

**Water System Operation
Statement of Work
July 25, 2011**

Old/Phils/Water operator/SOW 7_25_11

1.0 Scope

This document describes the operation of a rural community Direct Filtration Water System that services sixty connections of the Carlin Bay property Owners Association (CBPOA).

This document includes aspects of system operation, maintenance, and management that are consistent with the needs of the community and state regulations, and have been proven successful and efficient. These tasks include, but are not limited to, maintaining reservoirs at capacity, interfacing with regulatory agencies, and providing for maintenance and repairs of both the water plant and the distribution system as needed.

The contract operator shall be licensed at a minimum level of Drinking Water Treatment Operator Class 2 Idaho Bureau of Occupational licensing and shall serve as the responsible-in-charge operator of the system. The operator as such shall keep operational, maintenance, and administrative records of all water system activities to the standards specified by the Idaho Department of Environmental Quality (IDEQ).

2.0 Applicable Documents

Rules for Public Drinking Water Systems IDAPA 58, TITLE 01, Chapter 08, EPA Code of Federal Regulations Part 141-143
EPA 816-R-00-010 Public Notification Handbook

3.0 Requirements

Carlin Bay Property Owners Association (CBPOA) seeks to engage a qualified (Class II) water system operator to operate its surface water treatment plant and distribution system in accordance with IDEQ requirements and the needs of the CBPOA community.

The CBPOA surface water treatment plant operates on the principle of direct filtration. The process is complex and cannot be allowed to fail as a failure potentially exposes water users to microbial pathogens such as giardia cysts and cryptosporidium oocysts. The potential health impacts of these microbial pathogens can be significant to healthy individuals and potentially fatal to immuno-compromised individuals.

IDEQ strongly recommends, and it is a firm requirement, that applicants demonstrate their experience with direct filtration water treatment as a condition of this competition.

Prospective operators shall provide a copy of a current operator license and will maintain a valid operator certificate while this contract is in effect. If at any time, the contracted operator is un-available a properly licensed substitute shall be made available by the contracted operator

This document describes requirements for contracted service to provide for meaningful proposal evaluation.

3.1 Water Service:

Management of water operations in accordance with this document and IDEQ requirements including:

1. Timely operation of the water plant to provide uninterrupted water service for residents.
2. Monitoring, maintenance, and repair of the surface water treatment to ensure treated water meets all surface water filtration and disinfection requirements at all times.
3. Monitoring and maintenance of the distribution system to ensure continued disinfection of the water supply to each service connection. Maintenance of the distribution system to prevent depressurization. In the event of depressurization, the operator must provide a timely and appropriate response as per Idaho Rules for Public Drinking Water Systems. Flushing of all dead end mains in the system at a frequency of no less than twice per year as required by the Idaho Rules. Exercise all valves on an annual basis.

3.1.5 DEQ and/or Public Notification

If a violation or a situation occurs that requires notification of DEQ or the public as defined in the Public Notification Handbook (EPA 816-R-00-010), the responsible contracted charge operator shall notify a CBPOA board member with two hours of the occurrence. The responsible contracted charge operator shall also notify DEQ within the time required by the Public Notification Handbook. CBPOA members will be notified by the CBPOA board.

3.2 Cross Connection Program

Implement and manage a cross-connection program in accordance with Idaho Rules for Public Drinking Water Systems IDAPA 58, TITLE 01, Chapter 08. . This includes inspection and verification that all households connected to the system have proper backflow prevention devices, annual testing of backflow prevention assemblies, maintenance of accurate records, and disconnection of users refusing to cooperate with inspections or testing of installed assemblies as per the Association's Cross Connection Control Resolution By-Law.

3.3 Publish an annual consumer confidence report and provide a copy of the report to IDEQ. Work with the CBPOA board to make the report available to users upon request.

3.4 Be on site for the sanitary survey performed by IDEQ and other district health department inspections that may be required by governing agencies.

3.4.1 Be available to customers for water quality questions and discussions.

3.5 Read water meters as close as reasonably possible to April 1, July 1, and Oct 1. Record data and provide to the CBPOA treasurer for billing as required.

