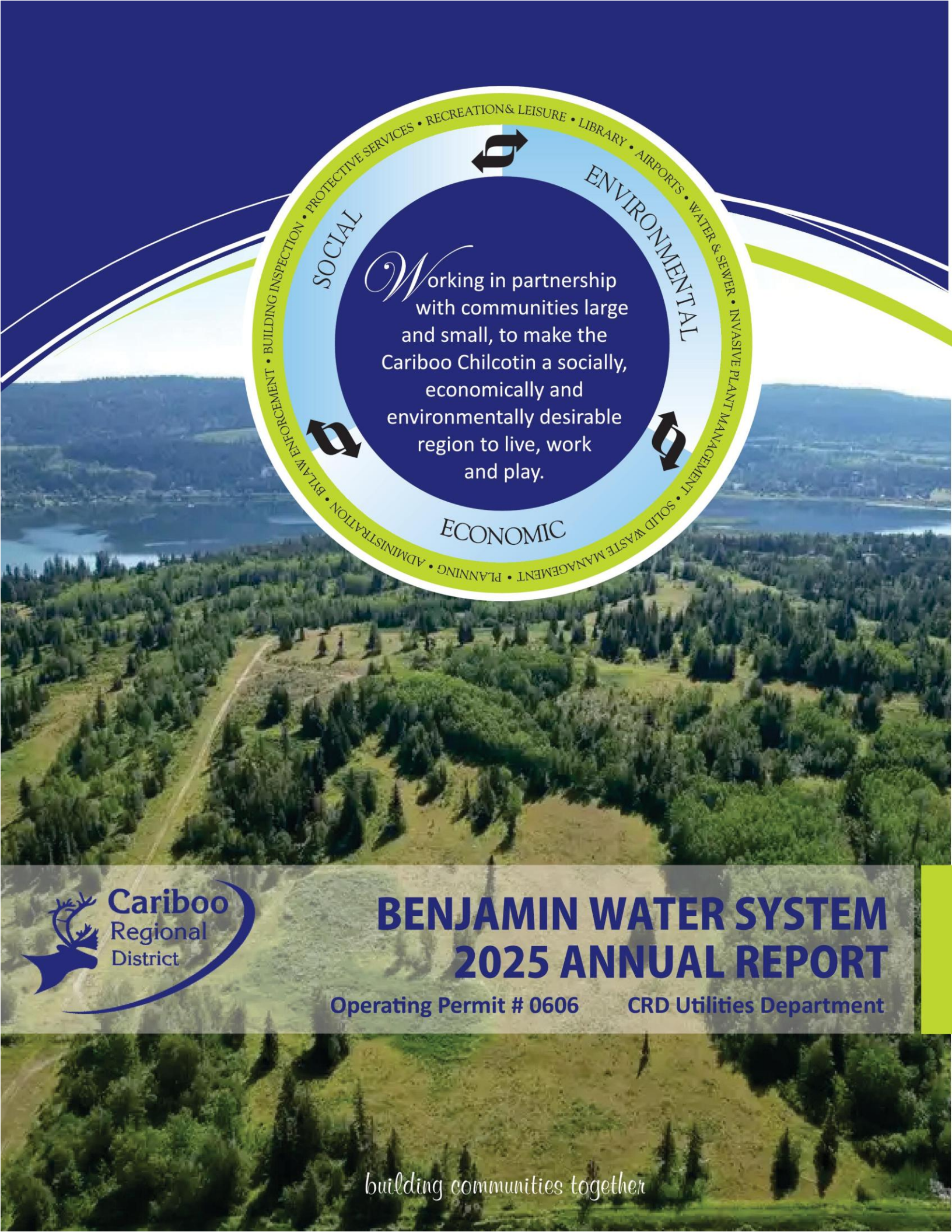

Cariboo Regional District

BENJAMIN WATER SYSTEM 2025 ANNUAL REPORT

Operating Permit # 0606 **CRD Utilities Department**

building communities together

Cariboo Regional District
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Fax: 250-392-2812
mailbox@cariboord.ca

File: 5600-20-06-01

January 14, 2026

Lynnette Winsor
Environmental Health Officer
Northern Health
543 Front Street
Quesnel, BC V2J 2K7

Dear Lynnette Winsor:

Re: Transmittal of the 2025 Annual Report for the Benjamin Water System

---

We are pleased to submit the 2025 Annual Report for the Benjamin Water System. This report is prepared to provide a comprehensive summary of the key developments, activities, and achievements of 2025, as well as to outline plans for the water system.

The report has been developed with consideration for public engagement and transparency, ensuring it meets the information needs of Northern Health, the Cariboo Regional District Board of Directors, and particularly the Benjamin Bells community, as represented by Electoral Area A Director Nicole Audet.

We trust this report will serve as a valuable resource in understanding the progress and direction of the Benjamin Water System.

Sincerely,

Kelly McDonald
Manager of Utilities

KM/cm

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Executive Summary

The Cariboo Regional District (CRD) continues to provide reliable water service to residents served by the Benjamin Water System within the Northern Health Authority jurisdiction. In 2025, system operations focused on maintaining service continuity, addressing critical infrastructure needs, and mitigating known water quality challenges associated with the source groundwater.

Throughout the year, the Benjamin Water System delivered 2,945 cubic metres of water, supporting a small residential population with modest and stable demand patterns. While the system remains under a perpetual Water Quality Advisory due to elevated manganese levels, proactive operational measures were undertaken to maintain infrastructure integrity and safeguard public health.

Key capital maintenance activities in 2025 included two reservoir cleanings, replacement of the well pump, repairs to the concrete reservoir surface, and replacement of a failed Variable Frequency Drive (VFD). Planning advanced toward long-term sustainability through asset management and future SCADA upgrades.

Highlights

- *Infrastructure Maintenance Completed*: Reservoir cleaned twice. Second cleaning required when distribution piping replaced due to well pump failure.
- *Well Pump Replacement*: New pump installed to ensure reliable water delivery and operational resilience.
- *VFD Replacement*: Failed Variable Frequency Drive replaced to restore proper pump control and efficiency.
- *Stable Water Demand*: Total system demand of 2,945 m^3 in 2025, with predictable seasonal trends.
- *Water Quality Advisory Ongoing*: Elevated manganese levels continue to necessitate a perpetual advisory.
- *Future Planning Initiated*: Asset management inventory and upgraded SCADA system planned for 2026 and beyond.

1. Introduction

The Benjamin Water System is owned and operated by the Cariboo Regional District and serves a small residential area within the Northern Health Authority jurisdiction. The system consists of a groundwater well, a reservoir, and associated pumping and control infrastructure.

Due to naturally elevated manganese levels in the source aquifer, the system operates under a permanent Water Quality Advisory. While the water remains suitable for general domestic use, residents are advised regarding aesthetic impacts such as discoloration and staining.

The CRD continues to manage the system with a focus on infrastructure reliability, regulatory compliance, and long-term planning proportional to system size and risk profile.

2. Maintenance and Monitoring

Routine operational monitoring and maintenance were conducted throughout 2025 to ensure system reliability and safety. Core activities included:

- ✓ Regular site inspections to verify pump operation, reservoir condition, and system pressures
- ✓ Monitoring of water levels and system performance
- ✓ Preventive and corrective maintenance on mechanical and electrical components
- ✓ Coordination with Northern Health regarding water quality advisory status

2.1. Water Quality and Advisory Status

The Benjamin Water System is not chlorinated. The groundwater source exhibits elevated manganese concentrations, which are naturally occurring and exceed aesthetic objectives under the Canadian Drinking Water Guidelines.

As a result:

- ➢ The system remains under a perpetual Water Quality Advisory
- ➢ No treatment is currently in place to remove manganese
- ➢ Ongoing monitoring and infrastructure maintenance are used to minimize secondary impacts

Future treatment options may be evaluated as part of long-term planning and asset management initiatives.

3. System Upgrades and Projects (2025)

3.1. Reservoir Cleaning and Repairs

In 2025, the reservoir was fully drained and cleaned twice, removing sediment accumulation and supporting water quality management.

Additionally:

- ✓ Distribution piping replaced

- ✓ Long-term durability of the reservoir was improved

3.2. Well Pump Replacement

A new well pump was installed following the end of service life of the previous unit. This upgrade:

- ✓ Improved pumping capacity reliability
- ✓ Reduced risk of unplanned outages
- ✓ Improved overall system resilience

3.3. Variable Frequency Drive (VFD) Replacement

The existing VFD failed during 2025 and was promptly replaced. The new VFD:

- ✓ Restored proper pump control
- ✓ Improved operational efficiency
- ✓ Reduced mechanical stress on pumping equipment

4. Operator Oversight

The Benjamin Water System is operated by EOCP-certified CRD operators who oversee multiple water and wastewater systems across the region. Operator responsibilities include system inspections, maintenance coordination, response to operational issues, and regulatory liaison.

CRD continues to support operator training and certification to ensure safe and consistent service delivery, even for small and remote systems such as Benjamin.

