

Waterworks Quality Assurance/Quality Control Policy

For The Town of Bruno

Policy # 04/2024

Resolution: 125/2024

Date: April 17, 2024

1. Policy Statement

We, The Town of Bruno, 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 and meet or exceed the quality standards required by *The Waterworks and Sewage Works Regulations*.

To achieve our goals, we will:

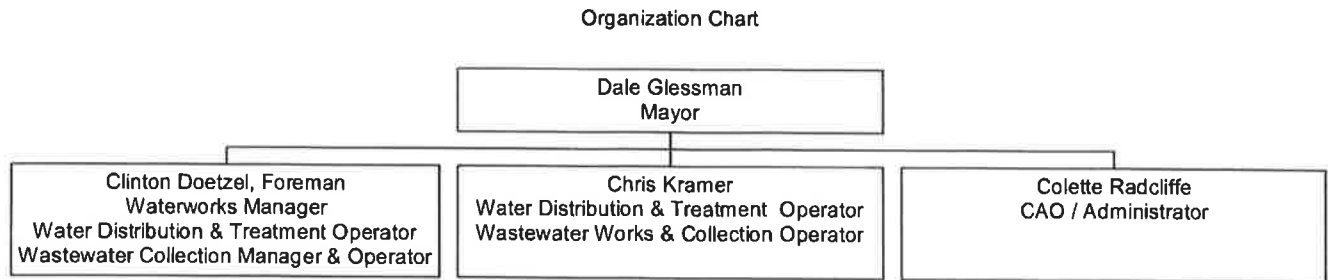
- Cooperate with the provincial government to protect our waterworks and water sources from contamination and work in conjunction with provincial authorities to develop and maintain necessary contingency and incident response plans.
- Ensure the potential risks associated with water quality are identified and assessed.
- Ensure that our water supply, treatment, storage, and distribution infrastructure is properly designed, constantly maintained, and regularly evaluated.
- Include the drinking water quality and quantity priorities, needs, and expectations of our citizens, the provincial authorities and our water system employees in our planning.
- Ensure adequate funds are available for the water utility to maintain and improve the infrastructure, meet and maintain regulatory standards and ensure our water treatment employees are educated about their responsibilities and adequately trained and certified.
- Provide annual waterworks notification to consumers and provide timely information to consumers regarding water quality and the overall water system.
- Regularly assess our performance and strive to improve our practices to produce good quality water to consumers.

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 working to improve the Drinking Water Quality Management System.



2. Organizational Structure



Waterworks Operations, Management and Administration

Mayor

Dale Glessman, Box 29, Bruno, SK S0K 0S0 306-231-7595

Council member responsible for waterworks

Kayla Shaw, Box 433, Bruno, SK S0K 0S0 306-369-7657

Municipal Administrator

Colette Radcliffe, Box 502, Bruno SK, S0K 0S0 306-369-7212

Waterworks Manager

Clinton Doetzel Box 82, Bruno SK S0K 0S0 306-369-7490

Water Treatment Operator(s)

Clinton Doetzel Box 82, Bruno SK S0K 0S0 306-369-7490

Chris Kramer, Box 17, Bruno SK S0K 0S0 306-369-7651

Water Distribution System Operator(s)

Clinton Doetzel Box 82, Bruno SK S0K 0S0 306-369-7490

Chris Kramer, Box 17, Bruno SK S0K 0S0 306-369-7651

Wastewater Works Operator

Clinton Doetzel Box 82, Bruno SK S0K 0S0 306-369-7490

Chris Kramer, Box 17, Bruno SK S0K 0S0 306-369-7651

Wastewater Collection System Operator

Clinton Doetzel Box 82, Bruno SK S0K 0S0 306-369-7490

Chris Kramer, Box 17, Bruno SK S0K 0S0 306-369-7651

The following is a summary of the role and responsibility of various persons involved in production and management of drinking water for the Town of Bruno.

The role of the Mayor with respect to waterworks operation includes:

- Overall responsibility for waterworks, quality of water provided to consumers, and regulatory compliance.
- 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 an emergency situation.
- Ensures operational, maintenance and infrastructure issues are addressed.

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

- 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 Waterworks and Sewage Works Regulations*.

The role of the Municipal Administrator includes:

- Receives and prepares administrative, budget and waterworks record submissions for review of assigned Council member to be reviewed/considered at 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 for Council, EPO and consumers on the state of drinking water on an annual basis.
- Receives and resolves or forwards all correspondence dealing with drinking water operations from and/or on behalf of mayor and council.
- Prepares financial reports regarding waterworks operational and maintenance issues
- Prepares strategies for ensuring waterworks sustainability
- Invoices and receipts waterworks related expenses as well as consumer charges for water use.

The role of the Waterworks Manager includes:

- Oversees and reports on operational, maintenance and infrastructure issues or needs to Council and the Mayor to ensure issues are addressed.
- 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.
- Budgets for operation and maintenance of waterworks.
- Works with administration to develop Waterworks Emergency Response Plan
- Provides guidance to operators on operation of waterworks.
- 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.
- 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.
- Maintains plant records, including operating logs, daily diaries, chemical inventories and automated data logs.
- Collects representative water samples and arranges for laboratory tests on samples for turbidity, chlorine residual and other tests as required by the operating permit or operational protocol.
- Performs minor corrective maintenance on plant mechanical equipment, e.g.: chemical feed pumps.
- May conduct tours of the waterworks and shall communicate 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(s) includes

- Periodic flushing or swabbing of the distribution system.
- Locates and repairs 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 work 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.
- ❑ Locates and eliminates cross-connections or potential cross-connections.

