

## **SCOPE OF SERVICES FOR DHHL ANAHOLA WATER SYSTEM**

The contractor shall operate and maintain the system in compliance and to the standards of County, State, and Federal rules and regulations.

The Contractor shall perform complete operation, maintenance and repair services including inspections and emergency calls for all pumps, reservoirs, distribution water lines, telemetering systems, equipment and other appurtenances included under the contract, in accordance with the manufacturer's specifications and recommended time intervals.

If the manufacturer does not provide these Operating and Maintenance (O & M) specifications, the Contractor shall contact the Contract Administrator or his designated representative and provide recommendations regarding the maintenance and repair of the specific equipment or system. Such service shall include regularly scheduled operation and maintenance tasks and inspections and any repairs required for each listed herein.

The maintenance and repair tasks and inspection shall consist of the furnishing of all labor, equipment, parts, materials and tools necessary to perform a thorough servicing and complete repair of all integral parts, lubricating, adjusting, and touch up painting where needed to keep the equipment and structures in, or returned to, a continuous operating condition. Maintenance of the system shall also include all activities such as routine flushing and water leak repair to insure water quality. All services performed will be subject to inspection and approval by the Department of Hawaiian Home Lands (DHHL) prior to start of work.

All tools and labor needed to perform the operation and maintenance services shall be the responsibility of the Contractor. DHHL will reimburse the Contractor for parts and supplies on a cost plus 10% basis. This is under normal operations and maintenance and includes all appurtenances. The Contractor shall submit invoice copies with reimbursement request. Reimbursement request will not be accepted without invoice copies.

The Contractor will not be responsible for the cost of repairs due to flagrant vandalism, fire, storm or related damages that can be attributed to causes beyond his control such as acts of God; acts of a public enemy; acts of the State and any other governmental body in its sovereign or contractual capacity as described under General Condition Section 13 item d. However, the Contractor shall be responsible for such repairs at no cost to the State if the damages are caused by the Contractor's failure to properly maintain and service the systems and equipment.

The Contractor shall be responsible to provide and maintain a communication system to notify their maintenance personnel in the event of an emergency at the pump station.

The Contractor shall also be responsible for all extraordinary incidents above the normal operation and maintenance including emergency call-outs and equipment breakdowns. The Contractor shall provide the Contract Administrator or his designated representative with following:

1. Cost estimates if repairs can be made with in-house labor and materials. The Contractor will submit cost estimates to the Contract Administrator or his designated representative for

approval prior to starting work. Labor charges will be based on the rates for the applicable time situations listed on a current Wage Rate Schedule Bulletin published by the Department of Labor and Industrial Relations. The current Wage Rate Schedule Bulletin can be found at <https://labor.hawaii.gov/wsd/prevaling-wages-wage-rate-schedule/>. All material and equipment required shall be on a cost plus 10% basis. The Contractor shall submit invoice copies with reimbursement request. Reimbursement request will not be accepted without invoice copies.

2. If repairs require using outside sub-contractors in addition to in-house labor or is more economically feasible (reduce down-time of system or special equipment or personnel to repair) to utilize outside sub-contractors, the Contractor shall be responsible to obtain quotations from sub-contractors and submit to the Contract Administrator for review. Charges for work performed by the sub-contractor will be for only the dollar amount quoted. The Contractor shall submit invoice copies with reimbursement request. Reimbursement request will not be accepted without invoice copies.

Such services require the approval of the Contract Administrator or his designated representative prior to commencement of work.

The contractor shall act as liaison between DHHL and SDWB (Hawaii Safe Drinking Water Branch) regarding procedures, sanitary surveys, and other regulatory matters; meet with DOH personnel at site as requested to answer questions and/or disseminate information regarding operation of the system.

All normal operations performed by the Contractor shall include, but not be limited to the following applicable listed items:

1. **Familiarization of the Water System at Startup:** The purpose for this requirement is to ensure that the Contractor is familiar with the water system, is able to start up the system in the event of power or water outage, equipment breakdown, or heavy storms and flooding for which the Contractor shall be responsible and accountable.
  - a. Operate entire water system. A DHHL representative shall be present for training purposes.
  - b. Contractor shall maintain a regular maintenance log for record keeping of essential equipment needed to operate the system such as operating hours of pumps, water level indicators and alarm systems. Contractor shall submit format of logbook and determination of essential equipment based on the SDWB requirements and approval of DHHL.
  - c. Review the water sample points and make recommendations on changes as necessary. The Contractor shall be responsible for the submission of any sample site plan modification to the SDWB and DHHL for approval.