5. Water Demand & Usage (2025)

5.1. System Demand Summary

Metric Value:

- ➢ Total Annual Water Use: 2,945 m^3
- ➢ Estimated Per Capita Use: ~150 litres/person/day
- ➢ Peak Use Month: June – 619 m^3
- ➢ Lowest Use Month: December – 304 m^3

Water demand followed expected seasonal patterns, with higher usage during summer months and reduced demand during winter.

5.2. Monthly Water Demand (2025)

Seasonal trends reflect outdoor water use during warmer months, with no abnormal spikes or sustained high-demand events observed during the year.

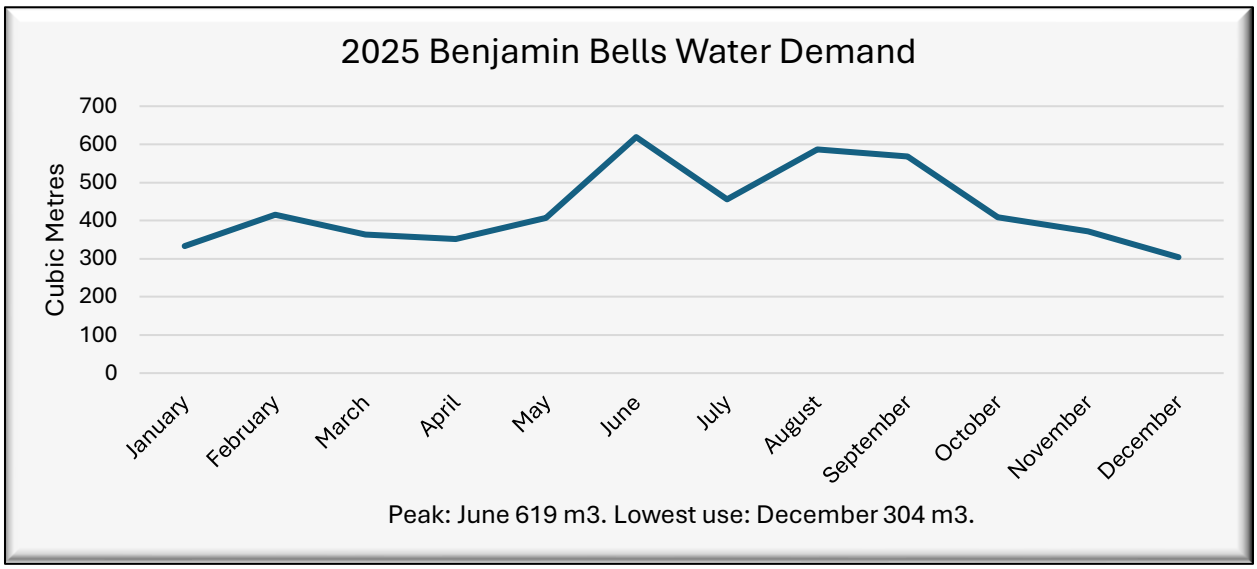


Figure 1 - Benjamin Water System Monthly Demand (2025)

6. Emergency Planning

6.1. Emergency Response

Emergency response procedures for the Benjamin Water System are incorporated into CRD operational protocols and include:

- ✓ Pump failure response
- ✓ Reservoir contamination scenarios
- ✓ Electrical and power failure contingencies
- ✓ Operator notification and response procedures

Given the system's size, emergency planning focuses on rapid response, operator accessibility, and coordination with Northern Health.

7. Looking Ahead: 2026 Priorities

- ➢ Develop a comprehensive Asset Management Program
- ➢ Complete a detailed Asset Inventory
- ➢ Upgrade the SCADA system to improve monitoring and response capability
- ➢ Evaluate long-term options for water quality risk mitigation
- ➢ Continue proactive maintenance to extend infrastructure service life

8. Conclusion

In 2025, the Benjamin Water System maintained stable service delivery while addressing key infrastructure needs and managing inherent source water quality challenges. Critical upgrades—including pump replacement, VFD replacement, and reservoir rehabilitation—have strengthened system reliability and reduced operational risk.

While the system remains under a perpetual Water Quality Advisory due to elevated manganese, the CRD continues to operate the system responsibly and transparently. With asset management planning and SCADA enhancements scheduled for 2026 and beyond, the Benjamin Water System is positioned for improved long-term sustainability and informed capital planning.

Thank you to:

- *Cheryl McMullen*
- *Jourdy Ouellette*
- *Larry Perry*
- *Colin Brusic*
- *Phil Wilkins*
- *Tyler Olsen*
- *Ken Heidema*
- *Charles Howes*

for their contribution.

Appendix A: Links

Northern Health:

- *Drinking Water Quality and Sample Results – Northern Health*

Cariboo Regional District:

- *Water Notices and Advisories - Cariboo Regional District*
- *Sewer and Water Services - Cariboo Regional District*

Notification App (VoyentAlert!):

- *Emergency Notification System - Cariboo Regional District*

Environmental Operators Certification Program (EOCP):

- *EOCP Homepage | EOCP*
- *Backflow Prevention, Cross Connection Control, and the Environmental Operators Certification Program | EOCP*

Appendix B: Sample Results

Facility and Sample Site: **Benjamin Water System** **2531 Gook Road, Quesnel, BC**	**Test Type:** **Drinking Water – Bacteriological** **Unit of Measure: CFU per 100 ml**	**Value**	**Date Collected**	**Results**
Distribution Sample Station	Sample Parameter: E. coli	<1	14 Jan 2025	Acceptable
	Sample Parameter: Total Coliform	<1	14 Jan 2025	Acceptable
Benjamin Bell Reservoir	Sample Parameter: E. coli	<1	14 Jan 2025	Acceptable
	Sample Parameter: Total Coliform	<1	14 Jan 2025	Acceptable
Distribution Sample Station	Sample Parameter: E. coli	<1	20 Feb 2025	Acceptable
	Sample Parameter: Total Coliform	<1	20 Feb 2025	Acceptable
Benjamin Bell Reservoir	Sample Parameter: E. coli	<1	20 Feb 2025	Acceptable
	Sample Parameter: Total Coliform	<1	20 Feb 2025	Acceptable
Distribution Sample Station	Sample Parameter: E. coli	<1	19 Mar 2025	Acceptable
	Sample Parameter: Total Coliform	<1	19 Mar 2025	Acceptable
Benjamin Bell Reservoir	Sample Parameter: E. coli	<1	19 Mar 2025	Acceptable
	Sample Parameter: Total Coliform	<1	19 Mar 2025	Acceptable
Distribution Sample Station	Sample Parameter: E. coli	<1	15 Apr 2025	Acceptable
	Sample Parameter: Total Coliform	<1	15 Apr 2025	Acceptable
Benjamin Bell Reservoir	Sample Parameter: E. coli	<1	15 Apr 2025	Acceptable
	Sample Parameter: Total Coliform	<1	15 Apr 2025	Acceptable
Distribution Sample Station	Sample Parameter: E. coli	<1	14 May 2025	Acceptable
	Sample Parameter: Total Coliform	<1	14 May 2025	Acceptable
Benjamin Bell Reservoir	Sample Parameter: E. coli	<1	14 May 2025	Acceptable
	Sample Parameter: Total Coliform	<1	14 May 2025	Acceptable
Distribution Sample Station	Sample Parameter: E. coli	<1	09 Jul 2025	Acceptable
	Sample Parameter: Total Coliform	<1	09 Jul 2025	Acceptable
Benjamin Bell Reservoir	Sample Parameter: E. coli	<1	09 Jul 2025	Acceptable
	Sample Parameter: Total Coliform	<1	09 Jul 2025	Acceptable
Distribution Sample Station	Sample Parameter: E. coli	<1	14 Aug 2025	Acceptable
	Sample Parameter: Total Coliform	1	14 Aug 2025	Unacceptable
Benjamin Bell Reservoir	Sample Parameter: E. coli	<1	14 Aug 2025	Acceptable
	Sample Parameter: Total Coliform	1	14 Aug 2025	Unacceptable
Distribution Sample Station	Sample Parameter: E. coli	<1	19 Aug 2025	Acceptable
	Sample Parameter: Total Coliform	3	19 Aug 2025	Unacceptable
Benjamin Bell Reservoir	Sample Parameter: E. coli	<1	19 Aug 2025	Acceptable
	Sample Parameter: Total Coliform	<1	19 Aug 2025	Acceptable
Distribution Sample Station	Sample Parameter: E. coli	<1	26 Aug 2025	Acceptable
	Sample Parameter: Total Coliform	<1	26 Aug 2025	Acceptable
Distribution Sample Station	Sample Parameter: E. coli	<1	01 Oct 2025	Acceptable
	Sample Parameter: Total Coliform	<1	01 Oct 2025	Acceptable
Benjamin Bell Reservoir	Sample Parameter: E. coli	<1	01 Oct 2025	Acceptable
	Sample Parameter: Total Coliform	<1	01 Oct 2025	Acceptable
Distribution Sample Station	Sample Parameter: E. coli	<1	28 Oct 2025	Acceptable
	Sample Parameter: Total Coliform	<1	28 Oct 2025	Acceptable
Benjamin Bell Reservoir	Sample Parameter: E. coli	<1	28 Oct 2025	Acceptable
	Sample Parameter: Total Coliform	<1	28 Oct 2025	Acceptable
Distribution Sample Station	Sample Parameter: E. coli	<1	26 Nov 2025	Acceptable
	Sample Parameter: Total Coliform	<1	26 Nov 2025	Acceptable
Benjamin Bell Reservoir	Sample Parameter: E. coli	<1	26 Nov 2025	Acceptable
	Sample Parameter: Total Coliform	<1	26 Nov 2025	Acceptable
Distribution Sample Station	Sample Parameter: E. coli	<1	03 Dec 2025	Acceptable
	Sample Parameter: Total Coliform	<1	03 Dec 2025	Acceptable
Benjamin Bell Reservoir	Sample Parameter: E. coli	<1	03 Dec 2025	Acceptable
	Sample Parameter: Total Coliform	<1	03 Dec 2025	Acceptable

