

Resort Village of Aquadeo

Policy Title	Policy #	Resolution	Resolution Date	# of pages	Forms
Water Quality Assurance and Quality Control Policy	WS-004	345/23	October 21/23	1	

Policy Objective:

To set a policy for Council and Staff to understand that supplying good quality drinking water is essential to the continued growth, prosperity and well being of our citizens.

Background:

The Resort Village of Aquadeo works closely with the Sask. Water group and is to provide a Quality Assurance and Control policy for the betterment of the water system within the Resort Village. This Policy is a requirement from Sask. Water to give them information on how the Resort Village's organizational chart, monitoring process, and emergency response procedures will be communicated.

The Quality Assurance and Quality Control Policy is attached to and forming part of this WS-004 Policy which will be shared with the Provincial standards office.

Updating

This Policy is to be reviewed yearly, and updates to be presented to Sask. Water.

Handwritten:
Kris BPG to
D.



Quality Assurance and Quality Control Policy

For the Community of

The Resort Village of Aquadeo

Date Completed: October 21, 2023

Date Approved by Waterworks Owner: October 21, 2023



**Saskatchewan
Environment**

**Environmental
Protection
Branch**

Waterworks Quality Assurance/Quality Control Policy

For The Community of THE RESORT VILLAGE OF AQUADEO

Approved: By Council

Date: October 21, 2023

1. Policy Statement

We, the Resort Village of Aquadeo Council, understand that supplying good quality drinking water is essential to the continued growth, prosperity, and well being of our citizens. We are committed to managing all aspects of our water system effectively to provide safe and aesthetically appealing water that tastes good and is free from objectionable colour or odour. It is our policy that the drinking water we provide will be produced in accordance with, or exceeds the quality standards required by *The Water Regulations, 2002*.

To achieve our goals, we will:

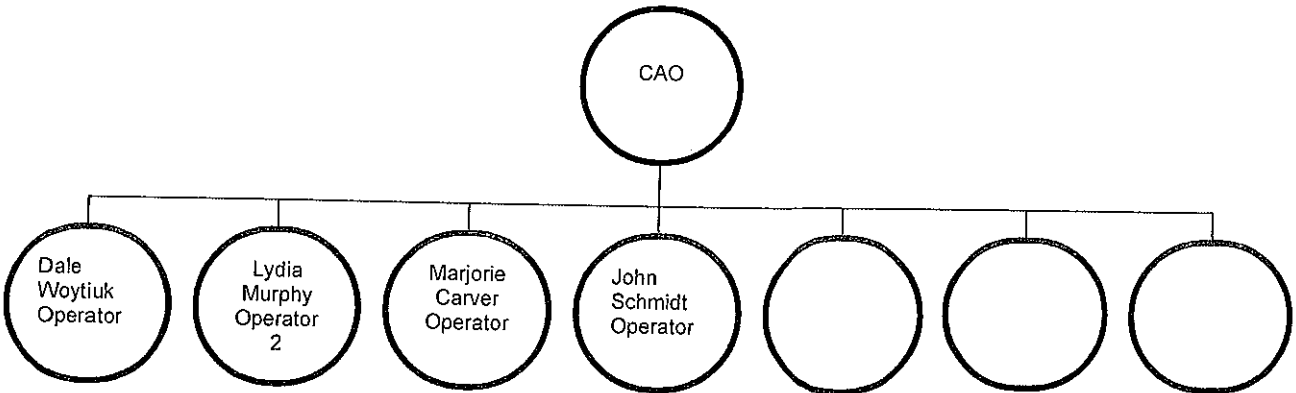
- Cooperate with the provincial government to protect our waterworks and water sources from contamination.
- Ensure the potential risks associated with water quality are identified and assessed.
- Ensure that our water supply, treatment, storage, and distribution infrastructure is properly designed, constantly maintained, and regularly evaluated and improved.
- Include the drinking water quality and quantity priorities, needs, and expectations of our citizens, the provincial authorities, and our water system employees into our planning.
- Develop a mechanism to ensure adequate funds are available for the water utility to maintain and improve the infrastructure, implement best practices, and ensure our water treatment employees are educated about their responsibilities and adequately trained and certified.
- Establish regular verification of the quality of drinking water provided to our citizens and monitoring of the water treatment process that produce the water.
- Provide community awareness about the water supply and its management by establishing and maintaining effective reporting of the water quality and timely information about the water system to our citizens.
- Develop contingency plans and incident response capabilities in cooperation with provincial authorities.
- Where possible participate in activities to ensure continued understanding of drinking water quality issues and performance.
- Regularly assess our performance and continually improve our practices to produce good quality water.