2. Operations and Maintenance of Anahola Water System

- a. Wells, pumps, and related equipment
  - i. The contract operator shall personally inspect wells, pumps, and equipment and record all findings, including operating pressures, run-time meter readings, and flow-meter readings on the Daily Well Logs at least two days each week.
  - ii. The contract operator shall initial all Daily Well Log entries as well as record the date and time of inspection in his/her state-issued Operators Log Book. A monthly .pdf scan of the log shall be sent to DHHL Contract Point of Contact (POC) within 10 days of the end of the month.
  - iii. The contract operator shall use the Daily Well Logs to compile a Monthly Production Report.
  - iv. The contract operator shall alert the DHHL POC when a necessary pumping test is needed.
  - v. The contract operator shall perform grass-cutting services surrounding the well site as needed and ensure that area is clean of debris.
  - vi. At minimum, the following schedule will be maintained:
    - 1. Pump System
      - a. Twice weekly
        - i. Inspect, adjust, repair and or replace if necessary, after receiving approval from DHHL, chlorine metering pump system.
        - ii. Inspect, adjust, repair and or replace if necessary, after receiving approval from DHHL, flow metering and totalizer system.
        - iii. Check, adjust and repair if necessary after receiving approval from DHHL, deepwell pump for vibration, noise and proper operation.
      - b. Monthly
        - i. Check, adjust, repair and or replace if necessary, after receiving approval from DHHL, automatic pump control valves for proper operation.
        - ii. Check seals on deepwell pump for leakage and adjust, repair and or replace as required.
        - iii. Check for proper alignment of motor/pump coupling and adjust, repair and or replace if necessary after receiving approval from DHHL.
        - iv. Check pump bearings for abnormal temperature and replace if necessary after receiving approval from DHHL.
        - v. Lubricate motor and pump bearings per manufacturer's recommendations.
        - vi. Check mounting bolts for tightness and tighten per manufacturer's recommendations.
        - vii. Clean motor starter contacts and replace if necessary.

- viii. Test, check and maintain the alarm system that notifies maintenance personnel of an emergency at the pump station.
- c. Quarterly
  - i. Check and adjust automatic pump control system (tank to sequence switch assembly) for start/stop signal and repair if necessary after receiving approval from DHHL.
  - ii. Check and adjust reservoir level indicator assembly for proper operation and level readings.
  - iii. Inspect all sensors, gauges, monitors, control devices and adjust through field calibration if necessary for proper operation.
- d. Semi-Annually
  - i. Clean strainer.
  - ii. Check all valves for proper operation, tightness and repair or replace if necessary after receiving approval from DHHL.
  - iii. Thoroughly clean out all dust and dirt from inside of electrical panels and starters.
- e. Annually
  - i. Scrape and sand bare metal and paint all rusted areas for preventive maintenance.
  - ii. Inspect condition of wiring and conduit from motor to starter and repair or replace if necessary, after receiving approval from DHHL.
  - iii. Open, inspect, clean and test pressure regulating and automatic control valves for proper operation and pressure setting.
  - iv. Megger motor and submit report and recommendations to the DHHL in writing.
- b. Tanks
  - i. The contract operator shall twice weekly make a visual inspection of the ground exterior of the storage tank. The contract operator shall alert the DHHL POC when necessary of any unusual activities or repairs needed.
  - ii. The contract operator shall at least quarterly inspect and repair if necessary, after receiving approval from DHHL the following: the tank roof, tank vent, lock on entry port, safety condition of ladder, water level mechanism, operating overflow, conditions of exterior tank surface coating. The contractor shall at least annually inspect the tank hatch and seal. The contractor will include quarterly inspections of the tank to DHHL as a .pdf file.
  - iii. The contract operator shall alert the DHHL POC when a necessary professional tank inspection or cleaning is needed.
  - iv. At the discretion of DHHL, the contractor shall work with DHHL to contract out to have the tanks internally inspected as necessary. If DHHL

elects to contract out this inspection, these costs shall be incurred through the contingency allotment.