Appendix C: Cariboo Regional District Water System Statistics

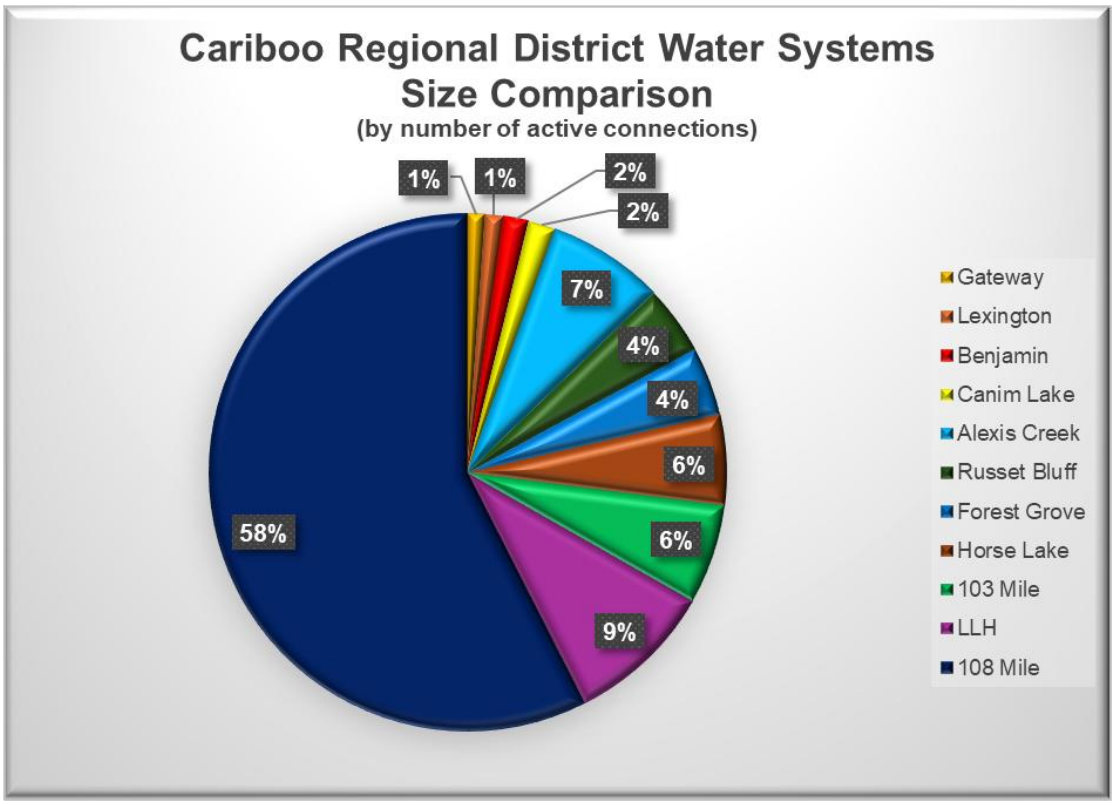
Cariboo Regional District Water System Statistics

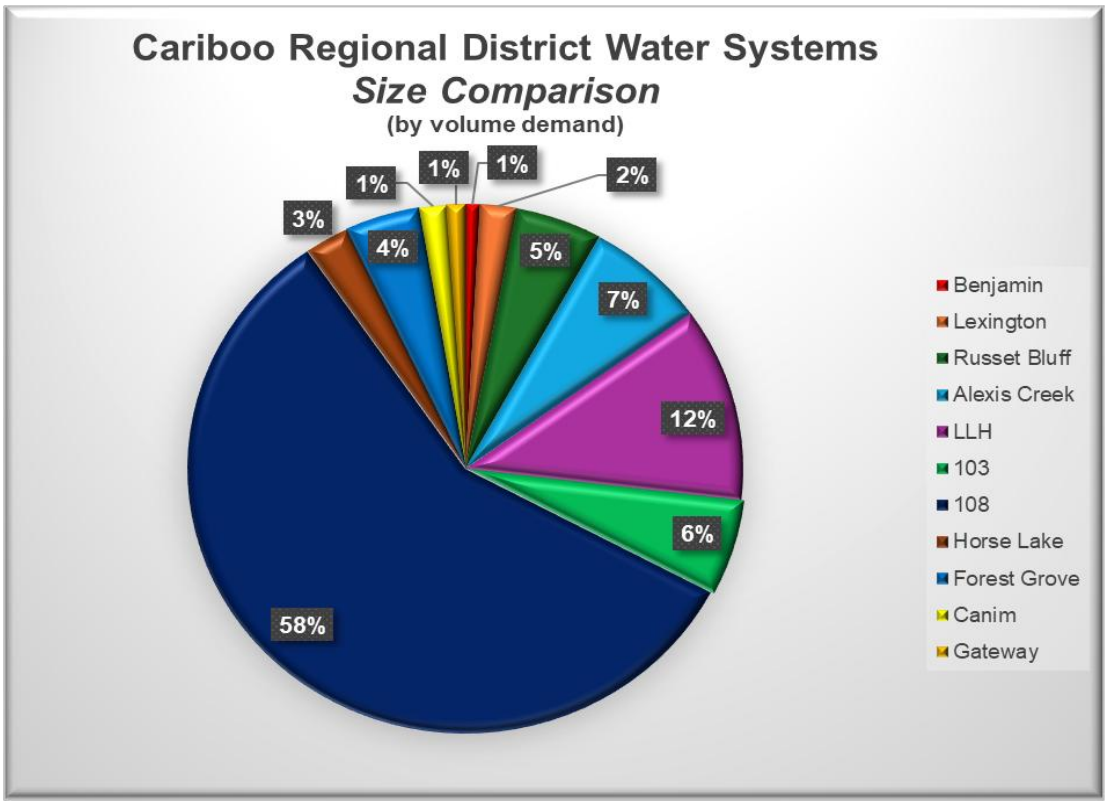
2025: CARIBOO REGIONAL DISTRICT WATER UTILITIES			
Water System Name	**Active Service Connections**	**Estimated Per Capita Use (litres per person per day)**	**Total Demand (m3)**
Gateway	27	301.3180386	6899.9
Lexington	29	570.5000027	12942.3
Benjamin	40	86.57475454	2945.1
Canim Lake	43	273.6718044	10008
Alexis Creek	184	274.5882662	30910.4
Russet Bluff	109	n/a	3289.3
Forest Grove	109	300.7652182	27378.9
Horse Lake	143	141.3380904	17663.4
103 Mile	158	267.2187695	36808
LLH	233	399.4421534	82616.4
108 Mile	1455	289.5464075	363369

CRD OPERATOR EOCP CERTIFICATION				
Certification EOCP	**Operator**	**Region**	**Water Distribution Level**	**Water Treatment Level**
6711	Tyler Olsen	North Cariboo		
1001148	Philip Wilkins	North Cariboo	2	1
8390	Ken Heidema	Central Cariboo	2	
1000182	Charles Howes	Central Cariboo	1	
8482	Jourdy Oullette	South Cariboo	3	2
1001817	Larry Perry	South Cariboo	1	2
1002392	Colin Brusic	South Cariboo		

TOTAL WATER DEMAND BY SYSTEM WITH HIGHEST AND LOWEST USE MONTH AND % VARIATION (CUBIC METRES)												
High/Low Month	**June /Dec**	**Aug /Nov**	**July /Nov**	**July /Nov**	**Aug /Nov**	**Jan /Nov ***	**Sept /Feb**	**July/Feb**	**Sept/Feb**	**July/Mar**	**Aug/Jan**	
	Benjamin	**Lexington**	**Russet Bluff**	**Alexis Creek**	**LLH**	**103**	**108**	**Horse Lake**	**Forest Grove**	**Canim**	**Gateway**	
High	619	2669.2	7213	5140.4	11089.2	2832	45539	1905.7	3075.5	1159	842.8	Total/Avg
Low	304	331.4	1519	2382.2	3836.3	1748	20637	790.4	1737.3	524	424.6	630464.5
Difference	315	2337.8	5694	2758.2	7252.9	1084	24902	1115.3	1338.2	635	418.2	292%
Total Use	5186	13448.2	31786	44452.7	74697.1	36804	363369	16435	27378.6	10008	6899.9	630464.5
High to Low %	204 %	805%	475%	216%	289%	162%	221%	241%	177%	221%	198%	292%

*** No leak: July**


Cariboo Regional District Water Systems
Size Comparison
(by number of active connections)
1%
1%
2%
2%
7%
4%
4%
6%
6%
9%
58%
Gateway
Lexington
Benjamin
Canim Lake
Alexis Creek
Russet Bluff
Forest Grove
Horse Lake
103 Mile
LLH
108 Mile


Cariboo Regional District Water Systems
Size Comparison
(by volume demand)
1%
1%
1%
2%
3%
4%
5%
7%
12%
6%
58%
Benjamin
Lexington
Russet Bluff
Alexis Creek
LLH
103
108
Horse Lake
Forest Grove
Canim
Gateway

Appendix D: Emergency Response Plan

2026 Cariboo Regional District

Emergency Response & Contingency Plan

Benjamin Water System

Utilities, Communications, and Emergency Operations Departments
1-1-2026

By Kelly McDonald, Cheryl McMullen, Kat Chatten, Tyler Olsen and Philip Wilkins

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SECTION 1: Emergency Plan Goals

The Objective of the Cariboo Regional District (CRD) Emergency Response and Contingency Plan (ERCP) is to provide staff and regulatory agencies with a guideline for potential water utility related emergencies.