We will develop a Drinking Water Quality Management System including an implementation plan to achieve these goals and adequately manage the risks to our drinking water quality.

All of our officials, managers, and employees involved with the supply of drinking water are responsible for understanding, implementing, maintaining, and continuously improving the Drinking Water Quality Management System.

2. Organizational Structure

Organizational Chart



Waterworks Operations, Management and Administration

Chief Administrative Officer – Gina Bernier, Box 501, Cochin, Sask. SOM 0L0 W-306-386-2942, Cell – 306-240-9428

Assistance CAO – Alexandria Bernier, Box 501, Cochin, Sask. SOM 0L0 W-306-386-2942, Cell – 306-240-9428

Waterworks Manager –

Dale Woytiuk, Box 347, Cochin, Sask. SOM 0L0 R-306-386-2038 C-306-441-7875

Water Treatment Certified Operator

Dale Woytiuk, Box 347, Cochin, Sask. SOM 0L0 R-306-386-2038 C-306-441-7875

Water Distribution System Operator – Summer only

Marjorie Carver, Box 148, Cochin, Sask. SOM 0L0 C-306-441-6154

Water Treatment Operator

Lydia Murphy, General Delivery, Cochin, SK., SOM 0L0, 306-386-2560

Water Treatment Certified Operator

John Schmidt, Box 361, Cochin, Sask. SOM 0L0

The following is a summary of the role and responsibility of various persons involved in production and management of drinking water for the community of the Resort Village of Aquadeo.

The role of the Chief Administrative Officer with respect to waterworks operation includes:

- Overall responsibility for waterworks, quality of water provided to consumers, and regulatory compliance in capacity of person responsible for the municipality or waterworks
- In conjunction with council, allocates financial resources through a budgeting process and establishes water and sewer rates and or surcharges
- Chief official in the event of a emergency situation
- In conjunction with the Waterworks manager reviews operational records and logs on a monthly basis in accordance with the requirements of section 43(2) of *The Water Regulations*
- Receives and prepares administrative, budget and waterworks record submissions for review of assigned Council member and to be tabled/considered at a Council meeting
- Arranges for and provides annual notification to consumers served by the waterworks on the quality of drinking water provided and on sample submission compliance. Prepares a report to Council on the state of drinking water on an annual basis

- ❑ Prepares strategies for ensuring waterworks sustainability
- ❑ Invoicing and receipt of waterworks related expenses as well as consumer charges for water use

The role of the Council Member assigned responsibility for the Waterworks includes:

- ❑ Review operational, maintenance or infrastructure issues or needs to Council and the Mayor to ensure issues are addressed

The role of the Waterworks Manager includes:

- ❑ Overall responsibility for the day-to-day operation of the waterworks
- ❑ Develops operational and maintenance protocols and plans
- ❑ Develops safety plans and conducts safety inspections
- ❑ Budget for operation and maintenance of waterworks
- ❑ Develops Waterworks Emergency Response Plan
- ❑ Provides guidance to operators on operation of works
- ❑ Staffing of waterworks operators and issues of supervision and scheduling

The role of the Water Treatment Operator(s) includes:

- ❑ Start up, shut down and periodic operating checks of plant equipment such as pumping systems, chemical feeders, auxiliary equipment (compressors), and measuring and control systems
- ❑ Makes arithmetic calculations to determine chemical feed rates, flow quantities, detention and contact times, and hydraulic loadings as required by plant operations
- ❑ Monitors the status of plant operating guidelines, such as flow pressures, chemical feeds, levels and water quality indicators, by reference to measuring systems
- ❑ Performs routine preventative maintenance, such as lubrication, operating adjustments, cleaning and painting equipment;
- ❑ Maintain plant records, including operating logs, daily diaries, chemical inventories and automated data logs
- ❑ Collects representative water samples and performs tests on samples for turbidity, chlorine residual and other tests as required by the operating permit or operational protocol
- ❑ Perform minor corrective maintenance on plant mechanical equipment, e.g.: chemical feed pumps
- ❑ Conducts tours of the waterworks and communicates with the public on issues associated with water quality
- ❑ Orders chemicals, repair parts and tools
- ❑ Load, unload and store water treatment chemicals
- ❑ Follows safety rules for plant operations

The role of the Water Distribution System Operator includes

- ❑ Periodic flushing or swabbing of the distribution system
- ❑ Locate and repair water leaks and operates, maintains and repairs valves and hydrants
- ❑ Collects and transports routine water samples from the distribution system and ensures proper packaging and shipment to the laboratory
- ❑ Performs repair work while ensuring safety procedures for the works site, traffic and the public are maintained
- ❑ Disinfects repaired or new sections of pipe and collects the necessary water samples
- ❑ Maintains distribution system plans and maps
- ❑ Cleans, disinfects and maintains reservoirs or other storage systems
- ❑ Operates and maintains any pumping equipment or facilities remote from the main water treatment plant as necessary
- ❑ Locates and eliminates cross-connections or potential cross-connections

3. Operations and Maintenance Protocol

Operation of the community waterworks will be performed in accordance with design specifications and standard operating protocols of the waterworks industry. Further detail regarding standards operating procedures, range of operation and chemical feed, maintenance practices and intervals are outlined below

Waterworks Operation/Maintenance Protocol Template

System Design Capacity (m³/day or L/s): _____ 95 gpm _____

Intake – type _____ Portable _____

Status of bar screens: _____

Pump check/inspection: _____ Daily _____

Floating intake adjustment: _____

Depth of intake winter & summer _____

Watershed inspection (Yes/No) _____ N/A _____

Well(s)

Number of wells: _____ 1 (one) _____

Pump maintenance/change-out: as needed- Anderson Pumphouse

Well/pump service disinfection: _____

Wellhead protection inspection: _____ 1-week summer

3-week winter

Supply Pipeline

Quantity supply agreement (Yes/No) Sask Water Shed License #3599

Iron/Manganese Control – Method/Type: Slow Sand Filter
 Filtration Rate: _____
 Potassium Permanganate: Dosage rate/range _____
 Pre-chlorination: Dosage rate/range _____
 Aeration: Rate/range _____
 Other: _____

Water Distribution System
 Piping type(s): 3/4" & 2" black pvc, 3&4 " white pvc, 6" high density
 Pumping capacity: 95 gal/min
 Emergency pumping capacity: _____
 Backflow prevention: (Yes/No) _____
 Hydrant maintenance schedule: open valves 1/month - summer only
 Valve maintenance schedule: check valves 1/month – change/repair as needed – summer only
 Repair safety procedures (Yes/No) _____
 Line/Main break disinfection (Yes/No) yes
 Line/Main break sampling (Yes/No) yes
 Customer metering (Yes/No) no
 Truck fill station (Yes/No) yes
 Truck fill backflow (Yes/No) yes
 Water hauler protocols: yes

Disinfection – Method/Type
 Disinfectant used: injection pump
 Typical dosage rate/range: Sodium Hypo
winter – 5.25 injections/50 gal used
Summer – 10 injections /70 gal used
 Feed type: pump injection
 Residual monitoring (location): 1/day at water treatment plant
as per monitoring schedule

4. Water Quality Monitoring, Data Collection, Record Keeping, Record Review and Reporting Procedures

The following monitoring and record keeping protocols apply to the operation of the waterworks and distribution system

Water Quality Monitoring - Permit and Regulatory Requirements

The community of the Resort Village of Aquadeo will conduct all monitoring required by permit or ministers order issued by SE. The Environmental Project Officer (EPO), Mike Rathwell, responsible for regulation of the waterworks, will be advised of any positive bacteriological sample result as well as any other water quality standards exceeding standards as determined through sampling and analysis for other substances as required by permit or ministers order. As of March 31, 2004 all required drinking water quality monitoring samples, other than samples for chlorine residual, turbidity or pH will be sent to and analyzed by an accredited laboratory.

