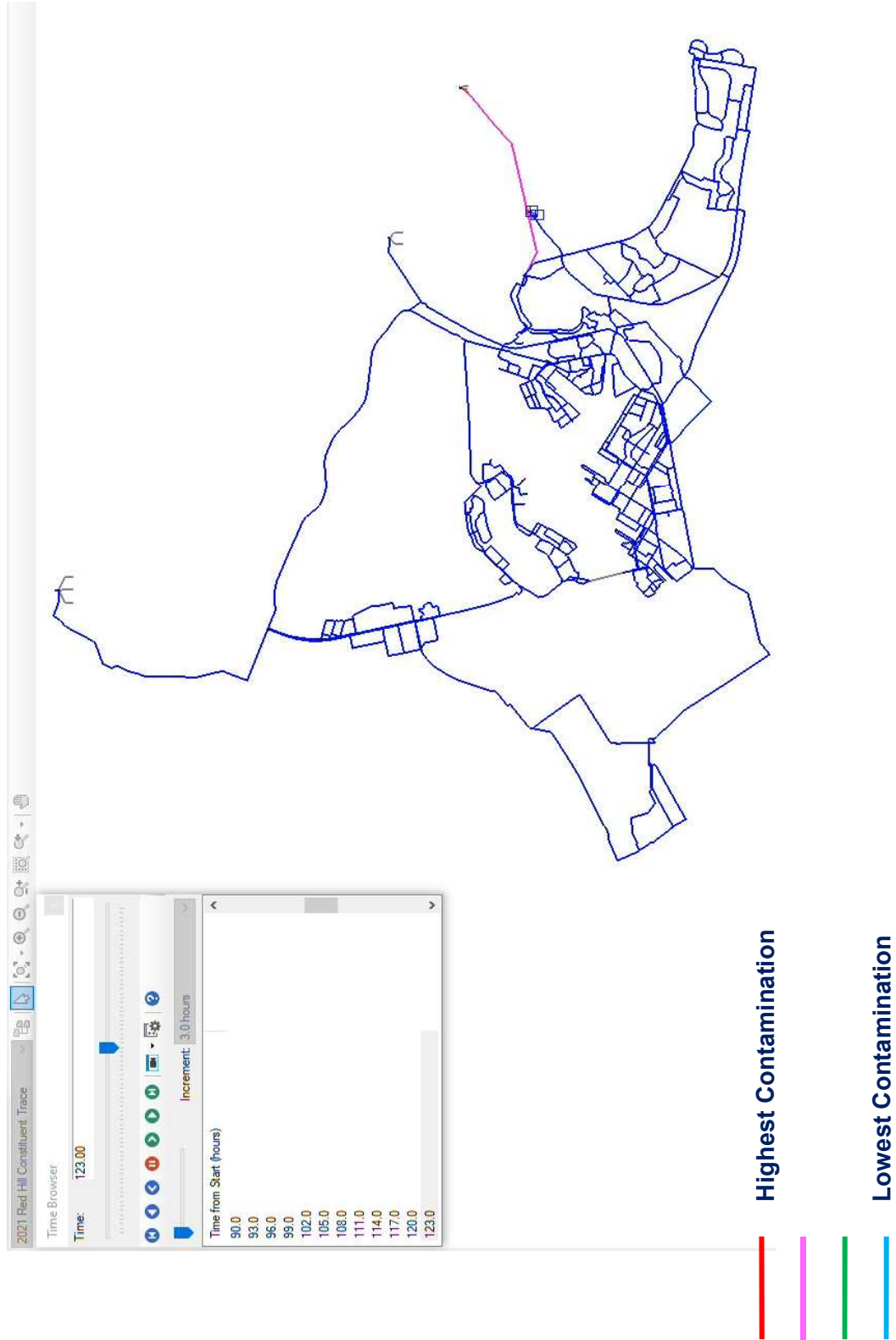
# JBP HH Hydraulic Model



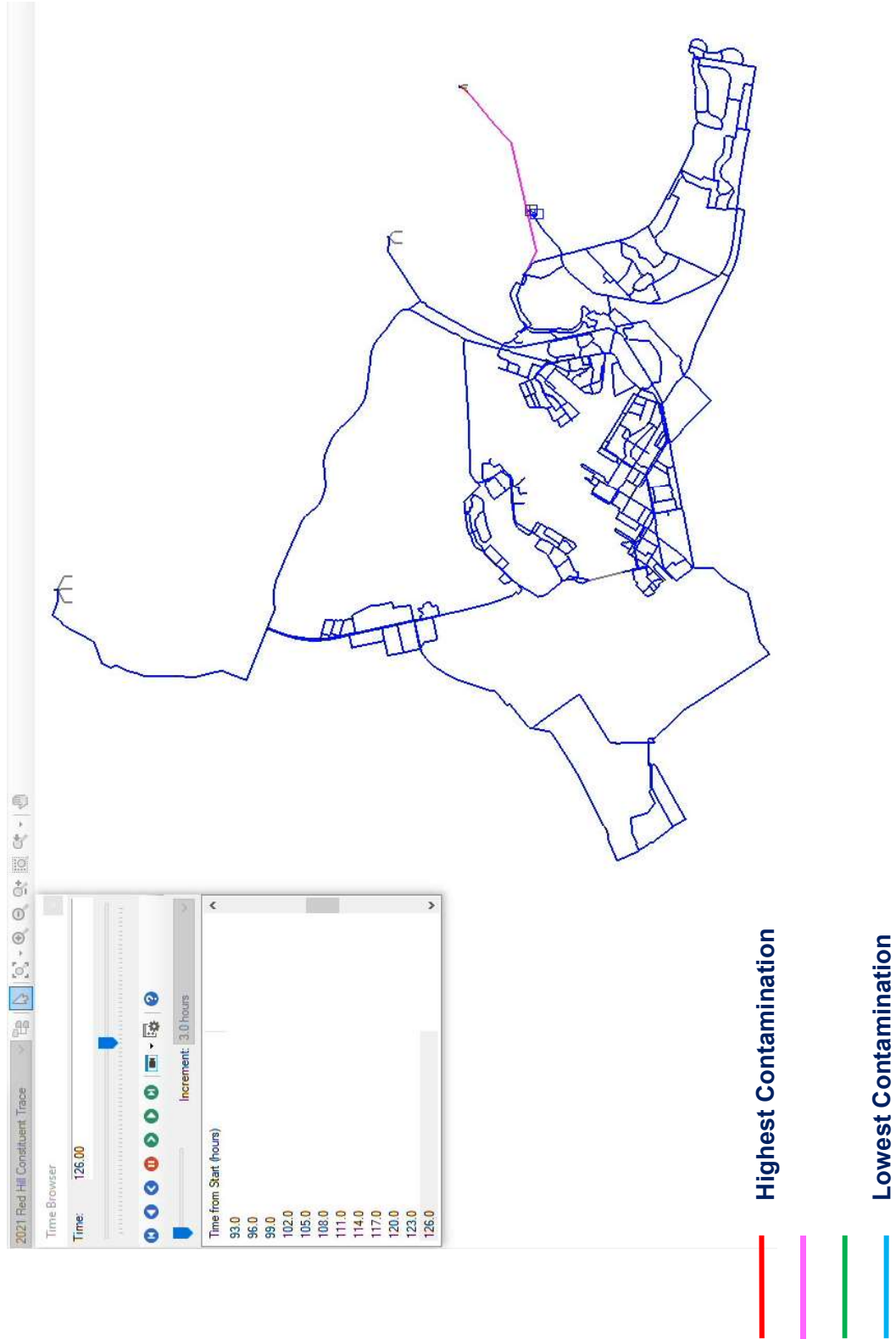




# JBP HH Hydraulic Model

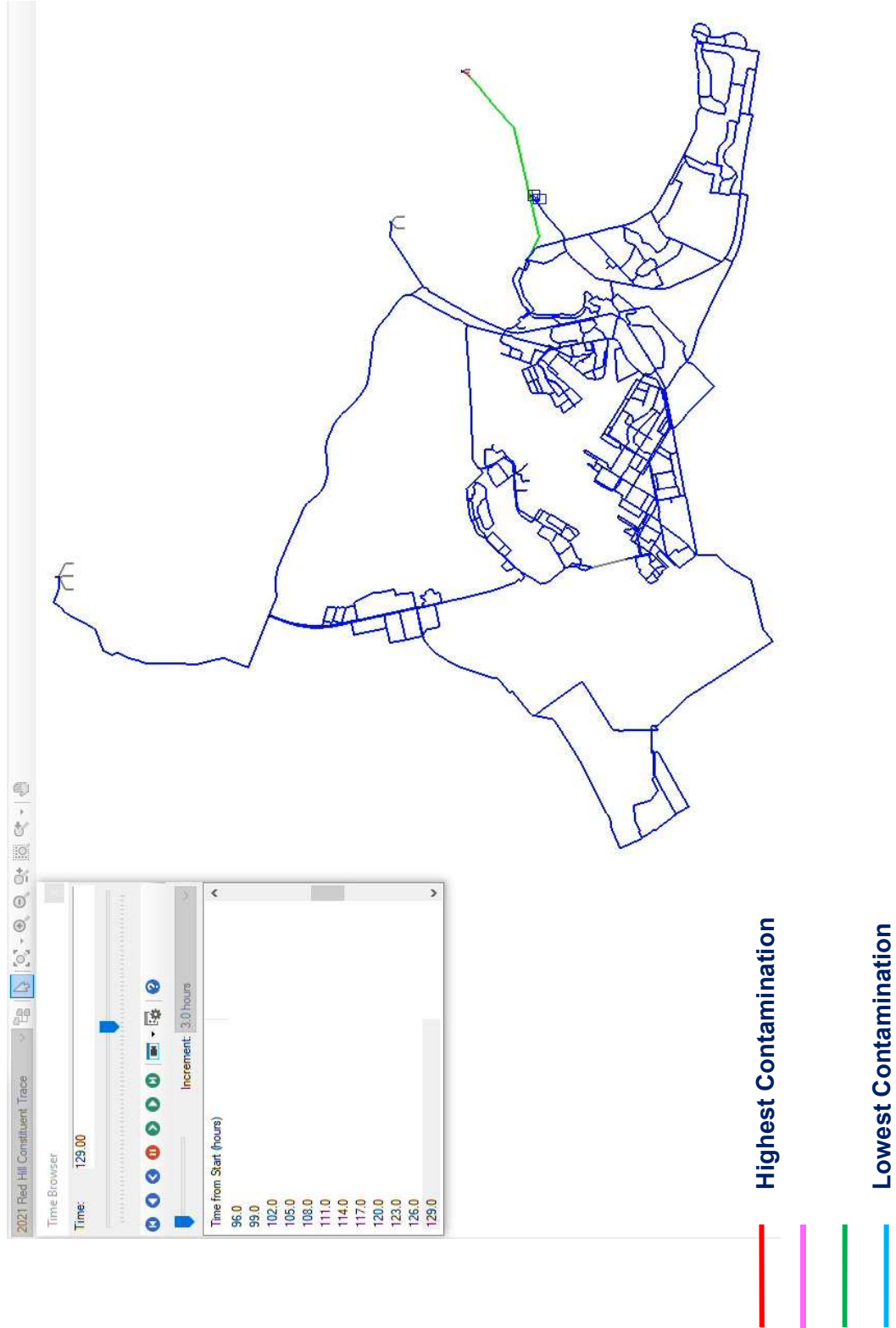


# JBP HH Hydraulic Model

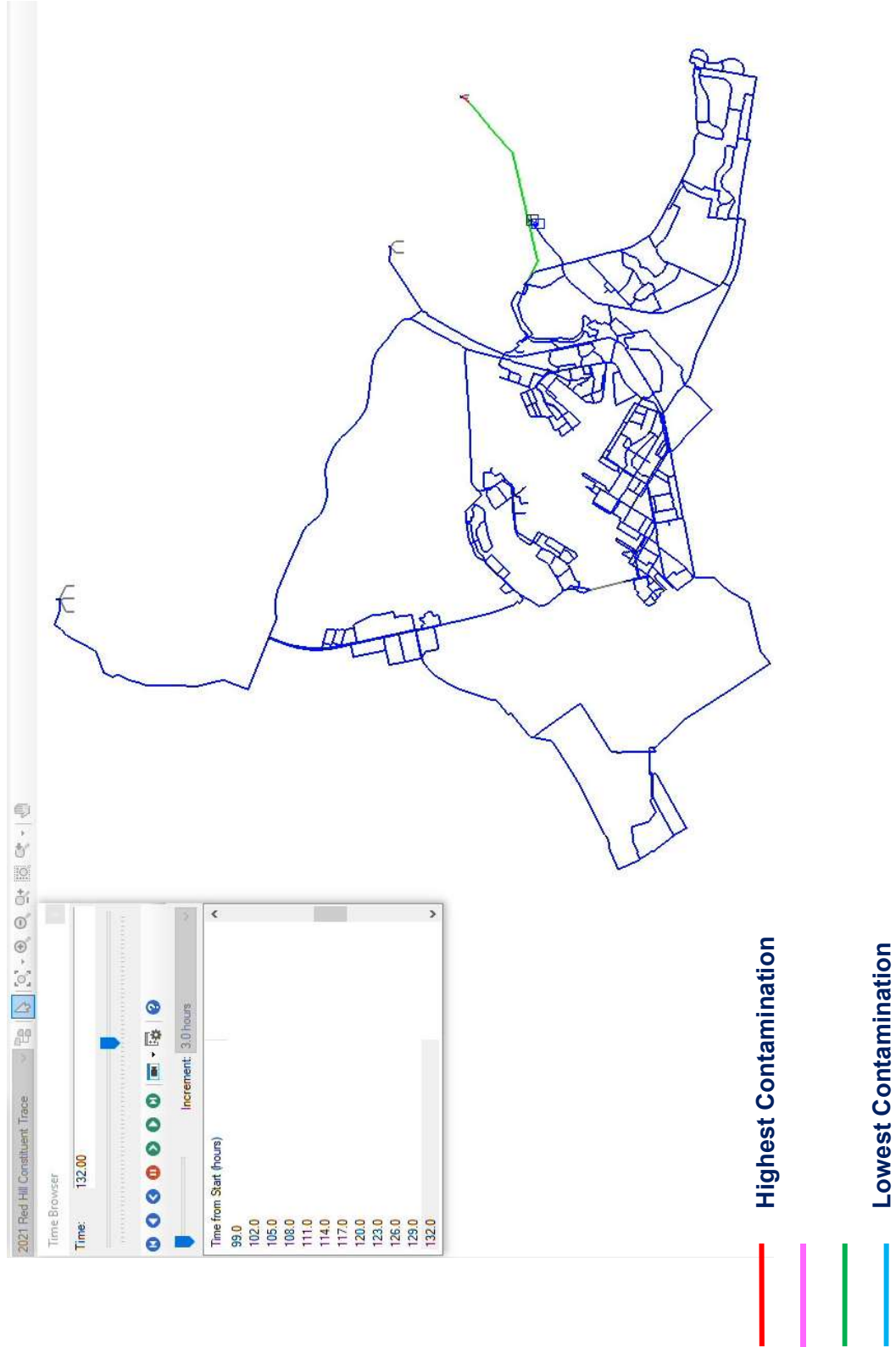




# JBP HH Hydraulic Model

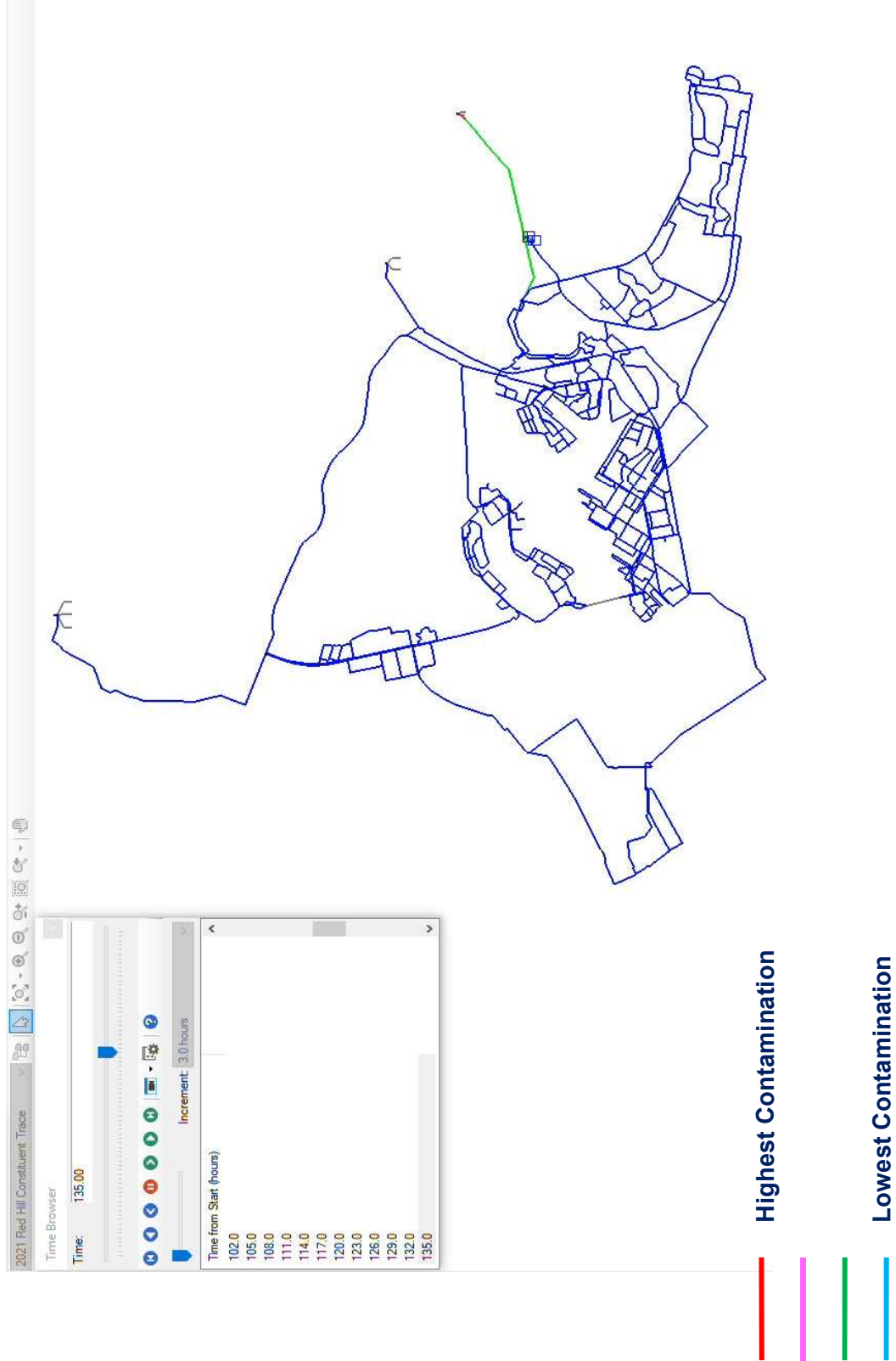


# JBP HH Hydraulic Model





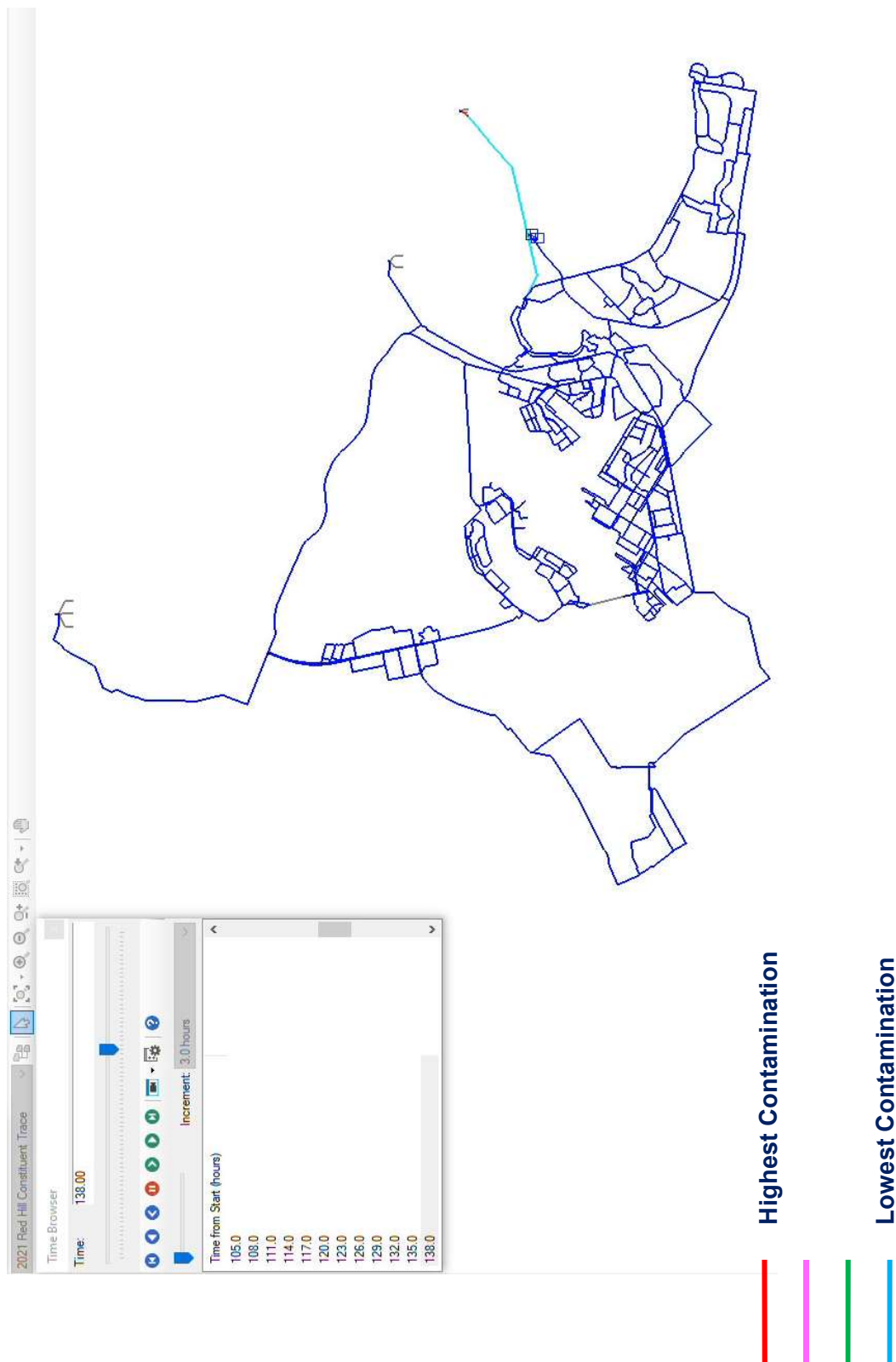
# JBP HH Hydraulic Model







# JBP HH Hydraulic Model





1-3		Shift		Flush Time		Documentation	
Date		Begin	End	Start	Stop	RunTime	UT Log
30-Dec		8:00	20:00	18:40		1:20 20211230 0800-2000	N/A
30-Dec		20:00	8:00			12:00 20211230 2000-0800	N/A
31-Dec		8:00	20:00	10:35		2:35 20211231 0800-2000	N/A
<div> TOTAL RUN @ FLOW of 185  TIME 15:55  VOLUME 176675 Gallons </div>							

2-7		Shift		Flush Time		Documentation	
Date		Begin	End	Start	Stop	RunTime	UT Log
28-Dec		8:00	20:00	16:47		3:13 20211228 0800-2000	N/A
28-Dec		20:00	8:00			12:00 20211228 2000-0800	N/A
29-Dec		8:00	20:00	12:23		7:37 20211229 0800-2000	N/A
<div> TOTAL RUN @ FLOW of 185  TIME 22:50  VOLUME 253450 Gallons </div>							

1-14		Shift		Flush Time		Documentation	
Date		Begin	End	Start	Stop	RunTime	UT Log
30-Dec		8:00	20:00	17:11		2:49 20211230 0800-2000	N/A
30-Dec		20:00	8:00			12:00 20211230 2000-0800	N/A
31-Dec		8:00	20:00	9:50		1:50 20211231 0800-2000	N/A
<div> TOTAL RUN @ FLOW of 185  TIME 16:39  VOLUME 184815 Gallons </div>							

3-1		Shift		Flush Time		Documentation	
Date		Begin	End	Start	Stop	RunTime	UT Log
29-Dec		8:00	20:00	17:40		2:20 20211229 0800-2000	N/A
29-Dec		20:00	8:00			12:00 20211229 2000-0800	N/A
30-Dec		8:00	20:00	8:46		0:46 20211230 0800-2000	N/A
<div> TOTAL RUN @ FLOW of 185  TIME 15:06  VOLUME 167610 Gallons </div>							

1-15		Shift		Flush Time		Documentation	
Date		Begin	End	Start	Stop	RunTime	UT Log
29-Dec		8:00	20:00	19:51		0:09 20211229 0800-2000	N/A
29-Dec		20:00	8:00			12:00 20211229 2000-0800	N/A
30-Dec		8:00	20:00	9:08		1:08 20211230 0800-2000	N/A
<div> TOTAL RUN @ FLOW of 185  TIME 13:17  VOLUME 147445 Gallons </div>							

4-6		Shift		Flush Time		Documentation	
Date		Begin	End	Start	Stop	RunTime	UT Log
29-Dec		8:00	20:00	18:12		1:48 20211229 0800-2000	N/A
29-Dec		20:00	8:00			12:00 20211229 2000-0800	N/A
30-Dec		8:00	20:00	9:35		1:35 20211230 0800-2000	N/A
<div> TOTAL RUN @ FLOW of 185  TIME 15:23  VOLUME 170755 Gallons </div>							

5-16		Shift		Flush Time		Documentation	
Date		Begin	End	Start	Stop	RunTime	UT Log
29-Dec		8:00	20:00	18:15		1:45 20211230 0800-2000	N/A
29-Dec		20:00	8:00			12:00 20211230 2000-0800	N/A
30-Dec		8:00	20:00	10:27		2:27 20211231 0800-2000	N/A
<div> TOTAL RUN @ FLOW of 185  TIME 16:12  VOLUME 179820 Gallons </div>							

7-1		Shift		Flush Time		Documentation	
Date		Begin	End	Start	Stop	RunTime	UT Log
28-Dec		8:00	20:00	15:01		4:59 20211228 0800-2000	N/A
28-Dec		20:00	8:00			12:00 20211228 2000-0800	N/A
29-Dec		8:00	20:00	12:12		4:12 20211229 0800-2000	N/A
<div> TOTAL RUN @ FLOW of 185  TIME 21:11  VOLUME 235135 Gallons </div>							

8-7		Shift		Flush Time		Documentation	
Date		Begin	End	Start	Stop	RunTime	UT Log
29-Dec		8:00	20:00	17:25		2:35 20211230 0800-2000	N/A
29-Dec		20:00	8:00			12:00 20211230 2000-0800	N/A
30-Dec		8:00	20:00	9:38		1:38 20211231 0800-2000	N/A
<div> TOTAL RUN @ FLOW of 185  TIME 16:13  VOLUME 180005 Gallons </div>							

Hydrant	Volume
1-3	176,675
1-14	184,815
1-15	147,445
2-7	253,450
3-1	167,610
4-6	170,755
5-16	179,820
7-1	235,135
8-7	180,005
TOTAL	1,695,710

## **NOTE TO REVIEWER:**

FLUSH LOGS WERE COMPLETED BY WATCH STANDERS THAT MAY NOT HAVE HAD THE TECHNICAL OR OVERALL KNOWLEDGE OF THE DISTRIBUTION FLUSHING PLAN. **LT CRUZ** WAS THE OFFICER IN CHARGE OF THE FIELD OPERATIONS AND CROSS REFERENCED THE FLUSH LOGS WITH THE ROVING SEABEE UTILITIESMAN LOGS TO VALIDATE THE TIMES. THE NOTES YOU SEE IN RED ARE VALIDATED ZONES, HYDRANTS, AND TIMES AS NEEDED.



## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Thursday, December 30, 2021 9:54 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamar T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211230 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211230 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Thursday, 30 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-13A – Flushing Stopped 0908L  
A2 FH ID 3-1 – Flushing Stopped 0846L  
A2 FH ID 4-6 – Flushing Stopped 0935L  
A2 FH ID 8-7 – Flushing Stopped 0938L  
A2 FH ID 1-14 – Flushing Started 1711L  
A2 FH ID 5-16 – Flushing Started 1815L  
A2 FH ID 1-3 – Flushing Started 1840L  
D2 FH ID 429 – Flushing Started 1122L, Flushing Paused 1635L  
D2 FH ID 363 – Flushing Started 1131L, Flushing Paused 1148L, Flushing Resumed 1248L  
D2 FH ID 276 – Flushing Started 1307L, Flushing Paused 1507L, Flushing Resumed 1750L  
D2 FH ID 363 – Flushing Paused 1500L, Flushing Resumed 1800L  
D2 FH ID 006 (No GAC) – Flushing Paused 1510L, Flushing Resumed 1740L  
D2 FH ID 003 – Flushing Started 1557L  
F1 FH ID FH-8 (No GAC) – Flushing Paused 1620L, Flushing Resumed 1928L  
F1 FH ID 11A – Flushing Paused 1605L, Flushing Resumed 1917L  
F1 FH ID 18 – Flushing Paused 1614L, Flushing Resumed 1924L  
F1 FH ID 21 – Flushing Paused 1558L, Flushing Resumed 1843L  
F1 FH ID 36A – Flushing Paused 1558L, Flushing Resumed 1830L  
F1 FH ID 606 – Flushing Paused 1544L, Flushing Resumed 1821L

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Friday, December 31, 2021 9:29 AM  
**To:** Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211230 2000L - 0800L JBPHH DWDSRP Flush Report  
**Attachments:** 20211231 2000L - 0800L JBPHH DWDSRP Flush Report.pdf

Ladies & Gentlemen,

Please see the attached flush report for Thursday/Friday, 30/31 Dec 21, 2000L – 0800L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-3 – Continuous Flush This Period  
A2 FH ID 1-14 – Continuous Flush This Period  
A2 FH ID 5-16 – Continuous Flush This Period  
D2 FH ID 003 – Continuous Flush This Period  
D2 FH ID 006 (No GAC) – Continuous Flush This Period  
D2 FH ID 276 – Continuous Flush This Period  
D2 FH ID 325 – Flushing Resumed 0112L / Flushing Paused 0546L  
D2 FH ID 363 – Continuous Flush This Period  
D2 FH ID 429 – Flushing Paused 2107L / Flushing Resumed 0034L / Flushing Complete 0529L  
F1 FH ID FH-8 (No GAC) – Continuous Flush This Period  
F1 FH ID 11A – Continuous Flush This Period  
F1 FH ID 18 – Continuous Flush This Period  
F1 FH ID 21 – Continuous Flush This Period  
F1 FH ID 36A – Continuous Flush This Period  
F1 FH ID 606 – Continuous Flush This Period

r/

srw

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: Sgt Wenger, Alan Agency: 2-14 CAV

Zone ID (A1, etc.): A2 Date: 20211231 Time: 0800

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: FH 1-3

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
<u>15</u> % cloud cover	____ % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☒ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge? <u>no</u>
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>no</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>no</u>	

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature: \_\_\_\_\_

*[Handwritten Signature]*

Date: 2021/2/21

## JBPHH Drinking Water Transmission System

## Flushing Report

## Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System  
☐ Flushing Water Storage Tanks  
☐ Flushing Drinking Water Well

## Section II: Asset Flushed

Map ID: A2Map Attached: ☐ Yes ☒ No

## Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Stream (Direct)</del>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.



	/		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		✓	Discharge water samples collected

Date of Flushing: 2021 Dec 31 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 2000 Flushing End Time: 0800

Signed By

\_\_\_\_\_  
Printed Name / Rank / Organization

\_\_\_\_\_  
Date



Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Friday, December 31, 2021 9:31 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211231 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211231 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Friday, 31 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-3 – Flushing Paused 1035L  
A2 FH ID 1-14 – Flushing Paused 0950L  
A2 FH ID 5-16 – Flushing Paused 1027L  
D2 FH ID 003 – Flushing Paused 0914L  
D2 FH ID 006 (No GAC) – Flushing Complete 1130L  
D2 FH ID 276 – Flushing Paused 0817L  
D2 FH ID 325 – Flushing Paused 0839L  
D2 FH ID 363 – Flushing Paused 0904L  
F1 FH ID FH-8 (No GAC) – Flushing Paused 1937L  
F1 FH ID 11A – Flushing Paused 1930L  
F1 FH ID 18 – Flushing Paused 1938L  
F1 FH ID 21 – Flushing Paused 1925L  
F1 FH ID 36A – Flushing Paused 1953L  
F1 FH ID 606 – Flushing Paused 1945L  
D3 FH ID 801 – Flushing Started 1215L  
D3 FH ID 805 – Flushing Started 1230L, Flushing Paused 1913L  
D3 FH ID 245 – Flushing Started 1359L  
D3 FH ID 228 – Flushing Started 1456L, Flushing Paused 1659L  
D3 FH ID 477 – Flushing Started 1226L

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: CE' LE, NHA Agency: CAMU 303

Zone ID (A1, etc.): A2 Date: 31 DEC 21 Time: 6031

Coordinates (latitude and longitude): FH 1-3 SUB HQ

Associated Flushing Report ID: FH 1-3 SUB HQ

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
<u>40</u> % cloud cover	<u>    </u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☒ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature: *[Signature]* Date: 31 DEC 21

# JBPHH Drinking Water Transmission System

## Flushing Report

### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

### Section II: Asset Flushed

Map ID: AZ

Map Attached: ☒ Yes ☐ No

### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Stream (Direct)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ocean (Direct)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.



	✓		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		✓	Discharge water samples collected

Date of Flushing: 31 DEC 21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 0830 Flushing End Time: 1035

Signed By

LEI NHA E6 CBMU 303

Printed Name / Rank / Organization

31 DEC 21

Date

  
Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Thursday, December 30, 2021 9:54 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamar T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211230 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211230 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Thursday, 30 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-13A – Flushing Stopped 0908L  
A2 FH ID 3-1 – Flushing Stopped 0846L  
A2 FH ID 4-6 – Flushing Stopped 0935L  
A2 FH ID 8-7 – Flushing Stopped 0938L  
A2 FH ID 1-14 – Flushing Started 1711L  
A2 FH ID 5-16 – Flushing Started 1815L  
A2 FH ID 1-3 – Flushing Started 1840L  
D2 FH ID 429 – Flushing Started 1122L, Flushing Paused 1635L  
D2 FH ID 363 – Flushing Started 1131L, Flushing Paused 1148L, Flushing Resumed 1248L  
D2 FH ID 276 – Flushing Started 1307L, Flushing Paused 1507L, Flushing Resumed 1750L  
D2 FH ID 363 – Flushing Paused 1500L, Flushing Resumed 1800L  
D2 FH ID 006 (No GAC) – Flushing Paused 1510L, Flushing Resumed 1740L  
D2 FH ID 003 – Flushing Started 1557L  
F1 FH ID FH-8 (No GAC) – Flushing Paused 1620L, Flushing Resumed 1928L  
F1 FH ID 11A – Flushing Paused 1605L, Flushing Resumed 1917L  
F1 FH ID 18 – Flushing Paused 1614L, Flushing Resumed 1924L  
F1 FH ID 21 – Flushing Paused 1558L, Flushing Resumed 1843L  
F1 FH ID 36A – Flushing Paused 1558L, Flushing Resumed 1830L  
F1 FH ID 606 – Flushing Paused 1544L, Flushing Resumed 1821L

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SGT NIEVES Agency: ARMY

Zone ID (A1, etc.): A2 Date: 30 DEC 2022 Time: 1730

Coordinates (latitude and longitude): FH 1-14/5

Associated Flushing Report ID: FH 1-14/5

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input checked="" type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input checked="" type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
<u>90</u> % cloud cover	<u>    </u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input checked="" type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input checked="" type="checkbox"/> yes <input checked="" type="checkbox"/> no		

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature: \_\_\_\_\_

Date: \_\_\_\_\_

*30 DEC 2021*

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## JBPHH Drinking Water Transmission System

## Flushing Report

## Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

## Section II: Asset Flushed

Map ID: A 2FH1-14Map Attached: ☒ Yes ☐ No

## Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Stream (Direct)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ocean (Direct)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.



			Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
			Discharge water samples collected

Date of Flushing: 30 DEC 2021 Estimated Volume: 20

Flushing Start Time: 1730 Flushing End Time: 2030

Signed By

SGT NIEVES

Printed Name / Rank / Organization

30 DEC 2021

Date



Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Friday, December 31, 2021 9:29 AM  
**To:** Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211230 2000L - 0800L JBPHH DWDSRP Flush Report  
**Attachments:** 20211231 2000L - 0800L JBPHH DWDSRP Flush Report.pdf

Ladies & Gentlemen,

Please see the attached flush report for Thursday/Friday, 30/31 Dec 21, 2000L – 0800L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-3 – Continuous Flush This Period  
A2 FH ID 1-14 – Continuous Flush This Period  
A2 FH ID 5-16 – Continuous Flush This Period  
D2 FH ID 003 – Continuous Flush This Period  
D2 FH ID 006 (No GAC) – Continuous Flush This Period  
D2 FH ID 276 – Continuous Flush This Period  
D2 FH ID 325 – Flushing Resumed 0112L / Flushing Paused 0546L  
D2 FH ID 363 – Continuous Flush This Period  
D2 FH ID 429 – Flushing Paused 2107L / Flushing Resumed 0034L / Flushing Complete 0529L  
F1 FH ID FH-8 (No GAC) – Continuous Flush This Period  
F1 FH ID 11A – Continuous Flush This Period  
F1 FH ID 18 – Continuous Flush This Period  
F1 FH ID 21 – Continuous Flush This Period  
F1 FH ID 36A – Continuous Flush This Period  
F1 FH ID 606 – Continuous Flush This Period

r/

srw

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: Sgt AS. MC. K. Victor Agency: 647 CES / 303... / NAVFAC HI

Zone ID (A1, etc.): A2 Date: Dec 30 2011 Time: 2100

Coordinates (latitude and longitude): 21.35431°N, 157.96398°W

Associated Flushing Report ID: FH ID 41-14

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
<u>60</u> % cloud cover	<u>60</u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☒ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:


% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>None</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping? <input type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Fish Dead	Abnormal Animal Behavior Near Discharge? <input type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Invertebrates Dead	Invertebrates collected? <input type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Dead	Notes (describe any yes):

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

# Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:



Date: Dec 30 2021

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: 12

Map Attached: ☐ Yes ☒ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
		<input checked="" type="checkbox"/>	DOH Incident Command notified
		<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
		<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>			Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>			Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>			Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>			Draining to Ground:
		<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
		<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
			Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
			Draining to Storm Drain:
			Identify on a map where the storm drain enters State waters
			Draining to Sanitary Sewer:
			Request Wastewater Treatment Plant consent
			<del>Draining to Stream (Direct)</del>
			<del>Draining to Ocean (Direct)</del>
			Discharge does/did not contact persons, pets, wildlife, etc.



			Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
			Discharge water samples collected

Date of Flushing: Dec 30 2021 Estimated Volume: \_\_\_\_\_


Flushing Start Time: 2000 Flushing End Time: 0600

Signed By

SGT ASUNCION, Victor (U.S ARMY) 2-14 CAV Dec 30 2021

Printed Name / Rank / Organization

Date

  
Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Friday, December 31, 2021 9:31 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211231 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211231 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Friday, 31 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-3 – Flushing Paused 1035L  
A2 FH ID 1-14 – Flushing Paused 0950L  
A2 FH ID 5-16 – Flushing Paused 1027L  
D2 FH ID 003 – Flushing Paused 0914L  
D2 FH ID 006 (No GAC) – Flushing Complete 1130L  
D2 FH ID 276 – Flushing Paused 0817L  
D2 FH ID 325 – Flushing Paused 0839L  
D2 FH ID 363 – Flushing Paused 0904L  
F1 FH ID FH-8 (No GAC) – Flushing Paused 1937L  
F1 FH ID 11A – Flushing Paused 1930L  
F1 FH ID 18 – Flushing Paused 1938L  
F1 FH ID 21 – Flushing Paused 1925L  
F1 FH ID 36A – Flushing Paused 1953L  
F1 FH ID 606 – Flushing Paused 1945L  
D3 FH ID 801 – Flushing Started 1215L  
D3 FH ID 805 – Flushing Started 1230L, Flushing Paused 1913L  
D3 FH ID 245 – Flushing Started 1359L  
D3 FH ID 228 – Flushing Started 1456L, Flushing Paused 1659L  
D3 FH ID 477 – Flushing Started 1226L

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: ED 3 LUCAS CAMARA Agency: \_\_\_\_\_

Zone ID (A1, etc.): A2 Date: 31 DEC 21 Time: 0820

Coordinates (latitude and longitude): A2 FH 1-14

Associated Flushing Report ID: FH 1-14

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input checked="" type="checkbox"/> storm (heavy rain)	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input checked="" type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	<u>72°</u>
____ % cloud cover	____ % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☒ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

# Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature: B. Lucas Camacho Date: 31 DEC 21

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## JBPHH Drinking Water Transmission System

## Flushing Report

## Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System  
☐ Flushing Water Storage Tanks  
☐ Flushing Drinking Water Well

## Section II: Asset Flushed

Map ID: A2 FH1-14Map Attached: ☒ Yes ☐ No

## Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Storm Drain:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Stream (Direct)</del>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.



		✓	Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		✓	Discharge water samples collected

Date of Flushing: 31 DEC 21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 0820 Flushing End Time: 1445

Signed By

B. WASCAMARA

Printed Name / Rank / Organization

31 DEC 21

Date

[Signature]

Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Wednesday, December 29, 2021 9:19 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211229 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211229 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Wednesday, 29 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 3-1 – Flushing Started 1740L  
A2 FH ID 2-7 – Flushing Paused 1223L  
A2 FH ID 7-1 – Flushing Paused 1212L  
A2 FH ID 8-7 – Flushing Started 1725L  
A2 FH ID 4-6 – Flushing Started 1812L  
A2 FH ID 1-15 – Flushing Started 1951L  
D2 FH ID 006 (No GAC) – Continuous Flush this Period  
D2 FH ID 105 – Flushing Paused 1510L  
D2 FH ID 061 – Flushing Paused 1430L  
D2 FH ID 236 – Flushing Paused 1437L  
D2 FH ID 280 – Flushing Paused 1446L  
D2 FH ID 301 – Flushing Paused 1400L  
F1 FH ID FH-8 (No GAC) – Continuous Flush this Period  
F1 FH ID 11A – Continuous Flush this Period  
F1 FH ID 18 – Continuous Flush this Period  
F1 FH ID 21 – Continuous Flush this Period  
F1 FH ID 36A – Continuous Flush this Period  
F1 FH ID 606 – Continuous Flush this Period

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: Sgt Cardarelli, Anthony Agency: B-TRP 2-14CAV

Zone ID (A1, etc.): A2 Date: 29 DEC 21 Time: 2000

Coordinates (latitude and longitude): 21.357878, -157.900885

Associated Flushing Report ID: FH 1-15

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
% cloud cover	% cloud cover	
<input checked="" type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input checked="" type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>Nm</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
Fish Kill? <u>/</u>	# Fish Dead <u>/</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Abnormal Animal Behavior Near Discharge?
Dead Invertebrates?	# Invertebrates Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>/</u>	Invertebrates collected?
Other Dead Animals?	# Dead <u>/</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Notes (describe any yes):

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:



Date:

27 DEC 1

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System  
☐ Flushing Water Storage Tanks  
☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: FH 1-15 Map Attached: ☐ Yes ☒ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
		<input checked="" type="checkbox"/>	DOH Incident Command notified
		<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
		<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>			Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>			Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>			Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>			Draining to Ground:
		<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
		<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>			Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	Draining to Storm Drain:
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	Draining to Sanitary Sewer:
		<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input checked="" type="checkbox"/>			<del>Draining to Stream (Direct)</del>
<input checked="" type="checkbox"/>			<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>			Discharge does/did not contact persons, pets, wildlife, etc.



	✓		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		✓	Discharge water samples collected

Date of Flushing: 29 DEC 2021 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 0750 1750 Flushing End Time: 2025

Signed By

SGT Curdarelli, Anthony SGT  
Printed Name / Rank / Organization BTRP  
2-14 CAN

29 DEC 21  
Date

  
Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Thursday, December 30, 2021 9:29 AM  
**To:** Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211230 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211230 2000L - 0800L JBPHH DWDSRP Flush Report.pdf

Ladies & Gentlemen,

Please see the attached flush report for Wednesday/Thursday, 29/30 Dec 21, 2000L – 0800L. A summary update on distribution flushing is listed below for this period.

Current Location Summary:

A2 FH ID ~~1-13A~~ – Continuous Flush This Period  
A2 FH ID 3-1 – Continuous Flush This Period  
A2 FH ID 4-6 – Continuous Flush This Period  
A2 FH ID 8-7 – Continuous Flush This Period  
D2 FH ID 006 (No GAC) – Continuous Flush this Period  
F1 FH ID FH-8 (No GAC) – Continuous Flush this Period  
F1 FH ID 11A – Continuous Flush this Period  
F1 FH ID 18 – Continuous Flush this Period  
F1 FH ID 21 – Continuous Flush this Period  
F1 FH ID 36A – Continuous Flush this Period  
F1 FH ID 606 – Continuous Flush this Period

**FH 1-15 due to 1-13A not having water  
- LT Cruz**

Respectfully,

//SIGNED//

ISRAEL A. DUARTE, MSgt, USAF

Superintendent, Structural Branch

Naval Facilities Engineering Systems Command Hawaii

Public Works Department, JBPHH

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SPC Neil Senora Agency: Aray

Zone ID (A1, etc.): 1-15 Date: 29-dec-2000 Time: 2000

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: \_\_\_\_\_

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
<u>20</u> % cloud cover	<u>0</u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☒ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>None</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
Fish Kill?	# Fish Dead <u>8</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Abnormal Animal Behavior Near Discharge?
Dead Invertebrates?	# Invertebrates Dead <u>2</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Invertebrates collected?
Other Dead Animals?	# Dead <u>8</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Notes (describe any yes):

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:  Date: 29-Dec-2021

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: A-1-15

Map Attached: ☐ Yes ☒ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Stream (Direct)</del>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

	✓		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		✓	Discharge water samples collected

Date of Flushing: 29-Dec-2021 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 700 Flushing End Time: 0800

Signed By

\_\_\_\_\_  
Printed Name / Rank / Organization

\_\_\_\_\_  
Date



Signature



## Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)

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**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Thursday, December 30, 2021 9:54 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211230 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211230 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Thursday, 30 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID ~~1-13A~~ – Flushing Stopped 0908L  
A2 FH ID 3-1 – Flushing Stopped 0846L  
A2 FH ID 4-6 – Flushing Stopped 0935L  
A2 FH ID 8-7 – Flushing Stopped 0938L  
A2 FH ID 1-14 – Flushing Started 1711L  
A2 FH ID 5-16 – Flushing Started 1815L  
A2 FH ID 1-3 – Flushing Started 1840L  
D2 FH ID 429 – Flushing Started 1122L, Flushing Paused 1635L  
D2 FH ID 363 – Flushing Started 1131L, Flushing Paused 1148L, Flushing Resumed 1248L  
D2 FH ID 276 – Flushing Started 1307L, Flushing Paused 1507L, Flushing Resumed 1750L  
D2 FH ID 363 – Flushing Paused 1500L, Flushing Resumed 1800L  
D2 FH ID 006 (No GAC) – Flushing Paused 1510L, Flushing Resumed 1740L  
D2 FH ID 003 – Flushing Started 1557L  
F1 FH ID FH-8 (No GAC) – Flushing Paused 1620L, Flushing Resumed 1928L  
F1 FH ID 11A – Flushing Paused 1605L, Flushing Resumed 1917L  
F1 FH ID 18 – Flushing Paused 1614L, Flushing Resumed 1924L  
F1 FH ID 21 – Flushing Paused 1558L, Flushing Resumed 1843L  
F1 FH ID 36A – Flushing Paused 1558L, Flushing Resumed 1830L  
F1 FH ID 606 – Flushing Paused 1544L, Flushing Resumed 1821L

FH 1-15 due to 1-13A not having water  
- LT Cruz

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: FH 1-13A SPL Frazier Agency: \_\_\_\_\_

Zone ID (A1, etc.): 1-13A Date: 2021230 Time: 0800

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: A2 FH 1-13A

FH 1-15  
- LT Cruz

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input checked="" type="checkbox"/> rain (steady rain)	<input checked="" type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
____ % cloud cover	____ % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input type="checkbox"/> Normal/none	<input type="checkbox"/> None	<input type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input type="checkbox"/> no		<input type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input type="checkbox"/> no		<input type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input type="checkbox"/> no		

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:  Date: 20211230

## JBPHH Drinking Water Transmission System

## Flushing Report

## Section I: Asset Type to be Flushed

- ☐ Flushing of Drinking Water Distribution System  
☐ Flushing Water Storage Tanks  
☐ Flushing Drinking Water Well

## Section II: Asset Flushed

Map ID: FH 1-13AMap Attached: ☐ Yes ☐ No

## Section III: Protocols

Yes	No	N/A	
	/		Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
		/	DOH Incident Command notified
		/	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
		/	Notified affected population
	/		Signs posted and affected area roped (Cordon off and mark the affected area)
/			Navy Personnel present for entire discharge
/			Treatment using diffusers & granulated activated carbon prior to discharge
	/		Draining to Ground:
	/		Soil samples collected before discharging onto ground
	/		Soil samples collected after discharge is completed
	/		Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
/			Draining to Storm Drain:
/			Identify on a map where the storm drain enters State waters
	/		Draining to Sanitary Sewer:
	/		Request Wastewater Treatment Plant consent
	/		<del>Draining to Stream (Direct)</del>
	/		<del>Draining to Ocean (Direct)</del>
/			Discharge <del>does</del> /did not contact persons, pets, wildlife, etc.

			Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
			Discharge water samples collected

Date of Flushing: 20211230 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 0800 Flushing End Time: 0907

Signed By

Andrew Frazier

Printed Name / Rank / Organization

20211230

Date



Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** AhLeong, Peter A MSgt USAF 647 ABG (USA) <peter.a.ahleong1@navy.mil>  
**Sent:** Tuesday, December 28, 2021 11:34 PM  
**To:** Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Wiley, Scottie R Capt USAF 647 ABG (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Duarte, Israel A MSgt USAF (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211228 0800L - 2000L JPBHH DWDSRP Flush Report  
**Attachments:** 20211228 0800L - 2000L JPBHH KDWDSRP Flush Report.pdf  
**Signed By:** peter.ahleong@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Tuesday, 28 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

D1 FH ID 455 – Flushing stopped 0939L  
D2 FH ID 30 – Flushing stopped 1030L  
F1 FH ID FH-8 (No GAC) – Flushing on  
F1 FH ID 606 – Flushing on  
F1 FH ID 613 – Flushing paused 1157L (field flooded)  
F1 FH ID 36A – Flushing on  
F1 FH ID 21 – Flushing on  
F1 FH ID 11A – Flushing on  
F1 FH ID 18 – Flushing on  
D1 FH ID 6 - Flushing on  
D2 FH ID 74 - Flushing stopped 1031L  
D2 FH ID 293 – Flushing stopped 0939L  
D1 FH ID 400 – Flushing stopped 0951L  
D2 FH ID 41 – Flushing started 1050L  
A2 FH ID 7-1 – Flushing started 1501L



A2 FH ID 2-7 – Flushing started 1647L

Respectfully,

MSgt Peter A. Ahleong  
Mechanical Services Element Superintendent  
Naval Facilities Engineering Systems Command, Hawaii  
647<sup>th</sup> Civil Engineer Squadron, JBPHH, HI  
808-471-0374

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SGT Ermondo Begay Agency: \_\_\_\_\_

Zone ID (A1, etc.): A2 Date: 28 DEC 21 Time: 1647

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: 2-7

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
_____% cloud cover	_____% cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input type="checkbox"/> Normal/none	<input type="checkbox"/> None	<input type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input type="checkbox"/> no		<input type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input type="checkbox"/> no		<input type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input type="checkbox"/> no		

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:  Date: 28 April

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: A2, 2-7

Map Attached: ☐ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Storm Drain:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Stream (Direct)</del>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Ocean (Direct)</del>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

			Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
			Discharge water samples collected

Date of Flushing: 28 Dec 21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 1647 Flushing End Time: 2105

Signed By

Ermondo Begay, SGT

Printed Name / Rank / Organization

28 Dec 21

Date



Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Wednesday, December 29, 2021 12:13 PM  
**To:** AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Duarte, Israel A MSgt USAF (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211229 2000L - 0800L JBPHH DWDSRP Flush Report  
**Attachments:** 20211229 2000L - 0800L JBPHH DWDSRP Flush Report.pdf

Ladies & Gentlemen,

Please see the attached flush report for Tuesday/Wednesday, 28/29 Dec 21, 2000L – 0800L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-3 – Not Active this Period  
A2 FH ID 2-7 – Continuous Flush this Period  
A2 FH ID 7-1 – Continuous Flush this Period  
D2 FH ID 003 – Not Active this Period  
D2 FH ID 006 (No GAC) – Continuous Flush this Period  
D2 FH ID 105 - Continuous Flush this Period  
D2 FH ID 061 – Flushing Started 2238L  
D2 FH ID 236 – Flushing Started 2158L  
D2 FH ID 280 – Flushing Started 2241L  
D2 FH ID 301 – Flushing Started 2000L  
F1 FH ID FH-8 (No GAC) – Continuous Flush this Period  
F1 FH ID 11A – Continuous Flush this Period  
F1 FH ID 18 – Continuous Flush this Period  
F1 FH ID 21 – Continuous Flush this Period  
F1 FH ID 36A – Continuous Flush this Period  
F1 FH ID 606 – Continuous Flush this Period  
F1 FH ID 613 – Not Active this Period

r/



# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SSG Mora Gonzalez, Doreen Agency: \_\_\_\_\_

Zone ID (A1, etc.): A1 Date: 2021/12/28 Time: 2100L

Coordinates (latitude and longitude): 21.36308°N, 157.95648°W

Associated Flushing Report ID: FH 2-7

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
<u>10</u> % cloud cover	_____ % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☒ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>yes</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
Fish Kill?	# Fish Dead <u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Abnormal Animal Behavior Near Discharge?
Dead Invertebrates?	# Invertebrates Dead <u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Invertebrates collected?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes

Observer Signature: [Signature] Date: 28 Dec 21

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☐ Flushing of Drinking Water Distribution System
- ☒ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: A2 2-7 Map Attached: ☒ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Stream (Direct)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ocean (Direct)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge <del>does</del> /did not contact persons, pets, wildlife, etc.

	✓	Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
	2	Discharge water samples collected

Date of Flushing: 28 Dec 21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 2000 Flushing End Time: 0800


Signed By

Mora Gonzalez, Dolores / SSG / 2-14 CAV

Printed Name / Rank / Organization

28 Dec 21

Date

  
Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Wednesday, December 29, 2021 9:19 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211229 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211229 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Wednesday, 29 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 3-1 – Flushing Started 1740L  
A2 FH ID 2-7 – Flushing Paused 1223L  
A2 FH ID 7-1 – Flushing Paused 1212L  
A2 FH ID 8-7 – Flushing Started 1725L  
A2 FH ID 4-6 – Flushing Started 1812L  
A2 FH ID 1-15 – Flushing Started 1951L  
D2 FH ID 006 (No GAC) – Continuous Flush this Period  
D2 FH ID 105 – Flushing Paused 1510L  
D2 FH ID 061 – Flushing Paused 1430L  
D2 FH ID 236 – Flushing Paused 1437L  
D2 FH ID 280 – Flushing Paused 1446L  
D2 FH ID 301 – Flushing Paused 1400L  
F1 FH ID FH-8 (No GAC) – Continuous Flush this Period  
F1 FH ID 11A – Continuous Flush this Period  
F1 FH ID 18 – Continuous Flush this Period  
F1 FH ID 21 – Continuous Flush this Period  
F1 FH ID 36A – Continuous Flush this Period  
F1 FH ID 606 – Continuous Flush this Period

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: Sgt Jordan Kelley Agency: 647 Ces / 303 1 Nufac HI  
 Zone ID (A1, etc.): A-2 Date: 2021.29.12 Time: 0830  
 Coordinates (latitude and longitude): Franklin Ave  
 Associated Flushing Report ID: FH 2-7

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
<u>30</u> % cloud cover	<u>      </u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☒ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>N/A</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping? <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill? <u>N/A</u>	# Fish Dead <u>0</u>	Abnormal Animal Behavior Near Discharge? <u>N/A</u>
<input type="checkbox"/> yes <input type="checkbox"/> no		<input type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input type="checkbox"/> no		<input type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input type="checkbox"/> no		

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:

A handwritten signature in black ink, appearing to be 'J. B. H.', written over a horizontal line.

Date:

Aug 29 2021



## JBPHH Drinking Water Transmission System

## Flushing Report

## Section I: Asset Type to be Flushed.

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

## Section II: Asset Flushed

Map ID: 2-7Map Attached: ☒ Yes ☐ No

## Section III: Protocols

Yes	No	N/A	
✓			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
		✓	DOH Incident Command notified
		✓	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
		✓	Notified affected population
✓			Signs posted and affected area roped (Cordon off and mark the affected area)
✓			Navy Personnel present for entire discharge
✓			Treatment using diffusers & granulated activated carbon prior to discharge
✓			Draining to Ground:
		✓	Soil samples collected before discharging onto ground
		✓	Soil samples collected after discharge is completed
✓			Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
✗		✓	Draining to Storm Drain:
			Identify on a map where the storm drain enters State waters
✗		✓	Draining to Sanitary Sewer:
			Request Wastewater Treatment Plant consent
			<del>Draining to Stream (Direct)</del>
			<del>Draining to Ocean (Direct)</del>
✓			Discharge does/did not contact persons, pets, wildlife, etc.

			Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
			Discharge water samples collected

Date of Flushing: 29 Dec 2021 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 0830 Flushing End Time: 1230


Signed By

Kelley SGT

Printed Name / Rank / Organization

Dec 29 2021

Date

  
Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Wednesday, December 29, 2021 9:19 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211229 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211229 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Wednesday, 29 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 3-1 – Flushing Started 1740L  
A2 FH ID 2-7 – Flushing Paused 1223L  
A2 FH ID 7-1 – Flushing Paused 1212L  
A2 FH ID 8-7 – Flushing Started 1725L  
A2 FH ID 4-6 – Flushing Started 1812L  
A2 FH ID 1-15 – Flushing Started 1951L  
D2 FH ID 006 (No GAC) – Continuous Flush this Period  
D2 FH ID 105 – Flushing Paused 1510L  
D2 FH ID 061 – Flushing Paused 1430L  
D2 FH ID 236 – Flushing Paused 1437L  
D2 FH ID 280 – Flushing Paused 1446L  
D2 FH ID 301 – Flushing Paused 1400L  
F1 FH ID FH-8 (No GAC) – Continuous Flush this Period  
F1 FH ID 11A – Continuous Flush this Period  
F1 FH ID 18 – Continuous Flush this Period  
F1 FH ID 21 – Continuous Flush this Period  
F1 FH ID 36A – Continuous Flush this Period  
F1 FH ID 606 – Continuous Flush this Period

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SPL BOWERS DERRICK Agency: 2-14 CAU BTRP

Zone ID (A1, etc.): A2 Date: 20211229 Time: 16:45

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: 3-1

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input checked="" type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
____ % cloud cover	____ % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input type="checkbox"/> None <input checked="" type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input type="checkbox"/> None <input checked="" type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input type="checkbox"/> None <input checked="" type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input type="checkbox"/> None <input checked="" type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:



Date: 20211229

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☐ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: AZ-3-1

Map Attached: ☒ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Ground:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Storm Drain:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Sanitary Sewer:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Stream (Direct)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Ocean (Direct)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.



		<input checked="" type="checkbox"/>	Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		<input checked="" type="checkbox"/>	Discharge water samples collected

Date of Flushing: 20211229 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 1740 Flushing End Time: 2023

Signed By

SPC BOWERS DERRECK 20211229  
 Printed Name / Rank / Organization 2-14CAU Date  
13-TRD

  
 Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Thursday, December 30, 2021 9:29 AM  
**To:** Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211230 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211230 2000L - 0800L JBPHH DWDSRP Flush Report.pdf

Ladies & Gentlemen,

Please see the attached flush report for Wednesday/Thursday, 29/30 Dec 21, 2000L – 0800L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-13A – Continuous Flush This Period  
A2 FH ID 3-1 – Continuous Flush This Period  
A2 FH ID 4-6 – Continuous Flush This Period  
A2 FH ID 8-7 – Continuous Flush This Period  
D2 FH ID 006 (No GAC) – Continuous Flush this Period  
F1 FH ID FH-8 (No GAC) – Continuous Flush this Period  
F1 FH ID 11A – Continuous Flush this Period  
F1 FH ID 18 – Continuous Flush this Period  
F1 FH ID 21 – Continuous Flush this Period  
F1 FH ID 36A – Continuous Flush this Period  
F1 FH ID 606 – Continuous Flush this Period

Respectfully,

//SIGNED//

ISRAEL A. DUARTE, MSgt, USAF

Superintendent, Structural Branch

Naval Facilities Engineering Systems Command Hawaii

Public Works Department, JBPHH

JBPHH, HI  
DSN (315) 471-0356  
Comm (808) 471-0356

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SPC Marco Hernandez Agency: 2-14

Zone ID (A1, etc.): A2 Date: 20211229 Time: 2000

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: FH 3-1

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
____ % cloud cover	____ % cloud cover	
<input checked="" type="checkbox"/> clear/sunny	<input checked="" type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
Fish Kill?	# Fish Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Abnormal Animal Behavior Near Discharge?
Dead Invertebrates?	# Invertebrates Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Invertebrates collected?
Other Dead Animals?	# Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Notes (describe any yes):

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: F4 3-1

Map Attached: ☒ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Storm Drain:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Stream (Direct)</del>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

			Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
			Discharge water samples collected

Date of Flushing: 20211229 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 20:00 Flushing End Time: 0840

Signed By

Hernandez, Marco SPC, 2-14

Printed Name / Rank / Organization

20211229

Date



Signature



## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Thursday, December 30, 2021 9:54 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaría T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211230 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211230 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Thursday, 30 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-13A – Flushing Stopped 0908L  
A2 FH ID 3-1 – Flushing Stopped 0846L  
A2 FH ID 4-6 – Flushing Stopped 0935L  
A2 FH ID 8-7 – Flushing Stopped 0938L  
A2 FH ID 1-14 – Flushing Started 1711L  
A2 FH ID 5-16 – Flushing Started 1815L  
A2 FH ID 1-3 – Flushing Started 1840L  
D2 FH ID 429 – Flushing Started 1122L, Flushing Paused 1635L  
D2 FH ID 363 – Flushing Started 1131L, Flushing Paused 1148L, Flushing Resumed 1248L  
D2 FH ID 276 – Flushing Started 1307L, Flushing Paused 1507L, Flushing Resumed 1750L  
D2 FH ID 363 – Flushing Paused 1500L, Flushing Resumed 1800L  
D2 FH ID 006 (No GAC) – Flushing Paused 1510L, Flushing Resumed 1740L  
D2 FH ID 003 – Flushing Started 1557L  
F1 FH ID FH-8 (No GAC) – Flushing Paused 1620L, Flushing Resumed 1928L  
F1 FH ID 11A – Flushing Paused 1605L, Flushing Resumed 1917L  
F1 FH ID 18 – Flushing Paused 1614L, Flushing Resumed 1924L  
F1 FH ID 21 – Flushing Paused 1558L, Flushing Resumed 1843L  
F1 FH ID 36A – Flushing Paused 1558L, Flushing Resumed 1830L  
F1 FH ID 606 – Flushing Paused 1544L, Flushing Resumed 1821L

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Wednesday, December 29, 2021 9:19 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211229 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211229 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Wednesday, 29 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 3-1 – Flushing Started 1740L  
A2 FH ID 2-7 – Flushing Paused 1223L  
A2 FH ID 7-1 – Flushing Paused 1212L  
A2 FH ID 8-7 – Flushing Started 1725L  
A2 FH ID 4-6 – Flushing Started 1812L  
A2 FH ID 1-15 – Flushing Started 1951L  
D2 FH ID 006 (No GAC) – Continuous Flush this Period  
D2 FH ID 105 – Flushing Paused 1510L  
D2 FH ID 061 – Flushing Paused 1430L  
D2 FH ID 236 – Flushing Paused 1437L  
D2 FH ID 280 – Flushing Paused 1446L  
D2 FH ID 301 – Flushing Paused 1400L  
F1 FH ID FH-8 (No GAC) – Continuous Flush this Period  
F1 FH ID 11A – Continuous Flush this Period  
F1 FH ID 18 – Continuous Flush this Period  
F1 FH ID 21 – Continuous Flush this Period  
F1 FH ID 36A – Continuous Flush this Period  
F1 FH ID 606 – Continuous Flush this Period

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SGT Young Agency: B TRP 2-14 CAI

Zone ID (A1, etc.): Grinder A2 Date: 29 Dec 2021 Time: 1753

Coordinates (latitude and longitude): 0 78 1 6 3 3 2

Associated Flushing Report ID: FH 4-6

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input checked="" type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
____ % cloud cover	____ % cloud cover	
<input checked="" type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
Fish Kill?	# Fish Dead 0	<input checked="" type="checkbox"/> None <input checked="" type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Abnormal Animal Behavior Near Discharge?
Dead Invertebrates?	# Invertebrates Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	0	Invertebrates collected?
Other Dead Animals?	# Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	0	Notes (describe any yes):

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:  Date: 29 Dec 2021

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: A2 4-6

Map Attached: ☒ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input checked="" type="checkbox"/>			DOH Incident Command notified
<input checked="" type="checkbox"/>			DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input checked="" type="checkbox"/>			Notified affected population
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>			Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>			Treatment using diffusers & granulated activated carbon prior to discharge
		<input checked="" type="checkbox"/>	Draining to Ground:
		<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
		<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
		<input checked="" type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
			Draining to Storm Drain:
<input checked="" type="checkbox"/>			Identify on a map where the storm drain enters State waters
			Draining to Sanitary Sewer:
			Request Wastewater Treatment Plant consent
			<del>Draining to Stream (Direct)</del>
<input checked="" type="checkbox"/>			<del>Draining to Ocean (Direct)</del>
			Discharge does/did not contact persons, pets, wildlife, etc.

			Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
			Discharge water samples collected

Date of Flushing: 29 Dec 2021 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 1715 Flushing End Time: 2023

Signed By

SGT Young B TRP 2-14 CAV

Printed Name / Rank / Organization

29 Dec 2021

Date



Signature



## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Thursday, December 30, 2021 9:29 AM  
**To:** Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211230 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211230 2000L - 0800L JBPHH DWDSRP Flush Report.pdf

Ladies & Gentlemen,

Please see the attached flush report for Wednesday/Thursday, 29/30 Dec 21, 2000L – 0800L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-13A – Continuous Flush This Period  
A2 FH ID 3-1 – Continuous Flush This Period  
A2 FH ID 4-6 – Continuous Flush This Period  
A2 FH ID 8-7 – Continuous Flush This Period  
D2 FH ID 006 (No GAC) – Continuous Flush this Period  
F1 FH ID FH-8 (No GAC) – Continuous Flush this Period  
F1 FH ID 11A – Continuous Flush this Period  
F1 FH ID 18 – Continuous Flush this Period  
F1 FH ID 21 – Continuous Flush this Period  
F1 FH ID 36A – Continuous Flush this Period  
F1 FH ID 606 – Continuous Flush this Period

Respectfully,

//SIGNED//

ISRAEL A. DUARTE, MSgt, USAF

Superintendent, Structural Branch

Naval Facilities Engineering Systems Command Hawaii

Public Works Department, JBPHH

JBPHH, HI  
DSN (315) 471-0356  
Comm (808) 471-0356

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: PFC Justin Rodriguez Agency: 2-14 Cav / 251D / Army

Zone ID (A1, etc.): A2 Date: 20211229 Time: 2023

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: FH 4-6

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
<u>25</u> % cloud cover	<u>      </u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input checked="" type="checkbox"/> clear	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☒ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>none</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
Fish Kill?	# Fish Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	Abnormal Animal Behavior Near Discharge?
Dead Invertebrates?	# Invertebrates Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	Invertebrates collected?
Other Dead Animals?	# Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	Notes (describe any yes):

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: A 2

Map Attached: ☒ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
		<input checked="" type="checkbox"/>	DOH Incident Command notified
		<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
		<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>			Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>			Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>			Treatment using diffusers & granulated activated carbon prior to discharge
		<input checked="" type="checkbox"/>	Draining to Ground:
		<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
		<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>			Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>			Draining to Storm Drain:
		<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
		<input checked="" type="checkbox"/>	Draining to Sanitary Sewer:
		<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
			<del>Draining to Stream (Direct)</del>
			<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>			Discharge does/did not contact persons, pets, wildlife, etc.

	<input checked="" type="checkbox"/>		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		<input checked="" type="checkbox"/>	Discharge water samples collected

Date of Flushing: 20211229 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 2023 Flushing End Time: 0844

Signed By

Justin Rodriguez / PFC / ARMY

Printed Name / Rank / Organization

20211229

Date



Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Thursday, December 30, 2021 9:54 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamarita T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211230 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211230 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Thursday, 30 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-13A – Flushing Stopped 0908L  
A2 FH ID 3-1 – Flushing Stopped 0846L  
A2 FH ID 4-6 – Flushing Stopped 0935L  
A2 FH ID 8-7 – Flushing Stopped 0938L  
A2 FH ID 1-14 – Flushing Started 1711L  
A2 FH ID 5-16 – Flushing Started 1815L  
A2 FH ID 1-3 – Flushing Started 1840L  
D2 FH ID 429 – Flushing Started 1122L, Flushing Paused 1635L  
D2 FH ID 363 – Flushing Started 1131L, Flushing Paused 1148L, Flushing Resumed 1248L  
D2 FH ID 276 – Flushing Started 1307L, Flushing Paused 1507L, Flushing Resumed 1750L  
D2 FH ID 363 – Flushing Paused 1500L, Flushing Resumed 1800L  
D2 FH ID 006 (No GAC) – Flushing Paused 1510L, Flushing Resumed 1740L  
D2 FH ID 003 – Flushing Started 1557L  
F1 FH ID FH-8 (No GAC) – Flushing Paused 1620L, Flushing Resumed 1928L  
F1 FH ID 11A – Flushing Paused 1605L, Flushing Resumed 1917L  
F1 FH ID 18 – Flushing Paused 1614L, Flushing Resumed 1924L  
F1 FH ID 21 – Flushing Paused 1558L, Flushing Resumed 1843L  
F1 FH ID 36A – Flushing Paused 1558L, Flushing Resumed 1830L  
F1 FH ID 606 – Flushing Paused 1544L, Flushing Resumed 1821L



# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SEIT Nieves Agency: ARMY

Zone ID (A1, etc.): A2 Date: 30 DEC 2021 Time: 0842

Coordinates (latitude and longitude): FH 4-6/19

Associated Flushing Report ID: FH 4-6/19

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input checked="" type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
<u>    </u> % cloud cover	<u>    </u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## JBPHH Drinking Water Transmission System

## Flushing Report

## Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System  
☐ Flushing Water Storage Tanks  
☐ Flushing Drinking Water Well

## Section II: Asset Flushed

Map ID: A2 FH 4-6Map Attached: ☒ Yes ☐ No

## Section III: Protocols

Yes	No	N/A	
✓			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
		✓	DOH Incident Command notified
		✓	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
		✓	Notified affected population
✓			Signs posted and affected area roped (Cordon off and mark the affected area)
✓			Navy Personnel present for entire discharge
✓			Treatment using diffusers & granulated activated carbon prior to discharge
✓			Draining to Ground:
		✓	Soil samples collected before discharging onto ground
		✓	Soil samples collected after discharge is completed
✓			Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
✓			Draining to Storm Drain:
		✓	Identify on a map where the storm drain enters State waters
✓			Draining to Sanitary Sewer:
		✓	Request Wastewater Treatment Plant consent
			<del>Draining to Stream (Direct)</del>
			<del>Draining to Ocean (Direct)</del>
✓			Discharge does/did not contact persons, pets, wildlife, etc.

	✓		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		✓	Discharge water samples collected

Date of Flushing: DEC 30 2021 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 0842 Flushing End Time: 0934

Signed By

\_\_\_\_\_  
Printed Name / Rank / Organization

\_\_\_\_\_  
Date



Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Thursday, December 30, 2021 9:54 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211230 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211230 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Thursday, 30 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-13A – Flushing Stopped 0908L  
A2 FH ID 3-1 – Flushing Stopped 0846L  
A2 FH ID 4-6 – Flushing Stopped 0935L  
A2 FH ID 8-7 – Flushing Stopped 0938L  
A2 FH ID 1-14 – Flushing Started 1711L  
A2 FH ID 5-16 – Flushing Started 1815L  
A2 FH ID 1-3 – Flushing Started 1840L  
D2 FH ID 429 – Flushing Started 1122L, Flushing Paused 1635L  
D2 FH ID 363 – Flushing Started 1131L, Flushing Paused 1148L, Flushing Resumed 1248L  
D2 FH ID 276 – Flushing Started 1307L, Flushing Paused 1507L, Flushing Resumed 1750L  
D2 FH ID 363 – Flushing Paused 1500L, Flushing Resumed 1800L  
D2 FH ID 006 (No GAC) – Flushing Paused 1510L, Flushing Resumed 1740L  
D2 FH ID 003 – Flushing Started 1557L  
F1 FH ID FH-8 (No GAC) – Flushing Paused 1620L, Flushing Resumed 1928L  
F1 FH ID 11A – Flushing Paused 1605L, Flushing Resumed 1917L  
F1 FH ID 18 – Flushing Paused 1614L, Flushing Resumed 1924L  
F1 FH ID 21 – Flushing Paused 1558L, Flushing Resumed 1843L  
F1 FH ID 36A – Flushing Paused 1558L, Flushing Resumed 1830L  
F1 FH ID 606 – Flushing Paused 1544L, Flushing Resumed 1821L

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SGT Colin Lewis Agency: 647 CES/402-709-4087

Zone ID (A1, etc.): A2 Date: 2021 12 30 Time: 2100 L

Coordinates (latitude and longitude): 21.36 -157.96

Associated Flushing Report ID: FH 5-16

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input checked="" type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
<u>50</u> % cloud cover	<u>    </u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☒ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>N/A</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
Fish Kill?	# Fish Dead <u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Abnormal Animal Behavior Near Discharge?
Dead Invertebrates?	# Invertebrates Dead <u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Invertebrates collected?
Other Dead Animals?	# Dead <u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Notes (describe any yes):

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:



Date: 2021 12 30



## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☐ Flushing of Drinking Water Distribution System
- ☒ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: A2

Map Attached: ☒ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input checked="" type="checkbox"/>			DOH Incident Command notified
		<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
		<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
		<input checked="" type="checkbox"/>	Navy Personnel present for entire discharge
		<input checked="" type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
		<input checked="" type="checkbox"/>	Draining to Ground:
		<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
		<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
		<input checked="" type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>			Draining to Storm Drain:
			Identify on a map where the storm drain enters State waters
<input checked="" type="checkbox"/>			Draining to Sanitary Sewer:
			Request Wastewater Treatment Plant consent
<input checked="" type="checkbox"/>			<del>Draining to Stream (Direct)</del>
<input checked="" type="checkbox"/>			<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>			Discharge does/did not contact persons, pets, wildlife, etc.

✓	✓	✓	Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
✓	✓	✓	Discharge water samples collected

Date of Flushing: 2021 12 30 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 16 15 Flushing End Time: ~~18 15~~ 20 30

Signed By

Sgt Colin Lewis

2021 12 30

Printed Name / Rank / Organization

Date

[Signature]

Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Friday, December 31, 2021 9:29 AM  
**To:** Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211230 2000L - 0800L JBPHH DWDSRP Flush Report  
**Attachments:** 20211231 2000L - 0800L JBPHH DWDSRP Flush Report.pdf

Ladies & Gentlemen,

Please see the attached flush report for Thursday/Friday, 30/31 Dec 21, 2000L – 0800L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-3 – Continuous Flush This Period  
A2 FH ID 1-14 – Continuous Flush This Period  
A2 FH ID 5-16 – Continuous Flush This Period  
D2 FH ID 003 – Continuous Flush This Period  
D2 FH ID 006 (No GAC) – Continuous Flush This Period  
D2 FH ID 276 – Continuous Flush This Period  
D2 FH ID 325 – Flushing Resumed 0112L / Flushing Paused 0546L  
D2 FH ID 363 – Continuous Flush This Period  
D2 FH ID 429 – Flushing Paused 2107L / Flushing Resumed 0034L / Flushing Complete 0529L  
F1 FH ID FH-8 (No GAC) – Continuous Flush This Period  
F1 FH ID 11A – Continuous Flush This Period  
F1 FH ID 18 – Continuous Flush This Period  
F1 FH ID 21 – Continuous Flush This Period  
F1 FH ID 36A – Continuous Flush This Period  
F1 FH ID 606 – Continuous Flush This Period

r/

srw

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SGT Samantha Hernandez

Agency: 2-14 CAV

Zone ID (A1, etc.): A2

Date: 2021/230

Time: 2030

Coordinates (latitude and longitude): 21.9638801, -157.9661830

Associated Flushing Report ID: FH 5-16

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input checked="" type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
% cloud cover	% cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☒ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>None</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature: Seong Date: 2021 23

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☐ Flushing of Drinking Water Distribution System
- ☒ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: A2

Map Attached: ☒ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
		<input checked="" type="checkbox"/>	DOH Incident Command notified
		<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
		<input checked="" type="checkbox"/>	Notified affected population
	<input checked="" type="checkbox"/>		Signs posted and affected area roped (Cordon off and mark the affected area)
	<input checked="" type="checkbox"/>		Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>			Treatment using diffusers & granulated activated carbon prior to discharge
	<input checked="" type="checkbox"/>		Draining to Ground:
		<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
		<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
		<input checked="" type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>			Draining to Storm Drain:
<input checked="" type="checkbox"/>			Identify on a map where the storm drain enters State waters
<input checked="" type="checkbox"/>			Draining to Sanitary Sewer:
		<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
			<del>Draining to Stream (Direct)</del>
			<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>			Discharge does/did not contact persons, pets, wildlife, etc.



		✓	Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		✓	Discharge water samples collected

Date of Flushing: 20211230 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 2000 Flushing End Time: 0800

Signed By

Samantha Henderson / SGT / 2-14 KAV

Printed Name / Rank / Organization

20211231

Date

[Signature]

Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Friday, December 31, 2021 9:31 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211231 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211231 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Friday, 31 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-3 – Flushing Paused 1035L  
A2 FH ID 1-14 – Flushing Paused 0950L  
A2 FH ID 5-16 – Flushing Paused 1027L  
D2 FH ID 003 – Flushing Paused 0914L  
D2 FH ID 006 (No GAC) – Flushing Complete 1130L  
D2 FH ID 276 – Flushing Paused 0817L  
D2 FH ID 325 – Flushing Paused 0839L  
D2 FH ID 363 – Flushing Paused 0904L  
F1 FH ID FH-8 (No GAC) – Flushing Paused 1937L  
F1 FH ID 11A – Flushing Paused 1930L  
F1 FH ID 18 – Flushing Paused 1938L  
F1 FH ID 21 – Flushing Paused 1925L  
F1 FH ID 36A – Flushing Paused 1953L  
F1 FH ID 606 – Flushing Paused 1945L  
D3 FH ID 801 – Flushing Started 1215L  
D3 FH ID 805 – Flushing Started 1230L, Flushing Paused 1913L  
D3 FH ID 245 – Flushing Started 1359L  
D3 FH ID 228 – Flushing Started 1456L, Flushing Paused 1659L  
D3 FH ID 477 – Flushing Started 1226L

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: MITCHELL E. ZIMMELGARTER Agency: 303  
 Zone ID (A1, etc.): A2 Date: 2021 12 31 Time: 0800  
 Coordinates (latitude and longitude): \_\_\_\_\_  
 Associated Flushing Report ID: FH 5-16

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
<u>90</u> % cloud cover	____ % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>NONE</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
Fish Kill?	# Fish Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	Abnormal Animal Behavior Near Discharge?
Dead Invertebrates?	# Invertebrates Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	Invertebrates collected?
Other Dead Animals?	# Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	Notes (describe any yes):

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

# Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:



Date:

31 Dec 21

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

# JBPHH Drinking Water Transmission System

## Flushing Report

### Section I: Asset Type to be Flushed

- ☐ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☒ Flushing Drinking Water Well

### Section II: Asset Flushed

Map ID: A25-16

Map Attached: ☒ Yes ☐ No

### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DOH Incident Command notified
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Soil samples collected after discharge is completed
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Stream (Direct)</del>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Discharge water samples collected

Date of Flushing: 31 DEC 21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 0800 Flushing End Time: ~~2000~~  
10:27

Signed By

EO<sup>2</sup> ZIMMER GARGEL CBMU 303

Printed Name / Rank / Organization

31 DEC 21

Date

  
Signature



## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** AhLeong, Peter A MSgt USAF 647 ABG (USA) <peter.a.ahleong1@navy.mil>  
**Sent:** Tuesday, December 28, 2021 11:34 PM  
**To:** Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Wiley, Scottie R Capt USAF 647 ABG (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Duarte, Israel A MSgt USAF (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211228 0800L - 2000L JPBHH DWDSRP Flush Report  
**Attachments:** 20211228 0800L - 2000L JPBHH KDWDSRP Flush Report.pdf  
**Signed By:** peter.ahleong@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Tuesday, 28 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

D1 FH ID 455 – Flushing stopped 0939L  
D2 FH ID 30 – Flushing stopped 1030L  
F1 FH ID FH-8 (No GAC) – Flushing on  
F1 FH ID 606 – Flushing on  
F1 FH ID 613 – Flushing paused 1157L (field flooded)  
F1 FH ID 36A – Flushing on  
F1 FH ID 21 – Flushing on  
F1 FH ID 11A – Flushing on  
F1 FH ID 18 – Flushing on  
D1 FH ID 6 - Flushing on  
D2 FH ID 74 - Flushing stopped 1031L  
D2 FH ID 293 – Flushing stopped 0939L  
D1 FH ID 400 – Flushing stopped 0951L  
D2 FH ID 41 – Flushing started 1050L  
A2 FH ID 7-1 – Flushing started 1501L

A2 FH ID 2-7 – Flushing started 1647L

Respectfully,

MSgt Peter A. Ahleong  
Mechanical Services Element Superintendent  
Naval Facilities Engineering Systems Command, Hawaii  
647<sup>th</sup> Civil Engineer Squadron, JBPHH, HI  
808-471-0374

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SPE Maxi Grey Agency: \_\_\_\_\_

Zone ID (A1, etc.): A2 Date: 2021/2/28 Time: 1500L

Coordinates (latitude and longitude): 21.3604985265377 -157.96757722607

Associated Flushing Report ID: FH 7-1

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
<u>95</u> % cloud cover	____ % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☒ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>None</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping? <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Fish Dead <u>0</u>	Abnormal Animal Behavior Near Discharge? <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Invertebrates Dead <u>0</u>	Invertebrates collected? <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes

Observer Signature: Maxi Grey Date: 28 DEC 21

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: A2 Map Attached: ☐ Yes ☒ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Storm Drain:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Stream (Direct)</del>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

	✓	Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
	✓	Discharge water samples collected

Date of Flushing: 28 DEC 2021 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 1500 Flushing End Time: 2107

Signed By

Maxi Grey SPC

Printed Name / Rank / Organization

28 DEC 21

Date

Maxi Grey

Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Wednesday, December 29, 2021 12:13 PM  
**To:** AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Duarte, Israel A MSgt USAF (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211229 2000L - 0800L JBPHH DWDSRP Flush Report  
**Attachments:** 20211229 2000L - 0800L JBPHH DWDSRP Flush Report.pdf

Ladies & Gentlemen,

Please see the attached flush report for Tuesday/Wednesday, 28/29 Dec 21, 2000L – 0800L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-3 – Not Active this Period  
A2 FH ID 2-7 – Continuous Flush this Period  
A2 FH ID 7-1 – Continuous Flush this Period  
D2 FH ID 003 – Not Active this Period  
D2 FH ID 006 (No GAC) – Continuous Flush this Period  
D2 FH ID 105 - Continuous Flush this Period  
D2 FH ID 061 – Flushing Started 2238L  
D2 FH ID 236 – Flushing Started 2158L  
D2 FH ID 280 – Flushing Started 2241L  
D2 FH ID 301 – Flushing Started 2000L  
F1 FH ID FH-8 (No GAC) – Continuous Flush this Period  
F1 FH ID 11A – Continuous Flush this Period  
F1 FH ID 18 – Continuous Flush this Period  
F1 FH ID 21 – Continuous Flush this Period  
F1 FH ID 36A – Continuous Flush this Period  
F1 FH ID 606 – Continuous Flush this Period  
F1 FH ID 613 – Not Active this Period

r/



# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: LT Ta'Myiah Reed Agency: 647 CES

Zone ID (A1, etc.): A2 Date: 2021 12 28 Time: 2200

Coordinates (latitude and longitude): 21.33069°N, 157.96672°W

Associated Flushing Report ID: FH 7-1

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
<u>25</u> % cloud cover	<u>    </u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☒ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>None</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:

Jamyl Read

Date:

28 Dec 21

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: A2 Map Attached: ☐ Yes ☒ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
		<input checked="" type="checkbox"/>	DOH Incident Command notified
		<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
		<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>			Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>			Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>			Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>			Draining to Ground:
		<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
		<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>			Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>			Draining to Storm Drain:
		<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input checked="" type="checkbox"/>			Draining to Sanitary Sewer:
		<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
			<del>Draining to Stream (Direct)</del>
			<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>			Discharge does/did not contact persons, pets, wildlife, etc.

	✓	Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
	✓	Discharge water samples collected

Date of Flushing: 28 Dec 21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: ~~0800~~  
2000 Flushing End Time: 0800

Signed By

Reed Ta'Myiah / 2LT / 2-14 Cav

Printed Name / Rank / Organization

28 Dec 21

Date

Ta'Myiah Reed

Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Wednesday, December 29, 2021 9:19 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211229 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211229 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Wednesday, 29 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 3-1 – Flushing Started 1740L  
A2 FH ID 2-7 – Flushing Paused 1223L  
A2 FH ID 7-1 – Flushing Paused 1212L  
A2 FH ID 8-7 – Flushing Started 1725L  
A2 FH ID 4-6 – Flushing Started 1812L  
A2 FH ID 1-15 – Flushing Started 1951L  
D2 FH ID 006 (No GAC) – Continuous Flush this Period  
D2 FH ID 105 – Flushing Paused 1510L  
D2 FH ID 061 – Flushing Paused 1430L  
D2 FH ID 236 – Flushing Paused 1437L  
D2 FH ID 280 – Flushing Paused 1446L  
D2 FH ID 301 – Flushing Paused 1400L  
F1 FH ID FH-8 (No GAC) – Continuous Flush this Period  
F1 FH ID 11A – Continuous Flush this Period  
F1 FH ID 18 – Continuous Flush this Period  
F1 FH ID 21 – Continuous Flush this Period  
F1 FH ID 36A – Continuous Flush this Period  
F1 FH ID 606 – Continuous Flush this Period

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SSG NEWELL Agency: BTRP, 2-14CAV

Zone ID (A1, etc.): A2 Date: 20211229 Time: 0637

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: FH 7-1

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
____ % cloud cover	____ % cloud cover	
<input checked="" type="checkbox"/> clear/sunny	<input checked="" type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols



## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature: \_\_\_\_\_

Date: 20211229

## JBPHH Drinking Water Transmission System

## Flushing Report

## Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System  
☐ Flushing Water Storage Tanks  
☐ Flushing Drinking Water Well

## Section II: Asset Flushed

Map ID: A2 FH 7-1Map Attached: ☒ Yes ☐ No

## Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
		<input checked="" type="checkbox"/>	DOH Incident Command notified
		<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
		<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>			Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>			Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>			Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>			Draining to Ground:
		<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
		<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>			Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
	<input checked="" type="checkbox"/>		Draining to Storm Drain:
		<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
	<input checked="" type="checkbox"/>		Draining to Sanitary Sewer:
	<input checked="" type="checkbox"/>		Request Wastewater Treatment Plant consent
	<input checked="" type="checkbox"/>		Draining to Stream (Direct)
	<input checked="" type="checkbox"/>		Draining to Ocean (Direct)
<input checked="" type="checkbox"/>			Discharge does/did not contact persons, pets, wildlife, etc.

	X		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		X	Discharge water samples collected

Date of Flushing: 20211229 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 0600 Flushing End Time: 2000

Signed By

SSA NEWEN/BTRP, 2-14, av  
Printed Name / Rank / Organization

20211229  
Date

[Signature]  
Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Wednesday, December 29, 2021 9:19 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211229 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211229 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Wednesday, 29 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 3-1 – Flushing Started 1740L  
A2 FH ID 2-7 – Flushing Paused 1223L  
A2 FH ID 7-1 – Flushing Paused 1212L  
A2 FH ID 8-7 – Flushing Started 1725L  
A2 FH ID 4-6 – Flushing Started 1812L  
A2 FH ID 1-15 – Flushing Started 1951L  
D2 FH ID 006 (No GAC) – Continuous Flush this Period  
D2 FH ID 105 – Flushing Paused 1510L  
D2 FH ID 061 – Flushing Paused 1430L  
D2 FH ID 236 – Flushing Paused 1437L  
D2 FH ID 280 – Flushing Paused 1446L  
D2 FH ID 301 – Flushing Paused 1400L  
F1 FH ID FH-8 (No GAC) – Continuous Flush this Period  
F1 FH ID 11A – Continuous Flush this Period  
F1 FH ID 18 – Continuous Flush this Period  
F1 FH ID 21 – Continuous Flush this Period  
F1 FH ID 36A – Continuous Flush this Period  
F1 FH ID 606 – Continuous Flush this Period

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: Sgt Josiah Esterson Agency: B-TRP 2-14

Zone ID (A1, etc.): A2 Date: 29 DEC 2021 Time: 17:17

Coordinates (latitude and longitude): 042 F308403 63047

Associated Flushing Report ID: FH 8-7

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input checked="" type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
<u>25</u> % cloud cover	<u>25</u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☒ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:


### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>NONE</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
Fish Kill?	# Fish Dead <u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	Abnormal Animal Behavior Near Discharge?
Dead Invertebrates?	# Invertebrates Dead <u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	Invertebrates collected?
Other Dead Animals?	# Dead <u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Notes (describe any yes):

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:  Date: 29 DEC 2021



## JBPHH Drinking Water Transmission System

## Flushing Report

## Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System  
☐ Flushing Water Storage Tanks  
☐ Flushing Drinking Water Well

## Section II: Asset Flushed

Map ID: A2 FH 8-7Map Attached: ☐ Yes ☒ No

## Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Stream (Direct)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ocean (Direct)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

	/		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		/	Discharge water samples collected

Date of Flushing: 29 DEC 2021 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 17:20 Flushing End Time: 20:35

Signed By

CPL CANNELLA, KAIMINAAUAO MANK 29/Dec/2021

Printed Name / Rank / Organization

Date



Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Thursday, December 30, 2021 9:29 AM  
**To:** Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211230 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211230 2000L - 0800L JBPHH DWDSRP Flush Report.pdf

Ladies & Gentlemen,

Please see the attached flush report for Wednesday/Thursday, 29/30 Dec 21, 2000L – 0800L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-13A – Continuous Flush This Period  
A2 FH ID 3-1 – Continuous Flush This Period  
A2 FH ID 4-6 – Continuous Flush This Period  
A2 FH ID 8-7 – Continuous Flush This Period  
D2 FH ID 006 (No GAC) – Continuous Flush this Period  
F1 FH ID FH-8 (No GAC) – Continuous Flush this Period  
F1 FH ID 11A – Continuous Flush this Period  
F1 FH ID 18 – Continuous Flush this Period  
F1 FH ID 21 – Continuous Flush this Period  
F1 FH ID 36A – Continuous Flush this Period  
F1 FH ID 606 – Continuous Flush this Period

Respectfully,

//SIGNED//

ISRAEL A. DUARTE, MSgt, USAF

Superintendent, Structural Branch

Naval Facilities Engineering Systems Command Hawaii

Public Works Department, JBPHH

JBPHH, HI  
DSN (315) 471-0356  
Comm (808) 471-0356

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SpC Austin Ryder Agency: \_\_\_\_\_

Zone ID (A1, etc.): A2 Date: 2021/229 Time: 2035

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: FH 8-7

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
<u>25</u> % cloud cover	<u>50-75</u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>None</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
Fish Kill?	# Fish Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Abnormal Animal Behavior Near Discharge?
Dead Invertebrates?	# Invertebrates Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Invertebrates collected?
Other Dead Animals?	# Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Notes (describe any yes):

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature: AS Ph Date: 12/29/21



## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☐ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: FH 87

Map Attached: ☒ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DOH Incident Command notified
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Soil samples collected after discharge is completed
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Sanitary Sewer:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Stream (Direct)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ocean (Direct)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge water samples collected

Date of Flushing: 12/29/21 - 12/30/21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 2000 Flushing End Time: 0800

Signed By

SPL Austin Rylor US Army

Printed Name / Rank / Organization

12/29/21

Date

[Signature]

Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Thursday, December 30, 2021 9:54 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaría T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil; Asistio, Maria Angela Grace L 2d LT USAF USN NAVFAC HAWAII PEARL (USA)  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211230 0800L - 2000L JBPHH DWDSRP Flush Report  
**Attachments:** 20211230 0800L - 2000L JBPHH DWDSRP Flush Report.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Thursday, 30 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

A2 FH ID 1-13A – Flushing Stopped 0908L  
A2 FH ID 3-1 – Flushing Stopped 0846L  
A2 FH ID 4-6 – Flushing Stopped 0935L  
A2 FH ID 8-7 – Flushing Stopped 0938L  
A2 FH ID 1-14 – Flushing Started 1711L  
A2 FH ID 5-16 – Flushing Started 1815L  
A2 FH ID 1-3 – Flushing Started 1840L  
D2 FH ID 429 – Flushing Started 1122L, Flushing Paused 1635L  
D2 FH ID 363 – Flushing Started 1131L, Flushing Paused 1148L, Flushing Resumed 1248L  
D2 FH ID 276 – Flushing Started 1307L, Flushing Paused 1507L, Flushing Resumed 1750L  
D2 FH ID 363 – Flushing Paused 1500L, Flushing Resumed 1800L  
D2 FH ID 006 (No GAC) – Flushing Paused 1510L, Flushing Resumed 1740L  
D2 FH ID 003 – Flushing Started 1557L  
F1 FH ID FH-8 (No GAC) – Flushing Paused 1620L, Flushing Resumed 1928L  
F1 FH ID 11A – Flushing Paused 1605L, Flushing Resumed 1917L  
F1 FH ID 18 – Flushing Paused 1614L, Flushing Resumed 1924L  
F1 FH ID 21 – Flushing Paused 1558L, Flushing Resumed 1843L  
F1 FH ID 36A – Flushing Paused 1558L, Flushing Resumed 1830L  
F1 FH ID 606 – Flushing Paused 1544L, Flushing Resumed 1821L

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SPC MERCINAGG Agency: \_\_\_\_\_

Zone ID (A1, etc.): AZ Date: 30 DEC 21 Time: 0942

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: FH 8-7

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
_____ % cloud cover	_____ % cloud cover	
<input checked="" type="checkbox"/> clear/sunny	<input checked="" type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☒ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature: \_\_\_\_\_

Date: \_\_\_\_\_

12/30/21

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## JBPHH Drinking Water Transmission System

## Flushing Report

## Section I: Asset Type to be Flushed

- ☐ Flushing of Drinking Water Distribution System  
☒ Flushing Water Storage Tanks  
☐ Flushing Drinking Water Well

## Section II: Asset Flushed

Map ID: AZ FH 8-7 Map Attached: ☒ Yes ☐ No

## Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Sanitary Sewer:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Stream (Direct)</del>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

		<input checked="" type="checkbox"/> Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		<input checked="" type="checkbox"/> Discharge water samples collected

Date of Flushing: 30 DEC 21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 08:32 Flushing End Time: 09:41

Signed By

12/30/2021

Printed Name / Rank / Organization

Date



Signature



February 26, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: WATER STORAGE FACILITIES AND WATER SOURCE FOR ZONES A1, A2, A3, B1, C1, C2, C3, D1, D2, D3, D4, G1, E1, F1, F2, H1, H2, H3, AND I1

Ref: (a) Drinking Water Sampling Plan, December 2021  
(b) Drinking Water Distribution System Recovery Plan, December 2021

Encl: (1) Joint Base Pearl Harbor Hickam Potable Water System Description  
(2) S1 and S2 Water Storage Tank Flushing Report Memo  
(3) Inspection, Maintenance, and Cleaning of Potable Water Tanks Memo  
(4) Ford Island/Shipyard Water Transmission Line Status  
(5) JBPHH/Iroquois Point Water Transmission Line Status  
(6) Board of Water Supply Interconnection Status

1. This letter and associated enclosures describes and documents the flushing of the water storage facilities that serve the Joint Base Pearl Harbor Hickam (JBPHH) public water system (PWS No. 360). The flushing of the JBPHH water storage facilities and distribution system was completed in accordance with reference (a) and (b). Enclosure (1) describes the JBPHH public water system and storage tanks associated with the system. Page 8 of reference (a) has the flushing zones and water storage facilities located in each zone. The flushing of each zone identified in phase 1 of reference (a) included five volumetric turnovers. The volumetric turnover requirement included the water tank storage and distribution system volume for each zone. The water testing of the distribution system after flushing a zone's water storage tank and distribution system was the confirmation that contamination was removed from the system and that the water tanks was not a source of contamination. Enclosure (2) documents the Hawaii Department of Health's approved change from reference (a) for the flushing of Halawa S-1 and Halawa S-2.

2. Zones A1, A2, A3, B1, C1, C2, C3, D1, D2, D3, D4, G1, E1, F1, F2, H1, H2, H3 and I1 are currently fed by the Waiawa Shaft water supply source. The pumps from the shafts generally run continuous and range from 6,000 to 14,000 gallons per minute based on the demand of the JBPHH potable water system. The pressure throughout the JBPHH distribution system is aided by the two Halawa water storage tanks. The Halawa S-1 tank is currently in service and the Halawa S-2 tank has been taken offline for maintenance as documented in enclosure (2). Enclosure (3) documents the planned timeline associated with the inspection, maintenance and cleaning of the Navy owned water storage tanks. The planned work is scheduled to be completed before the end of this calendar year. The inspection of the water storage tanks will be conducted in accordance with American Water Works Association (AWWA) Standard for Inspecting and Repairing Steel Water Tanks, Standpipes, Reservoirs, and Elevated Tanks by personnel with the requisite qualifications outlined in this AWWA standard. Zone I1 (Red Hill) is served by Navy owned water storage tanks. The Army operates the consecutive Aliamanu public water system (PWS No. 337) which receives its water from the JBPHH public water

SUBJ: WATER STORAGE FACILITIES AND WATER SOURCE FOR ZONES A1, A2, A3, B1, C1, C2, C3, D1, D2, D3, D4, G1, E1, F1, F2, H1, H2, H3, AND I1

system. The Army's public water system serves the Aliamanu Military Reservation (AMR). The AMR area was subdivided into three flushing zones which included Zones H1, H2, and H3. The planned timeline associated with the inspection, maintenance, and cleaning of the Army owned water storage tanks will be submitted as part of the removal action reports for Zones H1, H2, H3.

3. At this time, there are two water transmission lines that are not in operation. The water transmission line between Ford Island and the Shipyard was offline at the time of the incident as described in Enclosure (3) and is currently going through repairs. The valves at each end of the underwater water transmission line between JBPHH and Iroquois Point were closed on December 5, 2021 and the valves have remained closed since that date as documented in Enclosure (4). Enclosure (5) documents the method for reopening the underwater water transmission line between JBPHH and Iroquois Point to prevent potential contamination and adverse water quality issues. The Navy will notify the Hawaii Department of Health prior to reopening the underwater water transmission line the between JBPHH and Iroquois Point. Additional interconnections with Board of Water Supply (BWS) are described in Enclosure (6). Water being distributed in the system and being stored in water storage tanks that maintain pressure in Zones A1, A2, A3, B1, C1, C2, C3, D1, D2, D3, D4, G1, E1, F1, and F2 have been flushed in accordance with reference (b) and the distribution system tested in accordance with reference (a). The removal action reports for Zones H1, H2, H3, and I1 document the flushing of the water storage tanks that specifically serve those zones.

4. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and the submitted information is true, accurate, and complete.

MENO.MICHAEL | Digitally signed by  
.WAYNE.JR.1088 | MENO.MICHAEL.WAYNE.JR  
310035 | -1088310035  
Date: 2022.02.26 17:41:31  
-10'00'

M. W. Meno  
CAPT, CEC, USN

## **Joint Base Pearl Harbor Hickam (JBPHH) Potable Water Description**

### **Major components of the JBPHH potable water system include:**

- Supply sources
  - Waiawa Shaft/Pumping Station
  - Red Hill Shaft/Pumping Station
  - Halawa Shaft/Pumping Station
  - Emergency Interconnections (2 locations)
- Water storage facilities
- 2-6,000,000 gallon steel storage tanks at Halawa
  - 2-200,000 gallon concrete storage tanks at Camp Smith
  - 1-250,000 gallon glass-fused steel storage tank at Camp Smith with a usable storage capacity of 140,000 gallons
  - 2-250,000 gallon glass-fused steel storage tank at Red Hill
- Distribution system
  - Camp Smith Booster Pump (to convey water to the Camp Smith water system)
  - Red Hill Booster Pumps (to convey water to the storage tank)
  - Moanalua Terrace Booster Pumps (to pressurize the water system serving the Moanalua Terrace Housing area)
  - Boneyard Booster Pumps (to pressurize the water system serving the upper elevation of Moanalua Terrace Housing area)
  - Manana Booster Pumps (to pressurize the water system serving the Manana Housing area)
  - A network of pipes, meters, valves, and hydrants for distribution and fire protection

### **Water Storage Facilities:**

Fresh water storage facilities store water for normal, fire, and maximum demand use, and serve to maintain relatively constant pressure in the water system. The JBPHH water system is equipped with two welded steel tanks, each with a storage capacity of six million gallons. These tanks are identified as the Halawa storage tanks S-1 and S-2. Both of these tanks are located adjacent to the Aliamanu Military Reservation at a ground elevation of 140 feet. The diameter of the tanks are 164 feet each, with a nominal height of 48 feet. The spillway elevations of the S-1 and S-2 tanks are 178.5 feet. The tanks are interconnected by a 10-inch line. Water from each of the tanks discharges through separate 24-inch mains and combines to a single 30-inch transmission main.

Other water storage tanks in the JBPHH system include the three tanks at Camp Smith, a storage tank serving the Red Hill Housing area, and three storage tanks serving the Army's Aliamanu Housing area. The Red Hill and Aliamanu tanks are supplied by separate booster pump stations located at the Red Hill Water Pumping Station and the Halawa Storage Tanks, respectively. These tanks are dedicated to serving these two non-Navy housing areas.