This Emergency Response and Contingency Plan (ERCP) serves as a guideline to address various emergency situations, recognizing that no two emergencies are exactly alike. Each emergency is described with a general sequence of steps to follow, providing both a structured approach to response and a consistent method for documenting actions taken. Task lists within each emergency section also function as checklists to remind staff of critical items to consider and complete during an emergency. This ERCP includes specific protocols and considerations for the CRD water supply system.

This plan has been prepared to guide the Cariboo Regional District to respond to an emergency arising in the operation of the Benjamin Water System. The purpose of the ERCP is to:

- ✓ Ensure staff and the public's safety in carrying out emergency tasks.
- ✓ Provide the earliest and safest response to an emergency condition.
- ✓ Ensure that water quality and public health are not compromised.
- ✓ Ensure that water for firefighting is available.
- ✓ Restore normal water system operation.
- ✓ Protect the natural environment from impacts associated with the system operation in the event of an emergency.
- ✓ Contain property damage.

1.1. Resiliency in Operations

Operational resiliency refers to the capability of an operation to adjust, adapt, and maintain service delivery under emergency conditions. The objective for the CRD Water Utility is to achieve high operational resiliency. Indicators of operational resiliency include the following:

1.1.1. **Emergency Response Plan**: A comprehensive ERP is essential in building resilience within operations, providing structured guidance for handling emergencies effectively. This document is an integral part of that resiliency framework.

1.1.2. **Regional Agency Coordination**: The ERCP must be shared with regional emergency response agencies, ensuring cohesive support. The CRD Emergency Operations Department serves as the local staging agency for the Provincial Emergency Program.

1.1.3. **Mutual Aid Agreements**: In certain emergencies, the CRD may need support from neighboring water utilities. Quesnel is a nearby utility from which the CRD may seek

assistance in the future. The CRD is working toward a formal mutual aid agreement based on community protection principles.

1.1.4. **Emergency Power**: The Benjamin Water System can operate on gravity-fed supply. A standard battery pack is on hand to maintain disinfection if the power grid fails.

1.1.5. **Ability to Meet Water Demands**: While the water system meets current demands, the reservoir is small, and there are no fire hydrants in the service area.

1.1.6. **Critical Parts Inventory:** Appendix B provides a list of critical parts and their availability. Appendix A includes contact names for Cariboo support agencies offering specialized parts or services.

1.1.7. **Critical Staff Resiliency:** Staff's ability to respond and remain calm during extreme events is only evident when tested. Training and reinforcement of sound decision-making at all levels will support preparedness for emergency situations.

SECTION 2: How to Use This Plan

The Water System Emergency Response and Contingency Plan (ERCP) is a guide for handling water system emergencies. The "Actions" section outlines various potential emergencies and provides steps to help minimize further damage.

After an emergency, the CRD will complete a Post Incident Report (see Appendix D). Regular review exercises and updates will strengthen our emergency response capabilities. We ask all plan holders to participate and offer recommendations to continually improve the ERCP.

Remember, the ERCP is only effective if everyone reviews, understands, and contributes to its ongoing development.

SECTION 3: Emergency Planning Definitions

This section provides emergency planning definitions used in this document, following *AWWA Manual 19: Emergency Planning for Water Utilities*.

Emergency: An unexpected event that may compromise water quality or reduce the availability of domestic, irrigation, or fire flow water for the community.

Minor Emergency: A localized, routine incident impacting a small number of customers, such as a small pipe break, vehicle collision with a hydrant, brief power outage, or minor service repair. Minor emergencies should be manageable without special resources and, if effectively handled, can be prevented from escalating into major emergencies.

Major Emergency: A significant event affecting a large portion of the water system, posing risks to water quality or quantity and potentially endangering community health and safety. Major emergencies are rare but impactful.

Natural Disaster: Events caused by natural forces beyond human control, including wildfires, earthquakes, floods, tornadoes, heat domes, freezing, and other severe weather-related incidents.

Human-Caused Disaster: Disasters resulting from human actions, whether accidental or intentional. These may include human error, accidents, labor disputes, negligence, vandalism, sabotage, terrorism, biological contamination, or chemical spills.

Hazard: A source of potential harm or danger linked to a disaster, such as unstable slopes from a creek wash-out or ground shaking from an earthquake.

Lifeline Supply: Essential community services that support health, safety, and sustenance. Lifeline utilities include water, wastewater, electricity, and natural gas, as well as critical transportation, communication, healthcare, and emergency operations centres.

SECTION 4: Emergency Scenarios

4.1. Introduction

Sections 5 and 6 list potential water system emergencies related to the physical components of the water supply. Section 7 describes the steps for a cyber threat or vandalism.

4.2. Emergency Scenario Format

Each emergency scenario in this ERCP follows a consistent format:

4.2.1. **Description of Emergency**: Describes each potential emergency for easy reference. Sections 5 and 6 cover physical water service issues, while Section 7 addresses cyber incidents and vandalism.

4.2.2. **Indicators**: Outlines how each emergency can be recognized, either by CRD staff or external contacts.

4.2.3. **Actions**: Lists response steps for CRD staff, generally in recommended order. This list serves as a guideline, and the lead Water Operator can use the provided checklist to verify all necessary actions are taken.

4.2.4. **Contacts**: Lists relevant contact agencies; specific contacts are found in the ERCP's Communications Section.

4.2.5. **Event Record**: A checklist at the page bottom summarizes the event, records whether photos were taken, and tracks emergency reporting.

All events, including minor repairs and leaks, should be documented and sent to the CRD Office for electronic filing. Each event should be recorded by date. Large events should have dedicated folders containing photos and data, following a standardized naming protocol.

SECTION 5: Water Supply Contamination

Description of Emergency: Contamination has been detected or possible contamination is present.

Indicators: Public notification (taste, odour or colour observations), poor water sample results, visible observations made by Water Operators, cross connection with potential contamination.

5.1. Potential Causes

5.1.1. Chemical Spill (e.g. transport truck, industry)
5.1.2. Flood Event
5.1.3. Confirmed Cross Connection
5.1.4. System Breach (e.g. water main break) *see 6.2.
5.1.5. Positive Sample Result (e.g. E. coli or other immediate threat to public health contaminant)
5.1.6. Vandalism

Actions:

1) Notify Water Operator.
2) Notify Drinking Water Officer (DWO).
3) Assess threat level (see Appendix B).
4) Notify Communications Department.
5) Water Operators to investigate site and inform Manager of Utilities of possible situation. Manager to contact Northern Health.
6) Confirm that the source of contaminant is mitigated.
7) If chemical contamination confirmed or highly suspected to be present:
    a) Attempt to isolate.
    b) Discuss with Engineer, Biologist/Chemist (Lab) and DWO to develop a reasonable and representative sampling program.
    c) Contact Lab and arrange bottles if required and collect samples for rush analysis.

8) Report any spills to the Provincial Agency responsible (see Appendix A).

9) In an extreme situation of contamination, consider shutting down all supply pumps.

    a) Pump station would shut off and "Do Not Use" notices would be provided to the public. CRD senior management would make this call.

10) Communication: Begin public notification if required and follow Water Quality Notification Procedures.

11) Continue discussion with appropriate experts for moving forward.

12) Discussions to consider alternate water source if needed. Involve Emergency Operations Department and Notify Fire Department.

13) Continue monitoring until water quality is back to normal and NH gives approval to lift advisory or notice.

14) Complete documentation:

    a) Record of events, include times and dates.
    b) Complete a comprehensive damage assessment.
    c) Investigate potential causes.
    d) After action report.

SECTION 6: Supply Disruption

6.1. Equipment Failure

Description of Emergency: This type of emergency is typically caused by extreme weather events that place a very high demand on the Water Treatment Plant, or any other situation where water demands are high, and equipment or infrastructure reduces the ability to maintain maximum output.

Indicators: Visual observations by Water Operators. Failure of equipment as identified by alarms.