The community of the Resort Village of Aquadeo will conduct daily free chlorine residual monitoring of drinking water entering the distribution system and turbidity monitoring at each filter as required by regulation, permit or ministers order issued by SE. The EPO, Mike Rathwell, responsible for regulation of the waterworks, will be advised of any failure to meet a free-chlorine residual of at least 0.1 mg/L for water entering the distribution system as well as any turbidity levels exceeding standards as required by operational permit, ministers' order or regulatory requirement. Additionally, the community of the Resort Village of Aquadeo will advise the EPO, Mike Rathwell, responsible for regulation of the waterworks of any failure of the disinfection system or any other upset to the water treatment process, operation or distribution system concern in accordance with good practice or the emergency response plan – technical action plans for the waterworks.

Operational Monitoring Plan

Observational and measurement related operational monitoring of water quality and associated reporting requirements are established for the community of the Resort Village of Aquadeo waterworks. Water works operators will monitor operational process in accordance with Table 1.

Table 1. Operational parameters – Examples

Operational Parameter	Treatment step/Process					
	Treated water	Coagulation	Sedimentation	Filtration	Disinfection	Distribution system
Turbidity	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total coliforms	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	X
Chemical dosage		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
Flow rate		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Disinfectant residual					X	
Pressure						<input checked="" type="checkbox"/>

Key: Items with a check mark are recommended
 Items with an "X" are mandatory

Record Keeping

Waterworks records and logs will be kept in accordance with the requirements of The Water Regulations, 2002. The following persons are delegated responsibility for operational record and log keeping by the Mayor and Council of the Resort Village of Aquadeo:

Marjorie Carver, Lydia Murphy

Operational records and logs will include:

- total water pumped into the distribution system on a daily basis or the total raw water used;
- the types, dosages and total amounts of chemicals applied to the water for treatment;
- locations from which samples for any tests conducted by the permittee of the waterworks were taken in accordance with the permittee permit and the name of the person who conducted the sampling or testing and the results of those tests;
- any departures from normal operating procedures that may have occurred and the time and date that they occurred;
- any instructions that were given during operation of the waterworks to depart from normal operating practices and the name of the person who gave the instructions;

- ❑ any upset condition or bypass condition, the time and date of the upset condition or bypass condition and measures taken to notify others and resolve the upset condition or bypass condition;
- ❑ any condition of low disinfectant levels, the time, date and location of occurrence and measures taken to restore disinfectant levels to required values;
- ❑ the dates and results of calibrating any metering equipment and testing instruments; and
- ❑ the dates and types of maintenance performed on equipment and any actions taken to ensure the normal operations of the waterworks.

The operational records or logs mentioned above will be recorded and maintained in the following manner:

- ❑ operational records or logs must be made in chronological order, with the dates, times and testing locations clearly indicated;
- ❑ entries in an operational record or log will only be made by the permittee or person specifically appointed by the permittee;
- ❑ persons making an entry in an operational record or log shall do so in a manner that allows the person to be unambiguously identified as the maker of the entry;
- ❑ operational records or logs must be maintained for at least five years;
- ❑ any anomalies or instances of missing entries in an operational record or log must be accompanied by explanatory notes;
- ❑ operational records or logs must only contain data or information that is actually observed or produced;
- ❑ operational records or logs must not contain default values generated manually or by automated means;
- ❑ operational records or logs maintained in accordance with the above requirements must be made available promptly on request of the Minister of Environment or a representative of the Minister.

Record Review and Reporting

The assigned council member and the waterworks manager will review all monitoring results, records and operational logs on a monthly basis. If the review of the records or logs indicates that the quality of water from the waterworks has been adversely affected, the findings will be reported to SE as soon as reasonably practical after the report has been completed.

5. Emergency Response Planning

An Emergency Response Plan for the Community of the Resort Village of Aquadeo has been completed and is available for review at the Village office, the Water Plant, or the Fire Hall in The Resort Village of Aquadeo.