3.6 Water Plant Operations

3.6.1 Operations Schedule: Schedule and supervise all operations.

3.6.2 Daily Operations and Testing:

- A.** Test chlorine, pH, raw water turbidity, finished water turbidity, temperature, and water flow rates as required for Direct Filtration System Requirements, and record data on DEQ Disinfection & Turbidity form. If flow meters (pump to waste and clear well) are not working, remove, clean, and reinstall.
- B.** Track chlorine dosages daily. (This is a local requirement)
Record results on a hypochlorination form.
Verify correct chlorination level.
- C.** Check and fill if necessary: Alum, Chlorine, and Soda Ash tanks.
Record chemical usage amounts. Adjust feed rates as necessary to accommodate changes in raw water quality characteristics.
- D.** Monitor pressure gauges on the clarifier and filter tanks.
Check for head loss and filter break-through.
- E.** Read the flow meter on the output line of filter #2.
Adjust the valve for a flow rate of ½ of total flow into the clearwell.
- F.** Check the SCADA computer for any alarms and warnings. Respond to all alarms and warnings within one hour by monitoring SCADA, and if required, be on site within two hours.
Verify that the SCADA turbidity reading is the same the reading on the 1720E controller.
Verify that no distribution system leaks have occurred.
- G.** Provide oversight and review of daily operations. Analyze operational data to determine changes and improvements for more efficient operation.
- H.** Be available at all times for emergency situations including the need to locate and repair faults in the water plant.
- I.** In the case of a fire in the community where firefighters will depend on community hydrants the purveyor shall respond in emergency fashion to ensure that water is available to fight the fire.

3.6.3 Weekly Operations

- A.** Measure chlorine, Alum, and Soda Ash dosage rates.
- B.** Verify water flow rate to the 1720E turbidity meters and adjust if required.

3.6.4 Monthly Operations and Testing

- A.** Perform coliform tests and measure chlorine at randomly selected homes.
Record data on disinfection report forms and mark the test location on the distribution system map (available at the water plant).
- B.** Verify Turbidity and disinfection data on DEQ disinfection & Turbidity form.
E-mail to DEQ before the 5th of each month.
- C.** Deliver coliform water sample to Accurate Testing Labs for analysis.

3.6.5 Quarterly Operations

- A.** Calibrate the Hand-Held turbidity meters
Record the data on the Hand-Held Turbidity Calibration Record.
- B.** Calibrate the 1720E turbidity meters.

Record the data on the 1720E Calibration Record.

C. Perform jar tests as required.

3.6.6 Annual Operations and Testing

A. Sample water for VOC, IOC, DBP's Nitrate, Radiological tests, and any other tests required by DEQ.

Transport to Accurate testing Laboratory for analysis.

B. Submit applications for testing waivers as needed.

3.7 Maintenance: General maintenance of the water plant and distribution system.

3.7.1 Water Plant Maintenance

3.7.1.1 Daily Water Plant Maintenance:

A. Monitor the pump to waste water lagoon; check pond level; and pump alarm.

B. Provide oversight and review of maintenance.

C. Maintain plant cleanliness.

3.7.1.2 Weekly Water Plant Maintenance:

A. Maintain plant operations records

B. Verify water flow rate to the 1720E turbidity meters and adjust if required.

3.7.1.3 Monthly Water Plant Maintenance:

A. Inspect and verify operation of the computer, control electronics, valves, instrumentation, pumps and all operational equipment.

B. Stock operations supplies as required: Chlorine, Alum, Soda Ash, Red Reagent, Silicon oil, Distilled water, trash bags, printer paper.

3.7.1.4 Yearly Water Plant Maintenance:

A. Open all filter tanks and inspect

B. Clean Chlorine, Alum, and Soda Ash tanks

3.7.1.5 Other Water Plant Maintenance:

Repair Alum, Soda Ash Pumps as required.

3.7.2 Distribution System Maintenance

3.7.2.1 Emergencies

Be available at all times for emergency situations including the need to locate and repair leaks and other faults in the distribution system.

3.7.2.2 Daily Water Distribution System Maintenance:

A. Monitor for leaks throughout the system

Contract for repair of leaks as needed and notify the CBPOA board of all repair efforts. Be on site during repairs to operate valves, inspect and verify proper repair.

- B. Monitor, document, and approve all new connections
- C. Stock repair materials: pipe, couplings, etc. to facilitate timely repairs

3.7.2.3 Weekly Water Distribution System Maintenance:

None listed yet

3.7.2.4 Monthly Water Distribution System Maintenance:

Flush all dead-end distribution lines

3.7.2.5 Annual Water Distribution System Maintenance:

- A. Exercise all valves
- B. Ensure that all control valves are located with a marker e.g. a fence stake with reflector.

3.7.2.6 Other Water Distribution System Maintenance:

- A. Tar the tops of reservoirs and clear brush within 6 feet when required.
- B. Schedule and implement cleaning of all three reservoirs **every 5 years**

3.8 Interfaces with Carlin Bay Property Owners Association

3.8.1 Communications:

- A. A contact shall be made available for emergencies at all times.
- B. the CBPOA Address for billing and all other communications is:
13675 Edgewater drive Harrison, ID 83833
- C. A contact telephone number will be provided

3.8.2 Documentation:

- A. A report of activities shall be submitted to CBPOA monthly
- B. Invoices shall include a detailed accounting of expenses and fees
- C. Copies of all documents and test results submitted to governing agencies shall be sent to CBPOA.

3.8.3 System Improvements:

- A. The system operator shall be available periodically for consultation on pertinent technical issues.
- B. The system operator is expected to make recommendations for system improvement that improve operations and/or extend the life of the system.