Actions:

1) Document Situation: Note date, time, location and means of event recognition.

2) Notify Water Operator.

3) Notify Manager.

4) Notify Communications Department.

5) If cause is identified as a main break, see section 6.2.

6) Well Site Investigation: Generally, this problem is caused by high flows and overheating VFD's.

7) Check in the pumphouse for mechanical issues such as temperatures on variable frequency drive (VFD) displays.

8) Check on alarms.

9) Note status of chlorine disinfection, reservoir level, source pump status, chemical dosing status, and raw water flows.

10) Check all necessary equipment to confirm proper functionality.

11) Check inventory for parts that may be available to aid in necessary repairs. If necessary, contact Quesnel Public Works for assistance.

12) If the issue stems from the VFD's, allow to cool and contract electrician if necessary.

13) If issue is due to drawdown in Supply Well, consult Drought Management Plan (Appendix C) and proceed to next step.

14) If problem persists:

- ✓ Communicate with Northern Health, issue an advisory as recommended (see Section 1).
- ✓ Implement emergency water restrictions (Communications Department).
- ✓ Contact Quesnel Fire Department and CRD Protective Services Department to inform them of the situation.

15) Complete documentation:

a) Record of events, include times and dates.
b) Complete a comprehensive damage assessment.
c) Investigate potential causes.

6.2. Supply Main Break

Description of Emergency: Failure or damage to a water supply main causing loss of water and/or pressure.

Indicators: Alarms indicating pressure loss, calls from residents or staff observations.

Actions: Steps to be taken by CRD staff:

1) Contact Manager of Utilities.

2) Contact Water Operator.

3) Determine location.

4) Stop the flow of water by closing valves and isolating the break, depending on the scale of the break (see chart in Appendix B); attempt to maintain positive pressure.

5) Contact Manager and describe the emergency.

6) Determine what section of the system has been affected by the depressurization.

7) If there is a potential that the system has been contaminated, the Manager of Utilities will contact Northern Health for recommendations on issuing a Water Advisory. See Appendix E (follow Communications procedures).

8) Make the site safe by implementing traffic control: block road, if necessary, contact traffic control contractor (see Appendix A).

9) If possible, mitigate danger to the public and further damage of infrastructure or property. If necessary and feasible, set up sediment control measures and de-chlorinated water released.

10) Assess immediate damage.

11) Coordinate repair plans with appropriate contractors (see contacts).

12) Contact the Provincial Agency responsible (see Appendix) for large discharges of chlorinated water; or if there is significant sediment or chlorinated water in streams.

13) Call Fire Department to inform them when hydrants are in or out of service.

14) Complete documentation:

    a) Record of events, include times and dates.
    b) Complete a comprehensive damage assessment.
    c) Investigate potential causes.
    d) After action report.

6.3. Extended Loss of BC Hydro Power Supply

Description of Emergency: The loss of power will stop the pumping systems to supply water to the distribution system and from filling the reservoir. With no power, a full reservoir has approximately 48 hours of water available.

Indicators: Alarms

Actions:

1) Source a generator.

2) Change system settings if necessary to keep reservoirs topped up.

3) If sudden phase loss or total power loss causes equipment failure see Section 6.

4) If issues with power supply persist:

   ✓ Contact BC Hydro for information on the timelines for power restoration.

   ✓ Communicate with Northern Health, issue an advisory as recommended (see Section 1).

   ✓ Implement emergency water restrictions (Communications Department).

   ✓ Potentially throttle down the pressure within the distribution to reduce water loss (always above 20 psi).

   ✓ Contact Quesnel Fire Department and CRD Protective Services Department to inform them of the situation.

6.4. Operator Transportation Routes Compromised

6.4.1. Potential Causes

- Forest fire
- Accident
- Mechanical issues with vehicle
- Construction

Description of Emergency: The usual transportation route to the Benjamin area is blocked (e.g., by a forest fire or accident), and no operator can be onsite to perform duties.

Actions:

1) Contact Manager of Utilities.

2) Manager will inform Northern Health Officer of situation.

3) Continue to monitor system.

4) If issue persists:

   ✓ Contact Quesnel or other Regional Operators for assistance.

   ✓ Reach out to local contact if physical checks are needed. Preferably local contractor with system experience (see Appendix A).

   ✓ Contact the Communications Department to issue applicable advisories (at the recommendation of Northern Health).

5) Complete documentation:

   a) Record of events, include times and dates.
   b) Complete a comprehensive damage assessment.
   c) Investigate potential causes.

SECTION 7: Cyber Incident

(Omitted for security reasons.)

SECTION 8: Drought

8.1 Introduction

Drought is often caused by a long duration of inadequate rainfall or snowmelt to replenish the level of the water source. It can also be the result of a breakdown in a crucial piece of a water system's infrastructure; or a prolonged issue with water quality that prevents the supply of potable water for an extended period. All of these circumstances can result in a significant depletion in the source capacity or even a complete loss of source. The Cariboo Regional District's Drought Management Plan for the Benjamin Water System serves as a guide to monitoring, managing and conserving water use in the event of an impending drought. The objectives of this Plan are to:

1) Identify the priority users of the water supply.
2) Provide direction on water conservation before and during the drought period.
3) Establish a guideline for communicating issues and instructions to users and other key contacts.
4) List supplemental or alternate sources of potable water in the event of a prolonged drought.

Appendix C outlines the Cariboo Regional District's Drought Management Plan.

Appendix A: Contacts

(Omitted for security reasons)

Appendix B: Charts

Water Main Break

Water Main Break Severity Chart				
Class 1	*Class 2*	*Class 3*	*Class 4*	*Class 5*
Routine	*Minor*	*Substantial*	*Major*	*Catastrophic*
Small enough to leave until repairs are convenient	Water Pooling	Isolation Needed	Large area needs to be isolated	Complete Distribution System Shut down
Positive Pressure Maintained	Positive Pressure Maintained	Positive Pressure may not be possible	Loss of Pressure in large area of distribution system	Complete system pressure loss (e.g. drained reservoir)
Consult with DWO if any concerns.	Advisory may be required, consult with DWO.	Advisory Needed, contact Northern Health. Assess damage.	Advisory needed, contact Northern Health. Assess damage	Advisory needed, contact Northern Health. initiate EOC.
Flush line (localized)	sample for bacteriological contamination after flushing lines as per C651-14 (localized)	Sample for bacteriological contamination after flushing lines as per AWWA C651-14	Chemical and bacteriological sampling may be needed. Possible unidirectional flushing and super chlorination needed as per AWWA C651-14	Chemical and bacteriological sampling needed at various points in the system. System wide flushing needed. Super chlorination required as per AWWA C651-14

Critical Parts Inventory

Critical Parts Inventory							
Part	Use	Location Stored	Vendor	Part	Use	Location Stored	Vendor

Appendix C: Drought Management Plan

DROUGHT MANAGEMENT PLAN

Priority Users

The area served by the Benjamin Water System is comprised of an estimated 93 residents. In a drought situation, the provision of water will be prioritized as follows:

Priority Level	User	Comments
1	Residents	The CRD is obligated to provide water to the residents served by the Benjamin Water System for basic health and sanitation needs.

Water Restrictions and Conservation Measures

The following restrictions will be imposed and conservation measures recommended to Benjamin Water System users at various stages prior to and during a drought:

STAGE 1: PREPAREDNESS	
Permitted Uses	**Restrictions**
Drinking water Bathing Handwashing dishes or using dishwasher Washing machine Watering plants with a hose or watering can Bathing pets. Washing vehicles.	May 1 to Oct. 1: Lawn watering on reduced days for reduced hours, per bylaws.
	Conservation Measures
	Install water-saving devices.
STAGE 2: IMPENDING DROUGHT – CONSERVATION	
Permitted Uses	**Restrictions**
Drinking water Bathing Handwashing dishes or using dishwasher Washing machine Watering plants with a hose or watering can	Lawn watering days and hours restricted further. Wash vehicles only if absolutely necessary.
	Conservation Measures
	Bathe pets only as needed. Use washing machine for full loads only. Use dishwasher for full loads only.
STAGE 3: DROUGHT – RESTRICTIONS	
Permitted Uses	**Restrictions**
Drinking water (all users) Bathing Handwashing dishes or using dishwasher Washing machine	No watering of lawns or watering of plants, per bylaws. No bathing of pets unless absolutely necessary. No washing of vehicles. No filling of swimming pools. No power-washing.
	Conservation Measures
	Bathe only as needed and/or reduce time in shower. Use washing machine for full loads only. Use dishwasher for full loads only.

Communication Plan

Communication between the CRD and users of the Benjamin Water System, as well as with key operational contacts, is imperative during an emergency situation. Providing timely and clear

information and instructions greatly reduces confusion, frustration and anxiety, and enables outside agencies to provide assistance more effectively if needed.

