



STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS  
91-5420 Kapolei Parkway,  
Kapolei, HI. 96707

# **SCOPE OF SERVICES**

FOR

FURNISHING LABOR AND MATERIALS FOR

## **Kawaihae Water System Operation and Maintenance Services**

KAWAIHAE, SOUTH KOHALA, ISLAND OF HAWAII, HAWAII

IFB No.: IFB-20-HHL-014

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**Kawaihae Water System Operation and Maintenance Services**  
**Kawaihae, South Kohala, Island of Hawaii**

**Scope of Services**

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 this contract for the Department of Hawaiian Home Lands (DHHL) Kawaihae Water System, in accordance with the manufacturer's specifications and recommended time intervals. The Contractor shall perform such services on site at the Kawaihae Water System PWS 164 a minimum of three (3) weekdays, four (4) hours per day, for no less than 12 hours per week. The Kawaihae Water System is a Potable Water System. Such service shall include regularly scheduled operation and maintenance tasks and inspections, and any repairs required for each unit listed herein.

If the manufacturer does not provide Operating and Maintenance (O & M) specifications for any activity under this contract, the Contractor shall contact the Contract Administrator or his designated representative and provide recommendations to be approved by the Contract Administrator regarding the maintenance and repair of the specific equipment or system.

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 units in, or return to, a continuous operating condition. Maintenance of the system shall also include all activities such as routine flushing, valve exercising and water leak detection, and repair to insure water quality. All services performed will be subject to inspection and approval by the DHHL.

All tools and labor needed to perform these services shall be the responsibility of the Contractor. The Contractor shall provide parts and material to perform all repair work for the equipment and appurtenances listed herein and pay for the first \$50.00 for parts per task or visit. The Contractor shall include the \$50.00 amounts in its bid. DHHL will reimburse the Contractor for parts costs above and beyond \$50.00 upon submission of invoice and reimbursement request by Contractor. Reimbursement requests shall not be accepted without invoice copies.

The Contractor will not be responsible for the cost of repairs due to vandalism, fire, storm, or other damages attributed to causes beyond the Contractors control, to be determined by DHHL. Contractor shall be responsible for repairs, at no cost to the State, if the damages result from Contractor's failure to properly maintain and service the water system. The Contractor shall be responsible for providing and maintaining a communication system to notify DHHL and their maintenance personnel in the event of an emergency at the pump station or an emergency involving any part of the Water System.

The Contractor shall be responsible for all emergency call-outs and equipment breakdowns. The Contractor shall provide the Contract Administrator or his designated representative with the 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 rates for the applicable time situations listed on the appropriate Offer Form page. All material and equipment required shall be on a cost plus 10% basis. The Contractor shall submit invoice copies with reimbursement request. Reimbursement requests shall not be accepted without invoice copies.
2. If repairs require outside sub-contractors in addition to in-house labor, the use of outside sub-contractors or is more economically, the Contractor shall be responsible for obtaining quotations from sub-contractors and submitting to the Contract Administrator for review and approval. Charges for work performed by the sub-contractor shall be for only the dollar amount quoted. The Contractor shall submit invoice copies with its reimbursement request referencing the purchase order number. Reimbursement requests will not be accepted without invoice copies.

Such services shall be paid by the Project Contingency Fund and shall require the approval of the Contract Administrator or designated representative prior to commencement of work.

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

- I. **Familiarization of Water System Startup:** The purpose for this requirement is to ensure that the Contractor is able to startup the system in the event of a power outage, equipment breakdown, or heavy storms and flooding. Contractor must:
  - a. Operate entire water system. A DHHL employee or designated representative shall be present for training purposes.
  - b. 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, flow meter readings, and alarm systems. Format of the log and determination of essential equipment shall be determined by DHHL based on Department of Health (DOH) requirements. Each month, Contractor shall provide DHHL with copies of the maintenance log along with its billing invoice. Failure to provide the log information will delay processing of payment.
  - c. Identify and establish water sample points and frequency of sampling throughout the entire water system for Coliform testing and Chlorine Residual sampling pursuant to the DOH requirements. Contractor shall be responsible for the submission of a sample site plan to the DOH and the DHHL for approval and for the periodic update of the sample site plan as required by the DOH.

- d. Take recordings of highest and lowest pressure points at both reservoir tanks and adjust pressure regulators to maintain uniform pressure flow as required by the Water System.

## II. Operation and Maintenance

### a. Booster Pumps

1. Performance check – a visual check shall be performed each and every time the Water System is operated but not less than three (3) times per week.
  - Amps: all three legs
  - Volts: all three legs
  - Discharge pressure
  - Flow Rate (GPM)
  - Lubrication (according to manufacturer's recommendations)
  - Log all readings on computer for graphical comparison
  - Meter Reading
  - Check to ensure that the speed of the water pump corresponds with the output in horsepower
  - Examine for leakages, fissure or wear and tear
  - Monthly checks include inspecting and mending seals
2. Alternate lead/lag pump (see SCADA operations detail).
3. Compare performance data with field & factory curves; troubleshoot when necessary.
4. Coordinate with any sub-contractor necessary for pump/motor repair
5. Clean and adjust all pump control valves to ensure proper operation.
6. Housekeeping of Motor Control Center (MCC).
7. Change Recording Charts, if any. Store Recording Charts in a secure location.
8. Touch-up painting.
9. The performance check of the booster pumps shall be included in the regular maintenance log and submitted monthly to DHHL.