c. Fire hydrants

- i. Inspection: This should be done annually or after each use in conjunction with the maintenance and the flow test. Where possible, check the fire hydrant manufacturer's maintenance manual.
  1. Paint hydrants and refresh the numbering system on the hydrants as necessary.
  2. Check the hydrant's appearance. Remove obstructions within a 3-foot radius.
  3. Check to see whether the hydrant needs to be raised because of a change in the ground surface grade. If adjustments are needed, schedule the work.
  4. Inspect the hydrant for leaks, either from the operating nut, nozzle caps, or the drain.
  5. Remove all nozzle caps and check threads and operating nuts for damage
  6. Make repairs as necessary.
- ii. Maintenance: In conjunction with regular inspections, the following maintenance should be performed annually.
  1. Remove all outlet nozzle caps, clean the threads, check the condition of the gaskets, and lubricate the threads with a manufacturer approved lubricant. There are several never-seize compounds available. Check the ease of operation of each cap.
  2. Check outlet-nozzle-cap chains or cables for free action on each cap. If the chains or cables bind, open the loop around the cap until they move freely. This will keep the chains or cables from kinking when the cap is removed during an emergency.
  3. Replace the caps. Tighten them, and then back off slightly so they will not be excessively tight. Leave them tight enough to prevent their removal by hand.
  4. Check the lubrication of operating-nut threads. Lubricate per the manufacturer's recommendations.
  5. Locate and exercise the auxiliary valve. Leave it in the open position.
  6. Check the breakaway device for damage.
  7. If the hydrant is inoperable, bag it with a brightly colored, weather-resistive cover that bears the stenciled warning: "HYDRANT OUT OF SERVICE". Notify the Department of Hawaiian Home Lands, Land Development Division, Public Works & the District Office and schedule the hydrant for repair.
- iii. Fire Hydrant Flushing: Flushing a hydrant removes any accumulated sediment in the barrel and on the valve. Flushing must be performed annually along with the regular inspection and maintenance items described above.

1. Contact the appropriate Water Department to inform them that a hydrant flush is about to take place. Often, when a large volume of water is moved through an orifice such as a hydrant, sediment in the line will be stirred up and the Water Department may receive complaints about brown water.
  2. Prepare to flow water from the hydrant. Following are acceptable discharge locations for the water.
    - a. Sanitary Sewer
    - b. Storm Sewer if water has been de-chlorinated. Use BMPs to prevent erosion of soils.
    - c. Other locations must receive prior approval.
  3. Open the hydrant slowly until it is fully open;
  4. Let the water flow for a minimum of 3 minutes or until water is clear.
  5. Do not open more than one hydrant at a time – this will minimize the amount of flow created in the main.
  6. Shut the hydrant down, again very slowly, until the valve is completely shut.
  7. Remove hardware and replace cap.
- iv. Upon completion of the fire hydrant maintenance, the contract operator shall supply DHHL a copy of all residual pressure readings at each hydrant.
  - v. The contract operator shall maintain a testing log to document each hydrant's condition and inspection history and submit the testing log to DHHL no later than 12/31 of each year.

d. Water mains

- i. The contract operator shall locate and mark necessary water mains within 48 hours of receiving a request by a citizen or contractor to excavate within 10 feet of a water main or service line. The contract operator shall also document any request for line locations as well as any leaks or breaks caused by excavators and shall present this information to the DHHL POC.
- ii. The contract operator shall coordinate a leak-detection survey if non-revenue water loss exceeds 30 percent of the total water produced, or if it is recorded that there is a 10 percent increase in non-revenue water during a bi-monthly period. The contractor is responsible for providing a report of the water sold, water produced, and estimated other uses to the DHHL POC bi-monthly.
- iii. The contract operator shall periodically perform visual leak inspections to ensure that non-revenue water loss is identified and repairs are scheduled in a timely basis.
- iv. Within three months of contract award, the contract operator shall submit a valve exercising program plan to DHHL for review and approval. The contractor shall exercise all valves, checking for proper operation and

