



# Single Family Home Flushing Plan Checklist and Standard Operating Procedures

JBPHH, O‘ahu, Hawai‘i

December 2021

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Commander, Navy Region Hawaii  
By Direction of the Commander

*Kathleen Ho*

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Kathleen S. Ho      12/28/2021  
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David K. Brixius  
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# FLUSHING CHECKLIST: SINGLE-FAMILY HOME

NEIGHBORHOOD: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

This checklist is to be used by Navy and/or Army personnel to include Government Contractors for flushing homes that may have water contaminated with petroleum chemicals. Homes shall be flushed only **AFTER** the water distribution system has been flushed **AND** the Interagency Drinking Water System Team (IDWST) has authorized this Flushing Zone to advance to Step 3 (Household Flushing) as detailed in the December 2021 Sampling and Analysis Plan (SAP). This signed checklist will be provided to the PPV partner for addition to the home maintenance record and maintained for the IDWST’s administrative record of this project.

It will require roughly 2 hours to completely flush a typical home following this SOP.

<b>ATTENTION</b>
<ul style="list-style-type: none"> <li>• DO NOT OVERFLOW DRAINS. DO NOT LEAVE RUNNING FAUCETS UNATTENDED.</li> <li>• HOT WATER SYSTEM SHALL NOT BE FLUSHED UNTIL THE HEATER HAS COOLED.</li> <li>• DOCUMENT ANYTHING UNUSUAL ENCOUNTERED BEFORE OR DURING FLUSH.</li> <li>• IF STRONG FUEL SMELL IS PRESENT WHEN FLUSHING, UTILIZE BLOWERS/CEILING FANS/BATHROOM FANS TO VENTILATE THE SPACE. IF THE FUEL SMELL CANNOT BE CLEARED, CONTACT EV THROUGH THE EOC TO REQUEST ASSISTANCE.</li> </ul>

- STEP 1: HOME ENTRY PROCEDURES (COVID-19 AND PETS)
- STEP 2: PREPARE FOR HOME FLUSHING\*
- STEP 3: PERFORM SERVICE LINE AND COLD WATER SYSTEM FLUSH
- STEP 4: DRAIN WATER HEATER, EXPANSION TANK
- STEP 5: PERFORM HOT WATER SYSTEM FLUSH
- STEP 6: PERFORM SPIGOT FLUSH
- STEP 7: ADDRESS MAJOR APPLIANCES
- STEP 8: CLEAN UP
- FUEL ODOR PRESENT DURING OR AFTER FLUSHING?       YES       NO
- NOTES PAGE USED?       YES       NO

\*See Appendix A for Standard Operating Procedures of Steps 1-8

## Confirmation of Flushing for Single-Family Home

\_\_\_\_\_  
Name of Home Flushing Lead

\_\_\_\_\_  
Organization

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date                      (Start Time)                      (End Time)



## **APPENDIX A: FLUSHING STANDARD OPERATING PROCEDURES FOR A SINGLE-FAMILY HOME**

### **Team Supplies Needed**

- |                                      |                            |
|--------------------------------------|----------------------------|
| -Water Filter(s) – Provided by PPV   | -Pliers for Spigot Covers  |
| -Nitrile or Latex gloves             | -2x 50-ft Garden Hose Coil |
| -Mops & Mop Bucket                   | -2x 5-GAL Buckets          |
| -2x Drain Snakes (3 ft. length/each) | -Wrenches for Aerators     |
| -Towels                              | -Trash Bags                |
| -Booties for Home Entry              |                            |

### **ATTENTION**

- DO NOT OVERFLOW DRAINS. DO NOT LEAVE RUNNING FAUCETS UNATTENDED.
- MARK ON THE CHECKLIST IF THE PRESENCE OF PETROLEUM/CHEMICAL ODOR/SMELL IS ENCOUNTERED BEFORE OR DURING THE FLUSH.
- IF STRONG FUEL SMELL IS PRESENT WHEN FLUSHING, UTILIZE BLOWERS/CEILING FANS/BATHROOM FANS TO VENTILATE THE SPACE. IF THE FUEL SMELL CANNOT BE CLEARED, CONTACT EV THROUGH THE EOC TO REQUEST ASSISTANCE.
- DOCUMENT/NOTE ANYTHING UNUSUAL ENCOUNTERED BEFORE OR DURING FLUSH TO INCLUDE THE PRESENCE OF ANY STAINING (SUSPECTED TO BE PETROLEUM-RELATED) OF SINKS, TUBS, SHOWER, TOILETS, ETC IN THE NOTES/COMMENTS SECTION AT THE END OF THIS SOP.