STAGE 1: PREPAREDNESS	
Water use is routinely higher from mid-Spring to the end of Summer each year due to less rainfall, increased lawn and garden maintenance, swimming pools, more frequent car-washing and showers, etc. Water levels are constantly monitored, and watering restrictions are put in place annually from May 1 to October 1 as a preventative measure to minimize depletion of the water supply during these months.	
Procedures (Concurrent)	Target
Finance Dept. mails notice of water restrictions and water conservation recommendations with annual utility bills in April of each year.	Residents
Communications Dept. posts notice of water restrictions and water conservation recommendations on website and social media.	All users of the Benjamin Water System
Communications Dept. sends notice of water restrictions and water conservation recommendations by email.	Subscribed users.
Water Operators post notice of water restrictions and water conservation recommendations on bulletin boards at 108 Mall, gas station, mailboxes	Users of the Benjamin Water System who don't have access to a computer.

STAGE 2: POTENTIAL THREAT – DIMINISHED WATER SUPPLY		
If there is little snowmelt in the Spring and rainfall in the Spring/Summer is not enough to bring the source of the water supply to an adequate level, further restrictions on water use may be required. Prolonged water quality issues may result in having to obtain water from an alternate source until rectified. Any significant or ongoing issues would indicate that action is required to prevent the possibility of a water supply crisis.		
Procedures		**Target**
1.	Inform key contacts of possible threat to water source: Water Operators notify Manager of Utilities Manager of Utilities informs other key contacts	Manager of Utilities Drinking Water Officer Electoral Area Director Manager of Fire Administration
2.	At Northern Health's direction, Manager of Utilities and Communications Dept. have public notice mailed to users, posted on website, social media, and on local bulletin boards.	All users of the Benjamin Water System
	Communications Dept. sends public notice by email.	Subscribed users
3.	Manager of Utilities notifies CRD Managers involved in Emergency Planning as a precautionary measure.	Chief Administrative Officer Manager of Communications Manager of Emergency Programs
4.	Manager of Utilities, Water Operators and Electoral Area Director hold public meeting to discuss potential drought, further restrictions required and recommended conservation measures.	All users of the Benjamin Water System
5.	Manager of Utilities notifies other agencies as a precautionary measure that assistance may be required if situation can't be rectified.	City of Quesnel Ministry of Water, Land and Resource Stewardship Ministry of Emergency Management and Climate Readiness

STAGE 3: EMERGENCY – SIGNIFICANT DEPLETION OR LACK OF SOURCE		
The following situations are considered critical: • An inability to keep the water supply at a level that will provide enough water to meet the basic health and sanitation needs of the users. • A prolonged issue with the water system infrastructure that results in the inability to provide water to the users. • A severe or prolonged water quality issue that cannot be easily rectified. • The inability to provide an adequate water supply for fire protection. • An ongoing water supply issue that results in significant losses for businesses in the service area.		
Procedures		**Target**
1.	Inform key contacts of crisis situation. Discuss further steps: Water Operators inform Manager of Utilities. Manager of Utilities notifies other key contacts.	Manager of Utilities Drinking Water Officer Electoral Area Director Chief Administrative Officer Manager of Fire Administration Manager of Communications Manager of Emergency Programs
2.	At Northern Health's direction, Manager of Utilities and Communications Dept. have public notice mailed to users, and posted on website, social media, and local bulletin boards.	All users of the Benjamin Water System
	Communications Dept. sends notice of emergency situation by email and via Voyent Alert.	Subscribed users
3.	Manager of Utilities and Communications Dept. post notice in local newspaper; make radio announcements.	All users of the Benjamin Water System
4.	Manager of Utilities, Water Operators and Electoral Area Director hold public meeting to discuss further steps.	All users of the Benjamin Water System
5.	Manager of Utilities notifies other agencies. Discuss what assistance may be available.	City of Quesnel Ministry of Water, Land and Resource Stewardship Ministry of Emergency Management and Climate Readiness

Supplemental or Alternate Sources of Potable Water

Supplemental or Alternate Source	Contact Information	Capacity Available	Estimated Time To Deliver	Estimated Cost
Backup Water Source				
Reservoir Rental Company				
Bulk Haul Water				
Other Water Supplier				
Supplemental or Alternate Source	**Contact Information**	**Capacity Available**	**Estimated Time To Deliver**	**Estimated Cost**
Bottled Water				

Operational Procedures

Action		Person Responsible
1	Ensure pump is shut off (to protect pump).	Water Operator
2	Notify all users by social media, email distribution, radio and public bulletins. High risk users to be notified by telephone call. Situationally assessed for best means of communication process.	Manager of Utilities Manager of Communications
3	Contact government agencies (see below) for advice and assistance.	Manager of Utilities
4	Arrange alternate source (e.g. bottled water, bulk hauler and storage tank).	Manager of Utilities

Government Agency Contacts:

- Drinking Water Officer
- Local government's Emergency Program Coordinator
- Ministry of Forests, Lands and Natural Resource Operations
- Others as necessary, depending on severity (ie. Fire Department)

Appendix D: Templates

Section Status Report (EOC 401A)

Section Status Report

EOC 401A

INCIDENT NAME		TASK NUMBER	ICS SECTION
DATE PREPARED		TIME PREPARED	

1. CURRENT SITUATION *(What is occurring now within your area of responsibility?)*
2. OUTSTANDING ISSUES/CHALLENGES *(What issues within the current operational period still need to be resolved?)*
3. ANTICIPATED PRIORITIES/ACTIVITIES *(What will the priorities be for the next operational period?)*
4. DISTRIBUTION LIST / DISPOSITION
☐ Status Reports are to be completed by 14:00, for **Planning Section** to use to inform the SitRep and Action Plan for the next operational period
COMPLETED BY

Name (Print): _____ Position: _____ Signature: _____

Page 1 of 1

Position Log (EOC 414)

Position Log EOC 414

INCIDENT NAME	TASK NUMBER	DATE PREPARED
NAME	ICS SECTION	ICS POSITION/UNIT

ACTIVITY LOG

Time	Action/Decision/Enquiry	Action Required

Use highlighter to identify issues that should be tracked through multiple operational periods. Page 1 of 2

INCIDENT NAME	TASK NUMBER	DATE PREPARED
NAME	**ICS SECTION**	**ICS POSITION/UNIT**

ACTIVITY LOG

Time	Action/Decision/Enquiry	Action Required

Use highlighter to identify issues that should be tracked through multiple operational periods.

Page 2 of 2

EOC Situation Report (EOC 501)

EOC Situation Report

Cariboo Regional District

EOC 501

The purpose of this form is to summarize new and ongoing details of the emergency event

Date of Report: | Time of Report: | Initial Report: ☐ | Final Report: ☐

Event Name: | Event Type: | Task #:

Approved by: | EOC Director

Primary Contact Information

Name:

Phone: | Function/Title:

Email: | Other:

EOC Activation:	Overall Status:	Incident Prognosis:	Overall Severity:
☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ No EOC	☐ Assistance Required ☐ Under Control ☐ Resolved ☐ Unknown ☐ Closed	☐ Worsening ☐ Stable ☐ Improving ☐ Unknown	☐ Major ☐ Moderate ☐ Minor ☐ Unknown

Situation Summary *(What has happened and/or changed since the last Situation Report? **Bold** new information)*

Current Priority Needs *(Resources/Information/Support)*

Cariboo Regional District | *Emergency Program Services* | Page 1 of 3

Date of Report:		Time of Report:		Initial Report:☐	Final Report:☐
Event Name:		Event Type:		Task #:	

Human Impact *(Cariboo Regional District area/residents – does not include municipalities or indigenous on-reserve)*
*see attached alert & order tracking sheet for additional detail

Population on Alert:		Population on Order:	
Area under Alert:		Area under Order:	

TOTAL REGIONAL POPULATION AFFECTED (either on alert or order) Click or tap here to enter text.

# Evacuated	# Injured	# Homeless	# Missing	# Fatalities	# Hospitalized

Population information is based on the Census population numbers from 2020 and reported 9-1-1 population counts

Public Information and Media Issues

Other Impact *(Agricultural/Animals/Transportation/Utilities/Communications)*

Date of Report:		Time of Report:		Initial Report:☐	Final Report:☐
Event Name:		Event Type:		Task #:	

Future Outlook/Planned Actions *(What does the EOC hope to accomplish in the next operational period?)*

Action Plan (EOC 502)

Action Plan

FOR NEXT OPERATIONAL PERIOD

EOC 502

INCIDENT NAME		TASK NUMBER	ICS SECTION
DATE PREPARED		TIME PREPARED	

OBJECTIVES

List goals (in priority order) which identify what will need to be completed in the next operational period. ***Use active verbs****: acquire, advise, complete, confirm, consult, contact, declare, determine, develop, establish, ensure, gather, identify, issue, notify, obtain, prepare, request, support.*

Objective:		
Task	Section	Deadline

Objective:		
Task	Section	Deadline

Objective:		
Task	Section	Deadline

Page **1** of **2**

PLEASE PRINT DOUBLE-SIDED

INCIDENT NAME		TASK NUMBER	ICS SECTION
DATE PREPARED		TIME PREPARED	

Objective:		
Task	Section	Deadline

Objective:		
Task	Section	Deadline

Objective:		
Task	Section	Deadline

APPROVALS

Planning Section Chief *(Review, sign and forward to EOC Director)*

Prepared By: _____ **Position:** _____ **Date:** _____ **Time:** _____

EOC Director *(Review, sign and forward to Documentation for copying and distribution)*

Authorized By: _____ **Position:** _____ **Date:** _____ **Time:** _____

Authorizing Signature: _____

Page **2** of **2**

PLEASE PRINT DOUBLE-SIDED

Incident Report (EOC 550)

Incident Report

The purpose of this form is to capture and share situational awareness information as it becomes known

When receiving a report – first ask if it is a LIFE SAFETY issue. If so, have the person call 9-1-1.
Second, confirm jurisdiction – a ministry, municipality, or another RD may be responsible.