- tightness; repair or replace, if necessary, after receiving approval from DHHL. Record results and submit to DHHL annually.
- v. The contract operator shall annually submit a unidirectional fire hydrant flushing program to DHHL for review and approval which shall include the date range of flushing so that the Homestead may be notified prior to flushing. The contract operator may need to flush dead ends and other locations within the system more frequently than annually to maintain water quality and a chlorination residual throughout the system. If the contractor can demonstrate that flushing of dead ends is required more frequently than monthly to maintain water quality, the contractor shall work with DHHL in installing and maintaining automatic flushing stations. Flushing of mainlines are additionally required when contaminants are found, after repair of line breaks and after major components are replaced.
  - vi. Inspect pressure reducing stations for proper operations, perform maintenance and service on the pressure reducing station, and adjust as needed to maintain downstream pressure.
  - vii. Flush and maintain the inter-connection manifold system semi-annually. The contractor shall coordinate with Kauai Department of Water (KDOW) at least annually to inspect and schedule any necessary repairs to the inter-connection. Monthly, the contract operator shall test and maintain emergency equipment used for the interconnect for proper operation.
  - viii. The contract operator shall work with the DHHL Kauai District Office if water needs to be shut off in order to complete water system repairs or replacements. The Contract Operator shall provide customers notice of water outages at least one week prior to scheduled maintenance when possible.
  - ix. The Contractor shall paint valves or other exposed plumbing for preventive maintenance.
- e. Meters and service connections
- i. Bi-monthly, the contract operator shall read all distribution system meters and calculate customer usage using DHHL handheld meter reading computer. The contract operator shall provide usage reports to DHHL Kauai District Office.
  - ii. Every other month, the contract operator shall document any indications of leaks, damage, tampering, and non-functioning meters. The contract operator shall inspect conditions of the water meters and meter boxes. The contractor shall repair or replace meters and meter boxes after receiving approval by DHHL.
  - iii. DHHL shall periodically generate a computer report detailing possible non-functioning meters and the contract operator shall check the meter for validity and perform meter change-outs as necessary.
  - iv. The contract operator shall install new meters in existing boxes and deactivate existing meters as authorized by DHHL representative. The

Contractor shall submit invoice copies for reimbursement requests.  
Reimbursement request will not be accepted without invoice copies.

f. Sampling Stations

- i. The contractor shall maintain the integrity and cleanliness of the sampling stations. The contractor shall replace or install new sampling station as necessary.

g. Emergency Repairs and Call outs

- i. Repair to equipment and appurtenances other than routine servicing described shall be performed as described under Scope of Work, SPECIFICATIONS page S-1 and S-2. Contractor shall respond to an emergency or a break in service within 60 minutes of notification.
- ii. The contract operator shall notify DHHL of the extent of the damage as soon as reasonable. If a boil water notice or do not use order is issued, the contract operator shall immediately notify the DHHL POC.

h. Recordkeeping

- i. The contractor shall be responsible for maintaining an Operator Log Book detailing his/her activities. A copy of the operator log shall be submitted annually to DHHL as an Adobe.pdf file.
- ii. Prepare and maintain copies of the Monthly and Annual Production Reports as well as supply a copy to DLNR and DHHL.
- iii. Prepare a water accountability report to DHHL after the completion of every billing cycle which notes water produced, water sold, and other known water uses. The water accountability report shall be submitted bi-monthly.
- iv. Prepare the Annual Operations & Maintenance Report and supply a copy to the DHHL POC. The Annual Operations and Maintenance Report shall note deficiencies and recommendations for the water system and any trends noted by the operator.
- v. Prepare the annual consumer confidence report (CCR) by April 15<sup>th</sup> of each year. The draft shall be reviewed by the DHHL POC prior to distribution to the public.
- vi. The contract operator shall be responsible for maintaining copies of all state correspondence, test results, sanitary surveys and annual reports. The contract operator shall ensure that DHHL POC has received a .pdf copy of all state correspondence and sanitary surveys.