February 11, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: S1 AND S2 WATER STORAGE TANK FLUSHING REPORT

Ref: (a) Drinking Water Distribution System Recovery Plan, December 2021

1. This letter documents the current status of the S1 and S2 water storage tanks. In accordance with reference (a), the S1 and S2 water storage tanks were part of the Zone F1 flushing plan. The flushing plan for Zone F1 included both water storage tanks in the five volumetric turnover calculations. The calculated turnover volume was 61.35 million gallons of water. The S1 tank was flushed by cycling the water tank for five volumetric flushes. In order to conserve the amount of water being used in the flushing of Zone F1, the S2 water storage tank was taken out of service and remains out of service to date. This decision resulted in the conservation of approximately 25 million gallons of water. The Hawaii Department of Health (HDOH) was notified of the Navy's modified flushing plan and provided concurrence. The S2 water storage tank is being scheduled for cleaning and maintenance. The Navy will provide details to HDOH on the method and procedures for cleaning and maintenance of the S2 water storage tank prior to the start of work. The Navy will notify the HDOH upon completion of the work and the tank being placed back into service.

2. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and the submitted information is true, accurate, and complete.

MENO.MICHAEL.WAYNE.JR.10883100  
35

Digitally signed by  
MENO.MICHAEL.WAYNE.JR.1088  
310035  
Date: 2022.02.12 14:33:42  
-10'00'

M. W. Meno  
Captain, U.S. Navy Civil Engineer Corps

ENCL(2)

25 February 2022

MEMORANDUM FOR RECORD

SUBJECT: Inspection, Maintenance, and Cleaning of Potable Water Tanks

1. This Memorandum for Record (MFR) is to document the summary processes for inspection, maintaining, and cleaning storage tanks within the Joint Base Pearl Harbor-Hickam potable water system. There are seven potable water storage tanks. Each tank holds water that is consistently in flux – rising and falling according to the dynamic demands for water under certain pressures at specific times. As such, the tanks are continually cycling fresh water recently pumped from the well and chlorinated at the treatment plant. JBPH-H does not drain and clean the tanks per a schedule, however the following records indicate recent cleaning. Tank cleaning follows AWWA M42 - Steel Water Storage Tanks.
  - a. S1 tank inspected and cleaned in 2010, cleaned by in-house EV remediation shop, mainly to remove sediment from the tank floor.
  - b. S2 tank inspected and cleaned 2007, cleaned by in-house remediation shop, mainly to remove sediment from the tank floor.
  - c. Red Hill tank No. 685 was inspected in 2013, via remote camera vehicle
  - d. Red Hill tank No. 316 was installed in 2017 and has not yet been inspected
  - e. Camp Smith tanks (3) were inspected and cleaned in 2013.
2. As the seven tanks have not been inspected a group for several years, the Public Works Department shall funds and contract a complete inspection and cleaning for all tanks in accordance with AWWA standards by then end CY 2022.
3. Tanks are monitored and operated using a Supervisory Control and Data Acquisition (SCADA) system to ensure that they are at the right levels and pumps and valves are operating at prescribed times and speeds, overseen by Utilities staff 24/7. Our field team is regularly physically engaged with these tanks to ensure functionality, condition, and security of the tanks. There are frequent field actions near and connected to the tanks – they are routinely inspected per the requirements to manage the system.
4. As the tank hardware ages and requires repair and replacement, a tank may be isolated, drained and taken out of service to conduct this work. At these times, when work involved the interior of the tank, a full cleaning and refilling is conducted. This is typically done with a contract.
5. The S2 tank, a 6 MG tank that, with the S1 tank, provides the ability to keep pressurized water in the system for firefighting while serving the domestic demand, has been secured from the rest of the system since December 22, 2021. The water in the tank has been sampled and the results have shown a non-detect for TPH. Public work will make repairs and clean this tank within the next 90 days. The process to flush, clean and return the tank to the system is as follows:
  - a. Repair S1/S2 overflow 24" drain line with Cured-in-Place Pipe
  - b. Drain S2 tank via existing drain line, leading to the city storm drainage system
  - c. Clean and Disinfect S2 tank (Following ANSI/AWWA C652-02: Disinfection of Water-Storage Facilities)
  - d. Perform bacteriological and TPH sampling and testing
  - e. Return S2 tank to service

HARMEYER.RAN  
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86692663  
CAPT R. Harmeyer  
Public Works Officer  
Joint Base Pearl Harbor Hickam

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22 February 2022

MEMORANDUM FOR RECORD

SUBJECT: Ford Island/Shipyard Water Transmission Line Status

1. This Memorandum for Record (MFR) is to document the status of the underwater crossing water transmission line (pipe) that connects the Ford Island and Shipyard areas of the Joint Base Pearl Harbor-Hickam Potable Water System.
2. As part of the P-209 Dry Dock 3 Replacement design effort, a contractor was performing soil borings at Hospital Point near the Shipyard. The contractor damaged the 24-inch underwater crossing during one of their borings on 15 June 21, by drilling through the casing and pipe.
3. JBPHH has begun plans for repairing or replacing this damaged line. A Design consultant is scheduled to start the design on the repairs in March of 2022. Construction funds for the repair are allocated for Fiscal Year 2023.
4. The water transmission line was secured from the JBPHH system via an isolation valve on the Ford Island side, and physical pipe removal on the Shipyard side. Enclosure [1] is a picture taken on 22 January 2022 of the physical pipe removal at Hospital Point.
5. The Ford Island isolation valve is less than 5 years old, and PWD personnel have verified in the field that there are no indications of leak-by, via audible tests and noting the lack of vibrations.
6. a pitot-style flow meter that has been sending false readings is located in the currently isolated section is, as there is no water flow in this not-in-service piping. Isolation was performed with in-house NAVFAC forces on 5 Dec 2021. PWD has not explored the root cause of the false reading, as the piping is isolated, and the meter is not used for any other purposes. Possible cause of the flow readings may be air trapped in the lines that shows pressure differentials as tide changes.

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CAPT R. Harmeyer  
Public Works Officer  
Joint Base Pearl Harbor Hickam







25 February 2022

MEMORANDUM FOR RECORD

SUBJECT: Joint Base Pearl Harbor-Hickam – Iroquois Point Water Connection

ENCL.: (1) Interconnection line drainage schematic

1. This Memorandum for Record (MFR) is to document the process to reopen and flush the 24" potable water system interconnection line between Iroquois Point and Bishop Point on Joint Base Pearl Harbor-Hickam.
2. Like most looped systems, the water in this interconnection flows in both directions depending on demand. On work days, when residents are typically not on Iroquois Point and the Joint Base is operating, water typically flows from west to east. On nights and weekends, the water may flow from east to west, depending on if the Kapilina Homes in Iroquois Point is operating the irrigation system, and similarly, what the demand is on the Joint Base proper from housing communities near Bishop Point. The long-term closure of the line is possible because each zone has multiple feeds. The presence of these looped interconnections allows redundancy – if one feed goes off-line for maintenance or unexpectedly, the area has a redundant feed to continue service.
3. The interconnection was secured on 05 Dec. 2021 by closing the gate valve on each end (shore) of the interconnection. The water between these valves has not moved since then. When we bring this section back online, the process will be as follows, and according to the diagram in Enclosure (1).
  - a. Secure two additional valves (126 and 130 at West Loch). See Enclosure (1).
  - b. Open valve 128 (currently shut) at West Loch
  - c. Open valve at Hickam that is currently shut
  - d. Open and flush from hydrant no. 64 at West Loch, located between valves 126 and 128.
  - e. Flush transmission line for 6-8 hours to the sanitary sewer.
  - f. Flushing, chlorination and testing of the transmission main will follow ANSI/AWWA C651-05: Disinfecting Water Mains.
  - g. Collect first sample for bacteriological testing after flushing.
  - h. Collect second sample (at least 24 hours after first sample) for bacteriological testing.
  - i. Open valves 126 and 130 and valves on Bishop Point, completing the loop.

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CAPT R. Harmeyer  
Public Works Officer  
Joint Base Pearl Harbor Hickam

ENCL(5)

The diagram is a hand-drawn schematic of a water distribution system. It features several key components and handwritten annotations:

- Top Section:** A horizontal line at the top is labeled "INST. 1953" and "20\" B.W. CHANNEL FROM HICKAM". A blue arrow points down to this line.
- Left Side:** A vertical line is labeled "DEWATERING". To its left, a red box contains the text "Flush from fire hydrant 64 inside EOD Compound". A red arrow points from this box to a circled valve labeled "64".
- Central Area:** A diagonal line runs from the top left towards the bottom right, labeled "18\" C.I.". Along this line, there are several valves: "128", "127", "126", and "130". A blue box with the text "Valve 128 currently shut, will need to open to flush through hydrant 64" has a blue arrow pointing to valve 128.
- Bottom Section:** A horizontal line at the bottom is labeled "ENCLOSURE 1". A blue box with the text "Will need to shut valves 130 and 126 (currently open)" has a blue arrow pointing to valve 130.
- Other Features:**
  - A "METER" is indicated near valve 126.
  - A "PLUG" is marked on the diagonal line.
  - A dashed line labeled "FW 2\" PVC" runs from the bottom right towards the center.
  - Various other labels like "039", "0345", and "146" are present.

22 February 2022

MEMORANDUM FOR RECORD

SUBJECT: Board of Water Supply Interconnection Status

Ref: [1] Management Inquiry Into Manana Booster/BWS dtd 29 Dec 2021

1. This Memorandum for Record (MFR) is to document the status of the Board of Water Supply (BWS) interconnections with the Joint Base Pearl Harbor Hickam Potable Water System. The JBPHH system has four interconnection points with BWS: (1) Puuloa Road, (2) Halawa Heights Road, (3) Manana Housing, and (4) Red Hill.
2. BWS physically removed the meters from two of the interconnections, creating an “air gap” between the BWS system and the Navy system at both the Puuloa Road location and the Halawa Heights Road location. BWS performed that work on or around 10 December 2021. PWD personnel confirmed that the meters were removed on 14 December 2021.
3. Red Hill and Manana Housing BWS interconnections are still physically connected. The Red Hill interconnection is isolated on both the BWS side and Navy side of the connection. Manana interconnection was opened on 16 November 2021, and is feeding Manana housing. Isolation valves have been secured from the Navy supply to Manana, to isolate Manana Housing from the JBPHH System (Reference [1]).
4. Prior to December 2017, there was a fifth BWS interconnection with the JBPHH system, located at Geiger Road. The Kalaeloa area of the JBPHH water system was transferred from Navy to the Kalaeloa Water Company in December 2017. The BWS interconnection was included in the transfer. Shortly after the transfer, PWD Utilities personnel physically removed the connection from West Loch to Geiger Road piping, “air gapping” the KWC system and the JBPHH system.

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CAPT R. Harmeyer  
Public Works Officer  
Joint Base Pearl Harbor Hickam

ENCL(6)

February 20, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: DISTRIBUTION SYSTEM EXCEEDANCE INVESTIGATION SUMMARY AND RESULTS

Encl: (1) Level 2 Distribution System Sampling Report for Flushing Zone  
(2) Stage 2 Sampling Report

1. The Zone A2 Distribution System sampling results are listed in enclosures (1) and (2). The samples of the distribution system were taken at the hydrants. The categories of the results are broken down into non-detect, detect below limit levels, and exceedance. A non-detect occurs when the laboratory does not detect a measurable amount of an analyte. A detect below limit levels occurs when the laboratory detects a measurable amount of an analyte below Incident Specific Parameters (ISPs), Department of Health (DoH) Environmental Action Levels (EALs), or Environmental Protection Agency (EPA) Maximum Contaminant Levels (MCLs). An exceedance occurs when the laboratory detects a chemical and the amount detected is higher than established acceptable thresholds.
2. Categories. All chemical and metal detections are shown in enclosures (1) and (2). The various agency limits are listed for references and the result and location of the exceedance sample is listed in tabular form. Results highlighted in yellow exceed the ISP. Results in purple font also exceed the EAL. Results in green font also exceed the DOH MCL. Results in blue font also exceed the EPA MCL. There were no sample results above the MCLs or results above an ISP that required further investigation.
3. Results for Zone A2 enclosure (2) has sample results for the additional A2 Distribution System sample data. All copper results were below the AL of 1300 ppb. The DoH ISP for Total Organic Carbon (TOC) is 2 ppm. Zone A2 Distribution System samples showed one (1) sample exceedance of the ISP for TOC.

Hydrant 5-25 at 2.78 ppm

Based on the sample level being less than 1ppm above the ISP, it was determined that no further investigation was required.

4. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and the submitted information is true, accurate, and complete.

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M. W. Meno  
CAPT, CEC, USN

Level 2 Distribution System Sampling Report for Flushing Zone

A2 Zone Distribution Sampling

Chemistry Results

Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-HYD214	A2-HYD214	A2-HYD39	A2-HYD39	A2-HYD5-25	A2-HYD543	A2-HYD6-2
Location Type:	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant
Residence:	FH 214	FH 214	FH 39	FH 39	FH 5-25	FH ID: 3-1	FH 6-2
Field Sample ID:	20220113-A2-XT03	2020113-A2-XT03	20220113-A2-XT04	220113-A2-XT04	20220113-A2-YT03	A2-DWS-A2-3-1-010122-N	20220113-A2-YT05
Sample Date:	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-01	2022-01-13
Sample Type:	N	N	N	N	N	N	N

GENCHEM (mg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels			
					SDG: C22A013rev2	SDG: C22A018 rev1	SDG: 810122651_Rev1
Total Organic Carbon	2	None	None	None	1.63	2.78	0.250 U

HC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels			
					SDG: 5801093211	SDG: 5801093211	SDG: 5801093211
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	92.0 U	94.0 U	93.0 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	31.0 U	31.0 U	31.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	180 U	190 U	190 U

HERB (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels			
					SDG: 980520 CHEMLAB 202201191733	SDG: 980561	SDG: 980556 CHEMLAB 202201191747
Pentachlorophenol	None	None	None	None	0.0200 U	0.0200 U	0.0200 U

METAL (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels			
					SDG: 980520 CHEMLAB 202201191733	SDG: 980561	SDG: 980556 CHEMLAB 202201191747
Antimony	6	6	6	6	0.110 U	0.110 U	0.110 U
Arsenic	10	10	10	10	0.210 U	0.210 U	0.210 U
Barium	220	220	2000	2000	4.00	1.80 J	1.90 J
Beryllium	0.66	0.66	4	4	0.0910 U	0.0910 U	0.0910 U
Cadmium	3	3	5	5	0.0290 U	0.0290 U	0.0290 U
Chromium	11	11	100	100	1.50	1.60	1.60
Copper	2.9	2.9	1300	1300	5.00	3.20	4.70
Lead	15	5.6	15	15	0.560	0.330 J	0.360 J
Selenium	5	5	50	50	0.590 J	0.970 J	0.810 J
Thallium	2	2	2	2	0.0410 U	0.0410 U	0.0410 U

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels			
					SDG: 810122651_Rev1	SDG: 810122651_Rev1	SDG: 810122651_Rev1
1-Methylnaphthalene	2.1	10	None	None	0.0190 U	0.0190 U	0.0190 U
2-Methylnaphthalene	4.7	10	None	None	0.0190 U	0.0190 U	0.0190 U
Alachlor	None	None	None	None	0.0480 U	0.0490 U	0.0490 U



Level 2 Distribution System Sampling Report for Flushing Zone

A2 Zone Distribution Sampling

Chemistry Results

Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:										
Location Type:										
Residence:	A2-HYD6-2	A2-HYD7-13	A2-HYD7-13	A2-HYD7-4	A2-HYD7-4	A2-HYD7-13	A2-HYD7-4	A2-HYD812	A2-HYD812	A2-HYD84
	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant
	FH 6-2	FH 7-13	FH 7-13	FH 7-4	FH 7-4	FH 7-13	FH 7-4	FH 812	FH 812	FH 84
Field Sample ID:	220113-A2-YT05	22020113-A2-YT04	220113-A2-YT04	22020113-A2-YT02	220113-A2-YT02	220113-A2-YT04	22020113-A2-YT02	220113-A2-XT02	220113-A2-XT02	20220113-A2-XT01
Sample Date:	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13
Sample Type:	N	N	N	N	N	N	N	N	N	N

GENCHEM (mg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	DOH Environmental Protection Agency Maximum Contaminant Levels	SDG: 810122651	SDG: 810122651_Rev1	SDG: 810122651	SDG: 810122651_Rev1	SDG: 810122651	SDG: C22A013rev2
Total Organic Carbon	2	None	None	None	0.250 U	0.250 U	0.250 U	0.250 U	--	1.90

HC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	DOH Environmental Protection Agency Maximum Contaminant Levels	SDG: 5801093211	SDG: 5801093211	SDG: 5801093211
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	94.0 U	93.0 U	91.0 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	31.0 U	31.0 U	31.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	190 U	190 U	180 U

HERB (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	DOH Environmental Protection Agency Maximum Contaminant Levels	SDG: 980550 CHEMLAB 202201191743	SDG: 980538 CHEMLAB 202201191736	SDG: 980520 CHEMLAB 202201191733
Pentachlorophenol	None	None	None	None	0.0200 U	0.0200 U	0.0200 U

METAL (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	DOH Environmental Protection Agency Maximum Contaminant Levels	SDG: 980550 CHEMLAB 202201191743	SDG: 980538 CHEMLAB 202201191736	SDG: 980520 CHEMLAB 202201191733
Antimony	6	6	6	6	0.110 U	0.110 U	0.110 U
Arsenic	10	10	10	10	0.210 U	0.210 U	0.210 U
Barium	220	220	2000	2000	1.90 J	1.80 J	1.80 J
Beryllium	0.66	0.66	4	4	0.0910 U	0.0910 U	0.0910 U
Cadmium	3	3	5	5	0.0290 U	0.0290 U	0.0290 U
Chromium	11	11	100	100	1.60	1.60	1.50
Copper	2.9	2.9	1300	1300	5.20	3.60	7.20
Lead	15	5.6	15	15	1.00	0.690	1.00
Selenium	5	5	50	50	0.720 J	0.840 J	0.700 J
Thallium	2	2	2	2	0.0410 U	0.0410 U	0.0410 J

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	DOH Environmental Protection Agency Maximum Contaminant Levels	SDG: 810122651	SDG: 810122651_Rev1	SDG: 810122651	SDG: 810122651_Rev1	SDG: 810122651	SDG: 810122651_Rev1
1-Methylnaphthalene	2.1	10	None	None	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U
2-Methylnaphthalene	4.7	10	None	None	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U
Alachlor	None	None	None	None	0.0490 U	0.0480 U	0.0480 U	0.0480 U	0.0480 U	0.0480 U

Level 2 Distribution System Sampling Report for Flushing Zone

A2 Zone Distribution Sampling

Chemistry Results

Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-HYD84	A2-HYDZ-16	A2-HYDZ-16
Location Type:	Hydrant	Hydrant	Hydrant
Residence:	FH 84	FH Z-16	FH Z-16
Field Sample ID:	220113-A2-XT01	22020113-A2-YT06	220113-A2-YT06
Sample Date:	2022-01-13	2022-01-13	2022-01-13
Sample Type:	N	N	N

GENCHEM (mg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A013rev2	SDG: 810122651_Rev1	SDG: 810122651
Total Organic Carbon	2	None	None	None	0.200 U	0.250 U	0.250 U

HC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 5801093211	SDG: 5801093211
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	92.0 U	--
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	31.0 U	--
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	180 U	--

HERB (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 980520 CHEMLAB 202201191733	SDG: 980540
Pentachlorophenol	None	None	None	None	0.0200 U	--

METAL (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 980520 CHEMLAB 202201191733	SDG: 980540
Antimony	6	6	6	6	0.110 U	--
Arsenic	10	10	10	10	0.210 U	--
Barium	220	220	2000	2000	1.90 J	1.80 J
Beryllium	0.66	0.66	4	4	0.0910 U	--
Cadmium	3	3	5	5	0.0290 U	--
Chromium	11	11	100	100	1.80	1.60
Copper	2.9	2.9	1300	1300	7.40	6.40
Lead	15	5.6	15	15	1.60	1.60
Selenium	5	5	50	50	0.400 J	0.690 J
Thallium	2	2	2	2	0.0590 J	0.0410 U

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 810122651	SDG: 810122651_Rev1	SDG: 810122651
1-Methylnaphthalene	2.1	10	None	None	0.0190 U	0.0200 U	0.0200 U
2-Methylnaphthalene	4.7	10	None	None	0.0190 U	0.0200 U	0.0200 U
Alachlor	None	None	None	None	0.0480 U	0.0490 U	0.0490 U



Level 2 Distribution System Sampling Report for Flushing Zone

A2 Zone Distribution Sampling

Chemistry Results

Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-HYD214	A2-HYD214	A2-HYD39	A2-HYD39	A2-HYD5-25	A2-HYD543	A2-HYD6-2
Location Type:	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant
Residence:	FH 214	FH 214	FH 39	FH 39	FH 5-25	FH ID: 3-1	FH 6-2
Field Sample ID:	20220113-A2-XT03	20113-A2-XT03	20220113-A2-XT04	220113-A2-XT04	20220113-A2-YT03	A2-DWS-A2-3-1-010122-N	20220113-A2-YT05
Sample Date:	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-01	2022-01-13
Sample Type:	N	N	N	N	N	N	N

		Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels		
SVOC (µg/L)		None	None	None	None	SDG: 810122651_Rev1	SDG: 810122651_Rev1
Atrazine		0.06	0.06	0.2	0.2	0.0290 U	0.0290 U
Benzo(a)pyrene		3	3	6	6	0.00970 U	0.00970 U
Bis(2-ethylhexyl)phthalate		None	None	None	None	0.580 U	0.580 U
Chlordane		None	None	None	None	--	--
Diocyl adipate		None	None	None	None	0.580 U	0.580 U
Endrin		None	None	None	None	--	--
gamma-BHC (Lindane)		None	None	None	None	0.00700 U	0.00700 U
Heptachlor		None	None	None	None	0.00300 U	0.00300 U
Heptachlor epoxide		None	None	None	None	--	--
Hexachlorobenzene		0.0003	0.0003	1	1	0.00970 U	0.00970 U
Hexachlorocyclopentadiene		50	None	50	50	0.00970 U	0.00970 U
Methoxychlor		None	None	None	None	--	--
Naphthalene		12	17	None	None	0.0190 U	0.0190 U
PCB-1016 (Aroclor 1016)		None	None	None	None	0.0220 U	0.0220 U
PCB-1221 (Aroclor 1221)		None	None	None	None	0.0790 U	0.0790 U
PCB-1232 (Aroclor 1232)		None	None	None	None	--	--
PCB-1242 (Aroclor 1242)		None	None	None	None	0.0720 U	0.0720 U
PCB-1248 (Aroclor 1248)		None	None	None	None	0.0230 U	0.0230 U
PCB-1254 (Aroclor 1254)		None	None	None	None	--	--
PCB-1260 (Aroclor 1260)		None	None	None	None	0.0330 U	0.0330 U
Simazine		None	None	None	None	0.0290 U	0.0290 U

		Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels		
VOC (µg/L)		11	11	200	200	SDG: C22A013rev2	SDG: C22A013rev2
1,1,1-Trichloroethane		5	5	3	5	0.288 U	0.288 U
1,1,2-Trichloroethane		7	7	7	7	0.128 U	0.128 U
1,2,4-Trichlorobenzene		70	70	70	70	0.318 U	0.318 U
1,2-Dichlorobenzene		10	10	600	600	0.272 U	0.272 U
1,2-Dichloroethane		5	5	5	5	0.0884 U	0.0884 U
1,2-Dichloropropane		5	5	5	5	0.129 U	0.129 U
1,4-Dichlorobenzene		5	5	75	None	0.245 U	0.245 U
Benzene		5	5	5	5	0.0846 U	0.0846 U

Level 2 Distribution System Sampling Report for Flushing Zone

A2 Zone Distribution Sampling

Chemistry Results

Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:										
Location Type:	A2-HYD6-2	A2-HYD7-13	A2-HYD7-4	A2-HYD7-13	A2-HYD7-4	A2-HYD7-4	A2-HYD812	A2-HYD812	A2-HYD84	
Residence:	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	
	FH 6-2	FH 7-13	FH 7-4	FH 7-13	FH 7-4	FH 7-4	FH 812	FH 812	FH 84	
Field Sample ID:	220113-A2-YT05	20220113-A2-YT04	220113-A2-YT04	220113-A2-YT04	220113-A2-YT02	220113-A2-YT02	220113-A2-XT02	220113-A2-XT02	20220113-A2-XT01	
Sample Date:	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	
Sample Type:	N	N	N	N	N	N	N	N	N	

		Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels					
SVOC (µg/L)		None	None	None	None	SDG: 810122651	SDG: 810122651_Rev1	SDG: 810122651	SDG: 810122651_Rev1	SDG: 810122651_Rev1
Atrazine		0.06	0.06	0.2	0.2	0.0290 U	0.0290 U	0.0290 U	0.0290 U	0.0290 U
Benzo(a)pyrene		3	3	6	6	0.00970 U	0.00960 U	0.00970 U	0.00970 U	0.00960 U
Bis(2-ethylhexyl)phthalate		None	None	None	None	0.580 U	0.580 U	0.580 U	0.580 U	0.580 U
Chlordane		None	None	None	None	--	0.0320 U	0.0320 U	0.0320 U	--
Diocyl adipate		None	None	None	None	0.580 U	0.580 U	0.580 U	0.580 U	0.580 U
Endrin		None	None	None	None	--	0.00500 U	0.00500 U	0.00500 U	--
gamma-BHC (Lindane)		None	None	None	None	--	0.00700 U	--	0.00700 U	--
Heptachlor		None	None	None	None	--	0.00300 U	--	0.00300 U	--
Heptachlor epoxide		None	None	None	None	--	0.00500 U	--	0.00500 U	--
Hexachlorobenzene		0.0003	0.0003	1	1	0.00970 U	0.00960 U	0.00960 U	0.00970 U	0.00960 U
Hexachlorocyclopentadiene		50	None	50	50	0.00970 U	0.00960 U	0.00970 U	0.00970 U	0.00960 U
Methoxychlor		None	None	None	None	--	0.0320 U	--	0.0320 U	--
Naphthalene		12	17	None	None	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U
PCB-1016 (Aroclor 1016)		None	None	None	None	--	0.0220 U	--	0.0220 U	--
PCB-1221 (Aroclor 1221)		None	None	None	None	--	0.0790 U	--	0.0790 U	--
PCB-1232 (Aroclor 1232)		None	None	None	None	--	0.0850 U	--	0.0850 U	--
PCB-1242 (Aroclor 1242)		None	None	None	None	--	0.0720 U	--	0.0720 U	--
PCB-1248 (Aroclor 1248)		None	None	None	None	--	0.0230 U	--	0.0230 U	--
PCB-1254 (Aroclor 1254)		None	None	None	None	--	0.0350 U	--	0.0350 U	--
PCB-1260 (Aroclor 1260)		None	None	None	None	--	0.0330 U	--	0.0330 U	--
Simazine		None	None	None	None	0.0290 U	0.0290 U	0.0290 U	0.0290 U	0.0290 U

		Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A013rev2	SDG: C22A013rev2	SDG: C22A013rev2
VOC (µg/L)		11	11	200	200	0.119 U	0.119 U	0.119 U
1,1,1-Trichloroethane		5	5	3	5	0.288 U	0.288 U	0.288 U
1,1,2-Trichloroethane		7	7	7	7	0.128 U	0.128 U	0.128 U
1,2,4-Trichlorobenzene		70	70	70	70	0.318 U	0.318 U	0.318 U
1,2-Dichlorobenzene		10	10	600	600	0.272 U	0.272 U	0.272 U
1,2-Dichloroethane		5	5	5	5	0.0884 U	0.0884 U	0.0884 U
1,2-Dichloropropane		5	5	5	5	0.129 U	0.129 U	0.129 U
1,4-Dichlorobenzene		5	5	75	None	0.245 U	0.245 U	0.245 U
Benzene		5	5	5	5	0.0846 U	0.0846 U	0.0846 U

Level 2 Distribution System Sampling Report for Flushing Zone

A2 Zone Distribution Sampling

Chemistry Results

Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-HYD84	A2-HYDZ-16	A2-HYDZ-16
Location Type:	Hydrant	Hydrant	Hydrant
Residence:	FH 84	FH Z-16	FH Z-16
Field Sample ID:	220113-A2-XT01	20220113-A2-YT06	220113-A2-YT06
Sample Date:	2022-01-13	2022-01-13	2022-01-13
Sample Type:	N	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH		DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG:	
		Action Levels	Table D-1A Groundwater Action Levels			810122651	810122651_Rev1
Atrazine	None	None	None	None	None	0.0290 U	0.0290 U
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.2	0.00960 U	0.00980 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	6	0.580 U	0.590 U
Chlordane	None	None	None	None	None	0.0320 U	--
Diocyl adipate	None	None	None	None	None	0.580 U	0.590 U
Endrin	None	None	None	None	None	0.00500 U	--
gamma-BHC (Lindane)	None	None	None	None	None	0.00700 U	--
Heptachlor	None	None	None	None	None	0.00300 U	--
Heptachlor epoxide	None	None	None	None	None	0.00500 U	--
Hexachlorobenzene	0.0003	0.0003	1	1	1	0.00960 U	0.00980 U
Hexachlorocyclopentadiene	50	None	50	50	50	0.00960 U	0.00980 U
Methoxychlor	None	None	None	None	None	0.0320 U	--
Naphthalene	12	17	None	None	None	0.0190 U	0.0200 U
PCB-1016 (Aroclor 1016)	None	None	None	None	None	0.0220 U	--
PCB-1221 (Aroclor 1221)	None	None	None	None	None	0.0790 U	--
PCB-1232 (Aroclor 1232)	None	None	None	None	None	0.0850 U	--
PCB-1242 (Aroclor 1242)	None	None	None	None	None	0.0720 U	--
PCB-1248 (Aroclor 1248)	None	None	None	None	None	0.0230 U	--
PCB-1254 (Aroclor 1254)	None	None	None	None	None	0.0350 U	--
PCB-1260 (Aroclor 1260)	None	None	None	None	None	0.0330 U	--
Simazine	None	None	None	None	None	0.0290 U	0.0290 U

VOC (µg/L)	Incident Specific Parameters	DOH		DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG:	
		Action Levels	Table D-1A Groundwater Action Levels			C22A013rev2	C22A013rev2
1,1,1-Trichloroethane	11	11	200	200	200	0.119 U	--
1,1,2-Trichloroethane	5	5	3	3	5	0.288 U	--
1,1-Dichloroethene	7	7	7	7	7	0.128 U	--
1,2,4-Trichlorobenzene	70	70	70	70	70	0.318 U	--
1,2-Dichlorobenzene	10	10	600	600	600	0.272 U	--
1,2-Dichloroethane	5	5	5	5	5	0.0884 U	--
1,2-Dichloropropane	5	5	5	5	5	0.129 U	--
1,4-Dichlorobenzene	5	5	75	75	None	0.245 U	--
Benzene	5	5	5	5	5	0.0846 U	--

Level 2 Distribution System Sampling Report for Flushing Zone

A2 Zone Distribution Sampling

Chemistry Results

Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-HYD214	A2-HYD214	A2-HYD39	A2-HYD39	A2-HYD5-25	A2-HYD5-25	A2-HYD543	A2-HYD6-2
Location Type:	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant
Residence:	FH 214	FH 214	FH 39	FH 39	FH 5-25	FH 5-25	FH ID: 3-1	FH 6-2
Field Sample ID:	20220113-A2-XT03	20113-A2-XT03	20220113-A2-XT04	220113-A2-XT04	20220113-A2-YT03	220113-A2-YT03	A2-DWS-A2-3-1-010122-N	20220113-A2-YT05
Sample Date:	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-01	2022-01-13
Sample Type:	N	N	N	N	N	N	N	N

		DOH Environmental Action Levels Table D-1A		DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents		Environmental Protection Agency Maximum Contaminant Levels			
VOC (µg/L)	Incident Parameters	Specific	Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A013rev2	SDG: C22A013rev2
Carbon Tetrachloride	5		5	5	5	5	5	0.165 U	0.165 U
Chlorobenzene	25		25	100	100	100	100	0.146 U	0.146 U
cis-1,2-Dichloroethene	70		70	70	70	70	70	0.0570 U	0.0570 U
Ethylbenzene	700		7.3	700	700	700	700	0.141 U	0.141 U
m,p-Xylene	10000		13	None	None	None	None	0.317 U	0.317 U
Methylene chloride	5		5	5	5	5	5	2.15 U	2.15 U
o-Xylene	10000		13	None	None	None	None	0.157 U	0.157 U
Styrene	10		10	100	100	100	100	0.224 U	0.224 U
Tetrachloroethene (PCE)	5		5	5	5	5	5	0.125 U	0.125 U
Toluene	1000		9.8	1000	1000	1000	1000	0.120 U	0.120 U
trans-1,2-Dichloroethene	100		100	100	100	100	100	0.0958 U	0.0958 U
Trichloroethene (TCE)	5		5	5	5	5	5	0.0574 U	0.0574 U
Vinyl chloride	2		2	2	2	2	2	0.611 U	0.611 U
Xylenes, Total	10000		13	10000	10000	10000	10000	--	--

**Notes:**

-- indicates that the sample was Not Analyzed for the analyte

Results highlighted yellow exceed the ISP

Results in purple font also exceed the EALs

Results in green font also exceed the DOH MCL

Results in blue font also exceed the EPA MCL

µg/L = Micrograms per Liter

Level 2 Distribution System Sampling Report for Flushing Zone

A2 Zone Distribution Sampling

Chemistry Results

Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:										
Location Type:										
Residence:	A2-HYD6-2	A2-HYD7-13	A2-HYD7-13	A2-HYD7-4	A2-HYD7-4	A2-HYD7-4	A2-HYD812	A2-HYD812	A2-HYD84	
	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant	
	FH 6-2	FH 7-13	FH 7-13	FH 7-4	FH 7-4	FH 7-4	FH 812	FH 812	FH 84	
Field Sample ID:	220113-A2-YT05	22020113-A2-YT04	220113-A2-YT04	22020113-A2-YT02	220113-A2-YT02	220113-A2-YT02	22020113-A2-XT02	220113-A2-XT02	22020113-A2-XT01	
Sample Date:	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	2022-01-13	
Sample Type:	N	N	N	N	N	N	N	N	N	

		DOH		Environmental		Environmental		DOH Safe		Environmental		Protection	
		Action Levels		Table D-1A		Drinking Water		Branch (SDWB)		Agency		Maximum	
		Groundwater		Regulatory		Constituents		Constituents		Contaminant		Levels	
VOC (µg/L)	Incident Parameters	Specific	Action Levels	Parameters	Constituents	Constituents	Constituents	Constituents	Constituents	Constituents	Constituents	Constituents	Constituents
Carbon Tetrachloride	5	5	5	5	5	5	5	5	5	5	5	5	5
Chlorobenzene	25	25	25	25	100	100	100	100	100	100	100	100	100
cis-1,2-Dichloroethene	70	70	70	70	70	70	70	70	70	70	70	70	70
Ethylbenzene	700	7.3	7.3	700	700	700	700	700	700	700	700	700	700
m,p-Xylene	10000	13	13	None	None	None	None	None	None	None	None	None	None
Methylene chloride	5	5	5	5	5	5	5	5	5	5	5	5	5
o-Xylene	10000	13	13	None	None	None	None	None	None	None	None	None	None
Styrene	10	10	10	100	100	100	100	100	100	100	100	100	100
Tetrachloroethene (PCE)	5	5	5	5	5	5	5	5	5	5	5	5	5
Toluene	1000	9.8	9.8	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
trans-1,2-Dichloroethene	100	100	100	100	100	100	100	100	100	100	100	100	100
Trichloroethene (TCE)	5	5	5	5	5	5	5	5	5	5	5	5	5
Vinyl chloride	2	2	2	2	2	2	2	2	2	2	2	2	2
Xylenes, Total	10000	13	13	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000

Section 2a.6 Distribution System Exceedance Investigation Summary and Results

Level 2 Distribution System Sampling Report for Flushing Zone

A2 Zone Distribution Sampling

Chemistry Results

Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID: A2-HYD84 A2-HYDZ-16 A2-HYDZ-16

Location Type: Hydrant Hydrant Hydrant

Residence: FH 84 FH Z-16 FH Z-16

Field Sample ID: 220113-A2-XT01 20220113-A2-YT06 220113-A2-YT06

Sample Date: 2022-01-13 2022-01-13 2022-01-13

Sample Type: N N N

		DOH		DOH Safe		Environmental		Environmental	
		Action Levels		Drinking Water		Protection		Agency	
		Table D-1A		Branch (SDWB)		Maximum		Contaminant	
		Groundwater		Regulatory		Levels		Levels	
		Action Levels		Constituents		SDG:		SDG:	
						C22A013rev2		C22A013rev2	
VOC (µg/L)		Incident Specific Parameters		DOH Environmental		DOH Safe		Environmental	
				Table D-1A		Branch (SDWB)		Agency	
Carbon Tetrachloride	5	5	5	5	5	5	5	5	--
Chlorobenzene	25	25	100	100	100	100	100	100	--
cis-1,2-Dichloroethene	70	70	70	70	70	70	70	70	--
Ethylbenzene	700	7.3	700	700	700	700	700	700	--
m,p-Xylene	10000	13	None	None	None	None	None	None	--
Methylene chloride	5	5	5	5	5	5	5	5	--
o-Xylene	10000	13	None	None	None	None	None	None	--
Styrene	10	10	100	100	100	100	100	100	--
Tetrachloroethene (PCE)	5	5	5	5	5	5	5	5	--
Toluene	1000	9.8	1000	1000	1000	1000	1000	1000	--
trans-1,2-Dichloroethene	100	100	100	100	100	100	100	100	--
Trichloroethene (TCE)	5	5	5	5	5	5	5	5	--
Vinyl chloride	2	2	2	2	2	2	2	2	--
Xylenes, Total	10000	13	10000	10000	10000	10000	10000	10000	--





## Interagency Drinking Water System Team

### Drinking Water Distribution System Recovery Plan: *Stage 2 Sampling* *Results for Zone A2*

Joint Base Pearl-Hickam (JBPHH)

26 January 2022



*Neighborhoods included in Zone A2: Ford Island (Battleship Cove, Kamehameha, Luke Field, and Landing)*

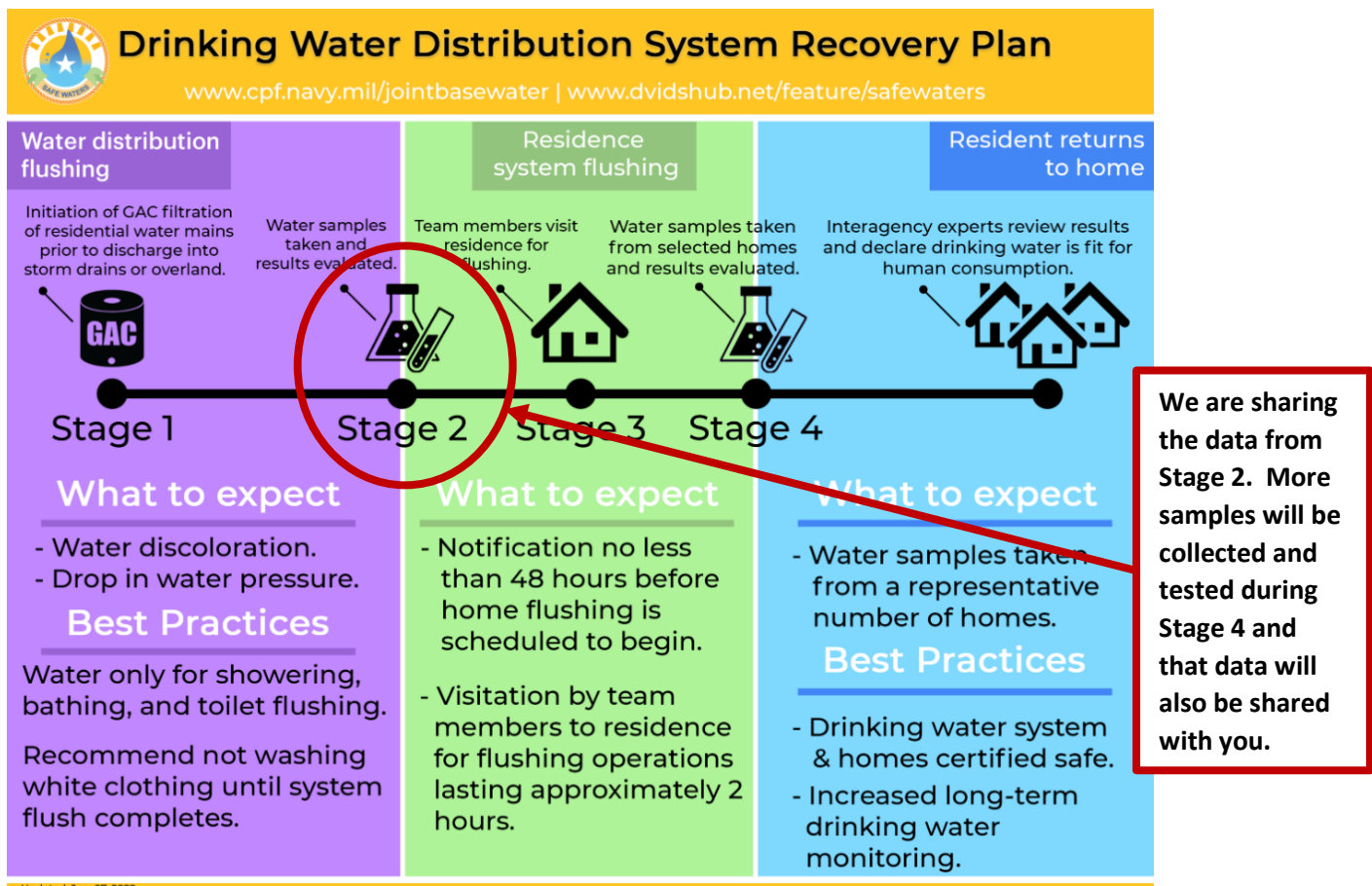


## EXECUTIVE SUMMARY FOR ZONE A2

The State of Hawaii Department of Health's (DOH) November 29, 2021 [Public Health Advisory for the JPBHH Public Water System](#) for Zone A2 remains in effect. DOH recommends all 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 also avoid using the water for bathing, dishwashing or laundry.

We have thoroughly flushed, sampled, and tested the water distribution system lines (Water Mains) in Zone A2. This Zone has moved to Stage 3–Building Flushing/Stage 4–Building Sampling, in the Drinking Water Distribution System Recovery Plan (see the Figure below). Based on the samples collected and tested, to date, this water meets all U.S. Environmental Protection Agency (EPA) and State of Hawaii Department of Health (DOH) standards that are applicable to the Navy Water System Incident.

No final conclusions or recommendations can be made at this time for the drinking water in your zone because more drinking water samples are being collected and tested from Water Mains, residences, buildings, schools, and child development centers (after they have been flushed). We are sharing this information to keep you updated on our progress towards restoring the water supply being provided to your community.



For additional information, please visit: <https://www.cpf.navy.mil/JBPHH-Water-Updates/>.



Table 1. Contaminants Detected in Drinking Water Samples Collected from Water Mains in Zone A2

Contaminant	Sampling Date	Units	DOH Project Screening Level	Basis of DOH Screening Level <sup>2</sup>	Highest Level Detected	Meets DOH Screening Level? (Yes / No)	Typical Source of Contaminant
<b>Contaminants of Concern<sup>1</sup></b>							
Benzene	01/04/2022	ppb	5	MCL	ND	Yes	Discharge from factories; Leaching from gas storage tanks and landfills
Ethylbenzene	01/04/2022	ppb	700	MCL	ND	Yes	Discharge from petroleum refineries
Toluene	01/04/2022	ppb	1000	MCL	ND	Yes	Discharge from petroleum factories
m,p-Xylenes	01/04/2022	ppb	10000	MCL	ND	Yes	Discharge from petroleum factories; Discharge from chemical factories
o-Xylenes	01/04/2022	ppb	10000	MCL	ND	Yes	
1-Methylnaphthalene	01/04/2022	ppb	2.1	ISP	ND	Yes	Used to make other chemicals such as dyes, and resins; also, present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites
2-Methylnaphthalene	01/04/2022	ppb	4.7	ISP	ND	Yes	Used to make other chemicals such as dyes, and resins; also used to make vitamin K; and is present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites
Naphthalene	01/04/2022	ppb	12	ISP	ND	Yes	Naphthalene is found in coal tar or crude oil and is used in the manufacture of plastics, resins, fuels, and dyes, and as a fumigant
Lead	01/04/2022	ppb	15	ISP	0.23	Yes	Corrosion of household plumbing systems; Erosion of natural deposits
Total Petroleum Hydrocarbons (TPH)-Gasoline	01/04/2022	ppb	200	ISP	ND	Yes	Gasoline is a petroleum product that can contaminate drinking water through spills and other releases into the environment
TPH-Diesel	01/01/2022	ppb	200	ISP	55	Yes	Diesel is a petroleum product that can contaminate drinking water through spills and other releases into the environment
TPH-Oil	01/04/2022	ppb	200	ISP	ND	Yes	Oil is a petroleum product that can contaminate drinking water through spills and other releases into the environment
Total Organic Carbon (TOC)	01/04/2022	ppb	2000	ISP	ND	Yes	Naturally present in the environment, but also can be an indicator of contamination, including petroleum or other sources



# JBPHH – Interagency Drinking Water System Team



Contaminant	Sampling Date	Units	DOH Project Screening Level	Basis of DOH Screening Level <sup>2</sup>	Highest Level Detected	Meets DOH Screening Level? (Yes / No)	Typical Source of Contaminant
<b>Metals</b>							
Barium	01/04/2022	ppb	2000	MCL	2.0	Yes	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium	01/01/2022	ppb	100	MCL	1.5	Yes	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints
Copper	01/04/2022	ppb	1300	AL	2.4	Yes	Corrosion of household plumbing systems; Erosion of natural deposits
Selenium	01/01/2022	ppb	50	MCL	0.12	Yes	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
<b>Volatile Organic Compounds - ND</b>							
<b>Synthetic Organic Compounds (SOCs) or Semi-Volatile Organic Compounds (SVOCs)</b>							
Methoxychlor	01/01/2022	ppb	40	MCL	0.0098	Yes	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock

Notes:

1. These contaminants are listed whether detected or non-detected (ND) because these are incident specific. All other contaminants are only listed if detected.
2. DOH uses multiple criteria to assess the safety of the drinking water including maximum contaminant levels (MCLs) previously established environmental action levels (EALs) and incident specific parameters (ISPs).
3. Acronyms and explanation of terms used in this table are presented on the following pages. For assistance in understanding and interpreting information in this table, refer to FACT SHEET, Understanding You Water Quality Summary Table, available online at: <https://www.cpf.navy.mil/JBPHH-Water-Updates/>.
4. For more information regarding Total Petroleum Hydrocarbons, refer to the FACT SHEET What Are Petroleum Hydrocarbons?, available online at: [https://health.hawaii.gov/about/files/2021/12/21.12.16\\_What-Are-Petroleum-Hydrocarbons.pdf](https://health.hawaii.gov/about/files/2021/12/21.12.16_What-Are-Petroleum-Hydrocarbons.pdf).



## **Drinking Water Distribution System Recovery Plan: Stage 2 Sampling Results for Zone A2**

### **What is the purpose of this Stage 2 Sampling Results Report?**

This is a progress report and presents the testing results from drinking water distribution system samples that have been collected, to date, from the water distribution system lines (Water Mains) in your Zone. These samples were collected after extensive flushing of the distribution system was performed using clean water from the Navy Waiawa Shaft. This is Stage 2 of the 4-Stage process described in the [Drinking Water Distribution System Recovery Plan](#).

No final conclusions or recommendations can be made at this time for the drinking water in your zone because more drinking water samples are being collected and tested from Water Mains, residences, buildings, schools, and child development centers. We are sharing this information to keep you updated on our progress towards restoring the water supply being provided to your community.

### **What was found?**

The table presented above (Table 1) presents all contaminants that were detected in drinking water samples that have been collected, to date, from the Water Mains in your Zone during Stage 2. Hawaii DOH used multiple standards/criteria (called DOH Project Screening Levels) to assess the safety of the drinking water to include:

- EPA and Hawaii DOH Maximum Contaminant Levels (MCLs) standards for drinking water,
- Previously established Environmental Action Levels (EALs); and
- Incident Specific Parameters (ISPs).

Based on these data, this Zone moved to Stage 3–Building/Home Flushing, in the [Drinking Water Distribution System Recovery Plan](#).

### **What contaminants were tested?**

Drinking water, including bottled water, can contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants tested can be obtained by calling the Hawaii DOH Safe Drinking Water Branch at 808-586-4258.

In order to ensure that drinking water is safe to drink, EPA and Hawaii DOH regulate the amount of certain contaminants in water provided by public water systems. The primary categories of monitored contaminants include volatile organic compounds (VOCs), synthetic organic chemicals (SOCs)/semi-volatile organic compounds (SVOCs), metals, Total Petroleum Hydrocarbons (TPH), Total Organic Carbon (TOC) chlorine and pH. A description of these contaminant categories can be found under Explanation of Terms located at the end of this report. The full list of contaminants that were tested for are



presented in the laboratory reports are located at: <https://www.cpf.navy.mil/JBPHH-Water-Updates/>.

### **What happened leading up to Public Health Advisory being issued?**

After receiving reports of a fuel-like smell or visual sheen in the drinking water from residents of Joint Base Pearl Harbor – Hickam (JBPHH) on November 28, 2021, the Navy immediately stopped using water from the Red Hill Shaft. Out of abundance of caution, the Navy also stopped using water from the Navy Aiea Halawa Shaft. The Navy's water system provides drinking water to JBPHH, including the Army, Air Force, Marine Corps, and Hawaii residents in some neighborhoods close to JBPHH. The Hawaii DOH issued a [Public Health Advisory on November 29, 2021](#). The Hawaii DOH, the United States Environmental Protection Agency (EPA), Navy, and Marine Corps Public Health Center, and Army formed the Interagency Drinking Water System Team (IDWST) to work on a coordinated effort to restore safe drinking water to all Navy Water System users.

### **Has the Public Health Advisory been amended or lifted?**

No. Please continue to follow the Public Health Advisory for Navy Water System users and only use your drinking water for non-consumptive purposes as long as your water does not have a visible sheen and remains odor free. Your service may have provided more restrictive guidance. As stated above, we are at Stage 2 of the 4-Stage process described in the Drinking Water System Recovery Plan and the Public Health Advisory will be re-evaluated by Hawaii DOH after Stage 4 in the process.

### **Where does our water come from?**

The source of all water for all Navy Water System users now comes only from the Navy Waiawa Shaft, which was not impacted by the release of Jet Fuel (JP-5) that occurred at Red Hill in late November 2021. The Waiawa Shaft has been sampled and EPA and DOH confirmed that it meets all federal and state drinking water standards and it will continue to be sampled in accordance with EPHA and DOH requirements.

### **What is the IDWST doing to clean the drinking water distribution system?**

The IDWST evaluated multiple options for cleaning the Navy drinking water distribution system and determined that high-volume flushing of the Navy drinking water distribution system (all water mains/laterals/buildings) with 3 to 5 volumes of clean water from the Waiawa Shaft, followed by extensive testing to confirm that flushing worked, would restore safe drinking water to all Navy Water System users.