### **STEP 1. HOME ENTRY PROCEDURES (COVID-19 AND PETS)**

All house flushing teams will adhere to current CDC, State of Hawaii, JBPHH and Army COVID-19 safety protocols.

- COVID-19 (If yes to any question, do not enter the home)
  - Have you experienced any of the symptoms in the list below in the last 48 hours? Fever or chills, cough, shortness of breath or difficulty breathing, fatigue, muscle or body aches, headache, new loss of taste or smell, sore throat, congestion or runny nose, nausea or vomiting, diarrhea. **If NO, proceed to question 2.**
  - Are you isolating or quarantining because you tested positive for COVID-19 or are worried that you may be sick with COVID-19? **IF NO, proceed to question 3.**
  - Have you been in close physical contact in the last 14 days with: anyone who is known to have laboratory-confirmed COVID-19 or anyone who has symptoms consistent with COVID-19? **IF NO, proceed to start home flushing.**
- Homes with Minors and/or Pets
  - Ensure pets are secured prior to entering the home. If you encounter an unaccompanied minor or unsecured pets, **do not proceed with home flushing.** Document and move on to the next home for flushing.



## STEP 2. PREPARE FOR HOME FLUSHING (SEE VIDEO WALKTHROUGHS)

- Turn off breakers in home.
  - AMR / Red Hill
    - Water Heater
    - Condensing Unit
    - Fan Coil Unit
  - Pearl / Hickam / Outlying
    - Water Heater
    - Solar Pump
- Open windows and doors so that any petroleum/chemicals in the air exit the buildings. Do not open windows or doors in rooms that contain secured pets.
- Identify all fixtures and appliances with filters within the home, mark on in home appliance and fixture checklist.
  - Place notice to resident that no personally installed water filter will be changed or replaced. Resident will be responsible for replacing filter.
  - Remove all aerators. Place aerator near fixture within sight. Some AMR / Red Hill aerators require key to remove, key will be provided by IPC.

### IN HOME APPLIANCE AND FIXTURE CHECKLIST

- Refrigerator
  - With Water
  - Filter Model Number \_\_\_\_\_
  - Without Water
- Dish Washer
- Washer
- Interior Fixtures (Total Number) \_\_\_\_\_
- Exterior Spigots (Total Number) \_\_\_\_\_
- Electric Water Heater
- Solar Water Heater
- Resident Install Filter System

## STEP 3. PERFORM SERVICE LINE AND COLD WATER SYSTEM FLUSH

### **ATTENTION**

- DO NOT OVERFLOW DRAINS. DO NOT LEAVE RUNNING FAUCETS UNATTENDED.
- MARK ON THE CHECKLIST IF THE PRESENCE OF PETROLEUM/CHEMICAL ODOR/SMELL IS ENCOUNTERED BEFORE OR DURING THE FLUSH.
- IF STRONG FUEL SMELL IS PRESENT WHEN FLUSHING, UTILIZE BLOWERS/CEILING FANS/BATHROOM FANS TO VENTILATE THE SPACE. IF THE FUEL SMELL CANNOT BE CLEARED, CONTACT EV THROUGH THE EOC TO REQUEST ASSISTANCE.
- DOCUMENT/NOTE ANYTHING UNUSUAL ENCOUNTERED BEFORE OR DURING FLUSH TO INCLUDE THE PRESENCE OF ANY STAINING (SUSPECTED TO BE PETROLEUM-RELATED) OF SINKS, TUBS, SHOWER, TOILETS, ETC IN THE NOTES/COMMENTS SECTION AT THE END OF THIS SOP.

- Locate where the water line enters the building (likely near the water heater or utility sink).



- Locate the fixture closest to the point of entry in the home.
- Confirm aerator was removed in Step 1.
- Open each fixture to include sink fixtures, shower head and tub fixtures, and utility fixtures for 15 minutes. Do not open no more than a max of 4 fixtures at a time. If home is two stories, start flushing of cold water fixtures on the first floor and then proceed to second floor fixture flushing.
- Remove reservoir cover for each toilet prior to flushing. Flush all toilets 3 times, flush bidet for 3 minutes. Replace reservoir cover after flushing.