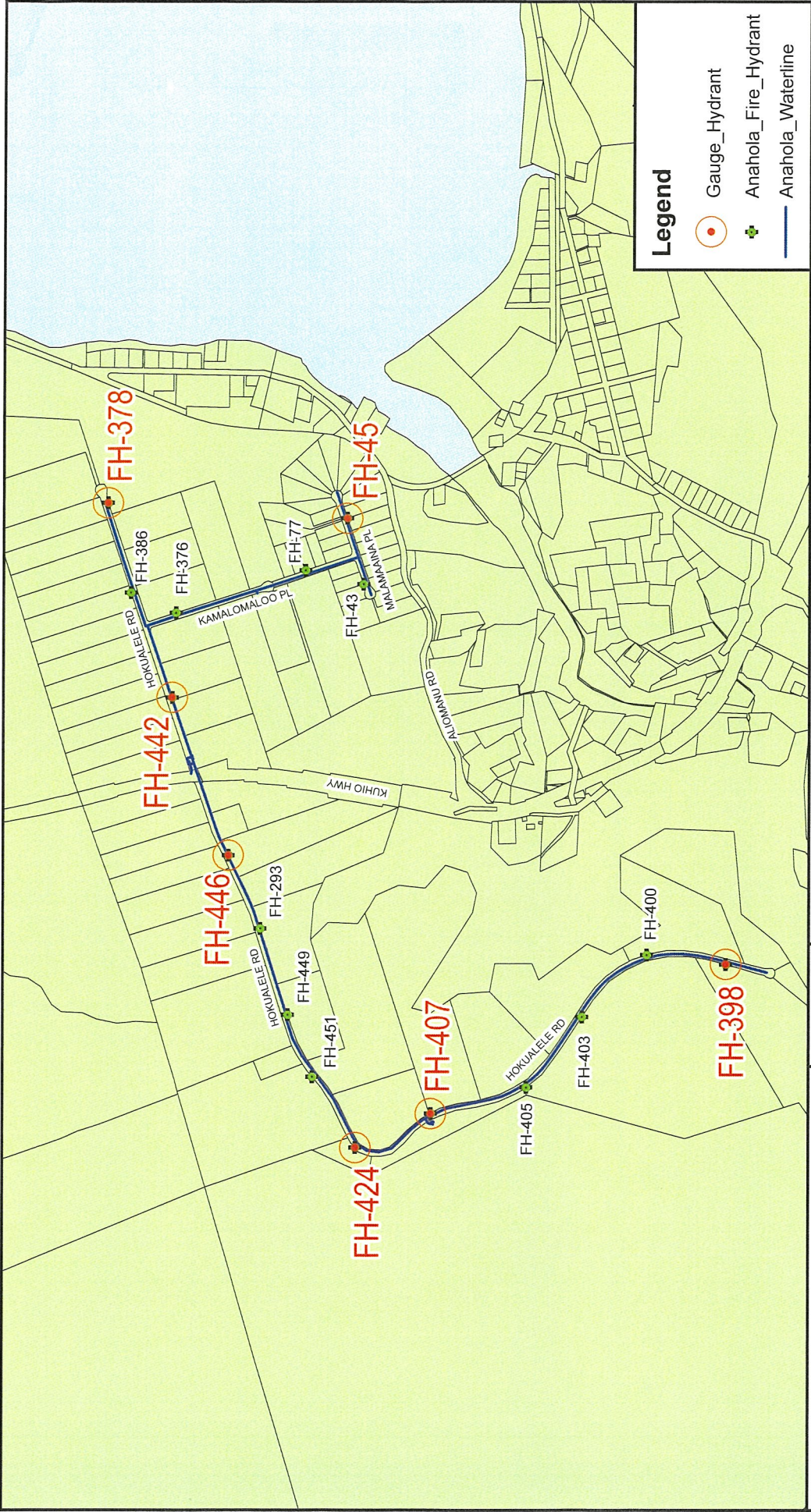
i. Testing and Monitoring

- i. Chlorine residual tests
  1. Twice each week the contract operator shall check the free chlorine residuals at the well site and at least weekly at the ends of the distribution system.
  2. The contract operator shall document the chlorine residual test results on a Chlorine Testing log