### **When was Water Main flushing conducted in Zone A2?**

The final round of distribution water main flushing in Zone A2 was completed on December 28, 2021.



## How much water was flushed through the water distribution system in Zone A2?

From December 23 – 28, 2021, a total of 0.8 million gallons was flushed through Zone A2.

## Where can I get more information about the potential health effects associated with these contaminants?

Hawaii Department of Health (DOH)

<https://health.hawaii.gov/about/navy-water-system-quality-updates/>.

Call the DOH Safe Drinking Water Branch at 808-586-4258

US Environmental Protection Agency (EPA)

<https://www.epa.gov/ground-water-and-drinking-water/forms/online-form-epas-office-ground-water-and-drinking-water>.

Call EPA Region 9's Environmental Information Center at 1-866-372-9378

See the FACT SHEET, Understanding Your Water Quality Summary Table, available online at: <https://www.cpf.navy.mil/JBPHH-Water-Updates/>.

## Acronyms used in the Table

AL	Action Level (for Lead and Copper)
DOH	Hawaii Department of Health
EAL	Environmental Action Level
EPA	U.S. Environmental Protection Agency
ISP	Incident Specific Parameter
MCL	Maximum Contaminant Level
ND	Non-Detect
ppb	parts per billion (or ug/L)
SDWA	Safe Drinking Water Act
SOCs	Synthetic Organic Compounds (also known as SVOCs)
SVOCs	Semi-Volatile Organic Compounds (same as SOC)
TPH	Total Petroleum Hydrocarbons
TOC	Total Organic Carbon
ug/L	micrograms per liter (or ppb)
VOCs	Volatile Organic Compounds

## Explanation of Terms used in this Report

**Action Level (AL).** This AL is for Lead and Copper. The AL is a measure of the effectiveness of the corrosion control treatment in water systems. The AL is not a standard for establishing a safe level of lead or copper. The AL is the point at which certain provisions of the proposed standards must be initiated.

**Contaminant.** Contaminant is any physical, chemical, biological, or radiological substance or matter in water, and can be either healthy or unhealthy, depending on the particular substance and concentration. It could also be a physical parameter monitored like pH or temperature.





**Incident Specific Parameters (ISP).** To more comprehensively monitor and respond to this specific petroleum contamination of drinking water, the DOH identified contaminants that require additional action prior to amending the Health Advisory. The ISP is used as a line of evidence to evaluate the data generated in each Zone during the investigation conducted by the IDWST.

**Maximum Contaminant Level (MCL).** An MCL is the maximum permissible level of a contaminant in water which is delivered to any user of a public water system. The MCL is set to protect the public from acute and chronic health risks associated with consuming water containing these contaminants.

**Metals.** Metals are chemicals that are not derived from living sources and in general do not contain carbon. Metals include antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, copper, cyanide, fluoride, lead, mercury, nitrate, nitrite, selenium, and thallium. These contaminants get into drinking water supplies through industrial discharge or spills, erosion of natural deposits, corrosion, sewage discharge, fertilizer runoff, and other sources.

**Project Specific Screening Level.** DOH uses multiple criteria to assess the safety of the drinking water including maximum contaminant levels (MCLs), previously established environmental action levels (EALs) and incident specific parameters (ISPs).

**Synthetic Organic Compounds (SOCs)/Semi-Volatile Organic Compounds (SVOCs).** SOCs and SVOCs may be used interchangeably and are man-made, organic (carbon-based) chemicals that are less volatile than Volatile Organic Contaminants (VOCs). They are used as pesticides, defoliants, fuel additives, and as ingredients for other organic chemicals.

**Tier 1 Environmental Action Level (EAL).** Tier 1 Environmental Action Levels (Tier 1 EALs) are concentrations of contaminants in drinking water and other media (e.g., soil, soil gas, and groundwater) below which the contaminants are assumed to not pose a significant threat to human health or the environment. Exceeding the Tier 1 EAL does not necessarily indicate that contamination at the site poses environmental hazards but generally warrants additional investigation.

**Total Petroleum Hydrocarbons (TPH).** TPH is a term used to describe a large family of several hundred chemical compounds that come from crude oil. Crude oil is used to make petroleum products, which can contaminate the environment. TPH is grouped by TPH-Gasoline, TPH-Diesel, and TPH-Oil.

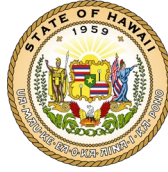
**Total Organic Carbon (TOC).** TOC is naturally present in the environment, but also can be an indicator of contamination, including petroleum or other sources.

**Units.** A unit is the concentration of contaminant found in the water. For this report, the units are expressed in U.S. Standard Units.

U.S. Standard Unit (Name)	Acronym	Equivalent International System of Units (Name)	Acronym
parts per million	ppm*	milligrams per Liter	mg/L
parts per billion	ppb*	micrograms per Liter	ug/L

\*One (1) part per million (ppm) is 1,000 parts per billion (ppb).

**Volatile Organic Compounds (VOCs).** VOCs are a class of chemicals that contain carbon and evaporate, or volatilize, easily into air at room temperature. VOCs are found in a variety of commercial, industrial, and residential products, including gasoline, solvents, cleaners and degreasers, paints, inks and dyes, and pesticides.



Interagency Drinking Water System Team  
Zone A2 Removal Action Report  
February 2022

**Line of Evidence 2b**

**Water in Premise Plumbing of Homes/Buildings does not exceed State and Federal Drinking Water MCLs, specified State EALs, and ISPs**

**Table 1: Lines of Evidence Under Evaluation – Ensure no contamination remains in the system and water chemistry concerns are addressed.**

**Objective 2b** - Water in premise plumbing of homes/buildings does not exceed State and Federal DW MCLs, specified State EALs, and ISPs.

Incident Specific Criteria –

- Flushing Plan includes procedures to ensure no service connections will re-contaminate the distribution system.
- Sample Plan includes 72-hour stagnation to account for leaching of contaminants from premise plumbing.
- Sample results show water in homes/buildings does not exceed State and Federal DW MCLs, specified State EALs, and ISPs.

Lines of Evidence	Completion Status	Outstanding Items
Flushing Plan includes procedures to ensure no service connections will re-contaminate the distribution system.	Complete	<ul style="list-style-type: none"> <li>• None.</li> </ul>

February 20, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: SUMMARY OF LINE OF EVIDENCE OBJECTIVE 2B – WATER IN PREMISE OF PLUMBING OF HOMES/BUILDINGS DOES NOT EXCEED STATE AND FEDERAL DW MCLs, SPECIFIED STATE EALs, AND ISPs

Encl: (1) 2b.1 Flushing Records and Distribution System Pressure Logs During Residential Flushing  
(2) 2b.2 Residential Sampling Report for Flushing Zone  
(3) 2b.3 Exceedance Investigation Summary and Results  
(4) 2b.4 Certification of Completed Irrigation Flushing  
(5) 2b.5 DOH Guidance for Active Irrigation Line Purging and Flushing

1. Enclosures (1) through (5) document completion of Line of Evidence 2b, that water in premise of plumbing of homes/buildings does not exceed State of Hawaii and Federal Drinking Water standards, Maximum Contaminate Levels, Environmental Action Levels and Incident Specific Parameters. On the evening of November 28, 2021, the Red Hill Shaft was secured from operation and all pumping operations ceased. The Aiea/Halawa shaft briefly served as the secondary source starting on November 28, 2021, but it was shut down on December 3, 2021 to prevent potential westward contaminant migration in the aquifer and because there were concerns over high chloride concentrations caused by saltwater intrusion. Since December 3, 2021, the Waiawa Shaft has been the sole water source providing potable water to the Joint Base Pearl Harbor-Hickam (JBPHH) distribution network. Zone A2 is part of the JBPHH Drinking Water system that is operated and maintained by the United States Navy. Flushing operations are summarized in Enclosure (1), signed by CDR Trevor Bingham, team lead for the Drinking Water Residential and Non-residential Recovery Team.

2. Enclosure (1) documents the flushing records for all facilities within Zone A2, as well as pressure logs for the distribution system during facility flushing operations. The completion of irrigation flushing in Zone A2, described in Enclosure (5), is documented in Enclosure (4). Sampling data collected after flushing is summarized in Enclosure (2).

3. Sample results with analyte detections exceeding the prescribed Maximum Contaminant Level (MCL), Environmental Action Level (EAL), or Incident Specific Parameter (ISP) are documented in Enclosure (3). The follow-on investigation summary and additional sampling results are also documented in Enclosure (3).

4. This information documents completion of Line of Evidence 2b, that water in premise of plumbing of homes/buildings does not exceed State of Hawaii and Federal Drinking Water standards, MCLs, EALs, or ISPs.

5. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and I believe the submitted information is true, accurate, and complete.

RODRIGUEZ.AL  
BERTO.MAURIC  
IO.1396316168  
A. M. Rodriguez  
LT, CEC, USN

Digitally signed by  
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URICIO.1396316168  
Date: 2022.02.20 14:50:39  
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17 February 2022

MEMORANDUM

From: Naval Facilities Engineering Systems Command Representative, EWG Team  
To: Interagency Drinking Water System Team

Subj: RECORDS OF COMPLETED RESIDENTIAL AND NON-RESIDENTIAL FLUSHING  
ZONE A2

Ref: (a) Single Family Home Flushing Plan Checklist and Standard Operating Procedures,  
December 2021

Encl: (1) EDMS Residential Flushing Records Zone A2  
(2) EDMS Non-Residential Flushing Records Zone A2  
(3) NAVFAC SCADA Data Zone A2 28 Dec 2021 to 12 Jan 2022

1. This memo documents the completion of residential and non-residential flushing in Zone A2. The completed records of residential flushing, as shown in Enclosure (1), document the flushing of 410/411 homes in EDMS. The one home is for an address that does not exist. The completed records of non-residential flushing, as shown in Enclosure (2), document the flushing of all 114 facilities in EDMS.

2. The distribution pressure was monitored on site using pressure gauges while flushing homes to ensure that the pressure did not drop below 30 psi the industry standard (Uniformed Facilities Guide 3-230-02). Navy Sailors of CBMU 303 logged the pressure gauges every hour. Enclosure (3) further demonstrates the sustained pressure well above 30 psi during the period of flushing in Zone A2.

3. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and the submitted information is true, accurate, and complete.

Very respectfully,

BINGHAM.TREVOR.A  
MMON.1131940048  
T. A. BINGHAM  
CDR, CEC, USN

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**Flushing Zone A2**

2022-01-10 - 2022-01-19

Total Homes	Total Homes Flushed	Percent Complete	No Access	Flushed on Selected Dates
411	410	100.0%	1	410

Zone	Neighborhood	Address	Appointment		Arrive Date	Start Time	Certified	Summary General		
			Date/Time					Notes	Unable To Access	Access Reason
Flushing Zone A2		1151 Catalina Drive (A2-CATA1151)			12-Jan-22	08:22	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1155 Catalina Drive (A2-CATA1155)			12-Jan-22	08:38	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1159 Catalina Drive (A2-CATA1159)			12-Jan-22	09:40	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1161 Catalina Drive (A2-CATA1161)			12-Jan-22	10:29	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1163 Catalina Drive (A2-CATA1163)			12-Jan-22	11:20	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1164 Catalina Drive (A2-CATA1164)			12-Jan-22	07:58	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1165 Catalina Drive (A2-CATA1165)			12-Jan-22	08:05	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1167 Catalina Drive (A2-CATA1167)			12-Jan-22	08:31	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1168 Catalina Drive (A2-CATA1168)			12-Jan-22	10:23	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1170 Catalina Drive (A2-CATA1170)			12-Jan-22	08:02	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1171 Catalina Drive (A2-CATA1171)			12-Jan-22	09:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1174 Catalina Drive (A2-CATA1174)			12-Jan-22	08:15	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1175 Catalina Drive (A2-CATA1175)			12-Jan-22	10:33	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1176 Catalina Drive (A2-CATA1176)			12-Jan-22	09:20	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1179 Catalina Drive (A2-CATA1179)			12-Jan-22	11:04	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1180 Catalina Drive (A2-CATA1180)			12-Jan-22	09:41	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1183 Catalina Drive (A2-CATA1183)			12-Jan-22	10:15	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1187 Catalina Drive (A2-CATA1187)			12-Jan-22	08:10	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1191 Catalina Drive (A2-CATA1191)			12-Jan-22	08:14	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1193 Catalina Drive (A2-CATA1193)			12-Jan-22	15:10	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1197 Catalina Drive (A2-CATA1197)			12-Jan-22	10:38	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1203 Catalina Drive (A2-CATA1203)			12-Jan-22	07:59	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1207 Catalina Drive (A2-CATA1207)			12-Jan-22	08:03	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		1211 Catalina Drive (A2-CATA1211)			12-Jan-22	09:29	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4940 Catalina Lane (A2-CATA4940)			12-Jan-22	09:10	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4944 Catalina Lane (A2-CATA4944)			12-Jan-22	09:10	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4946 Catalina Lane (A2-CATA4946)			12-Jan-22	09:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4950 Catalina Lane (A2-CATA4950)			12-Jan-22	09:05	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4952 Catalina Lane (A2-CATA4952)			12-Jan-22	22:20	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4956 Catalina Lane (A2-CATA4956)			12-Jan-22	09:19	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4960 Catalina Lane (A2-CATA4960)			12-Jan-22	09:25	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4964 Catalina Lane (A2-CATA4964)			12-Jan-22	09:31	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4968 Catalina Lane (A2-CATA4968)			12-Jan-22	10:47	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4972 Catalina Lane (A2-CATA4972)			12-Jan-22	10:48	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4872 Dauntless Drive (A2-DAUN4872)			12-Jan-22	11:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4876 Dauntless Drive (A2-DAUN4876)			12-Jan-22	11:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4880 Dauntless Drive (A2-DAUN4880)			12-Jan-22	11:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4882 Dauntless Drive (A2-DAUN4882)			12-Jan-22	11:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4886 Dauntless Drive (A2-DAUN4886)			12-Jan-22	11:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4890 Dauntless Drive (A2-DAUN4890)			12-Jan-22	11:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4894 Dauntless Drive (A2-DAUN4894)			12-Jan-22	11:11	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		4898 Dauntless Drive (A2-DAUN4898)			12-Jan-22	11:10	<input checked="" type="checkbox"/>		<input type="checkbox"/>	

**Flushing Zone A2**

2022-01-10 - 2022-01-19

Flushing Zone A2	4905 Dauntless Drive (A2-DAUN4905)	12-Jan-22	07:52	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4909 Dauntless Drive (A2-DAUN4909)	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4913 Dauntless Drive (A2-DAUN4913)	12-Jan-22	08:04	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4917 Dauntless Drive (A2-DAUN4917)	12-Jan-22	08:05	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4918 Dauntless Drive (A2-DAUN4918)	12-Jan-22	11:05	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4921 Dauntless Drive (A2-DAUN4921)	12-Jan-22	07:54	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4922 Dauntless Drive (A2-DAUN4922)	12-Jan-22	09:06	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4923 Dauntless Drive (A2-DAUN4923)	12-Jan-22	09:06	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4924 Dauntless Drive (A2-DAUN4924)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4927 Dauntless Drive (A2-DAUN4927)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4928 Dauntless Drive (A2-DAUN4928)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4931 Dauntless Drive (A2-DAUN4931)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4932 Dauntless Drive (A2-DAUN4932)	12-Jan-22	08:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4933 Dauntless Drive (A2-DAUN4933)	12-Jan-22	08:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	1755 Kamehameha Loop (A2-KAME1755)	12-Jan-22	00:00	<input checked="" type="checkbox"/>	address does not exist	Reason(s) Selected: Other address does not exist
Flushing Zone A2	4718 Kamehameha Loop (A2-KAME4718)	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4720 Kamehameha Loop (A2-KAME4720)	12-Jan-22	13:16	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4721 Kamehameha Loop (A2-KAME4721)	12-Jan-22	08:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4722 Kamehameha Loop (A2-KAME4722)	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4723 Kamehameha Loop (A2-KAME4723)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4724 Kamehameha Loop (A2-KAME4724)	12-Jan-22	08:26	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4725 Kamehameha Loop (A2-KAME4725)	12-Jan-22	11:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4727 Kamehameha Loop (A2-KAME4727)	12-Jan-22	08:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4752 Kamehameha Loop (A2-KAME4752)	12-Jan-22	09:38	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4754 Kamehameha Loop (A2-KAME4754)	12-Jan-22	13:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4755 Kamehameha Loop (A2-KAME4755)	12-Jan-22	10:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4756 Kamehameha Loop (A2-KAME4756)	12-Jan-22	11:05	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4757 Kamehameha Loop (A2-KAME4757)	12-Jan-22	08:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4758 Kamehameha Loop (A2-KAME4758)	12-Jan-22	11:09	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4770 Kamehameha Loop (A2-KAME4770)	12-Jan-22	08:07	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4771 Kamehameha Loop (A2-KAME4771)	12-Jan-22	08:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4772 Kamehameha Loop (A2-KAME4772)	12-Jan-22	08:24	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4773 Kamehameha Loop (A2-KAME4773)	12-Jan-22	08:45	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4775 Kamehameha Loop (A2-KAME4775)	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4777 Kamehameha Loop (A2-KAME4777)	12-Jan-22	10:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4792 Kamehameha Loop (A2-KAME4792)	12-Jan-22	08:02	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4793 Kamehameha Loop (A2-KAME4793)	12-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4794 Kamehameha Loop (A2-KAME4794)	12-Jan-22	08:05	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4795 Kamehameha Loop (A2-KAME4795)	12-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4796 Kamehameha Loop (A2-KAME4796)	12-Jan-22	22:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4797 Kamehameha Loop (A2-KAME4797)	12-Jan-22	12:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4798 Kamehameha Loop (A2-KAME4798)	12-Jan-22	10:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4799 Kamehameha Loop (A2-KAME4799)	12-Jan-22	11:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4824 Kamehameha Loop (A2-KAME4824)	12-Jan-22	08:13	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone A2	4826 Kamehameha Loop (A2-KAME4826)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

**Flushing Zone A2**

2022-01-10 - 2022-01-19

Flushing Zone A2	4831 Kamehameha Loop (A2-KAME4831)	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4833 Kamehameha Loop (A2-KAME4833)	12-Jan-22	08:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4850 Kamehameha Loop (A2-KAME4850)	12-Jan-22	08:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4851 Kamehameha Loop (A2-KAME4851)	12-Jan-22	12:22	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4852 Kamehameha Loop (A2-KAME4852)	12-Jan-22	08:11	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4853 Kamehameha Loop (A2-KAME4853)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4854 Kamehameha Loop (A2-KAME4854)	12-Jan-22	08:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4855 Kamehameha Loop (A2-KAME4855)	12-Jan-22	10:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4856 Kamehameha Loop (A2-KAME4856)	12-Jan-22	08:21	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4857 Kamehameha Loop (A2-KAME4857)	12-Jan-22	10:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4870 Kamehameha Loop (A2-KAME4870)	12-Jan-22	09:50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4872 Kamehameha Loop (A2-KAME4872)	12-Jan-22	08:50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4877 Kamehameha Loop (A2-KAME4877)	12-Jan-22	10:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4879 Kamehameha Loop (A2-KAME4879)	12-Jan-22	10:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4890 Kamehameha Loop (A2-KAME4890)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4892 Kamehameha Loop (A2-KAME4892)	12-Jan-22	08:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4894 Kamehameha Loop (A2-KAME4894)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4896 Kamehameha Loop (A2-KAME4896)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4906 Kamehameha Loop (A2-KAME4906)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4908 Kamehameha Loop (A2-KAME4908)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4913 Kamehameha Loop (A2-KAME4913)	12-Jan-22	10:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4915 Kamehameha Loop (A2-KAME4915)	12-Jan-22	08:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4916 Kamehameha Loop (A2-KAME4916)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4917 Kamehameha Loop (A2-KAME4917)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4918 Kamehameha Loop (A2-KAME4918)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4919 Kamehameha Loop (A2-KAME4919)	12-Jan-22	09:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4920 Kamehameha Loop (A2-KAME4920)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4922 Kamehameha Loop (A2-KAME4922)	12-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4944 Kamehameha Loop (A2-KAME4944)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4945 Kamehameha Loop (A2-KAME4945)	12-Jan-22	08:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4946 Kamehameha Loop (A2-KAME4946)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4947 Kamehameha Loop (A2-KAME4947)	12-Jan-22	08:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4980 Kamehameha Loop (A2-KAME4980)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4981 Kamehameha Loop (A2-KAME4981)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4982 Kamehameha Loop (A2-KAME4982)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4983 Kamehameha Loop (A2-KAME4983)	12-Jan-22	10:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4984 Kamehameha Loop (A2-KAME4984)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4985 Kamehameha Loop (A2-KAME4985)	12-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4986 Kamehameha Loop (A2-KAME4986)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4987 Kamehameha Loop (A2-KAME4987)	12-Jan-22	10:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5004 Kamehameha Loop (A2-KAME5004)	10-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5006 Kamehameha Loop (A2-KAME5006)	12-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5008 Kamehameha Loop (A2-KAME5008)	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5010 Kamehameha Loop (A2-KAME5010)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5029 Kamehameha Loop (A2-KAME5029)	12-Jan-22	08:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5030 Kamehameha Loop (A2-KAME5030)	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5032 Kamehameha Loop (A2-KAME5032)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Section 2b.1 Flushing Records and Distribution System Pressure Logs During Residential Flushing

**Flushing Zone A2**  
2022-01-10 - 2022-01-19

Flushing Zone A2	5034 Kamehameha Loop (A2-KAME5034)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5036 Kamehameha Loop (A2-KAME5036)	12-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5039 Kamehameha Loop (A2-KAME5039)	12-Jan-22	08:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5041 Kamehameha Loop (A2-KAME5041)	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5043 Kamehameha Loop (A2-KAME5043)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5045 Kamehameha Loop (A2-KAME5045)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5058 Kamehameha Loop (A2-KAME5058)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5060 Kamehameha Loop (A2-KAME5060)	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5062 Kamehameha Loop (A2-KAME5062)	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5063 Kamehameha Loop (A2-KAME5063)	12-Jan-22	08:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5064 Kamehameha Loop (A2-KAME5064)	12-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5065 Kamehameha Loop (A2-KAME5065)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5067 Kamehameha Loop (A2-KAME5067)	12-Jan-22	09:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5069 Kamehameha Loop (A2-KAME5069)	12-Jan-22	09:45	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5086 Kamehameha Loop (A2-KAME5086)	12-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5088 Kamehameha Loop (A2-KAME5088)	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5105 Kamehameha Loop (A2-KAME5105)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5107 Kamehameha Loop (A2-KAME5107)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5114 Kamehameha Loop (A2-KAME5114)	12-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5116 Kamehameha Loop (A2-KAME5116)	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5118 Kamehameha Loop (A2-KAME5118)	12-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5120 Kamehameha Loop (A2-KAME5120)	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5129 Kamehameha Loop (A2-KAME5129)	12-Jan-22	11:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5131 Kamehameha Loop (A2-KAME5131)	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5133 Kamehameha Loop (A2-KAME5133)	12-Jan-22	13:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5134 Kamehameha Loop (A2-KAME5134)	12-Jan-22	23:09	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5135 Kamehameha Loop (A2-KAME5135)	12-Jan-22	13:27	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5136 Kamehameha Loop (A2-KAME5136)	12-Jan-22	23:19	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5138 Kamehameha Loop (A2-KAME5138)	12-Jan-22	13:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5140 Kamehameha Loop (A2-KAME5140)	12-Jan-22	13:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5159 Kamehameha Loop (A2-KAME5159)	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5161 Kamehameha Loop (A2-KAME5161)	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5170 Kamehameha Loop (A2-KAME5170)	12-Jan-22	11:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5172 Kamehameha Loop (A2-KAME5172)	12-Jan-22	23:18	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5182 Kamehameha Loop (A2-KAME5182)	12-Jan-22	12:09	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5184 Kamehameha Loop (A2-KAME5184)	12-Jan-22	23:49	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5185 Kamehameha Loop (A2-KAME5185)	12-Jan-22	12:43	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5186 Kamehameha Loop (A2-KAME5186)	12-Jan-22	12:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5187 Kamehameha Loop (A2-KAME5187)	12-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5188 Kamehameha Loop (A2-KAME5188)	12-Jan-22	12:34	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5189 Kamehameha Loop (A2-KAME5189)	12-Jan-22	12:50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5191 Kamehameha Loop (A2-KAME5191)	12-Jan-22	12:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5208 Kamehameha Loop (A2-KAME5208)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5210 Kamehameha Loop (A2-KAME5210)	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5215 Kamehameha Loop (A2-KAME5215)	12-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5217 Kamehameha Loop (A2-KAME5217)	12-Jan-22	12:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5230 Kamehameha Loop (A2-KAME5230)	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Flushing Zone A2**

2022-01-10 - 2022-01-19

Flushing Zone A2	5232 Kamehameha Loop (A2-KAME5232)	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5242 Kamehameha Loop (A2-KAME5242)	12-Jan-22	13:06	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5244 Kamehameha Loop (A2-KAME5244)	17-Jan-22	17:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5246 Kamehameha Loop (A2-KAME5246)	12-Jan-22	13:43	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5248 Kamehameha Loop (A2-KAME5248)	12-Jan-22	13:11	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5259 Kamehameha Loop (A2-KAME5259)	12-Jan-22	12:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5260 Kamehameha Loop (A2-KAME5260)	12-Jan-22	13:25	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5261 Kamehameha Loop (A2-KAME5261)	12-Jan-22	12:55	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5262 Kamehameha Loop (A2-KAME5262)	12-Jan-22	13:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5263 Kamehameha Loop (A2-KAME5263)	12-Jan-22	12:45	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5264 Kamehameha Loop (A2-KAME5264)	12-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5265 Kamehameha Loop (A2-KAME5265)	12-Jan-22	12:45	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5266 Kamehameha Loop (A2-KAME5266)	12-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5280 Kamehameha Loop (A2-KAME5280)	12-Jan-22	13:46	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5282 Kamehameha Loop (A2-KAME5282)	12-Jan-22	13:06	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5027 Kamehameha Loop (A2-KAME5027)	12-Jan-22	08:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	2774 Langley Avenue (A2-LANG2774)	12-Jan-22	11:48	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	2813 Langley Avenue (A2-LANG2813)	12-Jan-22	11:11	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	2817 Langley Avenue (A2-LANG2817)	12-Jan-22	11:16	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4604 Lexington Boulevard (A2-LEX4604)	12-Jan-22	11:47	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4611 Lexington Boulevard (A2-LEX4611)	12-Jan-22	10:04	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4616 Lexington Boulevard (A2-LEX4616)	12-Jan-22	11:27	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4648 Lexington Boulevard (A2-LEX4648)	12-Jan-22	10:33	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4666 Lexington Boulevard (A2-LEX4666)	12-Jan-22	08:26	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4670 Lexington Boulevard (A2-LEX4670)	12-Jan-22	08:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4672 Lexington Boulevard (A2-LEX4672)	12-Jan-22	10:51	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4676 Lexington Boulevard (A2-LEX4676)	12-Jan-22	12:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4678 Lexington Boulevard (A2-LEX4678)	12-Jan-22	11:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4682 Lexington Boulevard (A2-LEX4682)	12-Jan-22	13:50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4697 Maryland Street (A2-MARY4697)	12-Jan-22	10:55	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4698 Maryland Street (A2-MARY4698)	12-Jan-22	10:37	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4701 Maryland Street (A2-MARY4701)	12-Jan-22	12:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4702 Maryland Street (A2-MARY4702)	12-Jan-22	10:56	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4703 Maryland Street (A2-MARY4703)	12-Jan-22	12:47	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4704 Maryland Street (A2-MARY4704)	12-Jan-22	08:43	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4705 Maryland Street (A2-MARY4705)	12-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4706 Maryland Street (A2-MARY4706)	12-Jan-22	08:34	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4707 Maryland Street (A2-MARY4707)	12-Jan-22	03:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4708 Maryland Street (A2-MARY4708)	12-Jan-22	09:17	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4711 Maryland Street (A2-MARY4711)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4712 Maryland Street (A2-MARY4712)	12-Jan-22	08:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4666 Nevada Street (A2-NEVA4666)	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4668 Nevada Street (A2-NEVA4668)	12-Jan-22	11:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4670 Nevada Street (A2-NEVA4670)	12-Jan-22	10:36	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4674 Nevada Street (A2-NEVA4674)	12-Jan-22	10:36	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4676 Nevada Street (A2-NEVA4676)	12-Jan-22	11:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4678 Nevada Street (A2-NEVA4678)	12-Jan-22	11:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Section 2b.1 Flushing Records and Distribution System Pressure Logs During Residential Flushing

# Flushing Zone A2

2022-01-10 - 2022-01-19

Flushing Zone A2	4680 Nevada Street (A2-NEVA4680)	12-Jan-22	11:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4684 Nevada Street (A2-NEVA4684)	12-Jan-22	12:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4686 Nevada Street (A2-NEVA4686)	12-Jan-22	11:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4690 Nevada Street (A2-NEVA4690)	12-Jan-22	12:16	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4692 Nevada Street (A2-NEVA4692)	12-Jan-22	14:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4697 Nevada Street (A2-NEVA4697)	12-Jan-22	11:18	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4698 Nevada Street (A2-NEVA4698)	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4699 Nevada Street (A2-NEVA4699)	12-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4700 Nevada Street (A2-NEVA4700)	12-Jan-22	08:56	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4703 Nevada Street (A2-NEVA4703)	12-Jan-22	11:19	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4704 Nevada Street (A2-NEVA4704)	12-Jan-22	08:29	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4705 Nevada Street (A2-NEVA4705)	12-Jan-22	10:34	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4706 Nevada Street (A2-NEVA4706)	12-Jan-22	08:44	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4707 Nevada Street (A2-NEVA4707)	12-Jan-22	11:31	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4710 Nevada Street (A2-NEVA4710)	12-Jan-22	08:27	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4711 Nevada Street (A2-NEVA4711)	12-Jan-22	08:58	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4712 Nevada Street (A2-NEVA4712)	12-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4665 Oklahoma Avenue (A2-OKLA4665)	12-Jan-22	08:36	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4669 Oklahoma Avenue (A2-OKLA4669)	12-Jan-22	12:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4671 Oklahoma Avenue (A2-OKLA4671)	12-Jan-22	10:08	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4675 Oklahoma Avenue (A2-OKLA4675)	12-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4677 Oklahoma Avenue (A2-OKLA4677)	12-Jan-22	13:12	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4681 Oklahoma Avenue (A2-OKLA4681)	12-Jan-22	13:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4682 Oklahoma Avenue (A2-OKLA4682)	12-Jan-22	11:19	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4686 Oklahoma Avenue (A2-OKLA4686)	12-Jan-22	11:45	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4690 Oklahoma Avenue (A2-OKLA4690)	12-Jan-22	11:57	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4692 Oklahoma Avenue (A2-OKLA4692)	12-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4698 Oklahoma Avenue (A2-OKLA4698)	12-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4700 Oklahoma Avenue (A2-OKLA4700)	12-Jan-22	12:22	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4704 Oklahoma Avenue (A2-OKLA4704)	12-Jan-22	12:50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4706 Oklahoma Avenue (A2-OKLA4706)	12-Jan-22	12:43	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4710 Oklahoma Avenue (A2-OKLA4710)	12-Jan-22	12:45	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4712 Oklahoma Avenue (A2-OKLA4712)	12-Jan-22	00:45	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4509 Princeton Place (A2-PRIN4509)	12-Jan-22	08:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4514 Princeton Place (A2-PRIN4514)	12-Jan-22	08:48	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4515 Princeton Place (A2-PRIN4515)	12-Jan-22	09:32	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4520 Princeton Place (A2-PRIN4520)	12-Jan-22	08:41	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4525 Princeton Place (A2-PRIN4525)	12-Jan-22	10:25	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4543 Princeton Place (A2-PRIN4543)	12-Jan-22	09:59	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4546 Princeton Place (A2-PRIN4546)	12-Jan-22	08:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4552 Princeton Place (A2-PRIN4552)	12-Jan-22	08:28	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4553 Princeton Place (A2-PRIN4553)	12-Jan-22	09:55	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4563 Princeton Place (A2-PRIN4563)	12-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4564 Princeton Place (A2-PRIN4564)	12-Jan-22	09:57	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4570 Princeton Place (A2-PRIN4570)	12-Jan-22	09:57	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1019 Saratoga Boulevard (A2-SARA1019)	12-Jan-22	08:32	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1023 Saratoga Boulevard (A2-SARA1023)	12-Jan-22	08:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## Section 2b.1 Flushing Records and Distribution System Pressure Logs During Residential Flushing

**Flushing Zone A2**

2022-01-10 - 2022-01-19

Flushing Zone A2	1025 Saratoga Boulevard (A2-SARA1025)	12-Jan-22	08:18	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1029 Saratoga Boulevard (A2-SARA1029)	12-Jan-22	08:27	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1033 Saratoga Boulevard (A2-SARA1033)	12-Jan-22	10:47	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1008 Tennessee Lane (A2-TENN1008)	12-Jan-22	08:53	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1009 Tennessee Lane (A2-TENN1009)	12-Jan-22	09:01	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1010 Tennessee Lane (A2-TENN1010)	12-Jan-22	13:05	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1013 Tennessee Lane (A2-TENN1013)	12-Jan-22	10:03	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1014 Tennessee Lane (A2-TENN1014)	12-Jan-22	11:16	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1028 Tennessee Street (A2-TENN1028)	12-Jan-22	13:43	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1030 Tennessee Street (A2-TENN1030)	12-Jan-22	14:01	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1032 Tennessee Street (A2-TENN1032)	12-Jan-22	14:46	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1036 Tennessee Street (A2-TENN1036)	12-Jan-22	14:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1038 Tennessee Street (A2-TENN1038)	12-Jan-22	14:46	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1042 Tennessee Street (A2-TENN1042)	12-Jan-22	13:55	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1046 Tennessee Street (A2-TENN1046)	12-Jan-22	14:32	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4904 Tomahawk Street (A2-TOMA4904)	12-Jan-22	09:43	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4905 Tomahawk Street (A2-TOMA4905)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4906 Tomahawk Street (A2-TOMA4906)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4909 Tomahawk Street (A2-TOMA4909)	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4910 Tomahawk Street (A2-TOMA4910)	12-Jan-22	10:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4911 Tomahawk Street (A2-TOMA4911)	12-Jan-22	10:17	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4912 Tomahawk Street (A2-TOMA4912)	12-Jan-22	11:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4915 Tomahawk Street (A2-TOMA4915)	12-Jan-22	10:18	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4916 Tomahawk Street (A2-TOMA4916)	12-Jan-22	20:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4917 Tomahawk Street (A2-TOMA4917)	12-Jan-22	10:57	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4918 Tomahawk Street (A2-TOMA4918)	12-Jan-22	08:25	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4921 Tomahawk Street (A2-TOMA4921)	12-Jan-22	20:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4922 Tomahawk Street (A2-TOMA4922)	12-Jan-22	21:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4923 Tomahawk Street (A2-TOMA4923)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4924 Tomahawk Street (A2-TOMA4924)	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4927 Tomahawk Street (A2-TOMA4927)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4928 Tomahawk Street (A2-TOMA4928)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4929 Tomahawk Street (A2-TOMA4929)	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4930 Tomahawk Street (A2-TOMA4930)	12-Jan-22	08:11	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4931 Tomahawk Street (A2-TOMA4931)	12-Jan-22	07:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4934 Tomahawk Street (A2-TOMA4934)	12-Jan-22	08:11	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4935 Tomahawk Street (A2-TOMA4935)	12-Jan-22	07:58	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4940 Tomahawk Street (A2-TOMA4940)	12-Jan-22	07:58	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4941 Tomahawk Street (A2-TOMA4941)	12-Jan-22	07:52	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4944 Tomahawk Street (A2-TOMA4944)	12-Jan-22	07:58	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4945 Tomahawk Street (A2-TOMA4945)	12-Jan-22	08:16	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4946 Tomahawk Street (A2-TOMA4946)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4949 Tomahawk Street (A2-TOMA4949)	12-Jan-22	09:28	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4950 Tomahawk Street (A2-TOMA4950)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4951 Tomahawk Street (A2-TOMA4951)	12-Jan-22	09:36	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4952 Tomahawk Street (A2-TOMA4952)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4955 Tomahawk Street (A2-TOMA4955)	12-Jan-22	10:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Section 2b.1 Flushing Records and Distribution System Pressure Logs During Residential Flushing



**Flushing Zone A2**

2022-01-10 - 2022-01-19

Flushing Zone A2	4956 Tomahawk Street (A2-TOMA4956)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4957 Tomahawk Street (A2-TOMA4957)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4959 Tomahawk Street (A2-TOMA4959)	12-Jan-22	08:33	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4960 Tomahawk Street (A2-TOMA4960)	12-Jan-22	07:59	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4965 Tomahawk Street (A2-TOMA4965)	12-Jan-22	08:29	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4966 Tomahawk Street (A2-TOMA4966)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4967 Tomahawk Street (A2-TOMA4967)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4970 Tomahawk Street (A2-TOMA4970)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4971 Tomahawk Street (A2-TOMA4971)	12-Jan-22	11:27	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4973 Tomahawk Street (A2-TOMA4973)	12-Jan-22	08:55	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4974 Tomahawk Street (A2-TOMA4974)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4977 Tomahawk Street (A2-TOMA4977)	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5684 Vestal Lane (A2-VEST5684)	12-Jan-22	08:27	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5688 Vestal Lane (A2-VEST5688)	12-Jan-22	08:31	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5690 Vestal Lane (A2-VEST5690)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5692 Vestal Lane (A2-VEST5692)	12-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5696 Vestal Lane (A2-VEST5696)	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5698 Vestal Lane (A2-VEST5698)	12-Jan-22	13:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5702 Vestal Lane (A2-VEST5702)	12-Jan-22	14:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5704 Vestal Lane (A2-VEST5704)	12-Jan-22	14:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5706 Vestal Lane (A2-VEST5706)	12-Jan-22	14:37	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	5710 Vestal Lane (A2-VEST5710)	12-Jan-22	14:33	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4904 Wasp Boulevard (A2-WASP4904)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4906 Wasp Boulevard (A2-WASP4906)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4910 Wasp Boulevard (A2-WASP4910)	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4912 Wasp Boulevard (A2-WASP4912)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4916 Wasp Boulevard (A2-WASP4916)	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4918 Wasp Boulevard (A2-WASP4918)	12-Jan-22	08:03	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4922 Wasp Boulevard (A2-WASP4922)	12-Jan-22	09:14	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4924 Wasp Boulevard (A2-WASP4924)	12-Jan-22	09:05	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4928 Wasp Boulevard (A2-WASP4928)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4930 Wasp Boulevard (A2-WASP4930)	12-Jan-22	07:50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4934 Wasp Boulevard (A2-WASP4934)	12-Jan-22	07:50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4940 Wasp Boulevard (A2-WASP4940)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4944 Wasp Boulevard (A2-WASP4944)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4946 Wasp Boulevard (A2-WASP4946)	12-Jan-22	08:06	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4950 Wasp Boulevard (A2-WASP4950)	12-Jan-22	08:27	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4952 Wasp Boulevard (A2-WASP4952)	12-Jan-22	09:55	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4956 Wasp Boulevard (A2-WASP4956)	19-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4960 Wasp Boulevard (A2-WASP4960)	12-Jan-22	08:14	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4964 Wasp Boulevard (A2-WASP4964)	12-Jan-22	07:55	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4972 Wasp Boulevard (A2-WASP4972)	12-Jan-22	11:42	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4976 Wasp Boulevard (A2-WASP4976)	12-Jan-22	10:27	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4980 Wasp Boulevard (A2-WASP4980)	12-Jan-22	09:24	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	4984 Wasp Boulevard (A2-WASP4984)	12-Jan-22	09:32	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1007 West Virginia Lane (A2-WEST1007)	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	1009 West Virginia Lane (A2-WEST1009)	12-Jan-22	10:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Flushing Zone A2**  
2022-01-10 - 2022-01-19

Flushing Zone A2	1013 West Virginia Lane (A2-WEST1013)	12-Jan-22	10:50	✓	□
Flushing Zone A2	1003 West Virginia Street (A2-WEST1003)	12-Jan-22	08:34	✓	□
Flushing Zone A2	1020 West Virginia Street (A2-WEST1020)	12-Jan-22	09:37	✓	□
Flushing Zone A2	1024 West Virginia Street (A2-WEST1024)	12-Jan-22	09:31	✓	□
Flushing Zone A2	1026 West Virginia Street (A2-WEST1026)	12-Jan-22	08:08	✓	□
Flushing Zone A2	1027 West Virginia Street (A2-WEST1027)	12-Jan-22	10:28	✓	□
Flushing Zone A2	1029 West Virginia Street (A2-WEST1029)	12-Jan-22	10:57	✓	□
Flushing Zone A2	1030 West Virginia Street (A2-WEST1030)	12-Jan-22	08:05	✓	□
Flushing Zone A2	1032 West Virginia Street (A2-WEST1032)	12-Jan-22	08:31	✓	□
Flushing Zone A2	1033 West Virginia Street (A2-WEST1033)	12-Jan-22	10:00	✓	□
Flushing Zone A2	1036 West Virginia Street (A2-WEST1036)	12-Jan-22	08:32	✓	□
Flushing Zone A2	1037 West Virginia Street (A2-WEST1037)	12-Jan-22	10:00	✓	□
Flushing Zone A2	1038 West Virginia Street (A2-WEST1038)	12-Jan-22	11:08	✓	□
Flushing Zone A2	1039 West Virginia Street (A2-WEST1039)	12-Jan-22	09:24	✓	□
Flushing Zone A2	1040 West Virginia Street (A2-WEST1040)	12-Jan-22	10:39	✓	□
Flushing Zone A2	1043 West Virginia Street (A2-WEST1043)	12-Jan-22	08:00	✓	□
Flushing Zone A2	5940 Wildcat Lane (A2-WILD5940)	12-Jan-22	08:45	✓	□
Flushing Zone A2	5944 Wildcat Lane (A2-WILD5944)	12-Jan-22	10:17	✓	□
Flushing Zone A2	5948 Wildcat Lane (A2-WILD5948)	12-Jan-22	10:21	✓	□
Flushing Zone A2	5952 Wildcat Lane (A2-WILD5952)	12-Jan-22	11:00	✓	□
Flushing Zone A2	5954 Wildcat Lane (A2-WILD5954)	12-Jan-22	11:00	✓	□
Flushing Zone A2	5960 Wildcat Lane (A2-WILD5960)	12-Jan-22	10:43	✓	□
Flushing Zone A2	4748 Yorktown Boulevard (A2-YORK4748)	12-Jan-22	08:02	✓	□
Flushing Zone A2	4756 Yorktown Boulevard (A2-YORK4756)	12-Jan-22	09:00	✓	□
Flushing Zone A2	4764 Yorktown Boulevard (A2-YORK4764)	12-Jan-22	08:40	✓	□
Flushing Zone A2	4770 Yorktown Boulevard (A2-YORK4770)	12-Jan-22	10:44	✓	□
Flushing Zone A2	4778 Yorktown Boulevard (A2-YORK4778)	12-Jan-22	08:10	✓	□
Flushing Zone A2	4784 Yorktown Boulevard (A2-YORK4784)	12-Jan-22	09:00	✓	□
Flushing Zone A2	4786 Yorktown Boulevard (A2-YORK4786)	12-Jan-22	09:00	✓	□
Flushing Zone A2	4790 Yorktown Boulevard (A2-YORK4790)	12-Jan-22	10:24	✓	□
Flushing Zone A2	4792 Yorktown Boulevard (A2-YORK4792)	12-Jan-22	08:51	✓	□
Flushing Zone A2	4806 Yorktown Boulevard (A2-YORK4806)	12-Jan-22	10:36	✓	□
Flushing Zone A2	4808 Yorktown Boulevard (A2-YORK4808)	12-Jan-22	11:00	✓	□
Flushing Zone A2	4812 Yorktown Boulevard (A2-YORK4812)	12-Jan-22	12:00	✓	□
Flushing Zone A2	4818 Yorktown Boulevard (A2-YORK4818)	12-Jan-22	11:35	✓	□
Flushing Zone A2	4824 Yorktown Boulevard (A2-YORK4824)	12-Jan-22	11:15	✓	□
Flushing Zone A2	4830 Yorktown Boulevard (A2-YORK4830)	12-Jan-22	09:27	✓	□
Flushing Zone A2	4838 Yorktown Boulevard (A2-YORK4838)	14-Jan-22	16:35	✓	□
Flushing Zone A2	4844 Yorktown Boulevard (A2-YORK4844)	12-Jan-22	10:36	✓	□
Flushing Zone A2	4846 Yorktown Boulevard (A2-YORK4846)	12-Jan-22	10:37	✓	□
Flushing Zone A2	4850 Yorktown Boulevard (A2-YORK4850)	12-Jan-22	08:50	✓	□
Flushing Zone A2	4852 Yorktown Boulevard (A2-YORK4852)	12-Jan-22	08:35	✓	□

**Key**

Not Started
No Access
In Progress



**Flushing Zone A2**

2021-12-12 - 2022-01-27

Total Facilities	Total Facilities Flushed	Percent Complete	No Access	Flushed on Selected Dates
114	114	100.0 %	0	114

Zone	Neighborhood	Address	Appointment		Arrive Date	Start Time	Certified	Summary General Notes	Unable To Access	Access Reason
			Date/Time							
Flushing Zone A2		BLDG 530 - Ford Island CDC, B350			12-Jan-22	16:16	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		BLDG 576 - NUWC Building, Wasp Blvd			12-Jan-22	00:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 1218, OHANA COMMUNITY			27-Jan-22	00:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 1219, OHANA COMMUNITY			27-Jan-22	10:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 130, NOAA FACILITY (A2-)			18-Jan-22	00:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 133, NUWC BLDG FORD ISLAND			12-Jan-22	07:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 1434, Navy LODGE, 1275			12-Jan-22	08:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 166A, NOAA FACILITY (A2-)			12-Jan-22	08:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 167B, NUWC BLDG FORD ISLAND			18-Jan-22	07:40	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 169, OPERATIONAL STORAGE (A2-)			18-Jan-22	10:30	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 170B, NUWC BLDG FORD ISLAND			18-Jan-22	07:40	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 174B, NSWG-3 / PACOM WHSE			18-Jan-22	11:12	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 176, NOAA FACILITY, 1845 Wasp			13-Jan-22	09:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 184, WATERFRONT OPERATION			13-Jan-22	08:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 187, NAVY LODGE ANNEX (A2-)			12-Jan-22	08:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 205205, WATER DISTRIBUTION			21-Jan-22	00:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 205206, FIRE PROTECTION			21-Jan-22	00:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 205207, REPAIR SHOP STORAGE			21-Jan-22	00:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 205208, ELECTRIC POWER PLANT			21-Jan-22	00:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 208A, OPERATIONAL ADMIN			18-Jan-22	09:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 212, MWR GOLF COURSE MAINT			19-Jan-22	08:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 217, WTR TRANS/HAZ MAT STRG			18-Jan-22	00:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 219, DAMAGE CONTROL			18-Jan-22	00:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 220A, DAMAGE CONTROL			18-Jan-22	10:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 221A, BRIG STORAGE BUILDING			13-Jan-22	08:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 223A, ATG SHOP (A2-BLDG223A)			18-Jan-22	13:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 250A, STNDBY GEN BLDG (A2-)			18-Jan-22	10:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 26, ATG ADMIN/TRAINING BLDG			17-Jan-22	13:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 264, BOAT MAINTENANCE/SHOP			18-Jan-22	00:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 26A, SSB/N/TEAM TRAINER (A2-)			12-Jan-22	00:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 28, BUNGALOW (A2-BLDG0028)			18-Jan-22	08:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 284A, ENGINE TEST CELL (A2-)			18-Jan-22	00:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 289, NAVY LODGE LAUNDRY			12-Jan-22	08:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 293, PW UTILITY SYS STORAGE			21-Jan-22	12:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 29A, BUNGALOW (A2-)			18-Jan-22	11:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 3, WATERFRONT OPS SUPPORT			18-Jan-22	10:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 31A, BUNGALOW (A2-)			18-Jan-22	00:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 32, BUNGALOW (A2-BLDG0032)			18-Jan-22	09:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 37, PEARL HARBOR AVIATION			14-Jan-22	14:13	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 39, SSB(N) TEAM TRAINER, 198			12-Jan-22	09:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 42, JIATFW WATERFRONT			14-Jan-22	13:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Flushing Zone A2		Building 43, WAREHOUSE (A2-BLDG0043)			18-Jan-22	00:00	<input checked="" type="checkbox"/>		<input type="checkbox"/>	

**Flushing Zone A2**

2021-12-12 - 2022-01-27

Flushing Zone A2	Building 442,WATER TRANS-FERRY	18-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 451,PUMPING STA FI-42 FORD IS	21-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 457,SHOWER/LOCKER NEAR	18-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 459,NUWC BLDG FORD ISLAND	12-Jan-22	08:19	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 461,TRAINER SUPPORT	12-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 462,BRIG - FORD ISLAND (A2-	13-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 463,NSTCP CLASSROOM/ADMIN	18-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 464,NSTCP DAMAGE CONTROL	18-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 464A,FIRE FIGHTING SCH	18-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 465,FIRE FIGHTING TRAINER	18-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 467,FORD ISLAND FIRE STATION,	12-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 468,SUBSTA BLDG TI-5 FORD IS	14-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 469,PIER UTILITY BLDG (A2-	21-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 470,GUARD HOUSE - F5 (A2-	18-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 4989A,COMMUNITY CENTER (A2-	13-Jan-22	15:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 4989B,COMMUNITY CENTER (A2-	13-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 510,PACIFIC WARFIGHTING	18-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 54,OPERATIONAL TRAINER (A2-	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 55,9BARRACKS EM (A2-	13-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 570,CHILD DEVELOPMENT	12-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 571,INFANT AREA SHADE	12-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 572,PRE-TODDLER AREA SHADE	12-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 573,CDC TODDLER AREA SHADE	12-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 574,CDC PRESCHOOL AREA	12-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 575,CDC INFANT/PRE-TODDLER	12-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 577,CDC PRESCHOOL STORAGE	12-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 580,CDC COVERED WALKWAY	12-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 634,GUARD SHACK FOX 13	18-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 68C,ADMIN (A2-BLDG068C)	18-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 75,NEX AND FACS FAC, 75	18-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 76,ADMIN BLDG (A2-BLDG0076)	17-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 77,DISA PACIFIC OPERATIONS	18-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 78,NAVY LODGE (A2-BLDG0078)	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 79,PEARL HARBOR AVIATION	14-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 79A,STORAGE SHED (A2-	17-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 830,SWITCH STA T BLDG/FORD	14-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 832,TELCOM HUT-FIN FORD IS	19-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 833,SWGE LIFTSTA FI-43 BLDG	21-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 838,SWGE LIFTSTA FI-44 BLDG	21-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 856,SEWAGE LIFT STA FI-45 (A2-	21-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 858,SWGE LIFTSTA FI-46 BLDG	21-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 86,TORP INST BLDG (A2-	18-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 860,SWGE LIFTSTA FI-48 BLDG	21-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 87,NMCI BUILDING (A2-	18-Jan-22	15:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 88,ALL HANDS ARIZONA CLUB	14-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 89A,FORD ISLAND CONFERENCE	12-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building 90A,BUNGALOW (A2-	18-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>