### b. Pump Flow Meters

1. Meter Performance Monitoring – to be completed during each Performance Check, but not less than three (3) times a week.
  - a. Record registering flow readings, time sweep hand.
  - b. Ensure the flow meter is primed.
  - c. Calculate gpm, compare readings.
  - d. Log all readings on computer for graphical comparison and trending. Readings will be compared for unusually high or low water production. The Contractor will be responsible for determining and correcting water production and loss problems.

2. Troubleshoot any problems.
3. Disassemble meter(s) for repair and/or determine when meters must be replaced.
4. Order, pick up, or make shipping arrangements for any necessary parts required.

c. Chlorinator Units

Performance Check - Not less than three (3) times per week.

1. Inspect Chlorine feeder pump system pursuant to specifications, including checking for leakages and wear and tear.
2. Check chlorine residual (free and total) at sampling points within the water system to insure proper disinfection (part of sampling plan).
3. Ensure adequate supply of chlorine.
4. Perform touch-up painting where necessary.
5. The results of the performance check of the Chlorinator Units shall be included in the regular maintenance log and submitted monthly to DHHL.

d. Reservoir Tanks

1. Inspect for leaks, spaulding, or other indications of structural compromise.
2. Coordinate periodic cleaning once every three (3) years with the DHHL and a subcontractor, as required by the DOH.
3. Inspect and replace or repair site gauges, ladders, railings, floats, vents, screens, hatch door seals, etc.
4. Order, pick up, or make shipping arrangements for any necessary parts required.
5. Log any repair work and include in monthly maintenance report to DHHL.

e. Reservoir Tank

1. Inspection - Semi Monthly.
  - a. Pressure Reducing
    - Verify upstream and downstream pressures and repair any leaks.
    - Log all readings.
  - b. Pump control/check valves
    - Verify upstream and downstream.
  - c. Solenoid Control Altitude Valves
    - Inspection of SCADA interface control reliability and repair any leaks or associated problems.
2. Troubleshoot any and all hydraulic valve failures.
3. Make all minor repairs and adjustments.

4. Order, pick up, or make shipping arrangements for any necessary parts required.
5. Log all repair work and inspection results in the monthly maintenance report and submit to DHHL.

f. Fire Hydrants and Meters

1. Semi-Annual Maintenance
  - Grease (Chevron Ploy FM No. 2) all caps and threads.
  - Record static pressure.
  - Exercise and record number of opening and closing turns for street valves.
  - With end caps off, inspect for proper valve seating and drainage and check for leaks and the integrity of the seals and replace where necessary. Immediately report hydrants that fail to operate so they can be repaired or replaced. Tag hydrants that are temporarily out of service.
  - Log maintenance work performed and submit to DHHL.
2. Troubleshoot any problems.
3. Order, pick up or make shipping arrangements for any necessary parts required.
4. Touch-up painting.
5. Exercise all street valves.
6. For meters, inspect to ensure proper operation according to specifications and for any indication of tampering. Document with photographs and report all such indications of tampering immediately to DHHL.

g. Street Valves

1. Regular Maintenance – Annual
  - Exercise and record number of opening and closing turns.
  - Record the hydrant number and corresponding street valve and the number of turns to open and close the valve safely.
  - Clean out all debris from street valve stem and record date of maintenance.
2. Troubleshoot any problems.
3. If necessary, hire sub-contractor to dig up/repair/replace and bury valve within roadway.
4. Log all maintenance and repair work on street valves and submit to DHHL.

h. Air Relief Valves

1. Inspect each valve for leaks – Quarterly.
2. Flush and exercise each valve to remove stagnant water – Quarterly.

3. Troubleshoot any problems.
4. Make minor repairs as needed.
5. Log all inspection results and any repair work and submit to DHHL.
6. Order, pick up, or make shipping arrangements for any necessary parts required.

i. Flushing

1. Monitor chlorine residual in each cul-de-sac – Once per week.
2. Calculate cul-de-sac leg volume and flush each as required to maintain proper chlorine residual.
3. Flush all water lines, not just dead ends, as needed to insure water quality.
4. Log all amounts of water flushed, residual counts, and frequency of flushing. Include estimated amount of water flushed in the accounted for water for that month, and submit to DHHL.

j. Water Quality Testing

When required, the Contractor shall be responsible for delivering samples on a timely basis to a certified laboratory approved by the DOH. All cost, including labor to obtain samples, cost to conduct the sample analysis, material cost such as the cost of sample containers and chill coolers, and delivery/freight costs to ship samples to the respective laboratories, shall be the Contractor's responsibility. Contractor shall submit all documents pertaining to samples, results, and correspondence from the DOH to DHHL for review.