EVENT _____ DATE: _____ REPORTED BY: _____

EMCR Task No. _____ TIME: _____ RECEIVED BY: _____

TYPE OF INCIDENT _____

LOCATION _____

SUMMARY OF INCIDENT *(what happened?)*

WHO IS RESPONDING? *(involved agencies & actions)*

Page 1 of 2

PLEASE PRINT DOUBLE-SIDED

WHO/WHAT IS AFFECTED?

People	Estimated	Confirmed
Fatalities		
Injuries		
Evacuees		
Homes Evacuated		

Damage: *(buildings, bridges, roads, utilities, etc.)*

Other Information:

SITUATION FORECAST

Prepared by: _____ Approved by EOC Director: _____

Name and Signature *Name and Signature*

Page **2** of **2**

PLEASE PRINT DOUBLE-SIDED

Rapid Damage Assessment Form

Rapid Damage Assessment Form

Inspection

Inspector ID: _____ Inspection date: _____ (dd MMM yy) time: _____ (24 hour clock)

Agency: _____ Areas inspected: ☐ Exterior Only ☐ Exterior and Interior

Building Description

Building Name: _____

Address: _____

Building contact/phone: _____

Number of stories above ground: _____ below ground: _____

Number of residential units: _____

Type of Construction

☐ Wood Frame ☐ Masonry
☐ Steel Frame ☐ Other: _____
☐ Concrete Frame

Primary Occupancy

☐ Single Family Dwelling ☐ Industrial ☐ School
☐ Multi-residential ☐ Offices ☐ Government
☐ Emergency Services ☐ Commercial ☐ Other: _____

Evaluation

Investigate the building and area around it for the conditions below and check the appropriate column.

Observed Conditions:	Minor/None	Moderate	Severe
Collapse, partial collapse, or building off foundation	☐	☐	☐
Building or store leaning / out of plumb	☐	☐	☐
Damage to primary structural members, racking of walls	☐	☐	☐
Falling hazards such as chimney, parapet, etc	☐	☐	☐
Ground movement or slope failure, scour, erosion	☐	☐	☐
Damaged /submerged fixtures or services, (electric / gas)	☐	☐	☐
Proximity risks / other (specify): _____	☐	☐	☐

Estimated Building Damage (excluding contents)

☐ None
☐ 1 – 10 %
☐ 11 – 30 %
☐ 31 – 60 %
☐ 61 – 99 %
☐ 100 %

Number of residential units not habitable: _____

Comments: _____

Posting

Severe conditions endangering the overall building are grounds for an Unsafe posting. Localised Severe and overall Moderate conditions may allow a Restricted Use posting. Where required, ensure that RESTRICTED USE and UNSAFE placards are posted at all entrances.

☐ **INSPECTED** (Green Placard) ☐ **RESTRICTED USE** (Yellow Placard) ☐ **UNSAFE** (Red Placard)

Record any use and entry restrictions exactly as written on placard:

☐ Do not enter or use the following areas: _____
☐ Brief entry allowed for access to contents: _____
☐ Do not use flooded/damaged appliances, devices or services (electric, gas) until recertified by a licensed contractor
☐ Other restrictions: _____

Further Actions Check the boxes below only if further actions are needed.

☐ Barricades needed in the following areas: _____
☐ Detailed Evaluation recommended ☐ Structural ☐ Geotechnical ☐ Other _____
☐ Other recommendations: _____

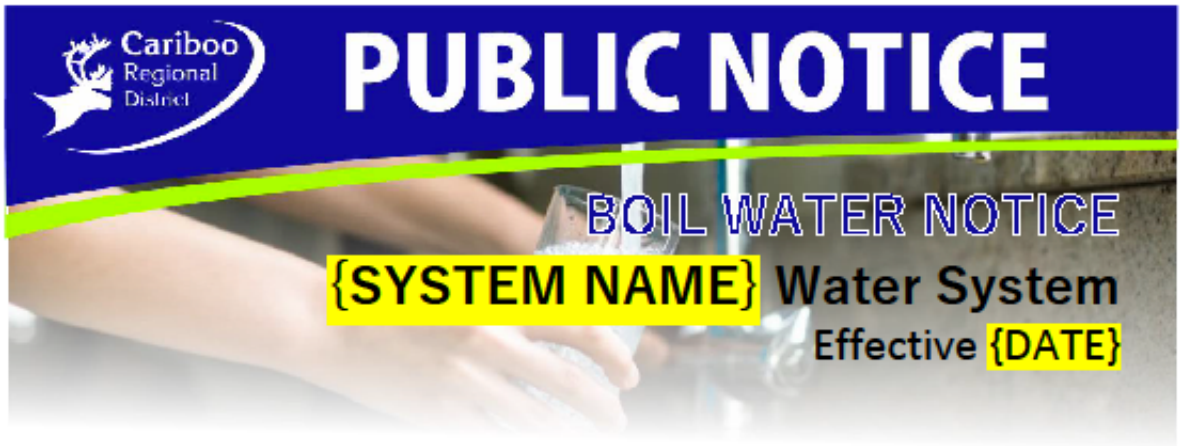
Comments: _____

Residential and All Structures

☐ Access: _____
☐ Access to other parts of operation: _____
☐ Wells / Septic: _____
☐ Insurance: _____

Comments: _____

Appendix E: Communications Templates



The Cariboo Regional District has issued a Boil Water Notice to users of the {SYSTEM NAME} Water System, pursuant to a request of a Drinking Water Officer under Section 14 of the *Drinking Water Protection Act*. This Notice remains in effect until further notice.

The Cariboo Regional District's water systems are tested regularly to ensure they meet public health regulations. This boil water notice is being issued because {REASON}. This notice is being issued {CHOOSE: as a precautionary measure to protect public health. OR in order to protect public health and safety from significant health risks presented by pathogens in the water supply.}

All users of the {WATER SYSTEM NAME} Water System are asked to bring water to a rolling boil for a minimum of one minute before using water from the system for:

Drinking (or use an alternate, safe source of water)
Cooking (if not boiled)
Brushing teeth
Washing Dishes
Washing fruits or vegetables to be eaten raw
Watering animals

Also, please use hand sanitizer after washing hands.

If you have further questions, please call Environmental Services at 1-800-665-1636 during regular office hours.

For more information about boil water advisories and service interruptions in the CRD and what to expect, visit cariboord.ca/water-notices-and-advisories. To receive updates on CRD water systems and other relevant information within the CRD, residents are reminded to subscribe to the latest news on our website at cariboord.ca/subscribe. Residents can also sign up the Cariboo Chilcotin Emergency Notification System to be notified directly of emergency orders and alerts or utility service interruptions at cariboord.ca/EmergencyNotifications.

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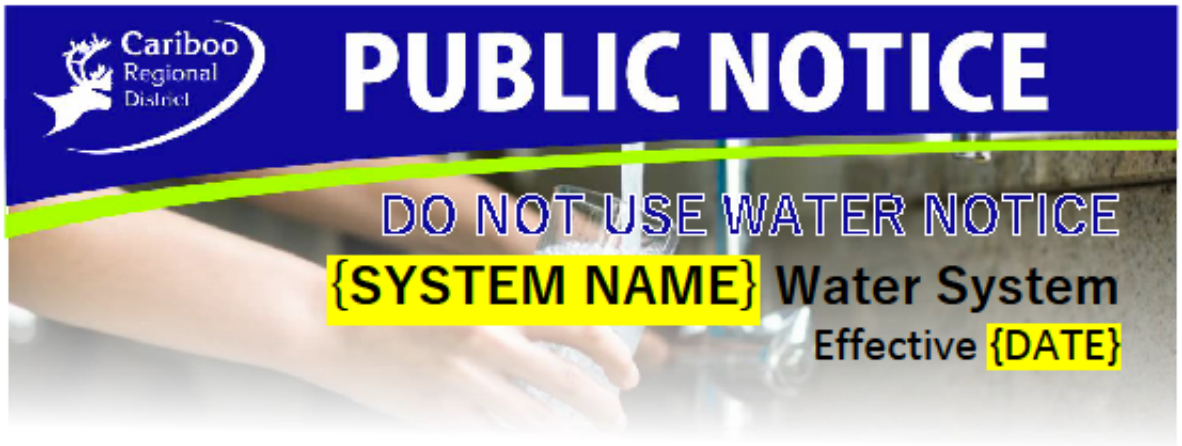

The Cariboo Regional District has issued a Do Not Use Notice to users of the {SYSTEM NAME} Water System, pursuant to a request of a Drinking Water Officer under Section 14 of the *Drinking Water Protection Act*. This Notice remains in effect until further notice.