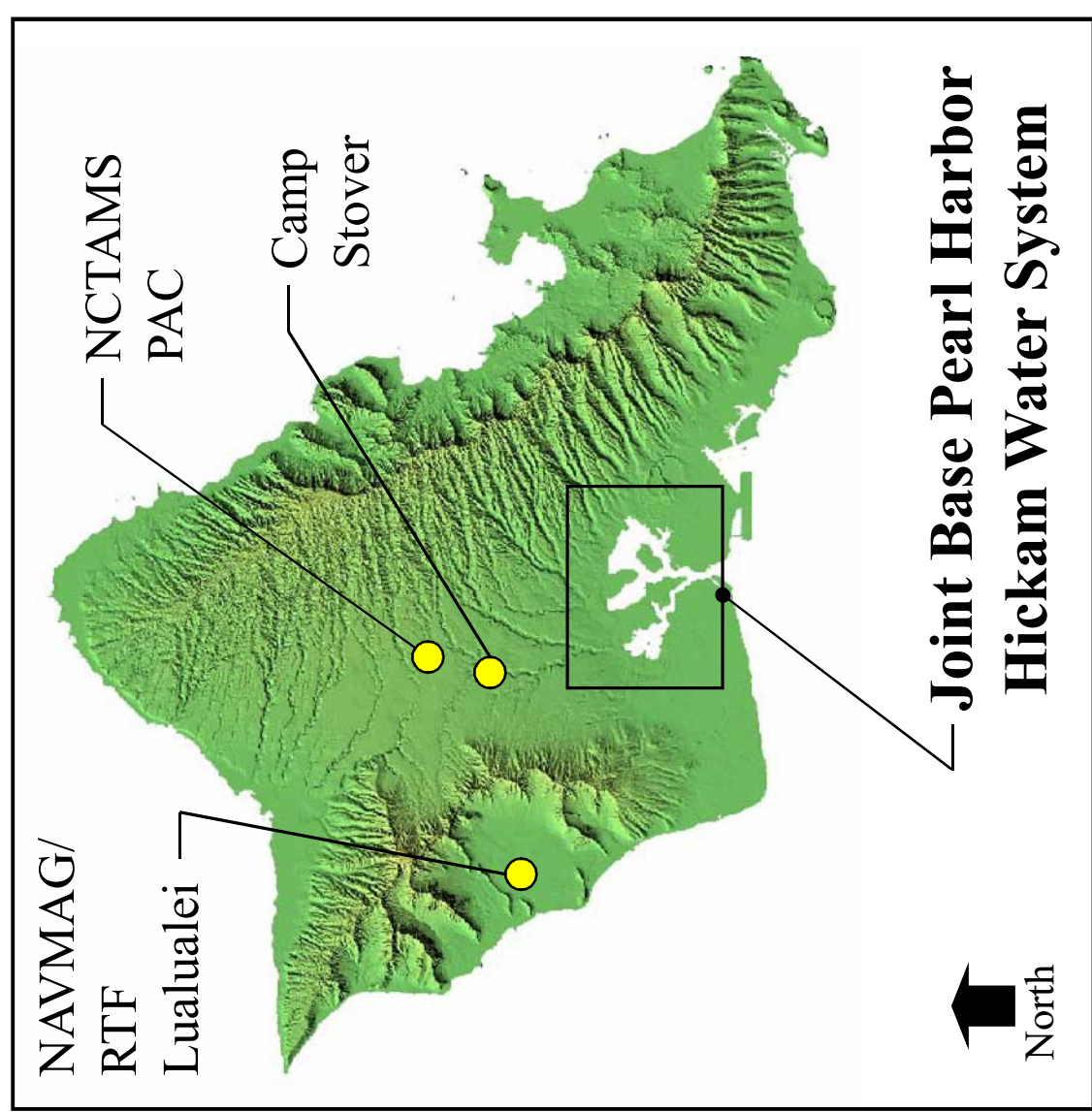
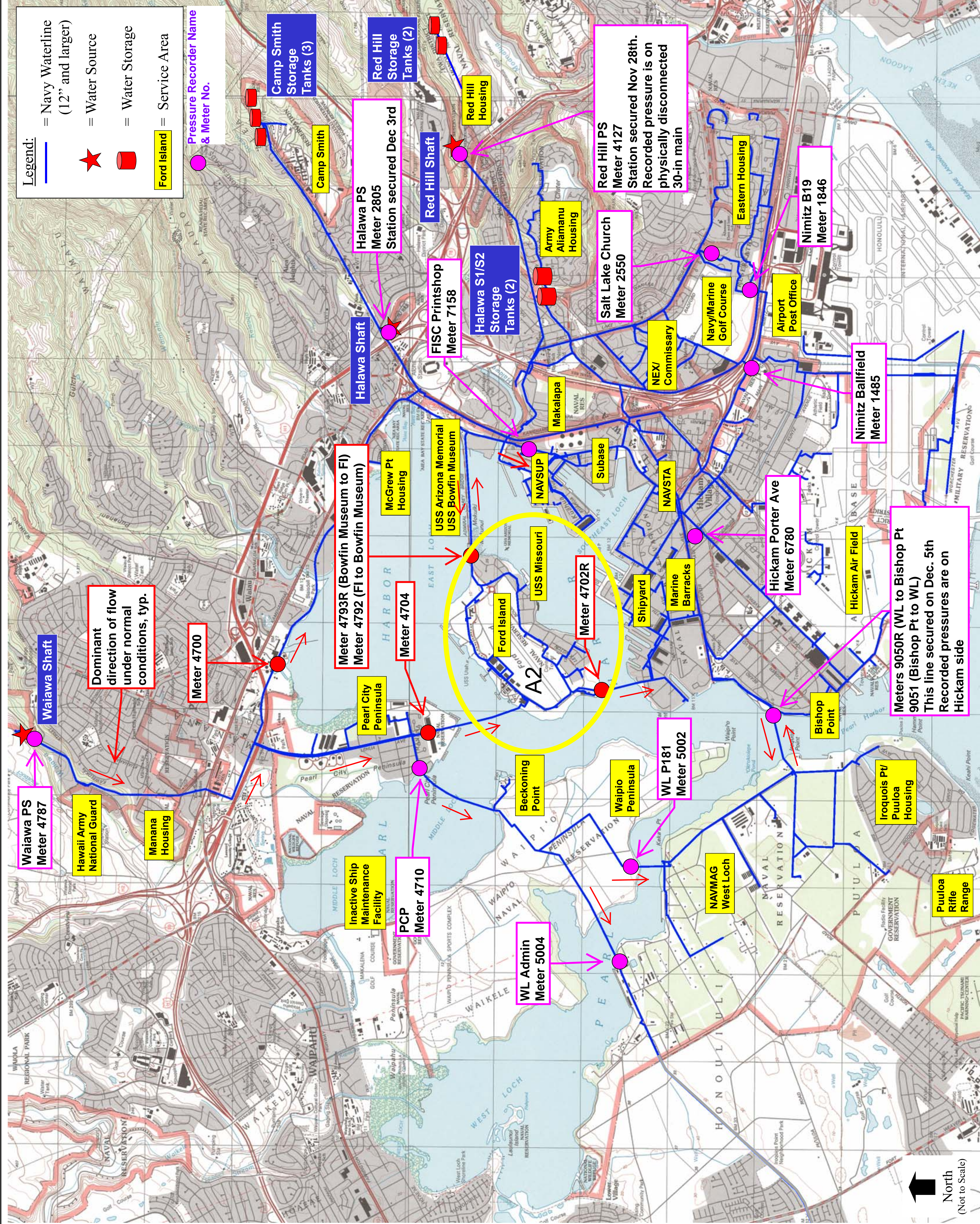
**Flushing Zone A2**  
2021-12-12 - 2022-01-27

Flushing Zone A2	Building 97, STORAGE (VACANT) (A2-	14-Jan-22	13:29	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building Q13, BOAT REPAIR SHOP (A2-	18-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building Q14, BOAT REPAIR SHOP (A2-	18-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S11, SWITCH STA TC-1 FORD	14-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S145, MAGAZINE SMALL	18-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S172, SOPAC ARMORY (A2-	18-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S180, MWR GROUNDS	26-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S181, BOMB SHELTER (A2-	18-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S235, OPERATIONAL STORAGE	14-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S236, HAZ/FLAM STORAGE (A2-	14-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S251, STA TI-3/FORD ISLAND (A2-	14-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S253, STA TG-1 BLDG FORD	14-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S254, TRANSF STATION TG-	19-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S255, SWITCH STA TB-1/FORD IS	14-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S256, STA TI-2/FORD ISLAND (A2-	14-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S259, TRANS STATION TF-	19-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S285, STA TF-6 FORD ISLAND (A2-	14-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S287, TRANSF STATION TF-	19-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S290, TRANSF STATION TL-	21-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S296, SUBSTATION TF-5/FORD IS	14-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S831, SWITCH STA TD	14-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S84, HISTORIC AIRCRAFT CNTRL	15-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building S99A, ADMIN OFC (A2-	18-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	Building TD1, XFMR STA TD-1 BLDG (A2-	15-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone A2	NUWC, 171B Avocet St and Ranger Loop	12-Dec-21	09:46	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Key**

<input type="checkbox"/>	Not Started
<input type="checkbox"/>	No Access
<input type="checkbox"/>	In Progress
<input type="checkbox"/>	Complete





# NAVFAC HAWAII

## Joint Base Pearl Harbor – Hickam Water System

NAVFAC Hawaii owns and operates a total of 4 potable water systems on the island of Oahu. These systems include Joint Base Pearl Harbor – Hickam (JBPHH), NAVMAG & RTF Lualualei, NCTAMS PAC, and Camp Stover.

The largest of these systems is JBPHH, which includes 3 water sources located at Waiawa, Halawa, and Red Hill. The transmission/ distribution system needed to convey water throughout the complex consists of approximately 250 miles of pipelines ranging in size from 4 inches to 42 inches in diameter.

Water is stored in two 6 million gallon (MG) reservoirs located at Halawa. Smaller storage tanks are also located at Red Hill and Camp Smith.

On a daily basis, these three sources provide approximately 12 to 22 MG of potable water to customers throughout JBP HH, which includes over 60,000 personnel (military and civilian), and numerous industrial users. (rev 2018 11 29)





Date	Time	Date/Time	A2				
			4787	4710	9050	7158	6780
28-Dec-21	0:00:00	28-Dec-2100:00	67.0	76.4	67.7	71.0	61.7
28-Dec-21	0:30:00	28-Dec-2100:00	67.0	77.0	68.0	71.1	62.0
28-Dec-21	1:00:00	28-Dec-2101:00	67.0	77.0	68.8	71.2	62.0
28-Dec-21	1:30:00	28-Dec-2101:00	67.0	77.0	68.0	71.0	62.0
28-Dec-21	2:00:00	28-Dec-2102:00	67.0	77.0	68.6	71.3	62.0
28-Dec-21	2:30:00	28-Dec-2102:00	67.0	77.3	68.9	71.3	62.0
28-Dec-21	3:00:00	28-Dec-2103:00	68.6	77.7	69.0	71.8	62.6
28-Dec-21	3:30:00	28-Dec-2103:00	69.0	78.0	69.0	72.0	62.8
28-Dec-21	4:00:00	28-Dec-2104:00	69.0	77.8	69.0	72.0	62.9
28-Dec-21	4:30:00	28-Dec-2104:00	69.0	77.6	69.0	72.0	63.0
28-Dec-21	5:00:00	28-Dec-2105:00	69.0	77.0	69.0	71.7	63.0
28-Dec-21	5:30:00	28-Dec-2105:00	69.0	77.3	69.0	72.0	63.0
28-Dec-21	6:00:00	28-Dec-2106:00	69.0	78.0	69.0	72.0	63.0
28-Dec-21	6:30:00	28-Dec-2106:00	69.0	77.8	69.3	72.0	63.0
28-Dec-21	7:00:00	28-Dec-2107:00	69.0	77.0	69.0	72.0	63.0
28-Dec-21	7:30:00	28-Dec-2107:00	69.0	77.0	69.0	72.0	62.4
28-Dec-21	8:00:00	28-Dec-2108:00	68.7	77.6	69.0	71.4	63.0
28-Dec-21	8:30:00	28-Dec-2108:00	68.9	77.0	69.0	71.7	62.7
28-Dec-21	9:00:00	28-Dec-2109:00	69.0	77.0	69.0	72.0	63.0
28-Dec-21	9:30:00	28-Dec-2109:00	69.0	77.5	69.4	72.0	63.0
28-Dec-21	10:00:00	28-Dec-2110:00	69.0	78.0	69.7	72.4	64.0
28-Dec-21	10:30:00	28-Dec-2110:00	69.0	78.0	70.0	72.7	63.7
28-Dec-21	11:00:00	28-Dec-2111:00	68.0	77.4	70.0	72.1	63.4
28-Dec-21	11:30:00	28-Dec-2111:00	68.8	78.0	70.4	73.0	64.0
28-Dec-21	12:00:00	28-Dec-2112:00	68.8	78.0	70.6	73.0	64.0
28-Dec-21	12:30:00	28-Dec-2112:00	68.8	78.6	70.3	73.0	64.7
28-Dec-21	13:00:00	28-Dec-2113:00	68.8	78.7	71.0	73.0	65.0
28-Dec-21	13:30:00	28-Dec-2113:00	68.8	79.0	71.0	73.6	65.0
28-Dec-21	14:00:00	28-Dec-2114:00	68.8	79.0	71.1	74.0	65.0
28-Dec-21	14:30:00	28-Dec-2114:00	68.9	79.0	71.3	74.0	65.0
28-Dec-21	15:00:00	28-Dec-2115:00	70.8	79.3	71.0	74.0	65.0
28-Dec-21	15:30:00	28-Dec-2115:00	64.0	76.8	70.3	73.4	63.8
28-Dec-21	16:00:00	28-Dec-2116:00	60.2	72.2	68.5	70.0	62.3
28-Dec-21	16:30:00	28-Dec-2116:00	60.2	72.0	68.0	70.0	62.0
28-Dec-21	17:00:00	28-Dec-2117:00	60.2	71.2	68.0	69.5	61.7
28-Dec-21	17:30:00	28-Dec-2117:00	60.2	71.0	67.2	69.0	61.0
28-Dec-21	18:00:00	28-Dec-2118:00	60.2	71.0	67.0	69.0	61.0
28-Dec-21	18:30:00	28-Dec-2118:00	58.5	70.2	66.5	68.4	60.6
28-Dec-21	19:00:00	28-Dec-2119:00	58.2	70.0	66.0	68.3	60.0
28-Dec-21	19:30:00	28-Dec-2119:00	58.2	69.2	66.0	67.4	59.4
28-Dec-21	20:00:00	28-Dec-2120:00	58.2	69.0	65.4	67.0	59.0
28-Dec-21	20:30:00	28-Dec-2120:00	60.4	69.8	65.0	68.8	58.4
28-Dec-21	21:00:00	28-Dec-2121:00	66.7	76.0	66.7	70.4	61.3
28-Dec-21	21:30:00	28-Dec-2121:00	66.7	76.0	68.0	70.5	61.5
28-Dec-21	22:00:00	28-Dec-2122:00	66.7	76.0	67.7	71.0	61.3
28-Dec-21	22:30:00	28-Dec-2122:00	66.7	76.0	67.7	70.3	61.5
28-Dec-21	23:00:00	28-Dec-2123:00	66.7	76.0	67.7	70.8	61.1
28-Dec-21	23:30:00	28-Dec-2123:00	66.7	76.3	68.3	71.0	62.0
29-Dec-21	0:00:00	29-Dec-2100:00	66.7	76.0	68.0	71.0	61.7
29-Dec-21	0:30:00	29-Dec-2100:00	66.7	76.3	68.0	71.0	62.0
29-Dec-21	1:00:00	29-Dec-2101:00	66.7	76.0	68.0	71.0	62.0
29-Dec-21	1:30:00	29-Dec-2101:00	66.7	76.8	68.2	71.0	62.0
29-Dec-21	2:00:00	29-Dec-2102:00	66.7	77.0	68.7	71.7	62.4
29-Dec-21	2:30:00	29-Dec-2102:00	66.8	77.0	69.0	72.0	63.0
29-Dec-21	3:00:00	29-Dec-2103:00	68.7	77.6	69.0	72.0	63.0

29-Dec-21	3:30:00	29-Dec-2103:00	68.7	77.4	69.1	72.0	63.0
29-Dec-21	4:00:00	29-Dec-2104:00	68.7	78.0	69.2	72.0	63.0
29-Dec-21	4:30:00	29-Dec-2104:00	68.7	77.3	69.0	72.0	63.3
29-Dec-21	5:00:00	29-Dec-2105:00	68.7	77.0	68.5	71.4	62.7
29-Dec-21	5:30:00	29-Dec-2105:00	68.7	77.0	68.0	71.0	62.0
29-Dec-21	6:00:00	29-Dec-2106:00	68.7	76.7	68.3	71.0	62.0
29-Dec-21	6:30:00	29-Dec-2106:00	68.7	77.0	68.0	71.3	62.0
29-Dec-21	7:00:00	29-Dec-2107:00	68.7	77.0	68.0	71.0	62.0
29-Dec-21	7:30:00	29-Dec-2107:00	68.7	76.7	68.0	70.7	61.7
29-Dec-21	8:00:00	29-Dec-2108:00	68.5	76.1	68.0	70.8	61.8
29-Dec-21	8:30:00	29-Dec-2108:00	66.6	76.7	68.0	71.0	61.9
29-Dec-21	9:00:00	29-Dec-2109:00	66.6	76.9	68.0	71.0	62.0
29-Dec-21	9:30:00	29-Dec-2109:00	66.6	76.0	68.0	71.0	62.0
29-Dec-21	10:00:00	29-Dec-2110:00	66.6	76.9	68.0	71.0	62.0
29-Dec-21	10:30:00	29-Dec-2110:00	66.6	76.5	68.0	71.0	62.0
29-Dec-21	11:00:00	29-Dec-2111:00	66.6	75.1	68.3	71.0	61.7
29-Dec-21	11:30:00	29-Dec-2111:00	66.6	75.8	68.0	71.0	62.0
29-Dec-21	12:00:00	29-Dec-2112:00	66.6	76.3	68.0	71.0	62.0
29-Dec-21	12:30:00	29-Dec-2112:00	66.6	76.2	68.0	71.0	62.0
29-Dec-21	13:00:00	29-Dec-2113:00	68.3	77.0	69.2	71.7	62.8
29-Dec-21	13:30:00	29-Dec-2113:00	68.6	77.0	69.0	72.0	63.0
29-Dec-21	14:00:00	29-Dec-2114:00	68.6	77.0	69.0	72.0	63.0
29-Dec-21	14:30:00	29-Dec-2114:00	68.6	77.8	69.7	72.0	63.9
29-Dec-21	15:00:00	29-Dec-2115:00	68.6	78.0	70.0	72.6	64.0
29-Dec-21	15:30:00	29-Dec-2115:00	68.6	78.0	70.0	72.5	64.0
29-Dec-21	16:00:00	29-Dec-2116:00	68.6	78.0	70.0	73.0	64.0
29-Dec-21	16:30:00	29-Dec-2116:00	68.6	78.0	71.0	73.0	64.0
29-Dec-21	17:00:00	29-Dec-2117:00	68.6	78.0	71.0	73.0	64.0
29-Dec-21	17:30:00	29-Dec-2117:00	68.6	78.0	70.3	73.0	64.0
29-Dec-21	18:00:00	29-Dec-2118:00	68.6	78.0	70.9	73.0	64.3
29-Dec-21	18:30:00	29-Dec-2118:00	68.6	78.0	70.3	73.0	64.0
29-Dec-21	19:00:00	29-Dec-2119:00	68.6	78.3	70.0	73.0	64.0
29-Dec-21	19:30:00	29-Dec-2119:00	68.6	78.0	70.0	73.0	64.0
29-Dec-21	20:00:00	29-Dec-2120:00	68.6	78.0	70.3	73.0	64.0
29-Dec-21	20:30:00	29-Dec-2120:00	68.6	78.0	70.3	73.0	64.0
29-Dec-21	21:00:00	29-Dec-2121:00	68.6	78.0	70.5	73.0	64.3
29-Dec-21	21:30:00	29-Dec-2121:00	68.6	78.0	71.0	73.1	65.0
29-Dec-21	22:00:00	29-Dec-2122:00	68.6	78.5	71.0	73.7	65.0
29-Dec-21	22:30:00	29-Dec-2122:00	66.4	78.7	71.0	73.9	64.7
29-Dec-21	23:00:00	29-Dec-2123:00	59.4	72.2	69.3	70.0	62.0
29-Dec-21	23:30:00	29-Dec-2123:00	59.4	72.0	68.0	70.0	62.0
30-Dec-21	0:00:00	30-Dec-2100:00	59.4	71.6	68.0	69.7	62.0
30-Dec-21	0:30:00	30-Dec-2100:00	59.4	71.0	68.0	70.0	62.0
30-Dec-21	1:00:00	30-Dec-2101:00	59.4	71.0	68.0	69.0	62.0
30-Dec-21	1:30:00	30-Dec-2101:00	59.4	71.0	68.0	69.0	61.4
30-Dec-21	2:00:00	30-Dec-2102:00	59.4	71.0	67.4	69.0	61.0
30-Dec-21	2:30:00	30-Dec-2102:00	59.4	70.7	67.0	69.0	61.0
30-Dec-21	3:00:00	30-Dec-2103:00	59.4	71.0	67.0	69.0	61.0
30-Dec-21	3:30:00	30-Dec-2103:00	59.4	70.2	67.0	69.0	61.0
30-Dec-21	4:00:00	30-Dec-2104:00	57.6	69.7	66.3	68.0	60.2
30-Dec-21	4:30:00	30-Dec-2104:00	57.4	69.2	66.0	67.4	60.0
30-Dec-21	5:00:00	30-Dec-2105:00	66.0	73.9	67.4	69.3	60.8
30-Dec-21	5:30:00	30-Dec-2105:00	67.3	76.0	68.0	70.0	61.1
30-Dec-21	6:00:00	30-Dec-2106:00	67.3	76.0	68.0	70.1	62.0
30-Dec-21	6:30:00	30-Dec-2106:00	67.3	76.0	68.0	71.0	62.0
30-Dec-21	7:00:00	30-Dec-2107:00	67.3	76.0	68.0	71.0	62.0
30-Dec-21	7:30:00	30-Dec-2107:00	67.3	76.0	68.0	71.0	62.0
30-Dec-21	8:00:00	30-Dec-2108:00	67.3	76.0	68.0	71.0	62.0

30-Dec-21	8:30:00	30-Dec-2108:00	67.3	76.3	68.9	71.0	62.5
30-Dec-21	9:00:00	30-Dec-2109:00	67.3	76.8	69.0	71.0	63.0
30-Dec-21	9:30:00	30-Dec-2109:00	67.3	77.0	69.0	71.7	63.0
30-Dec-21	10:00:00	30-Dec-2110:00	67.3	77.0	69.0	72.0	63.0
30-Dec-21	10:30:00	30-Dec-2110:00	67.3	77.0	69.0	72.0	63.3
30-Dec-21	11:00:00	30-Dec-2111:00	67.3	77.0	69.4	72.0	63.3
30-Dec-21	11:30:00	30-Dec-2111:00	67.3	77.3	70.0	72.0	63.7
30-Dec-21	12:00:00	30-Dec-2112:00	67.3	77.6	70.0	72.0	64.0
30-Dec-21	12:30:00	30-Dec-2112:00	67.3	77.2	70.0	72.0	64.0
30-Dec-21	13:00:00	30-Dec-2113:00	68.4	77.4	70.0	72.0	64.0
30-Dec-21	13:30:00	30-Dec-2113:00	69.3	78.0	70.0	72.9	64.0
30-Dec-21	14:00:00	30-Dec-2114:00	69.3	78.0	70.0	73.0	64.0
30-Dec-21	14:30:00	30-Dec-2114:00	69.3	78.0	70.0	72.7	64.0
30-Dec-21	15:00:00	30-Dec-2115:00	69.3	78.2	70.2	73.0	64.6
30-Dec-21	15:30:00	30-Dec-2115:00	69.3	79.0	71.0	73.6	64.7
30-Dec-21	16:00:00	30-Dec-2116:00	69.3	79.0	71.0	73.7	65.0
30-Dec-21	16:30:00	30-Dec-2116:00	69.3	79.5	72.0	74.0	65.6
30-Dec-21	17:00:00	30-Dec-2117:00	69.3	80.0	72.0	74.3	66.0
30-Dec-21	17:30:00	30-Dec-2117:00	61.1	75.3	70.4	72.0	64.2
30-Dec-21	18:00:00	30-Dec-2118:00	60.3	72.0	68.9	70.8	62.8
30-Dec-21	18:30:00	30-Dec-2118:00	60.3	72.0	68.6	70.0	62.0
30-Dec-21	19:00:00	30-Dec-2119:00	60.3	71.6	68.0	69.8	61.7
30-Dec-21	19:30:00	30-Dec-2119:00	60.3	71.0	67.2	69.0	61.0
30-Dec-21	20:00:00	30-Dec-2120:00	60.0	70.9	67.0	69.0	61.0
30-Dec-21	20:30:00	30-Dec-2120:00	58.3	70.0	66.8	68.7	60.7
30-Dec-21	21:00:00	30-Dec-2121:00	58.3	70.0	66.6	68.0	60.0
30-Dec-21	21:30:00	30-Dec-2121:00	58.3	70.0	66.1	68.0	60.0
30-Dec-21	22:00:00	30-Dec-2122:00	58.3	70.0	66.0	68.0	60.0
30-Dec-21	22:30:00	30-Dec-2122:00	58.3	69.6	66.0	67.8	59.7
30-Dec-21	23:00:00	30-Dec-2123:00	58.3	69.0	66.0	67.3	59.3
30-Dec-21	23:30:00	30-Dec-2123:00	68.0	73.8	68.5	69.9	61.4
31-Dec-21	0:00:00	31-Dec-2100:00	67.7	76.2	68.0	71.0	62.0
31-Dec-21	0:30:00	31-Dec-2100:00	67.7	76.6	68.0	71.0	62.0
31-Dec-21	1:00:00	31-Dec-2101:00	67.7	76.7	68.0	71.0	62.0
31-Dec-21	1:30:00	31-Dec-2101:00	67.7	77.0	68.9	71.1	62.5
31-Dec-21	2:00:00	31-Dec-2102:00	67.7	77.0	69.0	72.0	63.0
31-Dec-21	2:30:00	31-Dec-2102:00	67.7	77.3	69.0	72.0	63.0
31-Dec-21	3:00:00	31-Dec-2103:00	67.7	78.0	69.0	72.3	63.0
31-Dec-21	3:30:00	31-Dec-2103:00	67.7	78.0	69.8	72.3	63.4
31-Dec-21	4:00:00	31-Dec-2104:00	67.7	78.0	70.0	72.1	63.7
31-Dec-21	4:30:00	31-Dec-2104:00	67.7	78.0	70.0	73.0	64.0
31-Dec-21	5:00:00	31-Dec-2105:00	67.7	78.0	70.0	72.4	63.7
31-Dec-21	5:30:00	31-Dec-2105:00	69.7	78.0	69.8	73.0	64.0
31-Dec-21	6:00:00	31-Dec-2106:00	69.7	78.2	69.2	73.0	63.7
31-Dec-21	6:30:00	31-Dec-2106:00	69.7	79.0	70.6	73.0	64.0
31-Dec-21	7:00:00	31-Dec-2107:00	69.7	79.0	70.7	73.0	64.0
31-Dec-21	7:30:00	31-Dec-2107:00	69.7	79.0	71.0	73.0	64.6
31-Dec-21	8:00:00	31-Dec-2108:00	69.7	79.0	71.0	73.3	64.7
31-Dec-21	8:30:00	31-Dec-2108:00	69.7	79.0	71.0	73.3	65.0
31-Dec-21	9:00:00	31-Dec-2109:00	69.7	79.0	71.0	73.6	65.0
31-Dec-21	9:30:00	31-Dec-2109:00	69.7	79.0	71.0	74.0	65.0
31-Dec-21	10:00:00	31-Dec-2110:00	65.2	78.5	70.3	73.0	64.6
31-Dec-21	10:30:00	31-Dec-2110:00	60.9	72.0	68.6	70.2	62.4
31-Dec-21	11:00:00	31-Dec-2111:00	60.9	72.0	68.0	70.0	62.0
31-Dec-21	11:30:00	31-Dec-2111:00	60.9	71.4	68.0	70.0	62.0
31-Dec-21	12:00:00	31-Dec-2112:00	58.9	71.0	68.0	69.5	62.0
31-Dec-21	12:30:00	31-Dec-2112:00	58.9	71.0	68.0	69.0	61.4
31-Dec-21	13:00:00	31-Dec-2113:00	58.9	71.0	67.4	69.0	61.0

31-Dec-21	13:30:00	31-Dec-2113:00	58.9	70.3	66.9	69.0	61.0
31-Dec-21	14:00:00	31-Dec-2114:00	58.9	70.0	66.8	68.1	61.0
31-Dec-21	14:30:00	31-Dec-2114:00	58.9	70.0	67.0	68.0	60.4
31-Dec-21	15:00:00	31-Dec-2115:00	58.9	70.0	66.1	68.0	60.0
31-Dec-21	15:30:00	31-Dec-2115:00	58.9	69.1	66.0	68.0	60.0
31-Dec-21	16:00:00	31-Dec-2116:00	60.9	69.4	66.6	68.0	60.0
31-Dec-21	16:30:00	31-Dec-2116:00	68.0	75.8	69.1	70.8	62.0
31-Dec-21	17:00:00	31-Dec-2117:00	68.0	77.0	68.1	71.0	62.0
31-Dec-21	17:30:00	31-Dec-2117:00	68.0	77.0	68.7	71.0	62.2
31-Dec-21	18:00:00	31-Dec-2118:00	68.0	76.2	68.7	71.0	62.4
31-Dec-21	18:30:00	31-Dec-2118:00	68.0	76.5	69.0	71.9	63.0
31-Dec-21	19:00:00	31-Dec-2119:00	68.0	77.0	69.0	71.4	63.0
31-Dec-21	19:30:00	31-Dec-2119:00	68.0	77.7	69.4	72.0	63.0
31-Dec-21	20:00:00	31-Dec-2120:00	68.0	78.0	70.0	72.2	63.9
31-Dec-21	20:30:00	31-Dec-2120:00	68.0	78.0	70.0	72.7	63.7
31-Dec-21	21:00:00	31-Dec-2121:00	68.7	78.4	71.0	73.0	64.2
31-Dec-21	21:30:00	31-Dec-2121:00	70.0	79.0	71.0	73.0	65.0
31-Dec-21	22:00:00	31-Dec-2122:00	70.0	79.0	71.0	73.6	65.0
31-Dec-21	22:30:00	31-Dec-2122:00	70.0	79.0	71.0	73.0	65.0
31-Dec-21	23:00:00	31-Dec-2123:00	70.0	79.0	71.0	73.3	65.0
31-Dec-21	23:30:00	31-Dec-2123:00	70.0	79.0	71.0	73.8	65.0
1-Jan-22	0:00:00	01-Jan-2200:00	70.0	79.0	71.0	74.0	65.0
1-Jan-22	0:30:00	01-Jan-2200:00	70.0	79.0	71.2	74.0	65.0
1-Jan-22	1:00:00	01-Jan-2201:00	70.0	79.0	71.6	74.0	65.0
1-Jan-22	1:30:00	01-Jan-2201:00	66.6	79.0	72.0	73.2	64.0
1-Jan-22	2:00:00	01-Jan-2202:00	61.8	73.7	69.4	71.0	63.0
1-Jan-22	2:30:00	01-Jan-2202:00	61.8	73.0	69.0	71.0	63.0
1-Jan-22	3:00:00	01-Jan-2203:00	61.8	73.0	69.0	71.0	63.0
1-Jan-22	3:30:00	01-Jan-2203:00	61.8	72.8	69.0	71.0	63.0
1-Jan-22	4:00:00	01-Jan-2204:00	61.8	72.3	69.0	70.7	63.0
1-Jan-22	4:30:00	01-Jan-2204:00	61.8	72.0	69.0	70.6	63.0
1-Jan-22	5:00:00	01-Jan-2205:00	61.8	72.0	69.0	70.0	63.0
1-Jan-22	5:30:00	01-Jan-2205:00	60.7	72.0	69.0	70.0	63.0
1-Jan-22	6:00:00	01-Jan-2206:00	59.7	72.0	69.0	70.0	62.0
1-Jan-22	6:30:00	01-Jan-2206:00	59.7	72.0	68.1	70.0	62.0
1-Jan-22	7:00:00	01-Jan-2207:00	59.7	71.5	67.5	69.1	61.4
1-Jan-22	7:30:00	01-Jan-2207:00	59.7	71.0	67.0	69.0	61.0
1-Jan-22	8:00:00	01-Jan-2208:00	59.7	71.0	67.0	69.0	61.0
1-Jan-22	8:30:00	01-Jan-2208:00	59.7	70.2	67.0	68.4	60.7
1-Jan-22	9:00:00	01-Jan-2209:00	59.7	70.0	67.0	68.3	61.0
1-Jan-22	9:30:00	01-Jan-2209:00	59.7	70.0	67.0	68.3	61.0
1-Jan-22	10:00:00	01-Jan-2210:00	59.7	70.0	67.0	68.0	61.0
1-Jan-22	10:30:00	01-Jan-2210:00	59.7	70.0	67.0	68.0	60.7
1-Jan-22	11:00:00	01-Jan-2211:00	57.9	70.0	66.2	68.0	60.5
1-Jan-22	11:30:00	01-Jan-2211:00	60.3	70.3	66.1	68.4	61.1
1-Jan-22	12:00:00	01-Jan-2212:00	67.4	77.0	69.0	72.0	63.4
1-Jan-22	12:30:00	01-Jan-2212:00	67.4	77.0	69.0	71.8	63.0
1-Jan-22	13:00:00	01-Jan-2213:00	67.4	77.0	69.0	71.9	63.0
1-Jan-22	13:30:00	01-Jan-2213:00	67.4	77.0	69.8	72.0	63.3
1-Jan-22	14:00:00	01-Jan-2214:00	67.4	77.9	70.0	72.0	63.7
1-Jan-22	14:30:00	01-Jan-2214:00	67.4	78.0	70.0	72.0	64.0
1-Jan-22	15:00:00	01-Jan-2215:00	68.9	78.0	70.0	73.0	64.0
1-Jan-22	15:30:00	01-Jan-2215:00	69.4	78.0	70.0	73.0	64.0
1-Jan-22	16:00:00	01-Jan-2216:00	69.4	78.0	70.4	73.0	64.0
1-Jan-22	16:30:00	01-Jan-2216:00	69.4	79.0	70.7	73.0	64.9
1-Jan-22	17:00:00	01-Jan-2217:00	69.4	79.0	71.0	73.1	65.0
1-Jan-22	17:30:00	01-Jan-2217:00	69.4	79.0	71.0	73.7	65.0
1-Jan-22	18:00:00	01-Jan-2218:00	69.4	79.0	71.7	74.0	65.0

1-Jan-22	18:30:00	01-Jan-22	18:00	69.4	79.0	71.6	74.0	65.0
1-Jan-22	19:00:00	01-Jan-22	19:00	69.4	79.0	71.0	74.0	65.0
1-Jan-22	19:30:00	01-Jan-22	19:00	69.4	79.0	71.0	74.0	65.0
1-Jan-22	20:00:00	01-Jan-22	20:00	69.4	79.0	71.0	74.0	65.2
1-Jan-22	20:30:00	01-Jan-22	20:00	69.4	79.0	71.4	74.0	65.1
1-Jan-22	21:00:00	01-Jan-22	21:00	60.2	77.6	70.0	71.4	62.2
1-Jan-22	21:30:00	01-Jan-22	21:00	60.5	72.0	69.0	71.0	63.0
1-Jan-22	22:00:00	01-Jan-22	22:00	60.5	72.0	69.0	70.9	63.0
1-Jan-22	22:30:00	01-Jan-22	22:00	60.5	72.0	69.0	70.3	63.0
1-Jan-22	23:00:00	01-Jan-22	22:30	60.5	72.0	69.0	70.0	62.9
1-Jan-22	23:30:00	01-Jan-22	22:30	60.5	72.0	68.7	70.0	62.0
2-Jan-22	0:00:00	02-Jan-22	00:00	60.5	71.9	68.0	70.0	62.0
2-Jan-22	0:30:00	02-Jan-22	00:00	60.5	71.0	68.0	70.0	62.0
2-Jan-22	1:00:00	02-Jan-22	01:00	60.5	71.0	68.0	69.3	62.0
2-Jan-22	1:30:00	02-Jan-22	01:00	60.5	71.0	68.0	69.0	62.0
2-Jan-22	2:00:00	02-Jan-22	02:00	60.5	71.0	68.0	69.0	62.0
2-Jan-22	2:30:00	02-Jan-22	02:00	60.5	71.0	68.0	69.0	61.6
2-Jan-22	3:00:00	02-Jan-22	03:00	60.5	71.0	68.0	69.0	62.0
2-Jan-22	3:30:00	02-Jan-22	03:00	59.9	71.0	68.0	69.0	61.4
2-Jan-22	4:00:00	02-Jan-22	04:00	58.4	71.0	67.3	69.0	61.0
2-Jan-22	4:30:00	02-Jan-22	04:00	58.4	71.0	67.3	69.0	61.0
2-Jan-22	5:00:00	02-Jan-22	05:00	58.4	70.6	67.0	69.0	61.0
2-Jan-22	5:30:00	02-Jan-22	05:00	58.4	70.0	67.0	68.6	61.0
2-Jan-22	6:00:00	02-Jan-22	06:00	62.8	70.0	68.3	68.2	61.4
2-Jan-22	6:30:00	02-Jan-22	06:00	69.3	70.0	70.4	72.0	63.5
2-Jan-22	7:00:00	02-Jan-22	07:00	69.3	70.0	70.0	72.0	63.7
2-Jan-22	7:30:00	02-Jan-22	07:00	69.3	72.6	70.0	72.4	63.8
2-Jan-22	8:00:00	02-Jan-22	08:00	69.3	78.0	70.0	72.3	63.7
2-Jan-22	8:30:00	02-Jan-22	08:00	69.3	78.0	70.0	72.0	64.0
2-Jan-22	9:00:00	02-Jan-22	09:00	69.3	77.1	70.0	72.0	63.6
2-Jan-22	9:30:00	02-Jan-22	09:00	69.3	77.0	69.7	72.0	63.3
2-Jan-22	10:00:00	02-Jan-22	10:00	69.3	77.9	70.0	72.0	63.0
2-Jan-22	10:30:00	02-Jan-22	10:00	69.3	77.2	69.7	72.0	63.6
2-Jan-22	11:00:00	02-Jan-22	11:00	69.3	77.5	70.0	72.0	63.4
2-Jan-22	11:30:00	02-Jan-22	11:00	69.3	77.3	70.0	72.3	64.0
2-Jan-22	12:00:00	02-Jan-22	12:00	69.3	78.0	70.0	72.3	64.0
2-Jan-22	12:30:00	02-Jan-22	12:00	69.3	78.0	70.2	73.0	64.0
2-Jan-22	13:00:00	02-Jan-22	13:00	69.3	78.2	71.0	73.3	64.7
2-Jan-22	13:30:00	02-Jan-22	13:00	69.3	79.0	71.5	74.0	65.0
2-Jan-22	14:00:00	02-Jan-22	14:00	69.3	79.5	72.0	74.0	65.0
2-Jan-22	14:30:00	02-Jan-22	14:00	69.3	80.0	72.0	74.0	66.0
2-Jan-22	15:00:00	02-Jan-22	15:00	69.3	80.0	72.0	74.3	66.0
2-Jan-22	15:30:00	02-Jan-22	15:00	65.2	80.0	71.7	73.2	64.7
2-Jan-22	16:00:00	02-Jan-22	16:00	61.6	72.9	69.3	70.8	63.0
2-Jan-22	16:30:00	02-Jan-22	16:00	61.6	72.0	68.8	70.3	62.7
2-Jan-22	17:00:00	02-Jan-22	17:00	60.9	72.0	68.0	70.0	62.2
2-Jan-22	17:30:00	02-Jan-22	17:00	59.6	71.3	67.9	69.5	61.5
2-Jan-22	18:00:00	02-Jan-22	18:00	59.6	70.2	66.5	68.4	60.4
2-Jan-22	18:30:00	02-Jan-22	18:00	58.3	70.0	66.0	68.0	60.0
2-Jan-22	19:00:00	02-Jan-22	19:00	57.6	69.3	65.6	67.5	59.2

2-Jan-22	19:30:00	02-Jan-22	19:00	57.6	69.0	65.0	67.0	58.7
2-Jan-22	20:00:00	02-Jan-22	20:00	57.6	68.7	64.4	67.0	58.0
2-Jan-22	20:30:00	02-Jan-22	20:00	60.3	68.0	64.0	67.2	58.0
2-Jan-22	21:00:00	02-Jan-22	21:00	67.4	74.4	66.6	70.0	60.8
2-Jan-22	21:30:00	02-Jan-22	21:00	67.4	76.0	67.6	70.0	61.0
2-Jan-22	22:00:00	02-Jan-22	22:00	67.4	76.0	68.0	70.5	61.0
2-Jan-22	22:30:00	02-Jan-22	22:00	67.4	76.3	68.0	70.7	61.3
2-Jan-22	23:00:00	02-Jan-22	23:00	67.4	76.0	68.0	70.4	61.5
2-Jan-22	23:30:00	02-Jan-22	23:00	67.4	76.3	68.0	70.4	62.0
3-Jan-22	0:00:00	03-Jan-22	00:00	67.4	76.6	68.0	70.7	61.4
3-Jan-22	0:30:00	03-Jan-22	00:00	67.4	76.0	68.0	71.0	62.0
3-Jan-22	1:00:00	03-Jan-22	01:00	67.4	76.7	68.0	71.0	62.0
3-Jan-22	1:30:00	03-Jan-22	01:00	67.4	77.0	68.2	71.0	62.0
3-Jan-22	2:00:00	03-Jan-22	02:00	67.4	77.0	69.0	71.3	62.1
3-Jan-22	2:30:00	03-Jan-22	02:00	67.4	77.0	69.0	72.0	63.0
3-Jan-22	3:00:00	03-Jan-22	03:00	67.4	77.8	69.0	72.0	63.0
3-Jan-22	3:30:00	03-Jan-22	03:00	67.4	77.7	69.3	72.0	63.0
3-Jan-22	4:00:00	03-Jan-22	04:00	67.4	78.0	69.0	72.0	63.0
3-Jan-22	4:30:00	03-Jan-22	04:00	67.4	78.0	69.0	72.0	63.0
3-Jan-22	5:00:00	03-Jan-22	05:00	67.4	77.7	69.0	72.0	63.0
3-Jan-22	5:30:00	03-Jan-22	05:00	67.4	78.0	69.0	72.0	63.0
3-Jan-22	6:00:00	03-Jan-22	06:00	67.4	78.0	69.3	72.0	63.0
3-Jan-22	6:30:00	03-Jan-22	06:00	67.4	78.0	69.6	72.3	63.0
3-Jan-22	7:00:00	03-Jan-22	07:00	67.4	78.0	69.4	72.0	63.0
3-Jan-22	7:30:00	03-Jan-22	07:00	68.9	78.0	69.5	72.0	63.0
3-Jan-22	8:00:00	03-Jan-22	08:00	69.4	78.0	69.9	72.3	63.0
3-Jan-22	8:30:00	03-Jan-22	08:00	69.4	78.0	69.4	72.3	63.1
3-Jan-22	9:00:00	03-Jan-22	09:00	69.4	78.0	70.0	72.7	64.0
3-Jan-22	9:30:00	03-Jan-22	09:00	69.4	78.0	70.0	73.0	64.0
3-Jan-22	10:00:00	03-Jan-22	10:00	69.4	78.5	70.2	73.0	64.0
3-Jan-22	10:30:00	03-Jan-22	10:00	69.4	79.0	71.0	73.2	64.6
3-Jan-22	11:00:00	03-Jan-22	11:00	69.4	79.0	71.0	74.0	65.0
3-Jan-22	11:30:00	03-Jan-22	11:00	69.4	79.0	71.8	74.0	65.3
3-Jan-22	12:00:00	03-Jan-22	12:00	69.4	79.0	72.0	74.0	65.4
3-Jan-22	12:30:00	03-Jan-22	12:00	68.5	79.8	72.0	74.3	66.0
3-Jan-22	13:00:00	03-Jan-22	13:00	61.5	80.0	70.2	71.1	65.0
3-Jan-22	13:30:00	03-Jan-22	13:00	60.2	74.6	69.4	70.7	63.0
3-Jan-22	14:00:00	03-Jan-22	14:00	60.2	72.0	69.0	70.1	63.0
3-Jan-22	14:30:00	03-Jan-22	14:00	60.2	71.4	68.2	70.0	62.0
3-Jan-22	15:00:00	03-Jan-22	15:00	60.3	71.6	68.0	69.6	62.0
3-Jan-22	15:30:00	03-Jan-22	15:00	60.5	71.0	68.0	69.0	62.0
3-Jan-22	16:00:00	03-Jan-22	16:00	60.2	71.0	68.0	69.0	61.3
3-Jan-22	16:30:00	03-Jan-22	16:00	58.5	71.0	67.0	69.0	61.0
3-Jan-22	17:00:00	03-Jan-22	17:00	58.5	70.5	67.0	68.8	61.0
3-Jan-22	17:30:00	03-Jan-22	17:00	58.5	70.0	67.0	68.0	60.9
3-Jan-22	18:00:00	03-Jan-22	18:00	58.5	69.6	66.0	68.0	60.0
3-Jan-22	18:30:00	03-Jan-22	18:00	58.5	69.0	66.0	67.1	59.4
3-Jan-22	19:00:00	03-Jan-22	19:00	62.3	71.0	65.4	68.0	59.3
3-Jan-22	19:30:00	03-Jan-22	19:00	66.5	76.0	67.9	70.3	61.7
3-Jan-22	20:00:00	03-Jan-22	20:00	66.5	76.0	68.0	70.5	62.0
3-Jan-22	20:30:00	03-Jan-22	20:00	66.5	76.0	68.0	70.7	62.0
3-Jan-22	21:00:00	03-Jan-22	21:00	66.5	76.0	68.0	70.4	62.0
3-Jan-22	21:30:00	03-Jan-22	21:00	66.5	76.0	68.7	71.0	62.0
3-Jan-22	22:00:00	03-Jan-22	22:00	66.5	76.2	69.0	71.0	62.4
3-Jan-22	22:30:00	03-Jan-22	22:00	66.5	77.0	69.0	71.0	63.0
3-Jan-22	23:00:00	03-Jan-22	23:00	66.5	77.0	69.0	71.5	63.0
3-Jan-22	23:30:00	03-Jan-22	23:00	66.5	77.0	69.0	71.7	63.0
4-Jan-22	0:00:00	04-Jan-22	00:00	66.5	77.0	69.0	71.6	63.0



4-Jan-22	0:30:00	04-Jan-2200:00	67.5	77.0	69.0	71.6	63.0
4-Jan-22	1:00:00	04-Jan-2201:00	68.5	78.0	69.9	72.0	63.5
4-Jan-22	1:30:00	04-Jan-2201:00	68.5	78.0	70.0	72.5	64.0
4-Jan-22	2:00:00	04-Jan-2202:00	68.5	78.0	70.0	72.1	64.0
4-Jan-22	2:30:00	04-Jan-2202:00	68.5	78.0	70.0	72.4	64.0
4-Jan-22	3:00:00	04-Jan-2203:00	68.5	78.3	70.4	73.0	64.0
4-Jan-22	3:30:00	04-Jan-2203:00	68.5	78.0	70.7	73.0	64.0
4-Jan-22	4:00:00	04-Jan-2204:00	68.5	78.0	70.1	73.0	64.0
4-Jan-22	4:30:00	04-Jan-2204:00	68.5	78.3	70.4	73.0	64.0
4-Jan-22	5:00:00	04-Jan-2205:00	68.5	78.0	70.7	73.0	64.0
4-Jan-22	5:30:00	04-Jan-2205:00	68.5	78.0	71.0	73.0	64.0
4-Jan-22	6:00:00	04-Jan-2206:00	68.5	78.0	70.7	73.0	64.0
4-Jan-22	6:30:00	04-Jan-2206:00	68.5	78.3	71.0	73.0	64.0
4-Jan-22	7:00:00	04-Jan-2207:00	68.5	78.6	71.0	73.0	64.0
4-Jan-22	7:30:00	04-Jan-2207:00	68.5	78.0	71.0	73.0	64.0
4-Jan-22	8:00:00	04-Jan-2208:00	68.5	78.4	71.0	73.3	64.0
4-Jan-22	8:30:00	04-Jan-2208:00	69.5	79.0	71.1	73.8	64.0
4-Jan-22	9:00:00	04-Jan-2209:00	70.5	79.0	71.7	74.0	64.0
4-Jan-22	9:30:00	04-Jan-2209:00	65.5	77.5	71.0	73.1	64.0
4-Jan-22	10:00:00	04-Jan-2210:00	61.7	72.1	69.0	71.0	64.0
4-Jan-22	10:30:00	04-Jan-2210:00	61.7	72.0	69.0	71.0	64.0
4-Jan-22	11:00:00	04-Jan-2211:00	61.7	72.0	69.0	71.0	64.0
4-Jan-22	11:30:00	04-Jan-2211:00	60.8	72.0	68.7	70.3	64.0
4-Jan-22	12:00:00	04-Jan-2212:00	60.6	72.0	68.9	70.0	64.0
4-Jan-22	12:30:00	04-Jan-2212:00	59.6	72.0	68.7	70.0	64.0
4-Jan-22	13:00:00	04-Jan-2213:00	59.2	71.8	68.2	70.0	64.0
4-Jan-22	13:30:00	04-Jan-2213:00	59.9	71.7	68.0	70.0	64.0
4-Jan-22	14:00:00	04-Jan-2214:00	59.1	71.3	68.0	69.2	64.0
4-Jan-22	14:30:00	04-Jan-2214:00	59.1	71.0	68.0	69.0	64.0
4-Jan-22	15:00:00	04-Jan-2215:00	59.1	71.0	67.7	69.0	61.3
4-Jan-22	15:30:00	04-Jan-2215:00	59.1	71.0	67.9	69.0	61.0
4-Jan-22	16:00:00	04-Jan-2216:00	59.1	71.0	67.0	68.8	61.0
4-Jan-22	16:30:00	04-Jan-2216:00	59.1	71.0	67.0	68.0	60.9
4-Jan-22	17:00:00	04-Jan-2217:00	59.1	70.0	66.3	68.0	60.0
4-Jan-22	17:30:00	04-Jan-2217:00	61.6	70.8	66.0	68.5	60.3
4-Jan-22	18:00:00	04-Jan-2218:00	66.3	76.0	68.0	70.0	62.0
4-Jan-22	18:30:00	04-Jan-2218:00	66.3	76.0	68.0	70.0	62.0
4-Jan-22	19:00:00	04-Jan-2219:00	66.3	76.0	68.0	70.0	62.0
4-Jan-22	19:30:00	04-Jan-2219:00	66.3	76.0	68.0	70.0	61.7
4-Jan-22	20:00:00	04-Jan-2220:00	66.3	76.0	68.0	70.8	61.8
4-Jan-22	20:30:00	04-Jan-2220:00	66.3	76.0	68.0	70.4	61.9
4-Jan-22	21:00:00	04-Jan-2221:00	66.3	76.0	68.0	71.0	62.0
4-Jan-22	21:30:00	04-Jan-2221:00	66.3	76.0	68.0	71.0	62.0
4-Jan-22	22:00:00	04-Jan-2222:00	66.3	76.3	68.0	71.0	62.0
4-Jan-22	22:30:00	04-Jan-2222:00	66.3	76.7	68.6	71.0	62.0
4-Jan-22	23:00:00	04-Jan-2223:00	66.3	77.0	69.0	71.0	62.3
4-Jan-22	23:30:00	04-Jan-2223:00	66.7	77.0	69.0	71.0	63.0
5-Jan-22	0:00:00	05-Jan-2200:00	68.3	77.0	69.0	71.0	62.7
5-Jan-22	0:30:00	05-Jan-2200:00	68.3	77.0	69.0	71.3	63.0
5-Jan-22	1:00:00	05-Jan-2201:00	68.3	77.0	69.0	71.6	63.0
5-Jan-22	1:30:00	05-Jan-2201:00	68.3	77.3	69.0	71.7	63.0
5-Jan-22	2:00:00	05-Jan-2202:00	68.3	78.0	69.0	72.0	63.0
5-Jan-22	2:30:00	05-Jan-2202:00	68.3	78.0	69.4	72.0	63.3
5-Jan-22	3:00:00	05-Jan-2203:00	68.3	78.0	70.0	72.0	63.4
5-Jan-22	3:30:00	05-Jan-2203:00	68.3	78.0	70.0	72.0	64.0
5-Jan-22	4:00:00	05-Jan-2204:00	68.3	78.0	70.0	72.7	64.0
5-Jan-22	4:30:00	05-Jan-2204:00	68.3	78.0	70.0	73.0	64.0
5-Jan-22	5:00:00	05-Jan-2205:00	68.3	78.0	70.0	72.4	64.0