#### **STEP 4: DRAIN WATER HEATER, EXPANSION TANK (INCLUDING SOLAR HEATER TANKS)**

**\*\*Home water systems may vary per neighborhood, confirm system and use applicable checklist\*\***

##### AMR / Red Hill Housing

- Draining the water heater tank.
  - Turn off water supply valve entering the water heater.
  - Attach a hose to the tank spigot.
  - Run the hose to the exterior clean-out or nearest sewage drain. Water hose **CANNOT DRAIN** onto landscape.
  - Slowly open the tank valve to start draining.
  - After approx. 10-15 minutes, close cold water supply valve (helps to stir up and flush out sediment and cool the heated water).
  - Open hot water supply valve.
  - Open closest hot water fixture to the water heater. Typically the utility sink.
  - Close water tank drain valve when empty and remove hose.
  - Open water supply valve entering the water heater for refilling water tank.
  - Wipe up any spilled water.

##### Hickam / Pearl / Outlying Housing

- Draining the water heater tank.
  - Unplug pump (small pump above or on side of water heater).
  - Isolate pump.
  - Turn hot water service line off.
  - Connect water hose to drain valve (water hose may drain onto landscape, but should be in a suitable location).
  - Turn on gate valve at drain.
  - After approx. 10-15 minutes, close cold water supply (helps to stir up and flush out sediment and cool the heated water).



- Open hot water line.
- Turn on hot water faucet at closest fixture (open fixture instead of the TPR).
- Once tank is drained
  - Close drain gate valve.
  - Remove hose.
- Refilling the water heater tank.
  - Turn the supply line on (slowly).
  - Watch fixture where hot water is turned on to ensure no leaks.
  - Once tank is full:
    - Open valves that isolate pump.
    - Plug pump back in.
- Wipe up any spilled water.

### STEP 5. PERFORM HOT WATER SYSTEM FLUSH

#### **ATTENTION**

- DO NOT OVERFLOW DRAINS. DO NOT LEAVE RUNNING FAUCETS UNATTENDED.
- IF STRONG FUEL SMELL IS PRESENT WHEN FLUSHING, UTILIZE BLOWERS/CEILING FANS/BATHROOM FANS TO VENTILATE THE SPACE. IF THE FUEL SMELL CANNOT BE CLEARED, CONTACT EV THROUGH THE EOC TO REQUEST ASSISTANCE.

- Open each fixture for 15 minutes. Do not open more than 4 fixtures at a time.

### STEP 6. PERFORM SPIGOT FLUSH

- Flush all spigots for 15 minutes (typically located outside).
  - AMR / Red Hill must go to clean out or sewage system.
  - Pearl / Hickam / Outlying can be flushed to grass or gravel.

### STEP 7. ADDRESS MAJOR APPLIANCES.

- Refrigerators
  - Connected to water line (automatic icemaker, water in door).
    - Empty ice from freezer.
    - Flush refrigerator for 5 minutes and replace filter with new one when flushing is complete. Flush refrigerator for an additional 5 minutes to remove fine particles from the filter and drinking water.
      - If replacement filter is not available at time of flushing, place notice to resident not to use water on refrigerator.



- No automatic icemaker. Empty all ice trays in the freezer and place the ice tray in the sink.
- Dishwashers – Turn on rinse cycle one time.

### **STEP 8. CLEAN UP**

- Reinstall aerators.
- Clean up any additional water that may have spilled throughout the home.
- Confirm removal of hose and other supplies from home.
- Turn on breakers in home.
  - AMR / Red Hill
    - Water Heater
    - Condensing Unit
    - Fan Coil Unit
  - Pearl / Hickam / Outlying
    - Water Heater
    - Solar Pump
- Close all windows and doors that were opened, turn off all ceiling and exhaust fans that were turned on in Step 1.
- Do final walkthrough of home to ensure all water is secured, trash is removed.



# NOTES FROM HOME FLUSHING, IDENTIFY IF FIXTURES OR APPLIANCES WERE DAMAGED DURING FLUSH

NEIGHBORHOOD: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_