The role of the Wastewater Works and Collection Operator includes

- ❑ Treatment of lagoons.
- ❑ Maintains and checks sewer lines.
- ❑ Inspects proper drainage of lagoon cells and overflow.
- ❑ Arranges periodic flushing of sewer lines through contracted service.
- ❑ Collects required samples of wastewater and submit.
- ❑ Excavates, trenches, lays and connects sewer lines or contracts service.

Further information regarding the role of water treatment, water distribution, wastewater treatment and wastewater collection system operators, is available from “Water and Wastewater Operator Certification Program Guide, 2015, June 2015, EPB-144”.

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. Details are outlined below.

Waterworks Operation/Maintenance Protocol Template

System Design Capacity (m³/day or L/s): 700M3/day.

Intake: All intake procedures are handled by SaskWater via the South Saskatchewan River.

Well(s):
 Number of wells: Two wells which have not been in operation since approximately 1997.

Supply Reservoir(s): All supply reservoir procedures are handled by SaskWater at their facilities in/near Wakaw. There is a 1-million-gallon reservoir in addition to the main reservoirs

Supply Pipeline: The supply pipeline is owned and maintained by Saskwater. The treated water is pumped to Bruno reservoir by Saskwater from their facilities in Wakaw. There is an agreement in place between Bruno and Saskwater which includes quantity supply.

Pre-treatment: Pre-treatment procedures are handled by Saskwater at their facilities in Wakaw.

Coagulation & Flocculation: Coagulation & Flocculation procedures are handled by Saskwater at their facilities in Wakaw.

Sedimentation/Filtration/
Iron/Manganese Control/
Taste and Odor Control/
Disinfection/Corrosion
Control/Fluoridation:

All of these procedures are handled by SaskWater at their facilities in Wakaw.

Bruno Supply Reservoir/
Water storage:

The Bruno reservoir is a 150,000 gallon underground reinforced concrete clearwell with 1 reservoir having a 100,000 gallon capacity and 1 having a 50,000 gallon capacity. It has output metering which is recorded daily, it is inspected daily and maintenance and cleaning is completed as needed. Fire water capacity is 150,000 gallons @ 60PSI.

Water Distribution System:

Piping type(s):	6-inch cement.
Flushing schedule:	Spring and fall through hydrants.
Pumping capacity/ Emergency pumping capacity:	(1) 10 HP 26 amp, 230/460 Volt, 60 Hertz 1745RPM pump and (1) 5 HP 14-amp, 230/460 Volt, 60 Hertz 1745 RPM pump. Both pumps are Layne vertical centrifugal turbine pumps. There is also an auxiliary Layne vertical centrifugal 30 HP, 1760 RPM pump.
Backflow prevention:	Yes.
Hydrant maintenance schedule:	Spring and fall as needed.
Valve maintenance schedule:	Yearly.
Repair safety procedures:	Yes.
Line/Main break disinfection:	Yes.
Line/Main break sampling:	Yes.
Customer metering:	Yes.
Truck fill station:	Yes.
Truck fill backflow:	Yes.
Water hauler protocols:	Yes.

Disinfection/Treatment:

Chlorine is added to the water supply as needed- Sodium Hypo chloride-12%.
Feed pump type/on site feeding rate; pulsating chemical LMI Milton Roy feeder/1.0 L/h.
Typical dose; 1.6 mg/L.
Residual monitoring is done continuously.

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

The Town of Bruno will conduct all monitoring required by permit or ministers order issued by the Water Security Agency. The Environmental Project Officer (EPO), (Gary Papic) responsible for regulation of the waterworks will be advised of any positive bacteriological sample result as well as any exceedance of other water quality standards as determined through sampling and analysis for other substances as required by permit or ministers order. 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 Town of Bruno will conduct daily free and total 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 WSA. The EPO 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 and total-chlorine of at least 0.5 mg/L for water entering the distribution system as well as any exceedance of turbidity levels (1.0 NTU) as required by operational permit, ministers order or regulatory requirement. Additionally, the Town of Bruno will advise the EPO 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 and the emergency response plan – technical action plans for the waterworks. Trihalomethanes (THMs) and Halo Acetic Acids (HAAS) shall be tested offsite quarterly and any abnormalities shall be reported to the EPO.

Operational Monitoring Plan

Observational and measurement related operational monitoring of water quality and associated reporting requirements are established for the Town of Bruno waterworks. Water works operators will monitor operational process in accordance with Appendix A and B (attached).

Record Keeping

Waterworks records and logs will be kept in accordance with the requirements of *The Waterworks and Sewage Works Regulations*. The following person(s) are delegated responsibility for operational record and log keeping: Waterworks Manager.

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's 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, including EPO, 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, and the issue has NOT previously been reported, the findings will be reported to the EPO as soon as reasonably practical after the report has been completed.

5. Emergency Response Planning

The Town of Bruno Waterworks Emergency Response plan should be used in conjunction with this document. The Emergency plan provides guidance on Emergency contact listings, establishes a waterworks emergency planning taskforce, crisis management, notification and communication as well as technical action plans for a number of incidents which may occur.