1. Coliform Testing – Once per Month.
  - a. Conduct sampling pursuant to a DOH approved sampling plan.
  - b. Make arrangements with certified laboratory to analyze samples.
  - c. Take sample for transport same day for analysis.
  - d. Maintain sample file according to current DOH rules.
  - e. Notify customers, per DOH requirements, in the event of a Coliform positive test result, conduct a follow-up testing and reporting in coordination with DHHL.
2. Chlorine Residual Sampling – Three (3) times per week.
  - a. Current Sampling
    - One sample at the top of each reservoir (two samples).
    - One sample at the bottom of each reservoir (two samples).
  - b. Take Sample and analyze samples at site
    - Maintain sample file according to current DOH rules.
    - Notify customers when required by DOH.
3. Other Testing
  - **Perform all other testing as required by the DOH.** Should other testing become a requirement of the DOH, the Contractor shall submit a cost breakdown to the Contract Administrator for

approval prior to beginning work. All material and equipment required shall be on a cost plus 10% basis. The Contractor shall submit invoice copies with reimbursement requests.

Reimbursement requests will not be accepted without invoice copies.

4. Log and file all sample results with DHHL.
5. Pay all freight cost with the exception of Section II.j.3. "Other Testing" (see above).

k. Customer Complaints, Education, and Service

1. Complaints

- Handle homesteader complaints in a professional and courteous manner.
- Meet with homesteader in the field where requested and respond to questions.
- Diagnose problem(s) and explain the proposed repair or resolution.
- Issue report to DHHL for each incident of homesteader complaint or request for information.

2. Education

- Educate homesteaders on current EPA/DOH regulations, as needed.
- Educate homesteaders on DHHL's Administrative Rules for the Water System.
- Provide education and training on the operation and maintenance of the Water System to interested homesteaders. This training will be paid under a time and materials basis as authorized by DHHL, and paid for from the Project Contingency Fund.

3. Service

- Maintain 24-hour, 7 days per week, on-call duty to respond to all Kawaihae Water System emergencies.

1. Meter Reading & Processing

1. Homesteader meters (approximately 145 meters)

- Read each meter once per month, unless it is a digital smart meter which can be read by DHHL online.
- Input all meter readings into the hand-held devices issued by DHHL.
- Submit the hand-held devices with all meter readings to DHHL West Hawaii District Office no later than the end of business on the first Friday of each month. If that day falls on a holiday, then submit no later than the following business day.

2. Hydrant Meters

- Contractors requesting to use water from a fire hydrant shall be charged a fee for temporary installation of a DHHL-owned 3” commercial water meter.
- Contractors shall pay for water used based upon the commercial meter reading.
- Commercial meters shall be read by O&M operators on the same day as water meters with the reading provided to DHHL manually.
- A deposit for surety of the 3” meter shall be required of the Contractor equaling the value of replacement.
- Following completion of the construction project, Contractors shall pay for use and return the 3” commercial water meter underground and in good working condition.
- DHHL shall inspect the 3” commercial water meter for damage and return the deposit, or balance of the deposit, upon finding that the 3” commercial water meter is undamaged and in good working condition.

m. Monthly Reporting

1. Usage Accounting
  - Read and report master meter(s) booster pumps.
  - Read and report booster pump meter(s) pump flow meter.
2. Issue Reports
  - a. Water Utilization
    - Master meter vs. water metered (compare).
    - Average daily usage.
    - Unaccounted water percentage.
  - b. Performance of all water system operations and maintenance.
  - c. All water system problems and corrective actions taken.

n. Emergency Repairs and Call-outs

Repair to equipment and appurtenances other than routine servicing described shall be performed as described under Scope of Work, SPECIFICATIONS pages 1 and 2. Contractor shall respond to an emergency or a break in service within 60 minutes of notification from DHHL or homesteader.

o. Water Meters and Chlorine

Install new meters in existing boxes and de-activate existing meters as authorized by Contract Administrator or his designated representative. The Contractor shall submit invoice copies with reimbursement request referencing the purchase order number. Reimbursement request will not be accepted without invoice copies.

Coordinate the ordering and receipt of chlorine with the Contract Administrator or his designated representative. The Contractor shall be reimbursed for the cost of

the chlorine. The Contractor shall submit invoice copies with reimbursement requests referencing the purchase order number. Reimbursement requests will not be accepted without invoice copies.

p. Reporting of Data

All Reports or information gathered shall be compiled and sent to the West Hawaii District Office in a format that meets the approval of the Contract Administrator or designated representative. Report shall include:

1. Total gallons through master meter.
2. Flow rate at lower reservoir measured in gallons per minute (gpm) and gallons per day (GPD).
3. Height levels of both reservoirs and graph to show levels in six (6) hour increments.
4. Chlorine residual measurements in system and chlorine added via chlorinator.
5. Booster pump activity (gpm, HRS) log all readings on computer and graph; information from recording charts shall be graphed.
6. Pump Flow Meters – graph for comparison and trending for high/low water production.
7. Identify loss in system.
8. Contractor to meet with a DHHL representative once per month to review data acquired and reports of information gathered on system operations.