5-Jan-22	5:30:00	05-Jan-2205:00	68.3	78.0	70.0	72.6	64.0
5-Jan-22	6:00:00	05-Jan-2206:00	68.3	78.0	70.0	72.8	64.0
5-Jan-22	6:30:00	05-Jan-2206:00	68.3	78.0	70.0	72.7	64.0
5-Jan-22	7:00:00	05-Jan-2207:00	68.3	78.0	70.0	73.0	64.0
5-Jan-22	7:30:00	05-Jan-2207:00	68.3	78.4	70.4	73.0	64.0
5-Jan-22	8:00:00	05-Jan-2208:00	68.8	78.7	70.7	73.0	64.0
5-Jan-22	8:30:00	05-Jan-2208:00	70.3	79.0	71.0	73.4	65.0
5-Jan-22	9:00:00	05-Jan-2209:00	70.3	79.0	71.0	73.8	65.0
5-Jan-22	9:30:00	05-Jan-2209:00	70.3	79.0	71.0	73.9	65.0
5-Jan-22	10:00:00	05-Jan-2210:00	70.3	79.0	71.0	74.0	65.0
5-Jan-22	10:30:00	05-Jan-2210:00	63.9	79.0	70.1	72.4	65.0
5-Jan-22	11:00:00	05-Jan-2211:00	60.2	72.8	69.0	70.0	62.7
5-Jan-22	11:30:00	05-Jan-2211:00	60.2	72.0	68.4	70.0	62.1
5-Jan-22	12:00:00	05-Jan-2212:00	60.2	71.7	68.1	69.7	62.0
5-Jan-22	12:30:00	05-Jan-2212:00	59.9	71.0	67.3	69.0	61.5
5-Jan-22	13:00:00	05-Jan-2213:00	59.7	71.0	68.0	69.0	61.9
5-Jan-22	13:30:00	05-Jan-2213:00	58.0	70.2	67.2	68.4	61.1
5-Jan-22	14:00:00	05-Jan-2214:00	58.0	70.0	66.1	68.0	60.5
5-Jan-22	14:30:00	05-Jan-2214:00	58.0	70.0	66.0	68.0	60.0
5-Jan-22	15:00:00	05-Jan-2215:00	58.0	70.0	66.0	68.0	60.0
5-Jan-22	15:30:00	05-Jan-2215:00	58.0	69.6	66.0	68.0	60.0
5-Jan-22	16:00:00	05-Jan-2216:00	59.5	69.0	66.0	68.0	59.5
5-Jan-22	16:30:00	05-Jan-2216:00	66.9	73.4	67.9	70.1	59.9
5-Jan-22	17:00:00	05-Jan-2217:00	66.9	76.0	68.0	71.0	62.0
5-Jan-22	17:30:00	05-Jan-2217:00	66.9	76.0	68.0	70.4	62.0
5-Jan-22	18:00:00	05-Jan-2218:00	66.9	75.7	68.0	70.4	62.0
5-Jan-22	18:30:00	05-Jan-2218:00	66.9	75.1	68.0	71.0	62.0
5-Jan-22	19:00:00	05-Jan-2219:00	66.9	76.0	68.0	71.0	62.0
5-Jan-22	19:30:00	05-Jan-2219:00	66.9	76.0	68.0	71.0	62.0
5-Jan-22	20:00:00	05-Jan-2220:00	66.9	76.5	68.0	71.0	62.0
5-Jan-22	20:30:00	05-Jan-2220:00	66.9	77.0	68.9	71.0	62.0
5-Jan-22	21:00:00	05-Jan-2221:00	66.9	77.0	69.0	71.0	62.0
5-Jan-22	21:30:00	05-Jan-2221:00	66.9	77.0	69.0	71.7	63.0
5-Jan-22	22:00:00	05-Jan-2222:00	66.9	77.0	69.0	71.7	63.0
5-Jan-22	22:30:00	05-Jan-2222:00	66.9	77.0	69.0	72.0	63.0
5-Jan-22	23:00:00	05-Jan-2223:00	66.9	77.5	69.2	72.0	63.0
5-Jan-22	23:30:00	05-Jan-2223:00	66.9	77.4	69.4	72.0	63.0
6-Jan-22	0:00:00	06-Jan-2200:00	66.9	77.0	69.0	72.0	63.0
6-Jan-22	0:30:00	06-Jan-2200:00	68.5	77.3	69.9	72.0	63.4
6-Jan-22	1:00:00	06-Jan-2201:00	69.0	78.0	70.0	72.3	64.0
6-Jan-22	1:30:00	06-Jan-2201:00	69.0	78.0	70.0	72.3	64.0
6-Jan-22	2:00:00	06-Jan-2202:00	69.0	78.0	70.0	73.0	64.0
6-Jan-22	2:30:00	06-Jan-2202:00	69.0	78.3	70.0	73.0	64.0
6-Jan-22	3:00:00	06-Jan-2203:00	69.0	79.0	71.0	73.0	64.0
6-Jan-22	3:30:00	06-Jan-2203:00	69.0	79.0	71.0	73.0	64.3
6-Jan-22	4:00:00	06-Jan-2204:00	69.0	79.0	71.0	73.0	64.5
6-Jan-22	4:30:00	06-Jan-2204:00	69.0	79.0	71.0	73.3	64.7
6-Jan-22	5:00:00	06-Jan-2205:00	69.0	79.0	71.0	73.9	64.7
6-Jan-22	5:30:00	06-Jan-2205:00	69.0	79.0	71.0	73.8	65.0
6-Jan-22	6:00:00	06-Jan-2206:00	67.0	79.0	71.0	73.7	64.7
6-Jan-22	6:30:00	06-Jan-2206:00	61.0	73.5	68.1	70.0	62.2
6-Jan-22	7:00:00	06-Jan-2207:00	60.5	71.2	67.8	69.7	61.0
6-Jan-22	7:30:00	06-Jan-2207:00	59.0	71.0	67.6	69.0	61.0
6-Jan-22	8:00:00	06-Jan-2208:00	59.0	71.0	67.3	69.0	61.0
6-Jan-22	8:30:00	06-Jan-2208:00	59.0	71.0	67.0	69.0	61.0
6-Jan-22	9:00:00	06-Jan-2209:00	58.9	70.8	67.0	69.0	61.0
6-Jan-22	9:30:00	06-Jan-2209:00	58.9	70.0	67.6	69.0	61.0
6-Jan-22	10:00:00	06-Jan-2210:00	58.9	70.0	67.0	68.7	61.0

6-Jan-22	10:30:00	06-Jan-2210:00	58.9	70.2	67.0	68.7	61.0
6-Jan-22	11:00:00	06-Jan-2211:00	58.9	70.6	67.0	68.0	60.8
6-Jan-22	11:30:00	06-Jan-2211:00	68.7	75.2	68.8	71.1	63.6
6-Jan-22	12:00:00	06-Jan-2212:00	69.2	77.0	69.0	72.0	63.0
6-Jan-22	12:30:00	06-Jan-2212:00	69.2	77.1	69.1	72.0	63.3
6-Jan-22	13:00:00	06-Jan-2213:00	69.2	78.0	69.2	72.0	63.0
6-Jan-22	13:30:00	06-Jan-2213:00	69.2	78.0	69.0	72.0	63.0
6-Jan-22	14:00:00	06-Jan-2214:00	69.2	77.1	69.0	71.7	63.0
6-Jan-22	14:30:00	06-Jan-2214:00	69.2	77.2	69.0	72.0	63.0
6-Jan-22	15:00:00	06-Jan-2215:00	69.2	77.0	69.0	71.9	63.0
6-Jan-22	15:30:00	06-Jan-2215:00	69.2	77.0	69.0	71.8	63.0
6-Jan-22	16:00:00	06-Jan-2216:00	69.2	77.0	69.0	72.0	63.0
6-Jan-22	16:30:00	06-Jan-2216:00	69.2	77.0	69.0	72.0	63.0
6-Jan-22	17:00:00	06-Jan-2217:00	69.2	77.0	69.0	72.0	63.0
6-Jan-22	17:30:00	06-Jan-2217:00	69.2	77.0	69.0	72.0	63.0
6-Jan-22	18:00:00	06-Jan-2218:00	69.2	77.0	69.0	72.0	63.3
6-Jan-22	18:30:00	06-Jan-2218:00	69.2	77.0	69.0	72.0	63.0
6-Jan-22	19:00:00	06-Jan-2219:00	69.2	77.0	69.0	72.0	63.0
6-Jan-22	19:30:00	06-Jan-2219:00	69.2	77.0	69.0	72.0	63.0
6-Jan-22	20:00:00	06-Jan-2220:00	69.2	77.0	69.0	72.0	63.0
6-Jan-22	20:30:00	06-Jan-2220:00	68.4	77.0	69.0	72.0	63.0
6-Jan-22	21:00:00	06-Jan-2221:00	67.1	77.0	69.0	72.0	63.2
6-Jan-22	21:30:00	06-Jan-2221:00	68.5	77.4	69.4	72.2	63.4
6-Jan-22	22:00:00	06-Jan-2222:00	69.3	78.0	70.0	72.7	64.0
6-Jan-22	22:30:00	06-Jan-2222:00	69.3	78.0	70.0	72.7	64.0
6-Jan-22	23:00:00	06-Jan-2223:00	69.3	78.0	70.0	73.0	64.0
6-Jan-22	23:30:00	06-Jan-2223:00	69.3	78.0	70.0	73.0	64.0
7-Jan-22	0:00:00	07-Jan-2200:00	69.3	78.0	70.0	72.7	64.0
7-Jan-22	0:30:00	07-Jan-2200:00	69.3	78.0	70.0	73.0	64.0
7-Jan-22	1:00:00	07-Jan-2201:00	69.3	78.0	70.0	73.0	64.0
7-Jan-22	1:30:00	07-Jan-2201:00	69.3	78.0	70.0	73.0	64.0
7-Jan-22	2:00:00	07-Jan-2202:00	69.3	78.0	70.0	73.0	64.3
7-Jan-22	2:30:00	07-Jan-2202:00	69.3	78.8	70.8	73.4	64.7
7-Jan-22	3:00:00	07-Jan-2203:00	65.4	79.0	70.7	73.4	64.5
7-Jan-22	3:30:00	07-Jan-2203:00	60.3	77.2	68.3	70.1	62.3
7-Jan-22	4:00:00	07-Jan-2204:00	60.3	71.7	68.0	70.0	61.7
7-Jan-22	4:30:00	07-Jan-2204:00	60.3	71.5	67.8	69.7	61.9
7-Jan-22	5:00:00	07-Jan-2205:00	60.3	71.0	67.0	69.0	61.0
7-Jan-22	5:30:00	07-Jan-2205:00	60.3	71.0	66.8	69.0	61.0
7-Jan-22	6:00:00	07-Jan-2206:00	58.5	70.7	66.0	68.6	60.3
7-Jan-22	6:30:00	07-Jan-2206:00	58.3	69.8	65.8	68.0	60.0
7-Jan-22	7:00:00	07-Jan-2207:00	58.3	69.0	65.0	67.4	59.2
7-Jan-22	7:30:00	07-Jan-2207:00	56.4	68.5	64.6	67.2	58.3
7-Jan-22	8:00:00	07-Jan-2208:00	56.7	68.0	64.0	66.4	58.0
7-Jan-22	8:30:00	07-Jan-2208:00	66.0	74.0	66.9	69.7	60.7
7-Jan-22	9:00:00	07-Jan-2209:00	67.3	76.0	68.6	71.0	62.3
7-Jan-22	9:30:00	07-Jan-2209:00	67.3	76.3	69.0	71.0	62.5
7-Jan-22	10:00:00	07-Jan-2210:00	67.8	76.6	68.7	71.4	62.4
7-Jan-22	10:30:00	07-Jan-2210:00	67.6	77.0	68.4	72.0	63.0
7-Jan-22	11:00:00	07-Jan-2211:00	67.4	77.9	69.6	72.0	63.1
7-Jan-22	11:30:00	07-Jan-2211:00	67.4	77.7	70.0	72.0	63.7
7-Jan-22	12:00:00	07-Jan-2212:00	68.9	78.0	70.0	72.3	64.0
7-Jan-22	12:30:00	07-Jan-2212:00	69.4	78.0	70.0	72.0	63.8
7-Jan-22	13:00:00	07-Jan-2213:00	69.4	78.0	70.0	72.3	64.0
7-Jan-22	13:30:00	07-Jan-2213:00	69.4	78.0	70.0	73.0	64.0
7-Jan-22	14:00:00	07-Jan-2214:00	69.4	78.0	70.0	73.0	64.0
7-Jan-22	14:30:00	07-Jan-2214:00	69.4	78.0	70.0	73.0	64.0
7-Jan-22	15:00:00	07-Jan-2215:00	69.4	78.0	70.0	72.5	63.7

7-Jan-22	15:30:00	07-Jan-22	15:00	69.4	78.0	70.0	72.7	64.0
7-Jan-22	16:00:00	07-Jan-22	16:00	69.4	77.4	70.0	72.5	64.0
7-Jan-22	16:30:00	07-Jan-22	16:00	69.4	77.1	69.7	72.0	64.0
7-Jan-22	17:00:00	07-Jan-22	17:00	69.4	77.0	69.0	72.0	63.5
7-Jan-22	17:30:00	07-Jan-22	17:00	69.4	77.0	69.0	72.0	63.6
7-Jan-22	18:00:00	07-Jan-22	18:00	67.6	77.0	69.0	72.0	63.0
7-Jan-22	18:30:00	07-Jan-22	18:00	67.2	77.0	69.0	72.0	63.0
7-Jan-22	19:00:00	07-Jan-22	19:00	67.2	77.0	69.0	72.0	63.0
7-Jan-22	19:30:00	07-Jan-22	19:00	67.2	77.0	69.0	72.0	63.0
7-Jan-22	20:00:00	07-Jan-22	20:00	67.2	77.0	69.0	72.0	63.0
7-Jan-22	20:30:00	07-Jan-22	20:00	67.2	77.0	69.0	72.0	63.0
7-Jan-22	21:00:00	07-Jan-22	21:00	67.2	77.0	69.0	72.0	63.0
7-Jan-22	21:30:00	07-Jan-22	21:00	67.9	77.0	69.1	72.5	63.3
7-Jan-22	22:00:00	07-Jan-22	22:00	69.2	77.9	70.0	73.0	64.0
7-Jan-22	22:30:00	07-Jan-22	22:00	69.2	78.0	71.0	73.0	64.3
7-Jan-22	23:00:00	07-Jan-22	23:00	69.2	78.0	71.0	73.1	65.0
7-Jan-22	23:30:00	07-Jan-22	23:00	69.2	79.0	71.1	73.7	65.0
8-Jan-22	0:00:00	08-Jan-22	00:00	69.2	79.0	71.2	74.0	65.0
8-Jan-22	0:30:00	08-Jan-22	00:00	69.2	79.0	71.3	74.0	65.5
8-Jan-22	1:00:00	08-Jan-22	01:00	69.2	79.2	72.0	74.0	66.0
8-Jan-22	1:30:00	08-Jan-22	01:00	61.9	77.6	70.5	72.2	64.5
8-Jan-22	2:00:00	08-Jan-22	02:00	62.1	73.0	70.0	71.0	63.4
8-Jan-22	2:30:00	08-Jan-22	02:00	62.1	73.0	70.0	71.0	63.0
8-Jan-22	3:00:00	08-Jan-22	03:00	62.1	73.0	70.0	71.0	63.3
8-Jan-22	3:30:00	08-Jan-22	03:00	62.1	73.0	69.2	71.0	63.0
8-Jan-22	4:00:00	08-Jan-22	04:00	62.1	73.0	69.0	70.2	63.0
8-Jan-22	4:30:00	08-Jan-22	04:00	60.5	72.5	69.0	70.0	63.0
8-Jan-22	5:00:00	08-Jan-22	05:00	60.1	72.0	68.1	70.0	62.2
8-Jan-22	5:30:00	08-Jan-22	05:00	60.1	72.0	68.5	70.0	62.0
8-Jan-22	6:00:00	08-Jan-22	06:00	60.1	71.7	68.3	70.0	62.0
8-Jan-22	6:30:00	08-Jan-22	06:00	60.1	71.0	68.0	69.5	61.7
8-Jan-22	7:00:00	08-Jan-22	07:00	60.1	71.0	68.0	69.0	62.0
8-Jan-22	7:30:00	08-Jan-22	07:00	60.1	71.0	67.6	69.0	61.1
8-Jan-22	8:00:00	08-Jan-22	08:00	60.1	70.4	67.0	68.9	61.0
8-Jan-22	8:30:00	08-Jan-22	08:00	58.8	70.0	66.6	68.0	60.4
8-Jan-22	9:00:00	08-Jan-22	09:00	58.1	69.1	66.3	68.0	60.0
8-Jan-22	9:30:00	08-Jan-22	09:00	59.8	69.6	66.2	68.0	60.0
8-Jan-22	10:00:00	08-Jan-22	10:00	67.1	69.0	68.0	70.5	61.8
8-Jan-22	10:30:00	08-Jan-22	10:00	67.1	76.0	68.9	71.0	62.4
8-Jan-22	11:00:00	08-Jan-22	11:00	67.1	76.6	69.0	71.0	62.7
8-Jan-22	11:30:00	08-Jan-22	11:00	67.1	76.6	69.0	71.0	62.7
8-Jan-22	12:00:00	08-Jan-22	12:00	67.1	77.0	69.0	72.0	63.0
8-Jan-22	12:30:00	08-Jan-22	12:00	67.1	77.0	69.3	72.0	63.0
8-Jan-22	13:00:00	08-Jan-22	13:00	68.1	77.0	69.6	72.0	63.6
8-Jan-22	13:30:00	08-Jan-22	13:00	69.0	78.0	70.0	72.5	63.9
8-Jan-22	14:00:00	08-Jan-22	14:00	69.0	78.0	70.0	72.7	64.0
8-Jan-22	14:30:00	08-Jan-22	14:00	69.0	78.0	70.1	73.0	64.0
8-Jan-22	15:00:00	08-Jan-22	15:00	69.0	78.0	70.7	73.0	64.1
8-Jan-22	15:30:00	08-Jan-22	15:00	69.0	78.0	71.0	73.0	65.0
8-Jan-22	16:00:00	08-Jan-22	16:00	69.0	78.8	71.0	73.0	65.0
8-Jan-22	16:30:00	08-Jan-22	16:00	69.0	79.0	71.0	73.3	65.0
8-Jan-22	17:00:00	08-Jan-22	17:00	69.0	79.0	71.0	73.0	65.0
8-Jan-22	17:30:00	08-Jan-22	17:00	69.0	79.0	71.0	74.0	65.0
8-Jan-22	18:00:00	08-Jan-22	18:00	69.0	79.0	71.0	74.0	65.0
8-Jan-22	18:30:00	08-Jan-22	18:00	69.0	79.0	71.3	74.0	65.0
8-Jan-22	19:00:00	08-Jan-22	19:00	69.0	79.0	71.3	74.0	65.0
8-Jan-22	19:30:00	08-Jan-22	19:00	69.0	79.0	71.0	74.0	65.0
8-Jan-22	20:00:00	08-Jan-22	20:00	69.0	79.0	71.4	74.0	65.0

8-Jan-22	20:30:00	08-Jan-2220:00	60.9	73.9	69.6	72.2	63.7
8-Jan-22	21:00:00	08-Jan-2221:00	60.8	72.4	69.0	71.0	63.0
8-Jan-22	21:30:00	08-Jan-2221:00	60.8	72.5	69.0	70.8	63.0
8-Jan-22	22:00:00	08-Jan-2222:00	60.8	72.0	69.0	70.0	62.9
8-Jan-22	22:30:00	08-Jan-2222:00	60.8	72.0	68.3	70.0	62.0
8-Jan-22	23:00:00	08-Jan-2223:00	60.8	72.0	68.0	70.0	62.0
8-Jan-22	23:30:00	08-Jan-2223:00	60.8	71.6	68.0	70.0	62.0
9-Jan-22	0:00:00	09-Jan-2200:00	60.8	71.0	68.0	69.4	61.7
9-Jan-22	0:30:00	09-Jan-2200:00	60.8	71.0	68.0	69.0	62.0
9-Jan-22	1:00:00	09-Jan-2201:00	60.8	71.0	68.0	69.0	61.7
9-Jan-22	1:30:00	09-Jan-2201:00	60.8	71.0	68.0	69.0	61.3
9-Jan-22	2:00:00	09-Jan-2202:00	60.8	71.0	68.0	69.0	61.0
9-Jan-22	2:30:00	09-Jan-2202:00	58.8	71.0	67.4	69.0	61.0
9-Jan-22	3:00:00	09-Jan-2203:00	58.8	71.0	67.3	69.0	61.0
9-Jan-22	3:30:00	09-Jan-2203:00	58.8	70.4	67.0	68.7	61.0
9-Jan-22	4:00:00	09-Jan-2204:00	58.8	70.0	67.0	68.5	61.0
9-Jan-22	4:30:00	09-Jan-2204:00	64.8	72.4	69.5	69.4	62.0
9-Jan-22	5:00:00	09-Jan-2205:00	68.1	78.0	69.7	72.0	63.1
9-Jan-22	5:30:00	09-Jan-2205:00	68.1	78.0	70.0	72.3	64.0
9-Jan-22	6:00:00	09-Jan-2206:00	68.1	78.1	70.1	72.8	64.0
9-Jan-22	6:30:00	09-Jan-2206:00	68.1	78.2	70.8	72.7	64.0
9-Jan-22	7:00:00	09-Jan-2207:00	68.1	78.0	70.0	72.7	64.0
9-Jan-22	7:30:00	09-Jan-2207:00	68.1	78.0	70.0	72.7	64.0
9-Jan-22	8:00:00	09-Jan-2208:00	68.1	78.0	70.0	73.0	64.0
9-Jan-22	8:30:00	09-Jan-2208:00	68.1	78.0	70.0	72.7	64.0
9-Jan-22	9:00:00	09-Jan-2209:00	68.1	78.0	70.0	73.0	64.0
9-Jan-22	9:30:00	09-Jan-2209:00	68.8	78.8	70.5	73.0	64.6
9-Jan-22	10:00:00	09-Jan-2210:00	70.1	79.0	70.7	73.0	64.5
9-Jan-22	10:30:00	09-Jan-2210:00	70.1	78.2	70.0	73.0	64.0
9-Jan-22	11:00:00	09-Jan-2211:00	70.1	78.0	70.3	73.0	64.5
9-Jan-22	11:30:00	09-Jan-2211:00	70.1	79.0	71.0	73.0	64.7
9-Jan-22	12:00:00	09-Jan-2212:00	70.1	79.0	71.0	73.0	64.7
9-Jan-22	12:30:00	09-Jan-2212:00	70.1	79.0	71.0	74.0	64.4
9-Jan-22	13:00:00	09-Jan-2213:00	70.1	79.0	71.0	74.0	65.0
9-Jan-22	13:30:00	09-Jan-2213:00	70.1	79.0	71.0	74.0	65.0
9-Jan-22	14:00:00	09-Jan-2214:00	70.1	79.0	71.0	74.0	65.0
9-Jan-22	14:30:00	09-Jan-2214:00	62.6	76.4	69.7	71.7	64.0
9-Jan-22	15:00:00	09-Jan-2215:00	61.4	72.0	68.7	70.0	62.4
9-Jan-22	15:30:00	09-Jan-2215:00	61.4	72.0	68.1	70.0	62.0
9-Jan-22	16:00:00	09-Jan-2216:00	59.8	71.6	68.0	70.0	62.0
9-Jan-22	16:30:00	09-Jan-2216:00	59.4	71.0	68.0	69.7	61.9
9-Jan-22	17:00:00	09-Jan-2217:00	59.4	71.0	67.6	69.0	61.3
9-Jan-22	17:30:00	09-Jan-2217:00	64.4	75.6	69.7	69.8	61.8
9-Jan-22	18:00:00	09-Jan-2218:00	68.1	78.2	70.0	72.0	63.7
9-Jan-22	18:30:00	09-Jan-2218:00	68.1	78.0	70.0	72.3	63.7
9-Jan-22	19:00:00	09-Jan-2219:00	68.1	77.7	70.0	72.3	63.6
9-Jan-22	19:30:00	09-Jan-2219:00	68.1	77.4	70.0	72.0	63.3
9-Jan-22	20:00:00	09-Jan-2220:00	68.1	78.0	70.0	72.6	63.9
9-Jan-22	20:30:00	09-Jan-2220:00	68.1	78.0	70.0	73.0	64.0
9-Jan-22	21:00:00	09-Jan-2221:00	68.1	78.2	70.5	73.0	64.0
9-Jan-22	21:30:00	09-Jan-2221:00	68.1	79.0	71.0	73.0	64.8
9-Jan-22	22:00:00	09-Jan-2222:00	69.5	79.0	71.0	73.0	65.0
9-Jan-22	22:30:00	09-Jan-2222:00	70.1	79.0	71.0	73.4	65.0
9-Jan-22	23:00:00	09-Jan-2223:00	70.1	79.0	71.1	74.0	65.0
9-Jan-22	23:30:00	09-Jan-2223:00	70.1	79.8	72.0	74.0	65.0
10-Jan-22	0:00:00	10-Jan-2200:00	70.1	79.0	71.4	74.0	65.0
10-Jan-22	0:30:00	10-Jan-2200:00	70.1	79.8	72.0	74.3	65.6
10-Jan-22	1:00:00	10-Jan-2201:00	70.1	80.0	72.0	74.0	66.0

10-Jan-22	1:30:00	10-Jan-2201:00	70.1	80.0	72.7	74.8	66.0
10-Jan-22	2:00:00	10-Jan-2202:00	62.6	76.0	70.5	70.6	64.6
10-Jan-22	2:30:00	10-Jan-2202:00	62.5	73.0	70.0	71.5	64.0
10-Jan-22	3:00:00	10-Jan-2203:00	62.5	73.0	70.0	71.0	63.9
10-Jan-22	3:30:00	10-Jan-2203:00	62.5	73.0	69.7	71.0	63.0
10-Jan-22	4:00:00	10-Jan-2204:00	60.9	73.0	69.2	70.4	63.0
10-Jan-22	4:30:00	10-Jan-2204:00	60.5	73.0	69.0	70.0	63.0
10-Jan-22	5:00:00	10-Jan-2205:00	60.5	72.2	69.0	70.0	62.1
10-Jan-22	5:30:00	10-Jan-2205:00	60.5	72.0	68.2	70.0	62.0
10-Jan-22	6:00:00	10-Jan-2206:00	60.5	71.0	68.0	69.8	62.0
10-Jan-22	6:30:00	10-Jan-2206:00	60.5	71.0	67.8	69.0	61.0
10-Jan-22	7:00:00	10-Jan-2207:00	58.6	71.0	67.0	69.0	61.0
10-Jan-22	7:30:00	10-Jan-2207:00	58.4	71.0	67.3	69.0	60.9
10-Jan-22	8:00:00	10-Jan-2208:00	66.1	71.4	68.3	70.6	61.2
10-Jan-22	8:30:00	10-Jan-2208:00	67.6	77.0	69.0	71.1	62.7
10-Jan-22	9:00:00	10-Jan-2209:00	67.6	77.0	69.3	72.0	63.0
10-Jan-22	9:30:00	10-Jan-2209:00	67.6	77.3	69.7	72.0	63.0
10-Jan-22	10:00:00	10-Jan-2210:00	67.6	77.3	69.4	72.0	63.0
10-Jan-22	10:30:00	10-Jan-2210:00	67.6	78.0	69.6	72.0	63.0
10-Jan-22	11:00:00	10-Jan-2211:00	68.1	78.0	69.8	72.3	63.4
10-Jan-22	11:30:00	10-Jan-2211:00	69.7	78.0	70.0	72.7	64.0
10-Jan-22	12:00:00	10-Jan-2212:00	69.7	78.0	70.2	73.0	64.0
10-Jan-22	12:30:00	10-Jan-2212:00	69.7	78.3	70.1	73.0	64.0
10-Jan-22	13:00:00	10-Jan-2213:00	69.7	79.0	70.4	73.0	64.6
10-Jan-22	13:30:00	10-Jan-2213:00	69.7	78.4	71.0	73.0	64.1
10-Jan-22	14:00:00	10-Jan-2214:00	69.7	78.0	71.0	73.0	64.7
10-Jan-22	14:30:00	10-Jan-2214:00	69.7	78.0	70.9	73.0	64.7
10-Jan-22	15:00:00	10-Jan-2215:00	69.7	78.0	71.1	73.0	64.9
10-Jan-22	15:30:00	10-Jan-2215:00	69.7	78.6	71.0	74.0	64.8
10-Jan-22	16:00:00	10-Jan-2216:00	69.7	79.0	71.0	74.0	65.0
10-Jan-22	16:30:00	10-Jan-2216:00	69.7	79.0	71.3	74.0	65.0
10-Jan-22	17:00:00	10-Jan-2217:00	69.7	79.0	71.0	74.0	65.0
10-Jan-22	17:30:00	10-Jan-2217:00	69.7	79.0	71.1	74.0	65.0
10-Jan-22	18:00:00	10-Jan-2218:00	67.8	78.9	71.4	73.8	65.0
10-Jan-22	18:30:00	10-Jan-2218:00	61.1	72.0	69.0	70.8	63.0
10-Jan-22	19:00:00	10-Jan-2219:00	59.1	71.4	68.2	70.0	62.0
10-Jan-22	19:30:00	10-Jan-2219:00	59.1	71.0	67.7	69.5	61.7
10-Jan-22	20:00:00	10-Jan-2220:00	59.1	70.5	67.2	69.0	61.3
10-Jan-22	20:30:00	10-Jan-2220:00	59.1	70.0	67.0	69.0	61.0
10-Jan-22	21:00:00	10-Jan-2221:00	62.6	70.0	67.0	70.7	61.1
10-Jan-22	21:30:00	10-Jan-2221:00	68.6	72.4	69.4	72.0	63.5
10-Jan-22	22:00:00	10-Jan-2222:00	68.6	77.0	70.0	72.0	64.0
10-Jan-22	22:30:00	10-Jan-2222:00	68.6	77.0	70.0	72.0	64.0
10-Jan-22	23:00:00	10-Jan-2223:00	68.6	77.0	70.0	72.0	64.0
10-Jan-22	23:30:00	10-Jan-2223:00	68.6	77.3	70.8	72.9	64.0
11-Jan-22	0:00:00	11-Jan-2200:00	68.6	77.9	70.4	73.0	64.0
11-Jan-22	0:30:00	11-Jan-2200:00	68.6	77.6	71.0	73.0	64.7
11-Jan-22	1:00:00	11-Jan-2201:00	68.6	78.0	71.0	73.0	65.0
11-Jan-22	1:30:00	11-Jan-2201:00	68.6	78.0	71.0	73.3	65.0
11-Jan-22	2:00:00	11-Jan-2202:00	68.6	78.0	71.7	74.0	65.0
11-Jan-22	2:30:00	11-Jan-2202:00	68.6	78.0	72.0	74.0	65.4
11-Jan-22	3:00:00	11-Jan-2203:00	68.6	78.9	72.0	74.0	66.0
11-Jan-22	3:30:00	11-Jan-2203:00	70.0	79.0	72.0	74.0	66.0
11-Jan-22	4:00:00	11-Jan-2204:00	63.0	79.0	70.5	72.2	64.3
11-Jan-22	4:30:00	11-Jan-2204:00	61.9	75.8	69.3	70.8	63.0
11-Jan-22	5:00:00	11-Jan-2205:00	59.9	72.0	68.7	70.0	62.6
11-Jan-22	5:30:00	11-Jan-2205:00	59.9	71.0	68.0	70.0	62.0
11-Jan-22	6:00:00	11-Jan-2206:00	59.9	71.0	68.0	69.1	61.9



11-Jan-22	6:30:00	11-Jan-2206:00	59.9	71.0	67.6	69.0	61.0
11-Jan-22	7:00:00	11-Jan-2207:00	57.9	69.3	66.2	68.1	60.3
11-Jan-22	7:30:00	11-Jan-2207:00	57.7	69.0	65.7	67.5	59.7
11-Jan-22	8:00:00	11-Jan-2208:00	59.4	69.0	64.9	67.2	59.1
11-Jan-22	8:30:00	11-Jan-2208:00	66.2	75.9	67.8	70.8	62.2
11-Jan-22	9:00:00	11-Jan-2209:00	66.2	76.0	68.3	70.9	62.0
11-Jan-22	9:30:00	11-Jan-2209:00	66.2	76.0	68.0	71.0	62.0
11-Jan-22	10:00:00	11-Jan-2210:00	67.0	76.5	68.0	71.0	62.0
11-Jan-22	10:30:00	11-Jan-2210:00	68.2	77.0	68.0	71.0	62.0
11-Jan-22	11:00:00	11-Jan-2211:00	68.2	76.8	68.0	71.0	62.3
11-Jan-22	11:30:00	11-Jan-2211:00	68.2	76.6	68.6	71.9	62.8
11-Jan-22	12:00:00	11-Jan-2212:00	68.2	77.0	69.0	71.6	62.4
11-Jan-22	12:30:00	11-Jan-2212:00	68.2	77.0	68.7	71.4	62.8
11-Jan-22	13:00:00	11-Jan-2213:00	68.2	77.0	69.0	72.0	63.0
11-Jan-22	13:30:00	11-Jan-2213:00	68.2	77.0	69.0	71.7	63.0
11-Jan-22	14:00:00	11-Jan-2214:00	68.2	77.0	69.0	72.0	63.0
11-Jan-22	14:30:00	11-Jan-2214:00	68.2	77.0	69.0	72.0	63.0
11-Jan-22	15:00:00	11-Jan-2215:00	68.2	77.0	69.0	72.0	63.0
11-Jan-22	15:30:00	11-Jan-2215:00	68.2	77.0	69.0	72.0	63.0
11-Jan-22	16:00:00	11-Jan-2216:00	68.2	77.0	69.0	72.0	63.0
11-Jan-22	16:30:00	11-Jan-2216:00	68.2	77.0	69.0	72.0	63.0
11-Jan-22	17:00:00	11-Jan-2217:00	68.2	77.0	69.0	72.0	63.0
11-Jan-22	17:30:00	11-Jan-2217:00	68.2	76.1	69.0	72.0	63.0
11-Jan-22	18:00:00	11-Jan-2218:00	68.2	76.8	69.0	71.4	63.0
11-Jan-22	18:30:00	11-Jan-2218:00	68.2	76.0	69.0	71.3	63.0
11-Jan-22	19:00:00	11-Jan-2219:00	66.2	76.0	69.0	71.2	62.1
11-Jan-22	19:30:00	11-Jan-2219:00	66.2	76.0	69.0	71.0	62.1
11-Jan-22	20:00:00	11-Jan-2220:00	66.2	75.4	69.0	71.0	62.1
11-Jan-22	20:30:00	11-Jan-2220:00	66.2	75.1	68.4	71.0	62.0
11-Jan-22	21:00:00	11-Jan-2221:00	66.2	75.0	68.4	71.0	62.0
11-Jan-22	21:30:00	11-Jan-2221:00	66.2	75.0	69.0	71.0	62.1
11-Jan-22	22:00:00	11-Jan-2222:00	66.2	75.2	69.0	71.0	62.7
11-Jan-22	22:30:00	11-Jan-2222:00	66.2	76.0	69.0	71.0	63.0
11-Jan-22	23:00:00	11-Jan-2223:00	66.2	75.3	69.0	71.0	63.0
11-Jan-22	23:30:00	11-Jan-2223:00	66.2	75.5	69.0	71.3	63.0
12-Jan-22	0:00:00	12-Jan-2200:00	66.2	76.0	69.0	71.0	63.0
12-Jan-22	0:30:00	12-Jan-2200:00	66.2	76.0	69.0	71.3	63.0
12-Jan-22	1:00:00	12-Jan-2201:00	66.2	75.3	69.0	71.7	63.0
12-Jan-22	1:30:00	12-Jan-2201:00	66.2	75.0	69.0	72.0	63.0
12-Jan-22	2:00:00	12-Jan-2202:00	66.2	75.8	69.0	72.0	63.0
12-Jan-22	2:30:00	12-Jan-2202:00	66.2	76.0	69.7	72.0	63.0
12-Jan-22	3:00:00	12-Jan-2203:00	66.2	76.0	70.0	72.0	63.0
12-Jan-22	3:30:00	12-Jan-2203:00	67.7	76.6	70.0	72.0	63.5
12-Jan-22	4:00:00	12-Jan-2204:00	68.2	76.5	70.0	72.0	63.1
12-Jan-22	4:30:00	12-Jan-2204:00	68.2	76.0	70.0	72.0	63.0
12-Jan-22	5:00:00	12-Jan-2205:00	68.2	76.3	70.0	72.0	63.0
12-Jan-22	5:30:00	12-Jan-2205:00	68.2	76.0	69.1	72.0	63.0
12-Jan-22	6:00:00	12-Jan-2206:00	68.2	76.0	69.3	72.0	63.0
12-Jan-22	6:30:00	12-Jan-2206:00	68.2	76.3	69.6	72.0	63.1
12-Jan-22	7:00:00	12-Jan-2207:00	68.2	77.0	70.0	72.5	64.0
12-Jan-22	7:30:00	12-Jan-2207:00	68.2	77.0	70.0	72.1	64.0
12-Jan-22	8:00:00	12-Jan-2208:00	68.2	76.9	70.0	72.0	63.8
12-Jan-22	8:30:00	12-Jan-2208:00	68.2	76.8	70.0	72.0	63.9
12-Jan-22	9:00:00	12-Jan-2209:00	68.2	77.0	70.0	72.0	64.0
12-Jan-22	9:30:00	12-Jan-2209:00	68.2	77.0	70.6	72.3	64.3
12-Jan-22	10:00:00	12-Jan-2210:00	68.2	77.0	70.0	72.4	64.2
12-Jan-22	10:30:00	12-Jan-2210:00	68.2	78.0	70.7	73.0	64.7
12-Jan-22	11:00:00	12-Jan-2211:00	68.2	78.0	71.0	73.0	64.7

12-Jan-22	11:30:00	12-Jan-2211:00	69.9	78.3	71.0	73.0	65.0
12-Jan-22	12:00:00	12-Jan-2212:00	70.2	78.0	71.0	73.0	65.0
12-Jan-22	12:30:00	12-Jan-2212:00	70.2	78.4	71.0	73.7	65.0
12-Jan-22	13:00:00	12-Jan-2213:00	70.2	79.2	71.9	74.2	65.9
12-Jan-22	13:30:00	12-Jan-2213:00	70.2	80.0	72.5	75.0	67.0
12-Jan-22	14:00:00	12-Jan-2214:00	62.3	75.5	71.6	73.6	65.0
12-Jan-22	14:30:00	12-Jan-2214:00	61.8	73.0	70.3	71.3	64.0
12-Jan-22	15:00:00	12-Jan-2215:00	61.8	73.0	70.0	71.0	64.0
12-Jan-22	15:30:00	12-Jan-2215:00	61.8	73.0	70.0	71.0	64.0
12-Jan-22	16:00:00	12-Jan-2216:00	61.8	72.8	70.0	71.0	64.0
12-Jan-22	16:30:00	12-Jan-2216:00	61.8	72.9	70.0	71.0	63.8
12-Jan-22	17:00:00	12-Jan-2217:00	61.8	72.0	69.7	71.0	63.0
12-Jan-22	17:30:00	12-Jan-2217:00	59.9	72.0	68.2	70.0	62.3
12-Jan-22	18:00:00	12-Jan-2218:00	59.7	71.3	68.0	69.2	61.7
12-Jan-22	18:30:00	12-Jan-2218:00	61.9	71.0	67.2	69.1	61.3
12-Jan-22	19:00:00	12-Jan-2219:00	68.6	76.9	69.9	72.0	63.4
12-Jan-22	19:30:00	12-Jan-2219:00	68.6	77.2	70.0	72.0	63.7
12-Jan-22	20:00:00	12-Jan-2220:00	68.6	78.0	70.0	72.0	64.0
12-Jan-22	20:30:00	12-Jan-2220:00	68.6	78.0	70.0	72.8	64.0
12-Jan-22	21:00:00	12-Jan-2221:00	68.6	78.0	70.3	73.0	64.0
12-Jan-22	21:30:00	12-Jan-2221:00	68.6	78.2	71.0	73.0	64.0
12-Jan-22	22:00:00	12-Jan-2222:00	68.6	79.0	71.0	73.9	65.0
12-Jan-22	22:30:00	12-Jan-2222:00	69.1	79.0	71.4	74.0	65.0
12-Jan-22	23:00:00	12-Jan-2223:00	70.6	79.0	72.0	74.0	65.1
12-Jan-22	23:30:00	12-Jan-2223:00	70.6	79.7	72.0	74.0	66.0

Residential Sampling Report for Flushing Zone  
A2 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-BLDG0003	A2-BLDG0039	A2-BLDG0075	A2-BLDG0176	A2-BLDG0457	A2-BLDG0465	A2-BLDG0467	A2-BLDG0467
Location Type:	Non-Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence
Residence:	Building 3,WATERFRONT OPS SUPPORT BLDG, Hammonds Port St and Hornet Ave	Building 39,SSB(N) TEAM TRAINER, 198 Lexington Blvd	Building 75,NEX AND FACSFAC, 75 Liscomb Bay St	Building 176,NOAA FACILITY, 1845 Wasp Blvd	Building 457,SHOWER/LOCKE R NEAR ARIZONA POOL, B457 Lexington Blvd	Building 465,FIRE FIGHTING TRAINER BLDG, 465 Wasp Blvd	Building 467,FORD ISLAND FIRE STATION, B467 Long Island St	Building 467,FORD ISLAND FIRE STATION, B467 Long Island St
Field Sample ID:	220119-A2-KT04	220119-A2-ET08	220119-A2-KT05	220119-A2-JT05	220119-A2-KT03	220119-A2-JT04	220119-A2-KT01	220119-A2-KT02
Sample Date:	2022-01-19	2022-01-19	2022-01-19	2022-01-19	2022-01-19	2022-01-19	2022-01-19	2022-01-19
Sample Type:	N	N	N	N	N	N	N	FD

GENCHEM (mg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 2A20049	SDG: C22A040	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049
Total Organic Carbon	2	None	None	None	0.190 U	0.200 U	0.504	0.335	0.190 U	0.190 U	0.190 U	0.190 U

HC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 5801094701	SDG: DA41128	SDG: 5801094701	SDG: 5081095271	SDG: 5801094701	SDG: 5081095271	SDG: 5801094701	SDG: 5801094701
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	92.0 U	190 U	93.0 U	95.0 U	92.0 U	93.0 U	92.0 U	92.0 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	31.0 U	40.0 UJ	31.0 U	31.0 U	31.0 U	31.0 U	31.0 U	31.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	180 U	190 U	190 U	190 U	180 U	190 U	180 U	180 U

HG (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 2A20049	SDG: DA41128	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049
Mercury	0.025	0.025	2	2	0.0170 U	0.0250 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U

METAL (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 2A20049	SDG: DA41128	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049
Antimony	6	6	6	6	0.0889 U	0.100 U	0.0889 U	0.0889 U	0.0889 U	0.0889 U	0.0889 U	0.0889 U
Arsenic	10	10	10	10	0.155 J	0.500 U	0.128 J	0.131 J	0.164 J	0.114 J	0.231 J	0.254 J
Barium	220	220	2000	2000	1.92	1.80 J	1.86	1.01	1.92	2.87	5.79	5.60
Beryllium	0.66	0.66	4	4	0.0624 U	0.150 U	0.0624 U	0.0624 U	0.0624 U	0.0624 U	0.0624 U	0.0624 U
Cadmium	3	3	5	5	0.0416 U	0.0500 U	0.0588 J	0.0416 U	0.0416 U	0.0416 U	0.0416 U	0.0416 U
Chromium	11	11	100	100	1.36	1.60 J	1.41	1.46	1.37	1.42	1.43	1.41
Copper	2.9	2.9	1300	1300	105	82.0	50.5	46.7	108	31.9	20.1	22.4
Lead	15	5.6	15	15	0.445	0.130 U	0.551	0.904	0.337	0.619	0.0827 U	0.0853 J
Selenium	5	5	50	50	0.565	0.300 U	0.556	0.451	0.519	0.519	0.583	0.526
Thallium	2	2	2	2	0.0210 U	0.0500 U	0.0210 U	0.0210 U	0.0210 U	0.0210 U	0.0210 U	0.0210 U

**Residential Sampling Report for Flushing Zone**  
**A2 Zone Residential DW Sampling**  
**Chemistry Results**  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-BLDG0530	A2-BLDG0530	A2-BLDG0530	A2-BLDG0530	A2-BLDG0576	A2-BLDG089A	A2-BLDG1434	A2-BLDG171B
Location Type:	Child Development Center	Child Development Center	Child Development Center	Child Development Center	Non-Residence	Non-Residence	Non-Residence	Non-Residence
Residence:	BLDG 530 - Ford Island CDC; B350 O'Kane Boulevard and Saratoga Boulevard	BLDG 530 - Ford Island CDC; B350 O'Kane Boulevard and Saratoga Boulevard	BLDG 530 - Ford Island CDC; B350 O'Kane Boulevard and Saratoga Boulevard	BLDG 530 - Ford Island CDC; B350 O'Kane Boulevard and Saratoga Boulevard	BLDG 576 - NUWC Building, Wasp Blvd and Kingfisher St	Building 89A,FORD ISLAND CONFERENCE CTR, 89 Hornet Ave	Building 1434,Navy LODGE, 1275 Saratoga Blvd	NUWC, 171B Avocet St and Ranger Loop
Field Sample ID:	220115-A2-CT01	220115-A2-DT01	220117-A2-CT01	220117-A2-DT03	220119-A2-JT06	220119-A2-JT03	220119-A2-JT01	220119-A2-JT02
Sample Date:	2022-01-15	2022-01-15	2022-01-17	2022-01-17	2022-01-19	2022-01-19	2022-01-19	2022-01-19
Sample Type:	N	N	N	N	N	N	N	N

GENCHEM (mg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A023	SDG: C22A023	SDG: C22A033	SDG: C22A033	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049
Total Organic Carbon	2	None	None	None	1.90	0.200 U	2.65	2.90	0.190 U	0.190 U	0.190 U	0.190 U
HC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40954	SDG: DA40954	SDG: 5801094351	SDG: 5801094351	SDG: 5081095271	SDG: 5081095271	SDG: 5801094701	SDG: 5801094701
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	190 U	190 U	90.0 U	88.0 U	93.0 U	95.0 J	94.0 U	93.0 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 U	40.0 U	31.0 U	31.0 U	31.0 U	100 UJ	31.0 U	31.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	190 U	190 U	180 U	180 U	190 U	180 U	190 U	190 U
HG (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40954	SDG: DA40954	SDG: 2A18016	SDG: 2A18028	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049
Mercury	0.025	0.025	2	2	0.0250 UJ	0.0250 UJ	0.0505	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U
METAL (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40954	SDG: DA40954	SDG: 2A18016	SDG: 2A18028	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049
Antimony	6	6	6	6	0.100 U	0.100 U	0.0889 U	0.0889 U	0.0889 U	0.0889 U	0.0889 U	0.0889 U
Arsenic	10	10	10	10	0.500 UJ	0.500 UJ	0.239 J	0.232 J	0.129 J	0.204 J	0.196 J	0.132 J
Barium	220	220	2000	2000	2.10	2.00	2.04	1.90	2.46	3.10	1.80	1.78
Beryllium	0.66	0.66	4	4	0.150 U	0.150 U	0.0624 U	0.0624 U	0.0624 U	0.0624 U	0.0624 U	0.0624 U
Cadmium	3	3	5	5	0.0500 U	0.0500 U	0.0416 U	0.0416 U	0.0416 U	0.0416 U	0.0416 U	0.0416 U
Chromium	11	11	100	100	1.90 J	1.90 J	1.34	1.28	1.40	1.46	1.37	1.17
Copper	2.9	2.9	1300	1300	66.0	110	74.7	155	31.0	37.9	37.9	62.9
Lead	15	5.6	15	15	0.180 J	0.160 J	0.183 J	0.117 J	0.561	0.143 J	0.0859 J	0.146 J
Selenium	5	5	50	50	0.700 U	0.300 U	1.15	1.12	0.546	0.736	0.782	0.473
Thallium	2	2	2	2	0.0500 U	0.0560 J	0.0210 U	0.0210 U	0.0210 U	0.0210 U	0.0210 U	0.0210 U

Residential Sampling Report for Flushing Zone  
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Location ID:	A2-CATA1155	A2-CATA1191	A2-CATA4950	A2-DAUN4880	A2-DAUN4894	A2-DAUN4913	A2-DAUN4913	A2-DAUN4913
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	1155 Catalina Drive	1191 Catalina Drive	4950 Catalina Lane	4880 Dauntless Drive	4894 Dauntless Drive	4913 Dauntless Drive	4913 Dauntless Drive	4913 Dauntless Drive
Field Sample ID:	220118-A2-AT07	220119-A2-IT03	220117-A2-KT01	220117-A2-KT06	220118-A2-IT01	220118-A2-IT04	A2-TW-1303971-22041-3-N	A2-TW-1303971-22041-N
Sample Date:	2022-01-18	2022-01-19	2022-01-17	2022-01-17	2022-01-18	2022-01-18	2022-02-10	2022-02-10
Sample Type:	N	N	N	N	N	N	FD	N