The Cariboo Regional District's water systems are tested regularly to ensure they meet public health regulations. Due to the presence of {if known, be specific, or if unknown say "contaminants in the water supply posing an immediate threat to resident's safety}, the Cariboo Regional District is implementing this until further notice. Follow all instructions below:

All users of the {WATER SYSTEM NAME} Water System are asked to immediately stop using water from the system for any purpose. This includes: drinking, making beverages or ice, brushing teeth, preparing or washing food, bathing, water for animals, washing anything (including vehicles), and watering plants.

Do not turn your taps on for any reason. Boiling water will NOT make it safe! Water from your hot water tank may also be unsafe, and you are advised to consult a qualified plumber before draining the tank.

The Cariboo Regional District has contacted Interior Health and the Ministry of Environment to request their cooperation in investigating this matter. In addition, the Cariboo Regional District is taking immediate acton to find another source of water supply for residents of {WATER SYSTEM NAME}.

During this time, an alternate water source will be available at {ADDRESS AND OPERATING HOURS}.

If you have further questions, please call Environmental Services at 1-800-665-1636 during regular office hours.

For more information about boil water advisories and service interruptions in the CRD and what to expect, visit cariboord.ca/water-notices-and-advisories. To receive updates on CRD water systems and other relevant information within the CRD, residents are reminded to subscribe to the latest news on our website at cariboord.ca/subscribe. Residents can also sign up the Cariboo Chilcotin Emergency Notification System to be notified directly of emergency orders and alerts or utility service interruptions at cariboord.ca/EmergencyNotifications.

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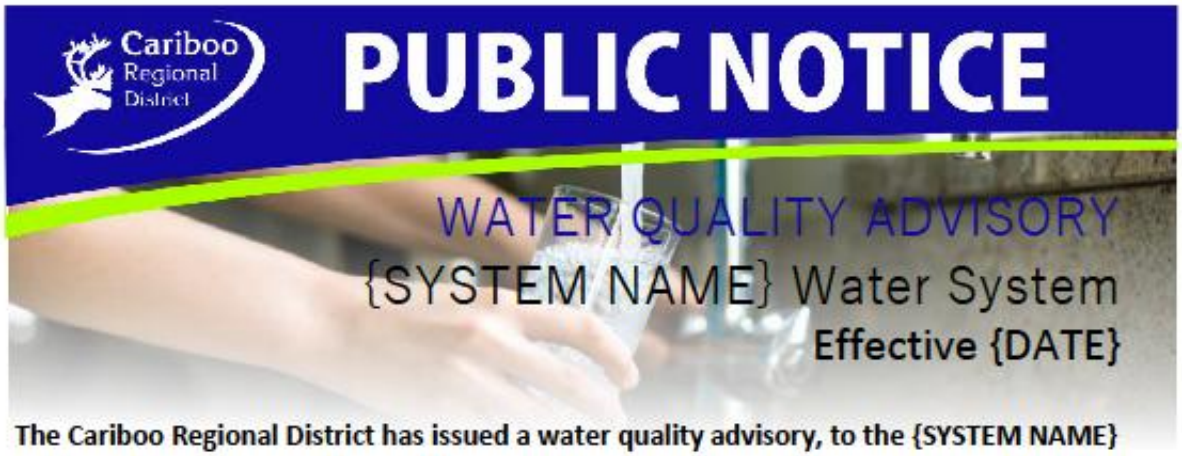

The Cariboo Regional District has issued a water quality advisory, to the {SYSTEM NAME} Water System users because of {issue} levels exceeding the *Guidelines for Canadian Drinking Water Quality*. This Advisory remains in effect until further notice.

The Cariboo Regional District's water systems are tested regularly to ensure they meet public health regulations. Health Canada's Guidelines for Drinking Water has established a maximum acceptable concentration (MAC) for {issue} in drinking water of {standard}. Recent water samples submitted show {issue} concentrations that exceed the MAC.

Add information provided by Health Canada or Interior Health about the nature of the water quality advisory. This section requires approval from a Drinking Water Officer.

{Other safety instructions or advisories. I.e. is the water safe for other non-consumption purposes, how does boiling water impact it, etc.}

If you have further questions, please call the Environmental Services department at 1-800-665-1636 during regular office hours.

*For more information about boil water advisories and service interruptions in the CRD and what to expect, visit **cariboord.ca/water-notices-and-advisories**. To receive updates on CRD water systems and other relevant*

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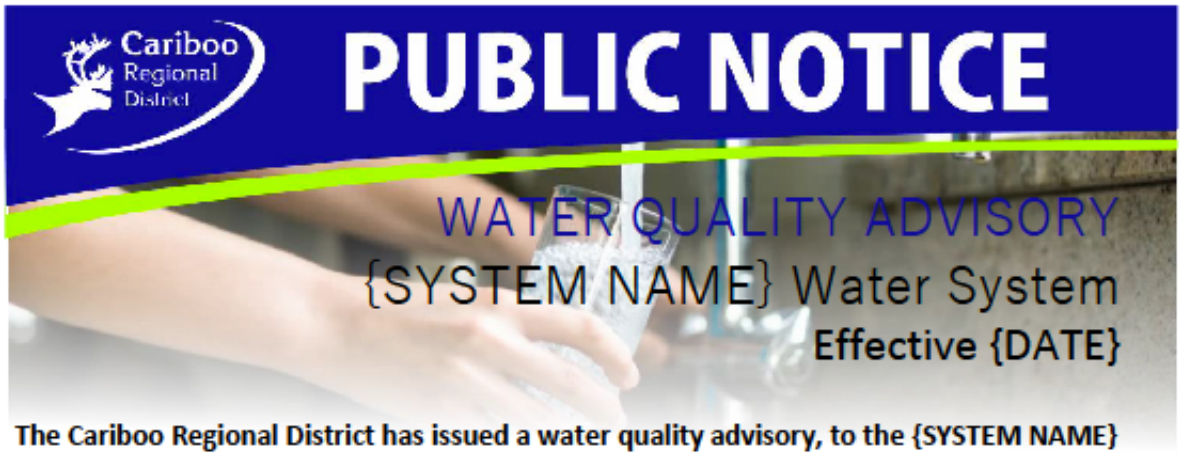

The Cariboo Regional District has issued a water quality advisory, to the {SYSTEM NAME} Water System users because of manganese (Mn) levels exceeding the *Guidelines for Canadian Drinking Water Quality*. This Advisory remains in effect until further notice.

The Cariboo Regional District's water systems are tested regularly to ensure they meet public health regulations. Health Canada has established a maximum acceptable concentration (MAC) for manganese in drinking water of 0.12 mg/L. Recent water samples submitted show manganese concentrations that exceed the MAC.

Manganese (Mn) is an element found in air, food, soil and drinking water. While a small amount of Mn is essential for human health, new Health Canada research has shown drinking water with too much Mn can be a risk to health for infants and young children.

Infants and young children are the most sensitive and vulnerable population, as their bodies absorb more manganese and cannot regulate or remove the chemical as readily as adults and older children. As a result, the **drinking water from this system must not be used to prepare formula for bottle-fed infants**. An alternate source of safe drinking water, such as bottled water, must be used when preparing formula for infants and young children. **Boiling the water will not lower the manganese level.**

Breastfed infants are generally considered at lower risk to manganese exposure as the transfer of manganese to breast milk is limited. Pregnant or breastfeeding women who have concerns may wish to use a safe, alternate source of drinking water or consult with a healthcare professional.

Water exceeding the MAC for manganese can be used for cooking and drinking by non-vulnerable groups and is still considered safe for hand washing, bathing and showering. If you have further questions, please call the Environmental Services department at 1-800-665-1636 during regular office hours.

*For more information about boil water advisories and service interruptions in the CRD and what to expect, visit **cariboord.ca/water-notices-and-advisories**. To receive updates on CRD water systems and other relevant information within the CRD, residents are reminded to subscribe to the latest news on our website at **cariboord.ca/subscribe**.*

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The Cariboo Regional District has issued a water quality advisory for users of the Forest Grove Water System because of a positive test result for low coliform found in the system.

For this reason, as precautionary measure, any high-risk users, including those with weakened immune systems, young children and those on dialysis are advised to:

- **use purchased bottled water or boiled water for drinking, brushing teeth, dishwashing, preparing food, and making ice, or**
- **bring water to a roiling boil for one minute, then cool to an appropriate temperature before using.**

The CRD regularly tests the water system as part of its Water Quality Monitoring Program. The advisory will remain in effect until further notice. We apologize in advance for any inconvenience this may cause.

When satisfactory results are reported from the required testing, customers will be notified that the advisory has been lifted. If you have questions, please call the Environmental Services department at 1-800-665-1636. If calling outside of regular business hours (8:30 a.m. to 4:30 p.m. Monday to Friday), please dial "5" when prompted to reach our emergency after hours contact.

For more information about boil water advisories and service interruptions in the CRD and what to expect, visit cariboord.ca/water-notices-and-advisories.

To receive updates on CRD water systems and other relevant information within the CRD, residents are reminded to subscribe to the latest news on our website at cariboord.ca/subscribe.

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