- a. If the free chlorine residual is tested as 0.2 mg/l or less at the end of the distribution system, the contract operator shall take the necessary steps to increase the free chlorine residual, including adjusting the chlorine feed rate and flushing.
    - b. The contract operator shall ensure that there is sufficient supply of chlorine stock and coordinate replenishment of chlorine stock. The contractor shall monitor chlorine stock and solution quality to ensure a sanitary, safe product. The contract operator shall keep chlorine storage facility clean and free of debris and pests.
  - ii. Bacteriological tests and other required testing, reporting and monitoring
    - 1. The contract operator shall collect the monthly bacteriological samples at the approved sampling sites and deliver them to the State or approved laboratory per the state approved schedule each month.
    - 2. If the bacteriological tests indicate the presence of coliform bacteria or are in any way not satisfactory, the contract operator shall take immediate necessary actions prescribed by the SDWB which may include public notification, flushing of lines, resampling procedures, and assessments prescribed by the revised total coliform rule.
  - iii. Other required testing, reporting, and monitoring
    - 1. All other required testing, reporting, and monitoring specified by the Safe Drinking Water Act and/or directed by the SDWB shall be completed by the Contract Operator following the state-prescribed guidelines and by the date that such testing, reporting, or monitoring is specified by the SDWB
  - iv. If DHHL has been found to be in non-compliance with the Safe Drinking Water Act due to monitoring violations, exceeding a maximum contaminant level standard, or has triggered an action level, the contract operator shall contact the DHHL POC and so advise on the status. The contractor shall work with DHHL in notifying all users and initiate corrective measures as required by the SDWB.
  - v. All costs including labor to obtain samples of water quality tests that are performed at the State laboratory are the contract operator's responsibility. The testing costs associated with any water quality tests that are not performed at the State laboratory shall be reimbursed at a cost plus 10% basis.
- j. Chlorine and Other Supplies
  - i. Contractor shall coordinate the ordering and receiving of chlorine and other supplies required for system operation such as gasoline for mowers, replacement parts for chlorine pump, electrical components and hoses. Replacement supplies will be the responsibility of the DEPARTMENT. The CONTRACTOR shall be reimbursed the cost of such items only with DHHL approval prior to purchase.

- k. Landscape Maintenance
  - i. Mow lawn, cut brush and weeds, and remove all rubbish within fence line of well site and storage tank.
  - ii. Cut and remove brush and weeds around fire hydrants and valve boxes.



Department of Hawaiian Home Lands  
Anahola Farm Lots Water System  
Public Water System No. 432

Attachment  
Proposed Fire Hydrant  
Pressure Gauge Locations





## DHHL Fire Hydrant Maintenance Report

The purpose of this Standard is to clarify the requirements for the testing, inspection, maintenance, and marking of private fire hydrants. It is the responsibility of the DHHL to have all the fire hydrants tested once every year in accordance with NFPA 25.

Address	DHHL Owner					Date of Inspection			Inspection Type	
	Property Address								New Installation	
	City		State		Zip Code			Annual		
	Phone Number			Mobile Number				5 Year Flow Test		
Service Data	Servicing Company									
	Company Address									
	City		State		Zip Code		Phone #			
	Make of Hydrants		Model of Hydrants				# of Hydrants Serviced			
Semi-Annual Inspections	Hydrants are accessible and free of obstructions. All vegetation, landscaping, and other obstructions are at least three feet away from hydrants							Yes Satisfactory	No Unsatisfactory	
	Top of hydrant is not leaking when hydrant is on									
	Gaskets under caps are not leaking when hydrant is on									
	Hydrant barrel is in good condition without cracks or corrosion									
	Operating nut is not worn and does not have rounded corners									
	Outlet threads are not damaged									
Annual Tests & Maintenance	Outlet caps secured									
	Open hydrant fully flow for not less than 1 min at full capacity until flowing water is clear									
	Hydrant drains completely within 60 minutes of closing valve									
	Number of turns to full open hydrant			GPM			Flow available @ 20psi			
	No. of ports flowed		Static Pressure		Residual Pressure			Pitot Reading PSI		
	Indicate Deficiencies Below									
	Will not open		Stem broken		Set too low/high			Lube operating nut		
	Nipples loose		Opens hard		Dome missing			Lubricate hydrant packing		
	Off at gate		Caps missing		Faced wrong			Gate valve accessible		
	Base leaks		Poor spanner fit		Stem leaking			Lubricate thrust collar		
Barrel broken										
Set improperly										
Poor spanner fit										
*All "No/Noted Deficiencies" shall be explained in detail										