GENCHEM (mg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A037	SDG: CHEMTOOL_35692067	SDG: 2A18016	SDG: C22A033	SDG: C22A037	SDG: C22A037	SDG: DA41841	SDG: DA41841
Total Organic Carbon	2	None	None	None	0.200 U	0.500 U	0.190 U	2.56	1.54	0.200 U	0.200 U	0.670
HC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41045	SDG: 5801094701	SDG: DA40989	SDG: DA41045	SDG: DA41077	SDG: DA41077	SDG: DA41841	SDG: DA41841
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	190 U	91.0 U	190 U	190 U	190 UJ	259 J	52.0 U	121
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 U	31.0 U	40.0 U	40.0 U	40.0 UJ	40.0 UJ	40.0 U	40.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	190 U	180 U	190 U	190 U	190 U	209	52.0 U	52.0 U
HG (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41045	SDG: CHEMTOOL_35692067	SDG: DA40989	SDG: DA41045	SDG: DA41077	SDG: DA41077	SDG: DA41841	SDG: DA41841
Mercury	0.025	0.025	2	2	0.0250 U	0.0900 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U
METAL (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41045	SDG: CHEMTOOL_35692067	SDG: DA40989	SDG: DA41045	SDG: DA41077	SDG: DA41077	SDG: DA41841	SDG: DA41841
Antimony	6	6	6	6	0.100 U	0.210 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Arsenic	10	10	10	10	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Barium	220	220	2000	2000	2.00	1.90	1.70 J	1.80 J	1.80 J	1.80 J	1.90 J	1.80 J
Beryllium	0.66	0.66	4	4	0.100 U	0.0700 U	0.150 U	0.100 U	0.100 U	0.100 U	0.150 U	0.150 U
Cadmium	3	3	5	5	0.100 J	0.120 U	0.0500 U	0.100 U	0.100 U	0.100 U	0.0500 U	0.0500 U
Chromium	11	11	100	100	1.60 J	1.40 J	0.970 J	1.50 J	0.600 J	0.700 J	1.30 J	1.30 J
Copper	2.9	2.9	1300	1300	75.0	65.5	40.0	55.0	48.0	110	55.0	45.3
Lead	15	5.6	15	15	0.600	0.520 J	0.340 J	0.400 J	0.400 J	0.300 J	0.360 J	0.360 J
Selenium	5	5	50	50	0.300 U	1.30	0.320 J	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U
Thallium	2	2	2	2	0.100 U	0.500 U	0.0500 U	0.100 U	0.100 U	0.100 U	0.130 J	0.0500 U

**Residential Sampling Report for Flushing Zone**  
**A2 Zone Residential DW Sampling**  
**Chemistry Results**  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-DAUN4913	A2-DAUN4921	A2-DAUN4923	A2-DAUN4931	A2-DAUN4931	A2-KAME4721	A2-KAME4793	A2-KAME4833
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	4913 Dauntless Drive	4921 Dauntless Drive	4923 Dauntless Drive	4931 Dauntless Drive	4931 Dauntless Drive	4721 Kamehameha Loop	4793 Kamehameha Loop	4833 Kamehameha Loop
Field Sample ID:	A2-TW-1303971-22041-N-R2	220118-A2-HT05	220118-A2-AT06	220117-A2-KT04	220117-A2-KT05	220118-A2-KT03	220117-A2-GT03	220117-A2-BT01
Sample Date:	2022-02-11	2022-01-18	2022-01-18	2022-01-17	2022-01-17	2022-01-18	2022-01-17	2022-01-17
Sample Type:	N	N	N	N	FD	N	N	N

GENCHEM (mg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41869	SDG: C22A037	SDG: C22A037	SDG: C22A033	SDG: C22A033	SDG: C22A037	SDG: 2A18016	SDG: C22A033
Total Organic Carbon	2	None	None	None	0.320 J	1.62	0.200 U	2.29	2.53	1.58	0.190 U	2.27
HC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41869	SDG: DA41077	SDG: DA41045	SDG: DA41045	SDG: DA41045	SDG: DA41045	SDG: DA41045	SDG: 5801094351
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	52.0 U	190 U	None	190 U	190 U	190 U	190 U	93.0 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 U	40.0 UJ	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	31.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	52.0 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U
HG (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41869	SDG: DA41077	SDG: DA41045	SDG: DA41045	SDG: DA41045	SDG: DA41045	SDG: DA41045	SDG: 2A18016
Mercury	0.025	0.025	2	2	0.0250 UJ	0.0250 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U	0.0170 U
METAL (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41869	SDG: DA41077	SDG: DA41045	SDG: DA41045	SDG: DA41045	SDG: DA41045	SDG: DA41045	SDG: 2A18016
Antimony	6	6	6	6	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.0889 U
Arsenic	10	10	10	10	0.670 J	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.199 J
Barium	220	220	2000	2000	1.90 J	1.90 J	1.90 J	1.80 J	1.80 J	1.90 J	1.70 J	1.73
Beryllium	0.66	0.66	4	4	0.150 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.0624 U
Cadmium	3	3	5	5	0.0500 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.0416 U
Chromium	11	11	100	100	1.50 J	0.600 J	1.60 J	1.70 J	1.50 J	1.70 J	1.50 J	1.35
Copper	2.9	2.9	1300	1300	209	48.0	16.0	37.0	46.0	70.0	71.0	53.4
Lead	15	5.6	15	15	0.530 J	0.400 J	0.200 J	0.300 J	0.300 J	0.300 J	0.200 J	0.118 J
Selenium	5	5	50	50	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	1.04
Thallium	2	2	2	2	0.130 J	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.0210 U



Residential Sampling Report for Flushing Zone  
A2 Zone Residential DW Sampling  
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Location ID:	A2-KAME4870	A2-KAME4894	A2-KAME4922	A2-KAME4947	A2-KAME5027	A2-KAME5036	A2-KAME5134	A2-KAME5135
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	4870 Kamehameha Loop	4894 Kamehameha Loop	4922 Kamehameha Loop	4947 Kamehameha Loop	5027 Kamehameha Loop	5036 Kamehameha Loop	5134 Kamehameha Loop	5135 Kamehameha Loop
Field Sample ID:	220118-A2-CT01	220118-A2-KT06	220117-A2-GT05	220117-A2-GT06	220118-A2-IT03	220117-A2-BT02	220117-A2-FT03	220117-A2-FT04
Sample Date:	2022-01-18	2022-01-18	2022-01-17	2022-01-17	2022-01-18	2022-01-17	2022-01-17	2022-01-17
Sample Type:	N	N	N	N	N	N	N	N

GENCHEM (mg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: C22A037	SDG: 2A18016	SDG: 2A18016	SDG: C22A037	SDG: C22A033	SDG: C22A033	SDG: C22A033
Total Organic Carbon	2	None	None	None	0.200 J	0.200 U	0.190 U	0.190 U	0.200 U	2.94	3.38	2.55

HC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: DA41077	SDG: DA41045	SDG: DA41045	SDG: DA41077	SDG: 5801094351	SDG: 5801094351	SDG: 5801094351
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	190 U	190 UJ	190 U	190 U	190 U	92.0 U	87.0 U	87.0 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 UJ	40.0 UJ	40.0 U	40.0 U	40.0 UJ	31.0 U	31.0 U	31.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	190 U	190 U	190 U	190 U	190 U	180 U	170 U	170 U

HG (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: DA41077	SDG: DA41045	SDG: DA41045	SDG: DA41077	SDG: 2A18016	SDG: 2A18016	SDG: 2A18016
Mercury	0.025	0.025	2	2	0.0250 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U	0.0170 U	0.0170 U	0.0390 J

METAL (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: DA41077	SDG: DA41045	SDG: DA41045	SDG: DA41077	SDG: 2A18016	SDG: 2A18016	SDG: 2A18016
Antimony	6	6	6	6	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.0889 U	0.0889 U	0.0889 U
Arsenic	10	10	10	10	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.221 J	0.267 J	0.242 J
Barium	220	220	2000	2000	1.70 J	1.80 J	1.80 J	1.90 J	1.80 J	1.69	1.81	1.67
Beryllium	0.66	0.66	4	4	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.0624 U	0.0624 U	0.0624 U
Cadmium	3	3	5	5	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.0416 U	0.0416 U	0.0416 U
Chromium	11	11	100	100	0.600 J	0.600 J	1.60 J	1.70 J	0.600 J	1.34	1.44	1.36
Copper	2.9	2.9	1300	1300	65.0	66.0	100	69.0	64.0	27.2	51.1	75.7
Lead	15	5.6	15	15	0.200 J	0.300 J	0.600	0.300 J	0.400 J	0.0827 U	0.147 J	0.190 J
Selenium	5	5	50	50	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	1.05	1.33	1.29
Thallium	2	2	2	2	0.100 U	0.100 J	0.100 U	0.100 U	0.100 U	0.0210 U	0.0210 U	0.0210 U

Residential Sampling Report for Flushing Zone  
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Location ID:	A2-KAME5184	A2-KAME5184	A2-KAME5242	A2-KAME5242	A2-KAME5246	A2-KAME5262	A2-KAME5262	A2-KAME5280
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	5184 Kamehameha Loop	5184 Kamehameha Loop	5242 Kamehameha Loop	5242 Kamehameha Loop	5246 Kamehameha Loop	5262 Kamehameha Loop	5262 Kamehameha Loop	5280 Kamehameha Loop
Field Sample ID:	220118-A2-CT02	220120-A2-CT01	220118-A2-KT01	220118-A2-KT02	220117-A2-FT01	220117-A2-BT05	220117-A2-BT09	220118-A2-KT04
Sample Date:	2022-01-18	2022-01-20	2022-01-18	2022-01-18	2022-01-17	2022-01-17	2022-01-17	2022-01-18
Sample Type:	N	N	N	FD	N	N	FD	N

GENCHEM (mg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: C22A042	SDG: C22A037	SDG: C22A037	SDG: C22A033	SDG: C22A033	SDG: C22A033	SDG: C22A037
Total Organic Carbon	2	None	None	None	0.200 U	1.83	0.200 U	1.61	2.23	2.67	2.05	0.200 U

HC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: 5081095271	SDG: DA41045	SDG: DA41045	SDG: 5801093841	SDG: 5801094351	SDG: 5801094351	SDG: DA41045
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	190 UJ	92.0 U	None	190 U	88.0 U	93.0 U	92.0 U	190 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 UJ	31.0 U	40.0 U	40.0 U	100 U	31.0 U	31.0 U	40.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	190 U	180 U	190 U	190 U	180 U	190 U	180 U	190 U

HG (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: 810127801	SDG: DA41045	SDG: DA41045	SDG: 2A18016	SDG: 2A18016	SDG: 2A18016	SDG: DA41045
Mercury	0.025	0.025	2	2	0.0250 U	0.100 U	0.0250 U	0.0250 U	0.0214 J	0.0170 U	0.0170 U	0.0250 U

METAL (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: 810127801	SDG: DA41045	SDG: DA41045	SDG: 2A18016	SDG: 2A18016	SDG: 2A18016	SDG: DA41045
Antimony	6	6	6	6	0.100 U	0.0770 J	0.100 U	0.100 U	0.0889 U	0.0889 U	0.0889 U	0.100 U
Arsenic	10	10	10	10	0.500 U	0.890 U	0.500 U	0.500 U	0.271 J	0.253 J	0.213 J	0.500 U
Barium	220	220	2000	2000	1.80 J	1.90 J	1.80 J	1.90 J	1.87	1.81	1.74	1.90 J
Beryllium	0.66	0.66	4	4	0.100 U	0.0830 U	0.100 U	0.100 U	0.0624 U	0.0624 U	0.0624 U	0.100 U
Cadmium	3	3	5	5	0.100 U	0.140 U	0.100 U	0.100 U	0.0416 U	0.0416 U	0.0416 U	0.100 U
Chromium	11	11	100	100	0.500 U	1.80	2.00	2.10	1.47	1.44	1.35	1.60 J
Copper	2.9	2.9	1300	1300	59.0	150	70.0	64.0	47.1	38.9	54.0	84.0
Lead	15	5.6	15	15	0.300 J	0.400 J	0.100 J	0.200 J	0.181 J	0.173 J	0.165 J	0.400 J
Selenium	5	5	50	50	0.300 U	1.60 U	0.300 U	0.300 U	1.34	1.05	0.980	0.300 U
Thallium	2	2	2	2	0.100 U	0.160 U	0.100 J	0.100 J	0.0210 U	0.0210 U	0.0210 U	0.100 U

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Location ID:	A2-LEXI4670	A2-MARY4705	A2-NEVA4674	A2-NEVA4697	A2-NEVA4703	A2-NEVA4705	A2-OKLA4682	A2-SARA1023
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	4670 Lexington Boulevard	4705 Maryland Street	4674 Nevada Street	4697 Nevada Street	4703 Nevada Street	4705 Nevada Street	4682 Oklahoma Avenue	1023 Saratoga Boulevard
Field Sample ID:	220118-A2-AT08	220119-A2-KT07	220118-A2-HT06	220118-A2-KT05	220118-A2-HT04	220118-A2-IT02	220118-A2-HT03	220118-A2-AT04
Sample Date:	2022-01-18	2022-01-19	2022-01-18	2022-01-18	2022-01-18	2022-01-18	2022-01-18	2022-01-18
Sample Type:	N	N	N	N	N	N	N	N

GENCHEM (mg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A037	SDG: 2A20049	SDG: C22A037	SDG: C22A037	SDG: C22A037	SDG: C22A037	SDG: C22A037_TOC	SDG: C22A037
Total Organic Carbon	2	None	None	None	0.200 U	0.190 U	0.200 U	0.200 U	1.90	0.200 U	1.71	0.200 U

HC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: 5081095271	SDG: DA41077	SDG: DA41077	SDG: DA41045	SDG: DA41077	SDG: DA41045	SDG: DA41045
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	190 U	92.0 U	190 U	190 UJ	190 U	190 UJ	190 U	190 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 UJ	31.0 U	40.0 UJ	40.0 UJ	40.0 U	40.0 UJ	40.0 U	40.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	190 U	180 U	190 U	190 U	190 U	190 U	190 U	190 U

HG (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: 2A20049	SDG: DA41077	SDG: DA41077	SDG: DA41045	SDG: DA41077	SDG: DA41045	SDG: DA41045
Mercury	0.025	0.025	2	2	0.0250 U	0.0170 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U

METAL (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: 2A20049	SDG: DA41077	SDG: DA41077	SDG: DA41045	SDG: DA41077	SDG: DA41045	SDG: DA41045
Antimony	6	6	6	6	0.100 U	0.0889 U	0.100 U	0.100 U	0.200 J	0.100 U	0.100 U	0.100 U
Arsenic	10	10	10	10	0.500 U	0.104 J	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Barium	220	220	2000	2000	1.80 J	1.94	1.90 J	1.90 J	2.80	1.80 J	1.90 J	1.90 J
Beryllium	0.66	0.66	4	4	0.100 U	0.0624 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Cadmium	3	3	5	5	0.100 U	0.0416 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Chromium	11	11	100	100	0.500 U	1.34	1.00 J	0.900 J	1.70 J	0.600 J	1.90 J	1.70 J
Copper	2.9	2.9	1300	1300	13.0	23.9	14.0	10.0	170	7.70	6.80	13.0
Lead	15	5.6	15	15	0.400 J	0.750	0.600	0.300 J	2.00	0.300 J	0.400 J	0.600
Selenium	5	5	50	50	0.300 U	0.405	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U
Thallium	2	2	2	2	0.100 U	0.0210 U	0.100 U	0.100 J	0.100 U	0.100 U	0.100 U	0.100 U

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Location ID:	A2-SARA1023	A2-TENN1038	A2-TOMA4923	A2-TOMA4959	A2-TOMA4970	A2-VEST5696	A2-VEST5696	A2-VEST5710
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	1023 Saratoga Boulevard	1038 Tennessee Street	4923 Tomahawk Street	4959 Tomahawk Street	4970 Tomahawk Street	5696 Vestal Lane	5696 Vestal Lane	5710 Vestal Lane
Field Sample ID:	220118-A2-AT05	220117-A2-GT04	220119-A2-KT06	220117-A2-BT03	220117-A2-KT02	220118-A2-DT01	220120-A2-DT01	220118-A2-DT02
Sample Date:	2022-01-18	2022-01-17	2022-01-19	2022-01-17	2022-01-17	2022-01-18	2022-01-20	2022-01-18
Sample Type:	N	N	N	N	N	N	N	N

GENCHEM (mg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A037	SDG: 2A18016	SDG: 2A20049	SDG: C22A033	SDG: 2A18016	SDG: DA41077	SDG: C22A042	SDG: DA41077
Total Organic Carbon	2	None	None	None	0.200 U	0.190 U	0.190 U	2.44	0.520	0.200 U	0.200 U	0.200 U

HC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41045	SDG: DA41045	SDG: 5081095271	SDG: 5081094351	SDG: DA40989	SDG: DA41077	SDG: 5081095271	SDG: DA41077
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	190 U	190 U	92.0 U	93.0 U	190 U	190 U	94.0 U	190 UJ
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 U	40.0 U	31.0 U	31.0 U	40.0 U	40.0 UJ	31.0 U	40.0 UJ
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	190 U	190 U	180 U	190 U	190 U	190 U	190 U	190 U

HG (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41045	SDG: DA41045	SDG: 2A20049	SDG: 2A18016	SDG: DA40989	SDG: DA41077	SDG: 810127801	SDG: DA41077
Mercury	0.025	0.025	2	2	0.0250 U	0.0250 U	0.0170 U	0.0170 U	0.0250 U	0.0250 U	0.100 U	0.0250 U

METAL (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41045	SDG: DA41045	SDG: 2A20049	SDG: 2A18016	SDG: DA40989	SDG: DA41077	SDG: 810127801	SDG: DA41077
Antimony	6	6	6	6	0.100 U	0.100 U	0.0889 U	0.0889 U	0.100 U	0.100 J	0.0570 U	0.100 U
Arsenic	10	10	10	10	0.500 U	0.500 U	0.148 J	0.236 J	0.500 U	0.500 U	0.890 U	0.500 U
Barium	220	220	2000	2000	1.80 J	1.80 J	1.73	1.85	1.80 J	2.20	1.80 J	2.10
Beryllium	0.66	0.66	4	4	0.100 U	0.100 U	0.0624 U	0.0624 U	0.150 U	0.100 U	0.0830 U	0.100 U
Cadmium	3	3	5	5	0.100 U	0.100 U	0.0416 U	0.0416 U	0.0500 U	0.100 U	0.140 U	0.100 U
Chromium	11	11	100	100	1.60 J	1.70 J	1.30	1.40	1.10 J	0.600 J	1.80	0.700 J
Copper	2.9	2.9	1300	1300	13.0	6.30	21.3	59.0	25.0	37.0	20.0	49.0
Lead	15	5.6	15	15	0.600	0.400 J	0.230	0.388	0.260 J	1.20	0.600	1.90
Selenium	5	5	50	50	0.300 U	0.300 U	0.571	1.22	0.300 U	0.300 U	1.60 U	0.300 U
Thallium	2	2	2	2	0.100 U	0.100 U	0.0210 U	0.0210 U	0.0500 U	0.100 U	0.160 U	0.100 U

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Location ID:	A2-WASP4918	A2-WASP4930	A2-WASP4964	A2-WEST1003	A2-WEST1036	A2-WEST1036	A2-WEST1038
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	4918 Wasp Boulevard	4930 Wasp Boulevard	4964 Wasp Boulevard	1003 West Virginia Street	1036 West Virginia Street	1036 West Virginia Street	1038 West Virginia Street
Field Sample ID:	220117-A2-FT02	220117-A2-BT04	220117-A2-KT03	220118-A2-IT05	220118-A2-HT01	220118-A2-HT02	220119-A2-IT04
Sample Date:	2022-01-17	2022-01-17	2022-01-17	2022-01-18	2022-01-18	2022-01-18	2022-01-19
Sample Type:	N	N	N	N	N	FD	N

GENCHEM (mg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A033	SDG: C22A033	SDG: 2A18016	SDG: C22A037	SDG: C22A037	SDG: C22A037	SDG: CHEMTOOL_35692067
Total Organic Carbon	2	None	None	None	2.57	3.13	0.190 U	0.200 U	0.200 U	0.200 U	0.500 U

HC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 5801093841	SDG: 5801094351	SDG: DA40989	SDG: DA41077	SDG: DA41045	SDG: DA41045	SDG: 5801094701
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	87.0 U	93.0 U	190 U	190 UJ	190 U	190 U	93.0 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	100 U	31.0 U	40.0 U	40.0 UJ	40.0 U	40.0 U	31.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	170 U	190 U	190 U	190 UJ	190 U	190 U	190 U

HG (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 2A18016	SDG: 2A18016	SDG: DA40989	SDG: DA41077	SDG: DA41045	SDG: DA41045	SDG: CHEMTOOL_35692067
Mercury	0.025	0.025	2	2	0.0170 U	0.0170 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U	0.0900 U

METAL (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 2A18016	SDG: 2A18016	SDG: DA40989	SDG: DA41077	SDG: DA41045	SDG: DA41045	SDG: CHEMTOOL_35692067
Antimony	6	6	6	6	0.0889 U	0.0889 U	0.100 U	0.100 U	0.100 U	0.100 U	0.210 U
Arsenic	10	10	10	10	0.283 J	0.221 J	0.550 J	0.500 U	0.500 U	0.500 U	0.500 U
Barium	220	220	2000	2000	1.69	1.79	1.80 J	1.90 J	1.80 J	1.80 J	1.90
Beryllium	0.66	0.66	4	4	0.0624 U	0.0624 U	0.150 U	0.100 U	0.100 U	0.100 U	0.0700 U
Cadmium	3	3	5	5	0.0416 U	0.0416 U	0.0500 U	0.100 U	0.100 U	0.100 U	0.120 U
Chromium	11	11	100	100	1.40	1.47	0.800 J	0.600 J	1.90 J	1.90 J	1.50 J
Copper	2.9	2.9	1300	1300	29.3	33.6	41.0	29.0	7.10	9.10	12.8
Lead	15	5.6	15	15	0.257	0.281	0.680	0.900	0.300 J	0.400 J	0.440 J
Selenium	5	5	50	50	1.24	1.10	0.300 U	0.300 U	0.300 U	0.300 U	1.50
Thallium	2	2	2	2	0.0210 U	0.0210 U	0.0500 U	0.100 U	0.100 U	0.100 U	0.500 U

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Location ID:	A2-BLDG0003	A2-BLDG0039	A2-BLDG0075	A2-BLDG0176	A2-BLDG0457	A2-BLDG0465	A2-BLDG0467	A2-BLDG0467
Location Type:	Non-Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence
Residence:	Building 3,WATERFRONT OPS SUPPORT BLDG, Hammonds Port St and Hornet Ave	Building 39,SSB(N) TEAM TRAINER, 198 Lexington Blvd	Building 75,NEX AND FACSFAC, 75 Liscomb Bay St	Building 176,NOAA FACILITY, 1845 Wasp Blvd	Building 457,SHOWER/LOCKE R NEAR ARIZONA POOL, B457 Lexington Blvd	Building 465,FIRE FIGHTING TRAINER BLDG, 465 Wasp Blvd	Building 467,FORD ISLAND FIRE STATION, B467 Long Island St	Building 467,FORD ISLAND FIRE STATION, B467 Long Island St
Field Sample ID:	220119-A2-KT04	220119-A2-ET08	220119-A2-KT05	220119-A2-JT05	220119-A2-KT03	220119-A2-JT04	220119-A2-KT01	220119-A2-KT02
Sample Date:	2022-01-19	2022-01-19	2022-01-19	2022-01-19	2022-01-19	2022-01-19	2022-01-19	2022-01-19
Sample Type:	N	N	N	N	N	N	N	FD

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 2A20049	SDG: DA41128	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049
1-Methylnaphthalene	2.1	10	None	None	0.00801 U	0.250 U	0.00801 U	0.00801 U	0.00801 U	0.00801 U	0.00801 U	0.00801 U
2-Ethylhexyl adipate	None	None	None	None	--	--	--	--	--	--	--	--
2-Methylnaphthalene	4.7	10	None	None	0.00904 U	0.250 U	0.00904 U	0.00904 U	0.00904 U	0.00904 U	0.00904 U	0.00904 U
Alachlor	None	None	None	None	--	--	--	--	--	--	--	--
Atrazine	None	None	None	None	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.0117 UJ	0.00990 U	0.0117 UJ	0.0117 UJ	0.0117 UJ	0.0117 UJ	0.0117 UJ	0.0117 UJ
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.437 U	0.390 U	0.437 U	2.92 J	0.437 U	0.437 U	0.437 U	0.437 U
Endrin	None	None	None	None	--	--	--	--	--	--	--	--
gamma-BHC (Lindane)	None	None	None	None	--	--	--	--	--	--	--	--
Heptachlor	None	None	None	None	--	--	--	--	--	--	--	--
Heptachlor epoxide	None	None	None	None	--	--	--	--	--	--	--	--
Hexachlorobenzene	0.0003	0.0003	1	1	0.0980 U	0.0200 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U
Hexachlorocyclopentadiene	50	None	50	50	0.00594 U	0.0400 U	0.00594 U	0.00594 U	0.00594 U	0.00594 U	0.00594 U	0.00594 U
Methoxychlor	None	None	None	None	--	--	--	--	--	--	--	--
Naphthalene	12	17	None	None	0.0103 U	0.250 U	0.0103 U	0.0103 U	0.0103 U	0.0103 U	0.0103 U	0.0103 U
Pentachlorophenol	None	None	None	None	--	--	--	--	--	--	--	--
Simazine	None	None	None	None	--	--	--	--	--	--	--	--

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 2A20049	SDG: C22A040	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049
1,1,1-Trichloroethane	11	11	200	200	0.256 U	0.119 U	0.256 U	0.256 U	0.256 U	0.256 U	0.256 U	0.256 U
1,1,2-Trichloroethane	5	5	3	5	0.190 U	0.288 U	0.190 U	0.190 U	0.190 U	0.190 U	0.190 U	0.190 U
1,1-Dichloroethene	7	7	7	7	0.160 U	0.128 U	0.160 U	0.160 U	0.160 U	0.160 U	0.160 U	0.160 U
1,2,4-Trichlorobenzene	70	70	70	70	0.170 U	0.318 U	0.170 U	0.170 U	0.170 U	0.170 U	0.170 U	0.170 U
1,2-Dichlorobenzene	10	10	600	600	0.190 U	0.272 U	0.190 U	0.190 U	0.190 U	0.190 U	0.190 U	0.190 U
1,2-Dichloroethane	5	5	5	5	0.243 U	0.0884 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U
1,2-Dichloropropane	5	5	5	5	0.130 U	0.129 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U
1,4-Dichlorobenzene	5	5	75	None	0.180 U	0.245 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U
Benzene	5	5	5	5	0.150 U	0.0846 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U
Carbon Tetrachloride	5	5	5	5	0.270 U	0.165 U	0.270 U	0.270 U	0.270 U	0.270 U	0.270 U	0.270 U



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Location ID:	A2-BLDG0530	A2-BLDG0530	A2-BLDG0530	A2-BLDG0530	A2-BLDG0576	A2-BLDG089A	A2-BLDG1434	A2-BLDG171B
Location Type:	Child Development Center	Child Development Center	Child Development Center	Child Development Center	Non-Residence	Non-Residence	Non-Residence	Non-Residence
Residence:	BLDG 530 - Ford Island CDC; B350 O'Kane Boulevard and Saratoga Boulevard	BLDG 530 - Ford Island CDC; B350 O'Kane Boulevard and Saratoga Boulevard	BLDG 530 - Ford Island CDC; B350 O'Kane Boulevard and Saratoga Boulevard	BLDG 530 - Ford Island CDC; B350 O'Kane Boulevard and Saratoga Boulevard	BLDG 576 - NUWC Building, Wasp Blvd and Kingfisher St	Building 89A,FORD ISLAND CONFERENCE CTR, 89 Hornet Ave	Building 1434,Navy LODGE, 1275 Saratoga Blvd	NUWC, 171B Avocet St and Ranger Loop
Field Sample ID:	220115-A2-CT01	220115-A2-DT01	220117-A2-CT01	220117-A2-DT03	220119-A2-JT06	220119-A2-JT03	220119-A2-JT01	220119-A2-JT02
Sample Date:	2022-01-15	2022-01-15	2022-01-17	2022-01-17	2022-01-19	2022-01-19	2022-01-19	2022-01-19
Sample Type:	N	N	N	N	N	N	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40954	SDG: DA40954	SDG: 2A18016	SDG: 2A18028	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049
1-Methylnaphthalene	2.1	10	None	None	0.240 U	0.240 UJ	None	0.00801 U	0.00801 U	0.00801 U	0.00801 U	0.00801 U
2-Ethylhexyl adipate	None	None	None	None	--	--	5.00 U	5.00 U	--	--	--	--
2-Methylnaphthalene	4.7	10	None	None	0.240 U	0.240 UJ	0.00904 U	0.00984 J	0.00904 U	0.00904 U	0.00904 U	0.00904 U
Alachlor	None	None	None	None	--	--	0.0110 U	0.0110 U	--	--	--	--
Atrazine	None	None	None	None	--	--	0.00734 U	0.00734 U	--	--	--	--
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00950 U	0.00950 UJ	0.0117 UJ	0.0117 UJ	0.0117 UJ	0.0117 UJ	0.0117 UJ	0.0117 UJ
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.380 U	0.380 U	0.437 U	0.437 U	0.437 UJ	0.437 U	0.437 U	0.437 U
Endrin	None	None	None	None	--	--	0.00991 U	0.00991 U	--	--	--	--
gamma-BHC (Lindane)	None	None	None	None	--	--	0.00633 U	0.00633 U	--	--	--	--
Heptachlor	None	None	None	None	--	--	0.00965 U	0.00965 U	--	--	--	--
Heptachlor epoxide	None	None	None	None	--	--	0.0122 U	0.0122 U	--	--	--	--
Hexachlorobenzene	0.0003	0.0003	1	1	0.0200 U	0.0200 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U	0.0980 U
Hexachlorocyclopentadiene	50	None	50	50	0.0400 U	0.0400 U	0.00594 U	0.00594 U	0.00594 U	0.00594 U	0.00594 U	0.00594 U
Methoxychlor	None	None	None	None	--	--	0.00863 U	0.00863 U	--	--	--	--
Naphthalene	12	17	None	None	0.240 U	0.240 UJ	0.0103 U	0.0103 U	0.0103 U	0.0103 U	0.0103 U	0.0103 U
Pentachlorophenol	None	None	None	None	--	--	0.0242 U	0.0242 U	--	--	--	--
Simazine	None	None	None	None	--	--	0.00734 U	0.00734 U	--	--	--	--

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40954R	SDG: C22A023	SDG: 2A18016	SDG: 2A18028	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049
1,1,1-Trichloroethane	11	11	200	200	0.500 U	0.119 U	0.256 U	0.256 U	0.256 U	0.256 U	0.256 U	0.256 U
1,1,2-Trichloroethane	5	5	3	5	0.500 U	0.288 U	0.190 U	0.190 U	0.190 U	0.190 U	0.190 U	0.190 U
1,1-Dichloroethene	7	7	7	7	0.500 U	0.128 U	0.160 U	0.160 U	0.160 U	0.160 U	0.160 U	0.160 U
1,2,4-Trichlorobenzene	70	70	70	70	0.500 U	0.318 U	0.170 U	0.170 U	0.170 U	0.170 U	0.170 U	0.170 U
1,2-Dichlorobenzene	10	10	600	600	0.500 U	0.272 U	0.190 U	0.190 U	0.190 U	0.190 U	0.190 U	0.190 U
1,2-Dichloroethane	5	5	5	5	0.500 U	0.0884 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U	0.243 U
1,2-Dichloropropane	5	5	5	5	0.500 U	0.129 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U
1,4-Dichlorobenzene	5	5	75	None	0.500 U	0.245 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U
Benzene	5	5	5	5	0.500 U	0.0846 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U
Carbon Tetrachloride	5	5	5	5	0.500 U	0.165 U	0.270 U	0.270 U	0.270 U	0.270 U	0.270 U	0.270 U

Residential Sampling Report for Flushing Zone  
A2 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-CATA1155	A2-CATA1191	A2-CATA4950	A2-DAUN4880	A2-DAUN4894	A2-DAUN4913	A2-DAUN4913	A2-DAUN4913
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	1155 Catalina Drive	1191 Catalina Drive	4950 Catalina Lane	4880 Dauntless Drive	4894 Dauntless Drive	4913 Dauntless Drive	4913 Dauntless Drive	4913 Dauntless Drive
Field Sample ID:	220118-A2-AT07	220119-A2-IT03	220117-A2-KT01	220117-A2-KT06	220118-A2-IT01	220118-A2-IT04	A2-TW-1303971-22041-3-N	A2-TW-1303971-22041-N
Sample Date:	2022-01-18	2022-01-19	2022-01-17	2022-01-17	2022-01-18	2022-01-18	2022-02-10	2022-02-10
Sample Type:	N	N	N	N	N	N	FD	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41045	SDG: CHEMTOOL_35692067	SDG: 810124611	SDG: 810124611	SDG: DA41077	SDG: DA41077	SDG: DA41841	SDG: DA41841
1-Methylnaphthalene	2.1	10	None	None	0.250 U	0.180 U	0.0200 U	0.0190 U	0.240 U	0.240 U	0.240 U	0.240 U
2-Ethylhexyl adipate	None	None	None	None	--	--	--	--	--	--	--	--
2-Methylnaphthalene	4.7	10	None	None	0.250 U	0.190 U	0.0200 U	0.0190 U	0.240 U	0.240 U	0.240 U	0.240 U
Alachlor	None	None	None	None	--	--	--	--	--	--	--	--
Atrazine	None	None	None	None	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00980 U	0.0190 U	0.00980 U	0.00970 U	0.00950 U	0.00950 U	0.00950 U	0.00980 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.390 U	0.470 U	0.590 U	0.580 U	0.390 U	0.380 U	0.380 U	0.390 U
Endrin	None	None	None	None	--	--	--	--	--	--	--	--
gamma-BHC (Lindane)	None	None	None	None	--	--	--	--	--	--	--	--
Heptachlor	None	None	None	None	--	--	--	--	--	--	--	--
Heptachlor epoxide	None	None	None	None	--	--	--	--	--	--	--	--
Hexachlorobenzene	0.0003	0.0003	1	1	0.0200 U	0.0150 U	0.00980 U	0.00970 U	0.0200 U	0.0200 U	--	--
Hexachlorocyclopentadiene	50	None	50	50	0.0400 U	0.0240 U	0.00980 U	0.00970 U	0.0400 U	0.0400 U	--	--
Methoxychlor	None	None	None	None	--	--	--	--	--	--	--	--
Naphthalene	12	17	None	None	0.250 U	0.180 U	0.0200 U	0.0190 U	0.240 U	0.240 U	0.240 U	0.240 U
Pentachlorophenol	None	None	None	None	--	--	--	--	--	--	--	--
Simazine	None	None	None	None	--	--	--	--	--	--	--	--

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A037	SDG: CHEMTOOL_35692067	SDG: DA40989	SDG: DA41045	SDG: C22A037	SDG: C22A037	SDG: DA41841	SDG: DA41841
1,1,1-Trichloroethane	11	11	200	200	0.119 U	0.270 U	0.500 U	0.500 U	0.119 U	0.119 U	0.500 U	0.500 U
1,1,2-Trichloroethane	5	5	3	5	0.288 U	0.280 U	0.500 U	0.500 U	0.288 U	0.288 U	0.500 U	0.500 U
1,1-Dichloroethene	7	7	7	7	0.128 U	0.290 U	0.500 U	0.500 U	0.128 U	0.128 U	0.500 U	0.500 U
1,2,4-Trichlorobenzene	70	70	70	70	0.318 U	0.350 U	0.500 U	0.500 U	0.318 U	0.318 U	0.500 U	0.500 U
1,2-Dichlorobenzene	10	10	600	600	0.272 U	0.260 U	0.500 U	0.500 U	0.272 U	0.272 U	0.500 U	0.500 U
1,2-Dichloroethane	5	5	5	5	0.0884 U	0.300 U	0.500 U	0.500 U	0.0884 U	0.0884 U	0.500 U	0.500 U
1,2-Dichloropropane	5	5	5	5	0.129 U	0.440 U	0.500 U	0.500 U	0.129 U	0.129 U	0.500 U	0.500 U
1,4-Dichlorobenzene	5	5	75	None	0.245 U	0.300 U	0.500 U	0.500 U	0.245 U	0.245 U	0.500 U	0.500 U
Benzene	5	5	5	5	0.0846 U	0.400 U	0.500 U	0.500 U	0.0846 U	0.0846 U	0.500 U	0.500 U
Carbon Tetrachloride	5	5	5	5	0.165 U	0.280 U	0.500 U	0.500 U	0.165 U	0.165 U	0.500 U	0.500 U

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Location ID:	A2-DAUN4913	A2-DAUN4921	A2-DAUN4923	A2-DAUN4931	A2-DAUN4931	A2-KAME4721	A2-KAME4793	A2-KAME4833
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	4913 Dauntless Drive	4921 Dauntless Drive	4923 Dauntless Drive	4931 Dauntless Drive	4931 Dauntless Drive	4721 Kamehameha Loop	4793 Kamehameha Loop	4833 Kamehameha Loop
Field Sample ID:	A2-TW-1303971-22041-N-R2	220118-A2-HT05	220118-A2-AT06	220117-A2-KT04	220117-A2-KT05	220118-A2-KT03	220117-A2-GT03	220117-A2-BT01
Sample Date:	2022-02-11	2022-01-18	2022-01-18	2022-01-17	2022-01-17	2022-01-18	2022-01-17	2022-01-17
Sample Type:	N	N	N	N	FD	N	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41869	SDG: DA41077	SDG: DA41045	SDG: 810124611	SDG: 810124611	SDG: DA41045	SDG: 810125421	SDG: 2A18016
1-Methylnaphthalene	2.1	10	None	None	0.240 U	0.250 U	0.250 U	0.0200 U	0.0200 U	0.250 U	0.0200 U	0.00801 U
2-Ethylhexyl adipate	None	None	None	None	--	--	--	--	--	--	--	5.00 U
2-Methylnaphthalene	4.7	10	None	None	0.240 U	0.250 U	0.250 U	0.0200 U	0.0200 U	0.250 U	0.0200 U	0.00904 U
Alachlor	None	None	None	None	--	--	--	--	--	--	--	0.0110 U
Atrazine	None	None	None	None	--	--	--	--	--	--	--	0.00734 U
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00960 U	0.00980 U	0.00990 U	0.00980 U	0.00980 U	0.00980 U	0.00980 U	0.0117 UJ
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.380 U	0.390 U	0.390 U	0.590 U	0.590 U	0.390 U	0.590 U	0.437 U
Endrin	None	None	None	None	--	--	--	--	--	--	--	0.00991 U
gamma-BHC (Lindane)	None	None	None	None	--	--	--	--	--	--	--	0.00633 U
Heptachlor	None	None	None	None	--	--	--	--	--	--	--	0.00965 U
Heptachlor epoxide	None	None	None	None	--	--	--	--	--	--	--	0.0122 U
Hexachlorobenzene	0.0003	0.0003	1	1	--	0.0200 U	0.0200 U	0.00980 U	0.00980 U	0.0200 U	--	0.0980 U
Hexachlorocyclopentadiene	50	None	50	50	--	0.0400 U	0.0400 U	0.00980 U	0.00980 U	0.0400 U	--	0.00594 U
Methoxychlor	None	None	None	None	--	--	--	--	--	--	--	0.00863 U
Naphthalene	12	17	None	None	0.240 U	0.250 U	0.250 U	0.0200 U	0.0200 U	0.250 U	0.0200 U	0.0103 U
Pentachlorophenol	None	None	None	None	--	--	--	--	--	--	--	0.0242 U
Simazine	None	None	None	None	--	--	--	--	--	--	--	0.00734 U

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41869	SDG: C22A037	SDG: C22A037	SDG: DA41045	SDG: DA41045	SDG: C22A037	SDG: DA41045	SDG: 2A18016
1,1,1-Trichloroethane	11	11	200	200	0.500 U	0.119 U	0.119 U	0.500 U	0.500 U	0.119 U	0.500 U	0.256 U
1,1,2-Trichloroethane	5	5	3	5	0.500 U	0.288 U	0.288 U	0.500 U	0.500 U	0.288 U	0.500 U	0.190 U
1,1-Dichloroethane	7	7	7	7	0.500 U	0.128 U	0.128 U	0.500 U	0.500 U	0.128 U	0.500 U	0.160 U
1,2,4-Trichlorobenzene	70	70	70	70	0.500 U	0.318 U	0.318 U	0.500 U	0.500 U	0.318 U	0.500 U	0.170 U
1,2-Dichlorobenzene	10	10	600	600	0.500 U	0.272 U	0.272 U	0.500 U	0.500 U	0.272 U	0.500 U	0.190 U
1,2-Dichloroethane	5	5	5	5	0.500 U	0.0884 U	0.0884 U	0.500 U	0.500 U	0.0884 U	0.500 U	0.243 U
1,2-Dichloropropane	5	5	5	5	0.500 U	0.129 U	0.129 U	0.500 U	0.500 U	0.129 U	0.500 U	0.130 U
1,4-Dichlorobenzene	5	5	75	None	0.500 U	0.245 U	0.245 U	0.500 U	0.500 U	0.245 U	0.500 U	0.180 U
Benzene	5	5	5	5	0.500 U	0.0846 U	0.0846 U	0.500 U	0.500 U	0.0846 U	0.500 U	0.150 U
Carbon Tetrachloride	5	5	5	5	0.500 U	0.165 U	0.165 U	0.500 U	0.500 U	0.165 U	0.500 U	0.270 U

Residential Sampling Report for Flushing Zone  
A2 Zone Residential DW Sampling  
Chemistry Results  
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Location ID:	A2-KAME4870	A2-KAME4894	A2-KAME4922	A2-KAME4947	A2-KAME5027	A2-KAME5036	A2-KAME5134	A2-KAME5135
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	4870 Kamehameha Loop	4894 Kamehameha Loop	4922 Kamehameha Loop	4947 Kamehameha Loop	5027 Kamehana Loop	5036 Kamehameha Loop	5134 Kamehameha Loop	5135 Kamehameha Loop
Field Sample ID:	220118-A2-CT01	220118-A2-KT06	220117-A2-GT05	220117-A2-GT06	220118-A2-IT03	220117-A2-BT02	220117-A2-FT03	220117-A2-FT04
Sample Date:	2022-01-18	2022-01-18	2022-01-17	2022-01-17	2022-01-18	2022-01-17	2022-01-17	2022-01-17
Sample Type:	N	N	N	N	N	N	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077R	SDG: DA41077	SDG: 810125421	SDG: 810125421	SDG: DA41077	SDG: 2A18016	SDG: 2A18016	SDG: 2A18016
1-Methylnaphthalene	2.1	10	None	None	0.250 U	0.250 U	0.0200 U	0.0200 U	0.240 U	0.00801 U	0.00801 U	0.00801 U
2-Ethylhexyl adipate	None	None	None	None	--	--	--	--	--	5.00 U	5.00 U	5.00 U
2-Methylnaphthalene	4.7	10	None	None	0.250 U	0.250 U	0.0200 U	0.0200 U	0.240 U	0.00904 U	0.00904 U	0.00904 U
Alachlor	None	None	None	None	--	--	--	--	--	0.0110 U	0.0110 U	0.0110 U
Atrazine	None	None	None	None	--	--	--	--	--	0.00734 U	0.00734 U	0.00734 U
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.0100 U	0.00980 U	0.00990 U	0.00980 U	0.00960 U	0.0117 UJ	0.0117 U	0.0117 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	2.30	0.390 U	0.590 U	0.590 U	0.380 U	0.437 U	0.437 UJ	0.437 UJ
Endrin	None	None	None	None	--	--	--	--	--	0.00991 U	0.00991 U	0.00991 U
gamma-BHC (Lindane)	None	None	None	None	--	--	--	--	--	0.00633 U	0.00633 U	0.00633 U
Heptachlor	None	None	None	None	--	--	--	--	--	0.00965 U	0.00965 U	0.00965 U
Heptachlor epoxide	None	None	None	None	--	--	--	--	--	0.0122 U	0.0122 U	0.0122 U
Hexachlorobenzene	0.0003	0.0003	1	1	0.0200 U	0.0200 U	--	--	0.0200 U	0.0980 U	0.0980 U	0.0980 U
Hexachlorocyclopentadiene	50	None	50	50	0.0400 U	0.0400 U	--	--	0.0400 U	0.00594 U	0.00594 U	0.00594 U
Methoxychlor	None	None	None	None	--	--	--	--	--	0.00863 U	0.00863 U	0.00863 U
Naphthalene	12	17	None	None	0.250 U	0.250 U	0.0200 U	0.0200 U	0.240 U	0.0103 U	0.0103 U	0.0103 U
Pentachlorophenol	None	None	None	None	--	--	--	--	--	0.0242 U	0.0242 U	0.0242 U
Simazine	None	None	None	None	--	--	--	--	--	0.00734 U	0.00734 U	0.00734 U

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: C22A037	SDG: DA41045	SDG: DA41045	SDG: C22A037	SDG: 2A18016	SDG: 2A18016	SDG: 2A18016
1,1,1-Trichloroethane	11	11	200	200	0.500 U	0.119 U	0.500 U	0.500 U	0.119 U	0.256 U	0.256 U	0.256 U
1,1,2-Trichloroethane	5	5	3	5	0.500 U	0.288 U	0.500 U	0.500 U	0.288 U	0.190 U	0.190 U	0.190 U
1,1-Dichloroethane	7	7	7	7	0.500 U	0.128 U	0.500 U	0.500 U	0.128 U	0.160 U	0.160 U	0.160 U
1,2,4-Trichlorobenzene	70	70	70	70	0.500 U	0.318 U	0.500 U	0.500 U	0.318 U	0.170 U	0.170 U	0.170 U
1,2-Dichlorobenzene	10	10	600	600	0.500 U	0.272 U	0.500 U	0.500 U	0.272 U	0.190 U	0.190 U	0.190 U
1,2-Dichloroethane	5	5	5	5	0.500 U	0.0884 U	0.500 U	0.500 U	0.0884 U	0.243 U	0.243 U	0.243 U
1,2-Dichloropropane	5	5	5	5	0.500 U	0.129 U	0.500 U	0.500 U	0.129 U	0.130 U	0.130 U	0.130 U
1,4-Dichlorobenzene	5	5	75	None	0.500 U	0.245 U	0.500 U	0.500 U	0.245 U	0.180 U	0.180 U	0.180 U
Benzene	5	5	5	5	0.500 U	0.0846 U	0.500 U	0.500 U	0.0846 U	0.150 U	0.150 U	0.150 U
Carbon Tetrachloride	5	5	5	5	0.500 U	0.165 U	0.500 U	0.500 U	0.165 U	0.270 U	0.270 U	0.270 U

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Location ID:	A2-KAME5184	A2-KAME5184	A2-KAME5242	A2-KAME5242	A2-KAME5246	A2-KAME5262	A2-KAME5262	A2-KAME5280
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	5184 Kamehameha Loop	5184 Kamehameha Loop	5242 Kamehameha Loop	5242 Kamehameha Loop	5246 Kamehameha Loop	5262 Kamehameha Loop	5262 Kamehameha Loop	5280 Kamehameha Loop
Field Sample ID:	220118-A2-CT02	220120-A2-CT01	220118-A2-KT01	220118-A2-KT02	220117-A2-FT01	220117-A2-BT05	220117-A2-BT09	220118-A2-KT04
Sample Date:	2022-01-18	2022-01-20	2022-01-18	2022-01-18	2022-01-17	2022-01-17	2022-01-17	2022-01-18
Sample Type:	N	N	N	FD	N	N	FD	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: 810127801	SDG: DA41045	SDG: DA41045	SDG: 2A18016	SDG: 2A18016	SDG: 2A18016	SDG: DA41045
1-Methylnaphthalene	2.1	10	None	None	0.240 U	0.0190 U	0.240 U	0.250 U	0.00801 U	0.00801 U	0.00801 U	0.250 U
2-Ethylhexyl adipate	None	None	None	None	--	--	--	--	5.00 U	5.00 U	5.00 U	--
2-Methylnaphthalene	4.7	10	None	None	0.240 U	0.0190 U	0.240 U	0.250 U	0.00904 U	0.00904 U	0.00904 U	0.250 U
Alachlor	None	None	None	None	--	--	--	--	0.0110 U	0.0110 U	0.0110 U	--
Atrazine	None	None	None	None	--	--	--	--	0.00734 U	0.00734 U	0.00734 U	--
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00970 U	0.00960 U	0.00980 U	0.00980 U	0.0117 UJ	0.0117 UJ	0.0117 U	0.00990 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.390 U	0.580 U	0.390 U	0.390 U	0.437 U	0.437 U	0.437 UJ	0.390 U
Endrin	None	None	None	None	--	--	--	--	0.00991 U	0.00991 U	0.00991 U	--
gamma-BHC (Lindane)	None	None	None	None	--	--	--	--	0.00633 U	0.00633 U	0.00633 U	--
Heptachlor	None	None	None	None	--	--	--	--	0.00965 U	0.00965 U	0.00965 U	--
Heptachlor epoxide	None	None	None	None	--	--	--	--	0.0122 U	0.0122 U	0.0122 U	--
Hexachlorobenzene	0.0003	0.0003	1	1	0.0200 U	--	0.0200 U	0.0200 U	0.0980 U	0.0980 U	0.0980 U	0.0200 U
Hexachlorocyclopentadiene	50	None	50	50	0.0400 U	--	0.0400 U	0.0400 U	0.00594 U	0.00594 U	0.00594 U	0.0400 U
Methoxychlor	None	None	None	None	--	--	--	--	0.00863 U	0.00863 U	0.00863 U	--
Naphthalene	12	17	None	None	0.240 U	0.0190 U	0.240 U	0.250 U	0.0103 U	0.0103 U	0.0103 U	0.250 U
Pentachlorophenol	None	None	None	None	--	--	--	--	0.0242 U	0.0242 U	0.0242 U	--
Simazine	None	None	None	None	--	--	--	--	0.00734 U	0.00734 U	0.00734 U	--

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: C22A042	SDG: C22A037	SDG: C22A037	SDG: 2A18016	SDG: 2A18016	SDG: 2A18016	SDG: C22A037
1,1,1-Trichloroethane	11	11	200	200	0.500 U	0.119 U	0.119 U	0.119 U	0.256 U	0.256 U	0.256 U	0.119 U
1,1,2-Trichloroethane	5	5	3	5	0.500 U	0.288 U	0.288 U	0.288 U	0.190 U	0.190 U	0.190 U	0.288 U
1,1-Dichloroethene	7	7	7	7	0.500 U	0.128 U	0.128 U	0.128 U	0.160 U	0.160 U	0.160 U	0.128 U
1,2,4-Trichlorobenzene	70	70	70	70	0.500 U	0.318 U	0.318 U	0.318 U	0.170 U	0.170 U	0.170 U	0.318 U
1,2-Dichlorobenzene	10	10	600	600	0.500 U	0.272 U	0.272 U	0.272 U	0.190 U	0.190 U	0.190 U	0.272 U
1,2-Dichloroethane	5	5	5	5	0.500 U	0.0884 U	0.0884 U	0.0884 U	0.243 U	0.243 U	0.243 U	0.0884 U
1,2-Dichloropropane	5	5	5	5	0.500 U	0.129 U	0.129 U	0.129 U	0.130 U	0.130 U	0.130 U	0.129 U
1,4-Dichlorobenzene	5	5	75	None	0.500 U	0.245 U	0.245 U	0.245 U	0.180 U	0.180 U	0.180 U	0.245 U
Benzene	5	5	5	5	0.500 U	0.0846 U	0.0846 U	0.0846 U	0.150 U	0.150 U	0.150 U	0.0846 U
Carbon Tetrachloride	5	5	5	5	0.500 U	0.165 U	0.165 U	0.165 U	0.270 U	0.270 U	0.270 U	0.165 U

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Location ID:	A2-LEXI4670	A2-MARY4705	A2-NEVA4674	A2-NEVA4697	A2-NEVA4703	A2-NEVA4705	A2-OKLA4682	A2-SARA1023
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	4670 Lexington Boulevard	4705 Maryland Street	4674 Nevada Street	4697 Nevada Street	4703 Nevada Street	4705 Nevada Street	4682 Oklahoma Avenue	1023 Saratoga Boulevard
Field Sample ID:	220118-A2-AT08	220119-A2-KT07	220118-A2-HT06	220118-A2-KT05	220118-A2-HT04	220118-A2-IT02	220118-A2-HT03	220118-A2-AT04
Sample Date:	2022-01-18	2022-01-19	2022-01-18	2022-01-18	2022-01-18	2022-01-18	2022-01-18	2022-01-18
Sample Type:	N	N	N	N	N	N	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: 2A20049	SDG: DA41077	SDG: DA41077	SDG: DA41045	SDG: DA41077	SDG: DA41045	SDG: DA41045
1-Methylnaphthalene	2.1	10	None	None	0.250 U	0.00801 U	0.250 U	0.250 U	0.250 U	0.240 U	0.250 U	0.250 U
2-Ethylhexyl adipate	None	None	None	None	--	--	--	--	--	--	--	--
2-Methylnaphthalene	4.7	10	None	None	0.250 U	0.00904 U	0.250 U	0.250 U	0.250 U	0.240 U	0.250 U	0.250 U
Alachlor	None	None	None	None	--	--	--	--	--	--	--	--
Atrazine	None	None	None	None	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00980 U	0.0117 UJ	0.00980 U	0.00990 U	0.00990 U	0.00950 U	0.0100 U	0.00990 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.390 U	0.437 U	0.390 U	0.390 U	0.400 U	0.380 U	0.400 U	0.390 U
Endrin	None	None	None	None	--	--	--	--	--	--	--	--
gamma-BHC (Lindane)	None	None	None	None	--	--	--	--	--	--	--	--
Heptachlor	None	None	None	None	--	--	--	--	--	--	--	--
Heptachlor epoxide	None	None	None	None	--	--	--	--	--	--	--	--
Hexachlorobenzene	0.0003	0.0003	1	1	0.0200 U	0.0980 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Hexachlorocyclopentadiene	50	None	50	50	0.0400 U	0.00594 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U
Methoxychlor	None	None	None	None	--	--	--	--	--	--	--	--
Naphthalene	12	17	None	None	0.250 U	0.0103 U	0.250 U	0.250 U	0.250 U	0.240 U	0.250 U	0.250 U
Pentachlorophenol	None	None	None	None	--	--	--	--	--	--	--	--
Simazine	None	None	None	None	--	--	--	--	--	--	--	--

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A037	SDG: 2A20049	SDG: C22A037	SDG: C22A037	SDG: C22A037	SDG: C22A037	SDG: C22A037	SDG: C22A037
1,1,1-Trichloroethane	11	11	200	200	0.119 U	0.256 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U
1,1,2-Trichloroethane	5	5	3	5	0.288 U	0.190 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U
1,1-Dichloroethene	7	7	7	7	0.128 U	0.160 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U
1,2,4-Trichlorobenzene	70	70	70	70	0.318 U	0.170 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U
1,2-Dichlorobenzene	10	10	600	600	0.272 U	0.190 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U
1,2-Dichloroethane	5	5	5	5	0.0884 U	0.243 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U
1,2-Dichloropropane	5	5	5	5	0.129 U	0.130 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U
1,4-Dichlorobenzene	5	5	75	None	0.245 U	0.180 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U
Benzene	5	5	5	5	0.0846 U	0.150 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U
Carbon Tetrachloride	5	5	5	5	0.165 U	0.270 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U



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Location ID:	A2-SARA1023	A2-TENN1038	A2-TOMA4923	A2-TOMA4959	A2-TOMA4970	A2-VEST5696	A2-VEST5696	A2-VEST5710
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	1023 Saratoga Boulevard	1038 Tennessee Street	4923 Tomahawk Street	4959 Tomahawk Street	4970 Tomahawk Street	5696 Vestal Lane	5696 Vestal Lane	5710 Vestal Lane
Field Sample ID:	220118-A2-AT05	220117-A2-GT04	220119-A2-KT06	220117-A2-BT03	220117-A2-KT02	220118-A2-DT01	220120-A2-DT01	220118-A2-DT02
Sample Date:	2022-01-18	2022-01-17	2022-01-19	2022-01-17	2022-01-17	2022-01-18	2022-01-20	2022-01-18
Sample Type:	N	N	N	N	N	N	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41045	SDG: 810125421	SDG: 2A20049	SDG: 2A18016	SDG: 810124611	SDG: DA41077	SDG: 810127801	SDG: DA41077
1-Methylnaphthalene	2.1	10	None	None	0.250 U	0.0200 U	0.00801 U	0.00801 U	0.0200 U	0.240 U	0.0200 U	0.240 U
2-Ethylhexyl adipate	None	None	None	None	--	--	--	5.00 U	--	--	--	--
2-Methylnaphthalene	4.7	10	None	None	0.250 U	0.0200 U	0.00904 U	0.00904 U	0.0200 U	0.240 U	0.0200 U	0.240 U
Alachlor	None	None	None	None	--	--	--	0.0110 U	--	--	--	--
Atrazine	None	None	None	None	--	--	--	0.00734 U	--	--	--	--
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00990 U	0.00980 U	0.0117 UJ	0.0117 UJ	0.00980 U	0.00950 U	0.00980 U	0.00950 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.390 U	0.590 U	0.437 U	0.437 U	0.590 U	0.380 U	0.590 U	0.380 U
Endrin	None	None	None	None	--	--	--	0.00991 U	--	--	--	--
gamma-BHC (Lindane)	None	None	None	None	--	--	--	0.00633 U	--	--	--	--
Heptachlor	None	None	None	None	--	--	--	0.00965 U	--	--	--	--
Heptachlor epoxide	None	None	None	None	--	--	--	0.0122 U	--	--	--	--
Hexachlorobenzene	0.0003	0.0003	1	1	0.0200 U	--	0.0980 U	0.0980 U	0.00980 U	0.0200 U	--	0.0200 U
Hexachlorocyclopentadiene	50	None	50	50	0.0400 U	--	0.00594 U	0.00594 U	0.00980 U	0.0400 U	--	0.0400 U
Methoxychlor	None	None	None	None	--	--	--	0.00863 U	--	--	--	--
Naphthalene	12	17	None	None	0.250 U	0.0200 U	0.0103 U	0.0103 U	0.0200 U	0.240 U	0.0200 U	0.240 U
Pentachlorophenol	None	None	None	None	--	--	--	0.0242 U	--	--	--	--
Simazine	None	None	None	None	--	--	--	0.00734 U	--	--	--	--

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A037	SDG: DA41045	SDG: 2A20049	SDG: 2A18016	SDG: DA40989	SDG: DA41077	SDG: C22A042	SDG: DA41077
1,1,1-Trichloroethane	11	11	200	200	0.119 U	0.500 U	0.256 U	0.256 U	0.500 U	0.500 U	0.119 U	0.500 U
1,1,2-Trichloroethane	5	5	3	5	0.288 U	0.500 U	0.190 U	0.190 U	0.500 U	0.500 U	0.288 U	0.500 U
1,1-Dichloroethene	7	7	7	7	0.128 U	0.500 U	0.160 U	0.160 U	0.500 U	0.500 U	0.128 U	0.500 U
1,2,4-Trichlorobenzene	70	70	70	70	0.318 U	0.500 U	0.170 U	0.170 U	0.500 U	0.500 U	0.318 U	0.500 U
1,2-Dichlorobenzene	10	10	600	600	0.272 U	0.500 U	0.190 U	0.190 U	0.500 U	0.500 U	0.272 U	0.500 U
1,2-Dichloroethane	5	5	5	5	0.0884 U	0.500 U	0.243 U	0.243 U	0.500 U	0.500 U	0.0884 U	0.500 U
1,2-Dichloropropane	5	5	5	5	0.129 U	0.500 U	0.130 U	0.130 U	0.500 U	0.500 U	0.129 U	0.500 U
1,4-Dichlorobenzene	5	5	75	None	0.245 U	0.500 U	0.180 U	0.180 U	0.500 U	0.500 U	0.245 U	0.500 U
Benzene	5	5	5	5	0.0846 U	0.500 U	0.150 U	0.150 U	0.500 U	0.500 U	0.0846 U	0.500 U
Carbon Tetrachloride	5	5	5	5	0.165 U	0.500 U	0.270 U	0.270 U	0.500 U	0.500 U	0.165 U	0.500 U

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Location ID:	A2-WASP4918	A2-WASP4930	A2-WASP4964	A2-WEST1003	A2-WEST1036	A2-WEST1036	A2-WEST1038
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	4918 Wasp Boulevard	4930 Wasp Boulevard	4964 Wasp Boulevard	1003 West Virginia Street	1036 West Virginia Street	1036 West Virginia Street	1038 West Virginia Street
Field Sample ID:	220117-A2-FT02	220117-A2-BT04	220117-A2-KT03	220118-A2-IT05	220118-A2-HT01	220118-A2-HT02	220119-A2-IT04
Sample Date:	2022-01-17	2022-01-17	2022-01-17	2022-01-18	2022-01-18	2022-01-18	2022-01-19
Sample Type:	N	N	N	N	N	FD	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 2A18016	SDG: 2A18016	SDG: 810124611	SDG: DA41077	SDG: DA41045	SDG: DA41045	SDG: CHEMTOOL_35692067
1-Methylnaphthalene	2.1	10	None	None	0.00801 U	0.00801 U	None	0.250 U	0.250 U	0.250 U	0.180 U
2-Ethylhexyl adipate	None	None	None	None	5.00 U	5.00 U	--	--	--	--	--
2-Methylnaphthalene	4.7	10	None	None	0.00904 U	0.00904 U	0.0190 U	0.250 U	0.250 U	0.250 U	0.190 U
Alachlor	None	None	None	None	0.0110 U	0.0110 U	--	--	--	--	--
Atrazine	None	None	None	None	0.00734 U	0.00734 U	--	--	--	--	--
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.0117 UJ	0.0117 UJ	0.00970 U	0.00980 U	0.00980 U	0.0100 U	0.0190 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.437 U	0.437 U	0.580 U	0.390 U	0.390 U	0.400 U	0.470 U
Endrin	None	None	None	None	0.00991 U	0.00991 U	--	--	--	--	--
gamma-BHC (Lindane)	None	None	None	None	0.00633 U	0.00633 U	--	--	--	--	--
Heptachlor	None	None	None	None	0.00965 U	0.00965 U	--	--	--	--	--
Heptachlor epoxide	None	None	None	None	0.0122 U	0.0122 U	--	--	--	--	--
Hexachlorobenzene	0.0003	0.0003	1	1	0.0980 U	0.0980 U	0.00970 U	0.0200 U	0.0200 U	0.0200 U	0.0150 U
Hexachlorocyclopentadiene	50	None	50	50	0.00594 U	0.00594 U	0.00970 U	0.0400 U	0.0400 U	0.0400 U	0.0240 U
Methoxychlor	None	None	None	None	0.00863 U	0.00863 U	--	--	--	--	--
Naphthalene	12	17	None	None	0.0103 U	0.0103 U	0.0190 U	0.250 U	0.250 U	0.250 U	0.180 U
Pentachlorophenol	None	None	None	None	0.0242 U	0.0242 U	--	--	--	--	--
Simazine	None	None	None	None	0.00734 U	0.00734 U	--	--	--	--	--

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 2A18016	SDG: 2A18016	SDG: DA40989	SDG: C22A037	SDG: C22A037	SDG: C22A037	SDG: CHEMTOOL_35692067
1,1,1-Trichloroethane	11	11	200	200	0.256 U	0.256 U	0.500 U	0.119 U	0.119 U	0.119 U	0.270 U
1,1,2-Trichloroethane	5	5	3	5	0.190 U	0.190 U	0.500 U	0.288 U	0.288 U	0.288 U	0.280 U
1,1-Dichloroethene	7	7	7	7	0.160 U	0.160 U	0.500 U	0.128 U	0.128 U	0.128 U	0.290 U
1,2,4-Trichlorobenzene	70	70	70	70	0.170 U	0.170 U	0.500 U	0.318 U	0.318 U	0.318 U	0.350 U
1,2-Dichlorobenzene	10	10	600	600	0.190 U	0.190 U	0.500 U	0.272 U	0.272 U	0.272 U	0.260 U
1,2-Dichloroethane	5	5	5	5	0.243 U	0.243 U	0.500 U	0.0884 U	0.0884 U	0.0884 U	0.300 U
1,2-Dichloropropane	5	5	5	5	0.130 U	0.130 U	0.500 U	0.129 U	0.129 U	0.129 U	0.440 U
1,4-Dichlorobenzene	5	5	75	None	0.180 U	0.180 U	0.500 U	0.245 U	0.245 U	0.245 U	0.300 U
Benzene	5	5	5	5	0.150 U	0.150 U	0.500 U	0.0846 U	0.0846 U	0.0846 U	0.400 U
Carbon Tetrachloride	5	5	5	5	0.270 U	0.270 U	0.500 U	0.165 U	0.165 U	0.165 U	0.280 U

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Location ID:	A2-BLDG0003	A2-BLDG0039	A2-BLDG0075	A2-BLDG0176	A2-BLDG0457	A2-BLDG0465	A2-BLDG0467	A2-BLDG0467
Location Type:	Non-Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence
Residence:	Building 3,WATERFRONT OPS SUPPORT BLDG, Hammonds Port St and Hornet Ave	Building 39,SSB(N) TEAM TRAINER, 198 Lexington Blvd	Building 75,NEX AND FACSFAC, 75 Liscomb Bay St	Building 176,NOAA FACILITY, 1845 Wasp Blvd	Building 457,SHOWER/LOCKE R NEAR ARIZONA POOL, B457 Lexington Blvd	Building 465,FIRE FIGHTING TRAINER BLDG, 465 Wasp Blvd	Building 467,FORD ISLAND FIRE STATION, B467 Long Island St	Building 467,FORD ISLAND FIRE STATION, B467 Long Island St
Field Sample ID:	220119-A2-KT04	220119-A2-ET08	220119-A2-KT05	220119-A2-JT05	220119-A2-KT03	220119-A2-JT04	220119-A2-KT01	220119-A2-KT02
Sample Date:	2022-01-19	2022-01-19	2022-01-19	2022-01-19	2022-01-19	2022-01-19	2022-01-19	2022-01-19
Sample Type:	N	N	N	N	N	N	N	FD

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 2A20049	SDG: C22A040	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049
Chlorobenzene	25	25	100	100	0.150 U	0.146 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U
cis-1,2-Dichloroethene	70	70	70	70	0.250 U	0.0570 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Ethylbenzene	700	7.3	700	700	0.210 U	0.141 U	0.210 U	0.210 U	0.210 U	0.210 U	0.210 U	0.210 U
m,p-Xylene	10000	13	None	None	0.330 U	0.317 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U
Methylene chloride	5	5	5	5	0.303 U	2.15 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U
o-Xylene	10000	13	None	None	0.200 U	0.157 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Styrene	10	10	100	100	0.190 U	0.224 U	0.190 U	0.190 U	0.190 U	0.190 U	0.190 U	0.190 U
Tetrachloroethene (PCE)	5	5	5	5	0.180 U	0.125 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U
Toluene	1000	9.8	1000	1000	0.294 U	0.120 U	0.294 U	0.294 U	0.294 U	0.294 U	0.294 U	0.294 U
trans-1,2-Dichloroethene	100	100	100	100	0.259 U	0.0958 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U
Trichloroethene (TCE)	5	5	5	5	0.180 U	0.0574 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U
Vinyl chloride	2	2	2	2	0.180 U	0.611 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U
Xylenes, Total	10000	13	10000	10000	--	--	--	--	--	--	--	--

Notes:

-- indicates that the sample was Not Analyzed for the analyte

Results highlighted yellow exceed the ISP  
Results in purple font also exceed the EALs  
Results in green font also exceed the DOH MCL  
Results in blue font also exceed the EPA MCL

µg/L = Micrograms per Liter

**Residential Sampling Report for Flushing Zone**  
**A2 Zone Residential DW Sampling**  
**Chemistry Results**  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-BLDG0530	A2-BLDG0530	A2-BLDG0530	A2-BLDG0530	A2-BLDG0576	A2-BLDG089A	A2-BLDG1434	A2-BLDG171B
Location Type:	Child Development Center	Child Development Center	Child Development Center	Child Development Center	Non-Residence	Non-Residence	Non-Residence	Non-Residence
Residence:	BLDG 530 - Ford Island CDC; B350 O'Kane Boulevard and Saratoga Boulevard	BLDG 530 - Ford Island CDC; B350 O'Kane Boulevard and Saratoga Boulevard	BLDG 530 - Ford Island CDC; B350 O'Kane Boulevard and Saratoga Boulevard	BLDG 530 - Ford Island CDC; B350 O'Kane Boulevard and Saratoga Boulevard	BLDG 576 - NUWC Building, Wasp Blvd and Kingfisher St	Building 89A,FORD ISLAND CONFERENCE CTR, 89 Hornet Ave	Building 1434,Navy LODGE, 1275 Saratoga Blvd	NUWC, 171B Avocet St and Ranger Loop
Field Sample ID:	220115-A2-CT01	220115-A2-DT01	220117-A2-CT01	220117-A2-DT03	220119-A2-JT06	220119-A2-JT03	220119-A2-JT01	220119-A2-JT02
Sample Date:	2022-01-15	2022-01-15	2022-01-17	2022-01-17	2022-01-19	2022-01-19	2022-01-19	2022-01-19
Sample Type:	N	N	N	N	N	N	N	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40954R	SDG: C22A023	SDG: 2A18016	SDG: 2A18028	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049	SDG: 2A20049
Chlorobenzene	25	25	100	100	0.500 U	0.146 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U
cis-1,2-Dichloroethene	70	70	70	70	0.500 U	0.0570 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Ethylbenzene	700	7.3	700	700	0.500 U	0.141 U	0.210 U	0.210 U	0.210 U	0.210 U	0.210 U	0.210 U
m,p-Xylene	10000	13	None	None	0.500 U	0.317 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U
Methylene chloride	5	5	5	5	0.500 U	2.15 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U	0.303 U
o-Xylene	10000	13	None	None	0.500 U	0.157 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Styrene	10	10	100	100	0.500 U	0.224 U	0.190 U	0.190 U	0.190 U	0.190 U	0.190 U	0.190 U
Tetrachloroethene (PCE)	5	5	5	5	0.500 U	0.125 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U
Toluene	1000	9.8	1000	1000	0.500 U	0.120 U	0.294 U	0.294 U	0.294 U	0.294 U	0.294 U	0.294 U
trans-1,2-Dichloroethene	100	100	100	100	0.500 U	0.0958 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U	0.259 U
Trichloroethene (TCE)	5	5	5	5	0.500 U	0.0574 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U
Vinyl chloride	2	2	2	2	0.500 U	0.611 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U
Xylenes, Total	10000	13	10000	10000	--	--	--	--	--	--	--	--

Residential Sampling Report for Flushing Zone  
A2 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-CATA1155	A2-CATA1191	A2-CATA4950	A2-DAUN4880	A2-DAUN4894	A2-DAUN4913	A2-DAUN4913	A2-DAUN4913
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	1155 Catalina Drive	1191 Catalina Drive	4950 Catalina Lane	4880 Dauntless Drive	4894 Dauntless Drive	4913 Dauntless Drive	4913 Dauntless Drive	4913 Dauntless Drive
Field Sample ID:	220118-A2-AT07	220119-A2-IT03	220117-A2-KT01	220117-A2-KT06	220118-A2-IT01	220118-A2-IT04	A2-TW-1303971-22041-3-N	A2-TW-1303971-22041-N
Sample Date:	2022-01-18	2022-01-19	2022-01-17	2022-01-17	2022-01-18	2022-01-18	2022-02-10	2022-02-10
Sample Type:	N	N	N	N	N	N	FD	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A037	SDG: CHEMTOOL_35692067	SDG: DA40989	SDG: DA41045	SDG: C22A037	SDG: C22A037	SDG: DA41841	SDG: DA41841
Chlorobenzene	25	25	100	100	0.146 U	0.260 U	0.500 U	0.500 U	0.146 U	0.146 U	0.500 U	0.500 U
cis-1,2-Dichloroethene	70	70	70	70	0.0570 U	0.330 U	0.500 U	0.500 U	0.0570 U	0.0570 U	0.500 U	0.500 U
Ethylbenzene	700	7.3	700	700	0.141 U	0.230 U	0.500 U	0.500 U	0.141 U	0.141 U	0.500 U	0.500 U
m,p-Xylene	10000	13	None	None	0.317 U	0.390 U	0.500 U	0.500 U	0.317 U	0.317 U	0.500 U	0.500 U
Methylene chloride	5	5	5	5	2.15 U	0.440 U	0.500 U	0.500 U	2.15 U	2.15 U	0.500 U	0.500 U
o-Xylene	10000	13	None	None	0.157 U	0.190 U	0.500 U	0.500 U	0.157 U	0.157 U	0.500 U	0.500 U
Styrene	10	10	100	100	0.224 U	0.200 U	0.500 U	0.500 U	0.224 U	0.224 U	0.500 U	0.500 U
Tetrachloroethene (PCE)	5	5	5	5	0.125 U	0.260 U	0.500 U	0.500 U	0.125 U	0.125 U	0.500 U	0.500 U
Toluene	1000	9.8	1000	1000	0.120 U	0.280 U	0.500 U	0.500 U	0.120 U	0.120 U	0.500 U	0.500 U
trans-1,2-Dichloroethene	100	100	100	100	0.0958 U	0.270 U	0.500 U	0.500 U	0.0958 U	0.0958 U	0.500 U	0.500 U
Trichloroethene (TCE)	5	5	5	5	0.0574 U	0.260 U	0.500 U	0.500 U	0.0574 U	0.0574 U	0.500 U	0.500 U
Vinyl chloride	2	2	2	2	0.611 U	0.120 U	0.500 U	0.500 U	0.611 U	0.611 U	0.500 U	0.500 U
Xylenes, Total	10000	13	10000	10000	--	--	--	--	--	--	0.500 U	0.500 U

Residential Sampling Report for Flushing Zone  
A2 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-DAUN4913	A2-DAUN4921	A2-DAUN4923	A2-DAUN4931	A2-DAUN4931	A2-KAME4721	A2-KAME4793	A2-KAME4833
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	4913 Dauntless Drive	4921 Dauntless Drive	4923 Dauntless Drive	4931 Dauntless Drive	4931 Dauntless Drive	4721 Kamehameha Loop	4793 Kamehameha Loop	4833 Kamehameha Loop
Field Sample ID:	A2-TW-1303971-22041-N-R2	220118-A2-HT05	220118-A2-AT06	220117-A2-KT04	220117-A2-KT05	220118-A2-KT03	220117-A2-GT03	220117-A2-BT01
Sample Date:	2022-02-11	2022-01-18	2022-01-18	2022-01-17	2022-01-17	2022-01-18	2022-01-17	2022-01-17
Sample Type:	N	N	N	N	FD	N	N	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41869	SDG: C22A037	SDG: C22A037	SDG: DA41045	SDG: DA41045	SDG: C22A037	SDG: DA41045	SDG: 2A18016
Chlorobenzene	25	25	100	100	0.500 U	0.146 U	0.146 U	0.500 U	0.500 U	0.146 U	0.500 U	0.150 U
cis-1,2-Dichloroethene	70	70	70	70	0.500 U	0.0570 U	0.0570 U	0.500 U	0.500 U	0.0570 U	0.500 U	0.250 U
Ethylbenzene	700	7.3	700	700	0.500 U	0.141 U	0.141 U	0.500 U	0.500 U	0.141 U	0.500 U	0.210 U
m,p-Xylene	10000	13	None	None	0.500 U	0.317 U	0.317 U	0.500 U	0.500 U	0.317 U	0.500 U	0.330 U
Methylene chloride	5	5	5	5	0.500 U	2.15 U	2.15 U	0.500 U	0.500 U	2.15 U	0.500 U	0.303 U
o-Xylene	10000	13	None	None	0.500 U	0.157 U	0.157 U	0.500 U	0.500 U	0.157 U	0.500 U	0.200 U
Styrene	10	10	100	100	0.500 U	0.224 U	0.224 U	0.500 U	0.500 U	0.224 U	0.500 U	0.190 U
Tetrachloroethene (PCE)	5	5	5	5	0.500 U	0.125 U	0.125 U	0.500 U	0.500 U	0.125 U	0.500 U	0.180 U
Toluene	1000	9.8	1000	1000	0.500 U	0.120 U	0.120 U	0.500 U	0.500 U	0.120 U	0.500 U	0.294 U
trans-1,2-Dichloroethene	100	100	100	100	0.500 U	0.0958 U	0.0958 U	0.500 U	0.500 U	0.0958 U	0.500 U	0.259 U
Trichloroethene (TCE)	5	5	5	5	0.500 U	0.0574 U	0.0574 U	0.500 U	0.500 U	0.0574 U	0.500 U	0.180 U
Vinyl chloride	2	2	2	2	0.500 U	0.611 U	0.611 U	0.500 U	0.500 U	0.611 U	0.500 U	0.180 U
Xylenes, Total	10000	13	10000	10000	0.500 U	--	--	--	--	--	--	--

Section 2b 2 Residential Sampling Report for Flushing Zone



Residential Sampling Report for Flushing Zone  
A2 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-KAME4870	A2-KAME4894	A2-KAME4922	A2-KAME4947	A2-KAME5027	A2-KAME5036	A2-KAME5134	A2-KAME5135
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	4870 Kamehameha Loop	4894 Kamehameha Loop	4922 Kamehameha Loop	4947 Kamehameha Loop	5027 Kamehana Loop	5036 Kamehameha Loop	5134 Kamehameha Loop	5135 Kamehameha Loop
Field Sample ID:	220118-A2-CT01	220118-A2-KT06	220117-A2-GT05	220117-A2-GT06	220118-A2-IT03	220117-A2-BT02	220117-A2-FT03	220117-A2-FT04
Sample Date:	2022-01-18	2022-01-18	2022-01-17	2022-01-17	2022-01-18	2022-01-17	2022-01-17	2022-01-17
Sample Type:	N	N	N	N	N	N	N	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: C22A037	SDG: DA41045	SDG: DA41045	SDG: C22A037	SDG: 2A18016	SDG: 2A18016	SDG: 2A18016
Chlorobenzene	25	25	100	100	0.500 U	0.146 U	0.500 U	0.500 U	0.146 U	0.150 U	0.150 U	0.150 U
cis-1,2-Dichloroethene	70	70	70	70	0.500 U	0.0570 U	0.500 U	0.500 U	0.0570 U	0.250 U	0.250 U	0.250 U
Ethylbenzene	700	7.3	700	700	0.500 U	0.141 U	0.500 U	0.500 U	0.141 U	0.210 U	0.210 U	0.210 U
m,p-Xylene	10000	13	None	None	0.500 U	0.317 U	0.500 U	0.500 U	0.317 U	0.330 U	0.330 U	0.330 U
Methylene chloride	5	5	5	5	0.500 U	2.15 U	0.500 U	0.500 U	2.15 U	0.303 U	0.303 U	0.303 U
o-Xylene	10000	13	None	None	0.500 U	0.157 U	0.500 U	0.500 U	0.157 U	0.200 U	0.200 U	0.200 U
Styrene	10	10	100	100	0.500 U	0.224 U	0.500 U	0.500 U	0.224 U	0.190 U	0.190 U	0.190 U
Tetrachloroethene (PCE)	5	5	5	5	0.500 U	0.125 U	0.500 U	0.500 U	0.125 U	0.180 U	0.180 U	0.180 U
Toluene	1000	9.8	1000	1000	0.500 U	0.120 U	0.500 U	0.500 U	0.120 U	0.294 U	0.294 U	0.294 U
trans-1,2-Dichloroethene	100	100	100	100	0.500 U	0.0958 U	0.500 U	0.500 U	0.0958 U	0.259 U	0.259 U	0.259 U
Trichloroethene (TCE)	5	5	5	5	0.500 U	0.0574 U	0.500 U	0.500 U	0.0574 U	0.180 U	0.180 U	0.180 U
Vinyl chloride	2	2	2	2	0.500 U	0.611 U	0.500 U	0.500 U	0.611 U	0.180 U	0.180 U	0.180 U
Xylenes, Total	10000	13	10000	10000	--	--	--	--	--	--	--	--

Residential Sampling Report for Flushing Zone  
A2 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-KAME5184	A2-KAME5184	A2-KAME5242	A2-KAME5242	A2-KAME5246	A2-KAME5262	A2-KAME5262	A2-KAME5280
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	5184 Kamehameha Loop	5184 Kamehameha Loop	5242 Kamehameha Loop	5242 Kamehameha Loop	5246 Kamehameha Loop	5262 Kamehameha Loop	5262 Kamehameha Loop	5280 Kamehameha Loop
Field Sample ID:	220118-A2-CT02	220120-A2-CT01	220118-A2-KT01	220118-A2-KT02	220117-A2-FT01	220117-A2-BT05	220117-A2-BT09	220118-A2-KT04
Sample Date:	2022-01-18	2022-01-20	2022-01-18	2022-01-18	2022-01-17	2022-01-17	2022-01-17	2022-01-18
Sample Type:	N	N	N	FD	N	N	FD	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: C22A042	SDG: C22A037	SDG: C22A037	SDG: 2A18016	SDG: 2A18016	SDG: 2A18016	SDG: C22A037
Chlorobenzene	25	25	100	100	0.500 U	0.146 U	0.146 U	0.146 U	0.150 U	0.150 U	0.150 U	0.146 U
cis-1,2-Dichloroethene	70	70	70	70	0.500 U	0.0570 U	0.0570 U	0.0570 U	0.250 U	0.250 U	0.250 U	0.0570 U
Ethylbenzene	700	7.3	700	700	0.500 U	0.141 U	0.141 U	0.141 U	0.210 U	0.210 U	0.210 U	0.141 U
m,p-Xylene	10000	13	None	None	0.500 U	0.317 U	0.317 U	0.317 U	0.330 U	0.330 U	0.330 U	0.317 U
Methylene chloride	5	5	5	5	0.500 U	2.15 U	2.15 U	2.15 U	0.303 U	0.303 U	0.303 U	2.15 U
o-Xylene	10000	13	None	None	0.500 U	0.157 U	0.157 U	0.157 U	0.200 U	0.200 U	0.200 U	0.157 U
Styrene	10	10	100	100	0.500 U	0.224 U	0.224 U	0.224 U	0.190 U	0.190 U	0.190 U	0.224 U
Tetrachloroethene (PCE)	5	5	5	5	0.500 U	0.125 U	0.125 U	0.125 U	0.180 U	0.180 U	0.180 U	0.125 U
Toluene	1000	9.8	1000	1000	0.500 U	0.120 U	0.120 U	0.120 U	0.294 U	0.294 U	0.294 U	0.120 U
trans-1,2-Dichloroethene	100	100	100	100	0.500 U	0.0958 U	0.0958 U	0.0958 U	0.259 U	0.259 U	0.259 U	0.0958 U
Trichloroethene (TCE)	5	5	5	5	0.500 U	0.0574 U	0.0574 U	0.0574 U	0.180 U	0.180 U	0.180 U	0.0574 U
Vinyl chloride	2	2	2	2	0.500 U	0.611 U	0.611 U	0.611 U	0.180 U	0.180 U	0.180 U	0.611 U
Xylenes, Total	10000	13	10000	10000	--	--	--	--	--	--	--	--

Section 2b 2 Residential Sampling Report for Flushing Zone

Residential Sampling Report for Flushing Zone  
A2 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-LEXI4670	A2-MARY4705	A2-NEVA4674	A2-NEVA4697	A2-NEVA4703	A2-NEVA4705	A2-OKLA4682	A2-SARA1023
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	4670 Lexington Boulevard	4705 Maryland Street	4674 Nevada Street	4697 Nevada Street	4703 Nevada Street	4705 Nevada Street	4682 Oklahoma Avenue	1023 Saratoga Boulevard
Field Sample ID:	220118-A2-AT08	220119-A2-KT07	220118-A2-HT06	220118-A2-KT05	220118-A2-HT04	220118-A2-IT02	220118-A2-HT03	220118-A2-AT04
Sample Date:	2022-01-18	2022-01-19	2022-01-18	2022-01-18	2022-01-18	2022-01-18	2022-01-18	2022-01-18
Sample Type:	N	N	N	N	N	N	N	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A037	SDG: 2A20049	SDG: C22A037	SDG: C22A037	SDG: C22A037	SDG: C22A037	SDG: C22A037	SDG: C22A037
Chlorobenzene	25	25	100	100	0.146 U	0.150 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U
cis-1,2-Dichloroethene	70	70	70	70	0.0570 U	0.250 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U
Ethylbenzene	700	7.3	700	700	0.141 U	0.210 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U
m,p-Xylene	10000	13	None	None	0.317 U	0.330 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U
Methylene chloride	5	5	5	5	2.15 U	0.303 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U
o-Xylene	10000	13	None	None	0.157 U	0.200 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U
Styrene	10	10	100	100	0.224 U	0.190 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U
Tetrachloroethene (PCE)	5	5	5	5	0.125 U	0.180 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U
Toluene	1000	9.8	1000	1000	0.120 U	0.294 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U
trans-1,2-Dichloroethene	100	100	100	100	0.0958 U	0.259 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U
Trichloroethene (TCE)	5	5	5	5	0.0574 U	0.180 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U
Vinyl chloride	2	2	2	2	0.611 U	0.180 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U
Xylenes, Total	10000	13	10000	10000	--	--	--	--	--	--	--	--

Section 2b 2 Residential Sampling Report for Flushing Zone

Residential Sampling Report for Flushing Zone  
A2 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-SARA1023	A2-TENN1038	A2-TOMA4923	A2-TOMA4959	A2-TOMA4970	A2-VEST5696	A2-VEST5696	A2-VEST5710
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	1023 Saratoga Boulevard	1038 Tennessee Street	4923 Tomahawk Street	4959 Tomahawk Street	4970 Tomahawk Street	5696 Vestal Lane	5696 Vestal Lane	5710 Vestal Lane
Field Sample ID:	220118-A2-AT05	220117-A2-GT04	220119-A2-KT06	220117-A2-BT03	220117-A2-KT02	220118-A2-DT01	220120-A2-DT01	220118-A2-DT02
Sample Date:	2022-01-18	2022-01-17	2022-01-19	2022-01-17	2022-01-17	2022-01-18	2022-01-20	2022-01-18
Sample Type:	N	N	N	N	N	N	N	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A037	SDG: DA41045	SDG: 2A20049	SDG: 2A18016	SDG: DA40989	SDG: DA41077	SDG: C22A042	SDG: DA41077
Chlorobenzene	25	25	100	100	0.146 U	0.500 U	0.150 U	0.150 U	0.500 U	0.500 U	0.146 U	0.500 U
cis-1,2-Dichloroethene	70	70	70	70	0.0570 U	0.500 U	0.250 U	0.250 U	0.500 U	0.500 U	0.0570 U	0.500 U
Ethylbenzene	700	7.3	700	700	0.141 U	0.500 U	0.210 U	0.210 U	0.500 U	0.500 U	0.141 U	0.500 U
m,p-Xylene	10000	13	None	None	0.317 U	0.500 U	0.330 U	0.330 U	0.500 U	0.500 U	0.317 U	0.500 U
Methylene chloride	5	5	5	5	2.15 U	0.500 U	0.303 U	0.303 U	0.500 U	0.500 U	2.15 U	0.500 U
o-Xylene	10000	13	None	None	0.157 U	0.500 U	0.200 U	0.200 U	0.500 U	0.500 U	0.157 U	0.500 U
Styrene	10	10	100	100	0.224 U	0.500 U	0.190 U	0.190 U	0.500 U	0.500 U	0.224 U	0.500 U
Tetrachloroethene (PCE)	5	5	5	5	0.125 U	0.500 U	0.180 U	0.180 U	0.500 U	0.500 U	0.125 U	0.500 U
Toluene	1000	9.8	1000	1000	0.120 U	0.500 U	0.294 U	0.294 U	0.500 U	0.500 U	0.120 U	0.500 U
trans-1,2-Dichloroethene	100	100	100	100	0.0958 U	0.500 U	0.259 U	0.259 U	0.500 U	0.500 U	0.0958 U	0.500 U
Trichloroethene (TCE)	5	5	5	5	0.0574 U	0.500 U	0.180 U	0.180 U	0.500 U	0.500 U	0.0574 U	0.500 U
Vinyl chloride	2	2	2	2	0.611 U	0.500 U	0.180 U	0.180 U	0.500 U	0.500 U	0.611 U	0.500 U
Xylenes, Total	10000	13	10000	10000	--	--	--	--	--	--	--	--

Residential Sampling Report for Flushing Zone  
A2 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	A2-WASP4918	A2-WASP4930	A2-WASP4964	A2-WEST1003	A2-WEST1036	A2-WEST1036	A2-WEST1038
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	4918 Wasp Boulevard	4930 Wasp Boulevard	4964 Wasp Boulevard	1003 West Virginia Street	1036 West Virginia Street	1036 West Virginia Street	1038 West Virginia Street
Field Sample ID:	220117-A2-FT02	220117-A2-BT04	220117-A2-KT03	220118-A2-IT05	220118-A2-HT01	220118-A2-HT02	220119-A2-IT04
Sample Date:	2022-01-17	2022-01-17	2022-01-17	2022-01-18	2022-01-18	2022-01-18	2022-01-19
Sample Type:	N	N	N	N	N	FD	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 2A18016	SDG: 2A18016	SDG: DA40989	SDG: C22A037	SDG: C22A037	SDG: C22A037	SDG: CHEMTOOL_35692067
Chlorobenzene	25	25	100	100	0.150 U	0.150 U	0.500 U	0.146 U	0.146 U	0.146 U	0.260 U
cis-1,2-Dichloroethene	70	70	70	70	0.250 U	0.250 U	0.500 U	0.0570 U	0.0570 U	0.0570 U	0.330 U
Ethylbenzene	700	7.3	700	700	0.210 U	0.210 U	0.500 U	0.141 U	0.141 U	0.141 U	0.230 U
m,p-Xylene	10000	13	None	None	0.330 U	0.330 U	0.500 U	0.317 U	0.317 U	0.317 U	0.390 U
Methylene chloride	5	5	5	5	0.303 U	0.303 U	0.500 U	2.15 U	2.15 U	2.15 U	0.440 U
o-Xylene	10000	13	None	None	0.200 U	0.200 U	0.500 U	0.157 U	0.157 U	0.157 U	0.190 U
Styrene	10	10	100	100	0.190 U	0.190 U	0.500 U	0.224 U	0.224 U	0.224 U	0.200 U
Tetrachloroethene (PCE)	5	5	5	5	0.180 U	0.180 U	0.500 U	0.125 U	0.125 U	0.125 U	0.260 U
Toluene	1000	9.8	1000	1000	0.294 U	0.294 U	0.500 U	0.120 U	0.120 U	0.120 U	0.280 U
trans-1,2-Dichloroethene	100	100	100	100	0.259 U	0.259 U	0.500 U	0.0958 U	0.0958 U	0.0958 U	0.270 U
Trichloroethene (TCE)	5	5	5	5	0.180 U	0.180 U	0.500 U	0.0574 U	0.0574 U	0.0574 U	0.260 U
Vinyl chloride	2	2	2	2	0.180 U	0.180 U	0.500 U	0.611 U	0.611 U	0.611 U	0.120 U
Xylenes, Total	10000	13	10000	10000	--	--	--	--	--	--	--

February 25, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: ZONE A2 EXCEEDANCE INVESTIGATION SUMMARY AND RESULTS

Encl: (1) Zone A2 Exceedance Investigation Sample Results from EDMS  
(2) Hawaii State Department of Health Petroleum Hydrocarbons in Water Health Effects

1. This letter documents the Zone A2 TPH-oil exceedance and TPH-diesel at 4913 Dauntless Drive, actions taken to address the exceedance, and subsequent test results. Enclosure (1) contains the exceedance sample result and subsequent sample results.

2. The sample result taken at 4913 Dauntless Drive on January 18, 2022 was 209 parts per billion (ppb) for TPH-oil and 259J ppb for TPH-diesel. This was in exceedance of the incident specific parameter (ISP) for TPH of 211 ppb. In response to this exceedance, the residence was resampled on February 10, 2022, the unit was reflushed on February 11, 2022, and resampled again on February 11, 2022. Two samples were taken on February 10, 2022. The first sample had a sample value of 121 ppb for TPH-diesel which was below the ISP and non-detect for TPH-gasoline and TPH-oil. The field duplicate was non-detect for all TPH. The resample after flushing was non-detect for TPH-oil and TPH-diesel. Enclosure (2) contains the health effects of petroleum hydrocarbons in water.

4. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and the submitted information is true, accurate, and complete.

MENO.MICHAELWAYNE  
EL.WAYNE.JR.  
1088310035

Digitally signed by  
MENO.MICHAELWAYNE  
EJR.1088310035  
Date: 2022.02.25  
17:18:49 -10'00'

M. W. Meno  
Captain, U.S. Navy Civil Engineer Corps



Zone A2 4913 Dauntless Drive Sample Results								
A2 Zone Residential DW Sampling								
Chemistry Results								
Drinking Water Sampling, JBPHH, Oahu Hawaii				A2-DAUN4913	A2-DAUN4913	A2-DAUN4913	A2-DAUN4913	
Location ID:				Residence	Residence	Residence	Residence	
Location Type:								
Residence:				4913 Dauntless Drive	4913 Dauntless Drive	4913 Dauntless Drive	4913 Dauntless Drive	
Field Sample ID:				220118-A2-IT04	A2-TW-1303971-22041-3-41	A2-TW-1303971-22041-3-41	A2-TW-1303971-22041-3-41	
Sample Date:				2022-01-18	2022-02-10	2022-02-10	2022-02-11	
Sample Type:				N	FD	N	N	
GENCHEM (mg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A037	SDG: DA41841	SDG: DA41841	SDG: DA41869
Total Organic Carbon	2	None	None	None	0.200 U	0.200 U	0.670	0.320 J
HC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: DA41841	SDG: DA41841	SDG: DA41869
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	299 J	52.0 U	121	52.0 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 UJ	40.0 U	40.0 U	40.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	209	52.0 U	52.0 U	52.0 U
HG (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: DA41841	SDG: DA41841	SDG: DA41869
Mercury	0.025	0.025	2	2	0.0250 U	0.0250 U	0.0250 U	0.0250 UJ
METAL (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: DA41841	SDG: DA41841	SDG: DA41869
Antimony	6	6	6	6	0.100 U	0.100 U	0.100 U	0.100 U
Arsenic	10	10	10	10	0.500 U	0.500 U	0.500 U	0.670 J
Barium	220	220	2000	2000	1.80 J	1.90 J	1.80 J	1.90 J
Beryllium	0.65	0.66	4	4	0.100 U	0.150 U	0.150 U	0.150 U
Cadmium	3	3	5	5	0.100 U	0.0500 U	0.0500 U	0.0500 U
Chromium	11	11	100	100	0.700 J	1.30 J	1.30 J	1.50 J
Copper	2.9	2.9	1300	1300	110	59.9	49.3	309
Lead	15	5.6	15	15	0.300 J	0.360 J	0.360 J	0.530 J
Selenium	5	5	50	50	0.300 U	0.300 U	0.300 U	0.300 U
Thallium	2	2	2	2	0.100 U	0.130 J	0.0500 U	0.130 J
SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41077	SDG: DA41841	SDG: DA41841	SDG: DA41869
1-Methylnaphthalene	2.1	10	None	None	0.240 U	0.240 U	0.240 U	0.240 U
2-Ethylhexyl adipate	None	None	None	None	--	--	--	--
2-Methylnaphthalene	4.7	10	None	None	0.240 U	0.240 U	0.240 U	0.240 U
Alachlor	None	None	None	None	--	--	--	--
Atrazine	None	None	None	None	--	--	--	--
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00950 U	0.00950 U	0.00980 U	0.00960 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.380 U	0.380 U	0.380 U	0.380 U
Endrin	None	None	None	None	--	--	--	--
gamma-BHC (Lindane)	None	None	None	None	--	--	--	--
Hapachlor	None	None	None	None	--	--	--	--
Hapachlor epoxide	None	None	None	None	--	--	--	--
Hexachlorobenzene	0.0003	0.0003	1	1	0.0200 U	--	--	--
Hexachlorocyclopentadiene	50	None	50	50	0.0400 U	--	--	--
Methoxychlor	None	None	None	None	--	--	--	--
Naphthalene	12	17	None	None	0.240 U	0.240 U	0.240 U	0.240 U
Pentachlorophenol	None	None	None	None	--	--	--	--
Simazine	None	None	None	None	--	--	--	--
VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A037	SDG: DA41841	SDG: DA41841	SDG: DA41869
1,1,1-Trichloroethane	11	11	200	200	0.119 U	0.500 U	0.500 U	0.500 U
1,1,2-Trichloroethane	5	5	3	5	0.288 U	0.500 U	0.500 U	0.500 U
1,1-Dichloroethane	7	7	7	7	0.128 U	0.500 U	0.500 U	0.500 U
1,2,4-Trichlorobenzene	70	70	70	70	0.318 U	0.500 U	0.500 U	0.500 U
1,2-Dichlorobenzene	10	10	600	600	0.272 U	0.500 U	0.500 U	0.500 U
1,2-Dichloroethane	5	5	5	5	0.0884 U	0.500 U	0.500 U	0.500 U
1,2-Dichloropropane	5	5	5	5	0.129 U	0.500 U	0.500 U	0.500 U
1,4-Dichlorobenzene	5	5	75	None	0.245 U	0.500 U	0.500 U	0.500 U
Benzene	5	5	5	5	0.0846 U	0.500 U	0.500 U	0.500 U
Carbon Tetrachloride	5	5	5	5	0.165 U	0.500 U	0.500 U	0.500 U
Chlorobenzene	25	25	100	100	0.146 U	0.500 U	0.500 U	0.500 U
cis-1,2-Dichloroethane	70	70	70	70	0.0570 U	0.500 U	0.500 U	0.500 U
Ethylbenzene	700	7.3	700	700	0.141 U	0.500 U	0.500 U	0.500 U
m,p-Xylene	10000	13	None	None	0.317 U	0.500 U	0.500 U	0.500 U
Methylene chloride	5	5	5	5	2.15 U	0.500 U	0.500 U	0.500 U
o-Xylene	10000	13	None	None	0.157 U	0.500 U	0.500 U	0.500 U
Styrene	10	10	100	100	0.224 U	0.500 U	0.500 U	0.500 U
Tetrachloroethene (PCE)	5	5	5	5	0.125 U	0.500 U	0.500 U	0.500 U
Toluene	1000	9.8	1000	1000	0.120 U	0.500 U	0.500 U	0.500 U
trans-1,2-Dichloroethane	100	100	100	100	0.0958 U	0.500 U	0.500 U	0.500 U
Trichloroethene (TCE)	5	5	5	5	0.0574 U	0.500 U	0.500 U	0.500 U
Vinyl chloride	2	2	2	2	0.611 U	0.500 U	0.500 U	0.500 U
Xylenes, Total	10000	13	10000	10000	--	0.500 U	0.500 U	0.500 U

Notes:

-- indicates that the sample was Not Analyzed for the analyte

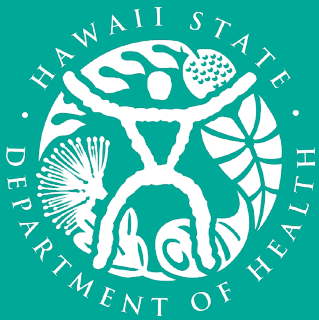
Results highlighted yellow exceed the ISP

Results in purple font also exceed the SGLs

Results in green font also exceed the DOH MCL

Results in blue font also exceed the EPA MCL

µg/L = Micrograms per Liter



# Petroleum Hydrocarbons in Water: Health Effects



## What happens if I swallow water with petroleum?

Drinking water containing petroleum hydrocarbons can cause an upset stomach, stomach cramping, nausea, vomiting, and diarrhea. Your throat and mouth may also get irritated.



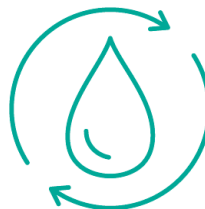
## What happens if water with petroleum gets on my skin?

Petroleum hydrocarbons can irritate the skin (dermal exposure). Continuous exposure can cause itchy rash with red and peeling skin. After skin contact, always wash with soap and clean water.



## What happens if I breathe air that smells like petroleum?

Breathing petroleum vapors (also called inhalational exposure) can cause headaches, dizziness, tiredness and respiratory problems like cough and difficulty breathing. Nosebleeds are possible.



## How can this affect my future health?

Evaluation of the possibility of long-term health effects is ongoing. Based on current information, people exposed to contaminated drinking water from the Joint Base Pearl Harbor-Hickam Drinking Water System in this incident are not expected to experience long-term health effects.

## What should I do if I have symptoms after exposure to contaminated water?

- If there is a strong petroleum smell, **leave the area and get fresh air.**
- If you develop respiratory problems or other severe symptoms, **seek urgent medical evaluation.**
- **Contact your primary care doctor** for an appointment.
- **Avoid exposure to the water.** Do not drink or use the water for cooking or brushing teeth. Do not bathe in the water. If skin contact, always wash with soap and clean water
- **Call the Hawaii Poison Center (800) 222-1222 for questions.**



- **Primary Care Doctor**
- **Hawaii Poison Center (800) 222-1222**

**For more information, visit [health.hawaii.gov/NavyWater](https://health.hawaii.gov/NavyWater)**



**DEPARTMENT OF THE NAVY**  
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND, HAWAII  
400 MARSHALL ROAD  
JBPHH, HAWAII 96860-3139

11000  
Ser PWO/0095  
February 10, 2022

Interagency Drinking Water System Team

**SUBJECT: CERTIFICATION OF IRRIGATION LINE FLUSHING – JOINT BASE  
PEARL HARBOR-HICKAM - ZONE A2**

On behalf of the United States Department of the Navy, operator of the Joint Base Pearl Harbor-Hickam Public Water System (PWS ID No. 360 Water System), and in connection with and pursuant to the removal action required by the DOH Hazard Evaluation and Emergency Response Office Incident Case No. 20211128-1848, the undersigned certifies that the Navy has made all necessary inquiry into their Water System and represents and warrants as set forth below.

Landscape irrigation systems in Zone A2, generally known as Ford Island, have been operated and flushed following Dept. of Health guidance, and subsequent to the approved distribution line flushing conducted in December, 2021.

The undersigned has due authority to deliver this Certification on behalf of the Navy.

Sincerely,

HARMEYER.RANDALL  
.ERNEST.1186692663

Digitally signed by  
HARMEYER.RANDALL.ERNEST.11  
86692663  
Date: 2022.02.17 10:23:37 -10'00'

R. E. HARMEYER  
Captain, CEC, U.S. Navy  
Public Works Officer  
By Direction  
of the Commanding Officer

### DOH Guidance for Active Irrigation Line Purging and Flushing

Given the minimal quantities and concentration of fuel contamination in the irrigation lines, along with the expected degradation due to time, the following guidance lines are being provided:

System operator responsibility:

- Determine what the irrigation system pipe size is (for volume calculations).
- Calculate the approximate amount of time needed to complete 3 volumetric turnovers of the subject line (est. duration per foot).
- Assess how long each line will need to be purged/flushed based on the above estimates.
- Notify community.
- Cover or otherwise minimize any spray from the system (traffic cone) in order to prevent contact.
- Purge irrigation system under supervision for the estimated duration.
- Allow ground to absorb and dry.
- Notify residents to avoid area for the next 24 hours.
- Prevent/minimize any runoff.
- Prevent contact with the irrigation water.

Navy/Army must develop a standard operating procedure incorporating the above guidance and provide training to personnel responsible for execution of the irrigation line purging/flushing.