

Drinking Water Annual Report -2009

City of Quesnel Water System

INTRODUCTION

The City of Quesnel annual water report describes the water system and provides a summary of quality testing and water management during 2009.

WATER SYSTEM OVERVIEW

The City of Quesnel water system is comprised of 6 operating groundwater wells (Main System), 8 reservoirs, 5 booster pump stations, 2 main PRV stations and approximately 100 km of water main. In addition the City also maintains one independent well on Sword Road (small system) in South Quesnel to provide water to the soccer fields. At present there is no treatment or disinfection provided to the City's water system. Approximately 10,500 residents are serviced by the City water system. In 2009, water usage in the City system resulted in 719,314,765 imperial gallons used. This was an approximate 3% increase from 2008.

WATER MANAGEMENT

An exploratory borehole was drilled in August in order to develop a replacement well near the current Well #5 location. The results ensure water quality and findings will also be used in the design and capacity capabilities of a new water well.

SCADA monitoring system upgrades have enabled City staff to observe real-time data and information of changing water system conditions. This includes well operation and reservoir levels. System operators have the ability to remotely respond to system conditions and demands. This reduces failure of equipment as well as increases pumping efficiency.

Staff continues to update the water system emergency plan. Operating procedures continue to be created in order to improve reliability of the distribution network.

Water system operators are certified under the Environmental Operators Certification Program. In order to maintain certification, operators must receive 24 hours of approved training in every two year period and achieve a minimum of 70% on written examinations.

On August 28, The City of Quesnel water system was inspected by Northern Health and following this inspection a new Operating Permit was issued under the Drinking Water Protection Act.

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WATER MONITORING

To ensure the delivery of safe drinking water, the City has a program to monitor water quality at the source.

Historically, drinking water quality within the City has been monitored in consultation with the Provincial Health Inspector. The challenge and responsibility to ensure safe drinking water has been assisted by the adoption, in May 2003, by the province of the "British Columbia Drinking Water Regulations". In accordance with these regulations, the City has developed a drinking water quality monitoring program to enhance present practices.

In May 2004 the City commenced sending their water samples to Cantest Laboratory in Burnaby, for all sampling points. The City has direct contact with the lab on results and concerns. Our local Drinking Water Officer at Northern Health Authority, also has access to these results. From the laboratory, the results are downloaded directly to Water Trax, the City's water quality database.

The sampling parameters used to monitor potability are listed in the Guidelines for Canadian Drinking Water Quality (GCDWQ) and the British Columbia Drinking Water Regulations (BCDWR). These sampling parameters are used as indicators for bacteriological, chemical and physical contaminants.

Sampling frequency is also important in obtaining an accurate overview of water quality within the distribution system. As a minimum, the number of samples to be taken of the source and distribution system, as required by provincial regulations, are based on population. The minimum number of samples to be taken for the City of Quesnel's approximately 10,500 people, is 13 per month. The City exceeds that number of monthly sampling. The City samples 15 individual sites bi-weekly, for total coliforms, E. Coli, heterotrophic plate count and turbidity. As well, all reservoirs and wells are tested on a monthly basis for bacterial contaminants. In addition to the bacteriological parameters, additional testing is done for chemical & physical contaminants.

On April 25, a boil water advisory was issued for six streets in South Quesnel and further expanded to all areas of South Quesnel on April 27. This advisory was rescinded on April 30 and as a follow up a boil water newsletter was mailed to all City residents. It is attached and forms part of this report.

WATER QUALITY

Samples are taken at the start, middle and end of the entire City water distribution system. Lab results are transmitted to the City via email, as well as to the Drinking Water Officer. Results are downloaded into the City's water quality database, Water Trax.

If it is observed during testing that certain parameters exceed the limits specified in the GCDWQ or BCDWR guidelines, a procedure is in place for retesting and notification of any results or conditions that render or could render the water unfit to drink. /3

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The standard protocol when a water sample is found to contain the presence of coliforms, however minute, is to resample the water immediately at the same location and resubmit for testing. The provincial Drinking Water Officer will determine if any action by the City is necessary only after a second test also shows the presence of coliforms.

In accordance with the regulations of our operating permit, the City has a plan in effect to respond to emergencies to ensure the delivery of safe drinking water to all its residents.

In 2009, 313 samples were tested for E.coli with one exceedence at Tatchell reservoir. This site was retested and found negative for E.coli. There were 313 samples tested for total coliform with four exceedences. One exceedence at the Airport, one at Mills Rd, one at Well #7, and one at Well #8. All sites were resampled and found negative for coliform.

CONCLUSION

The 2009 City of Quesnel Water System Annual Report is presented to Council as required by the British Columbia Drinking Water Regulations Drinking Water Protection Act. It has been established as a requirement to ensure accountability to the community for the water service provided. In order to meet the terms and conditions of the City's Water System Operating Permit issued by the BC Drinking Water Officer, this report is made available to the public.

Attachment "A" contains:

- a list of the sampling point sites and the parameters tested at Cantest Labs for the City of Quesnel

Attachment "B" contains:

- Water sampling result summary reports for 2009 from Cantest Labs on both of the City's water systems; Main System, & Small System (on Sword Road)

Attachment "C" contains: Special Edition Q-City News re: City Drinking Water

LINKS:

The Health Canada website (www.hc-sc.gc.ca) contains "Summary of Guidelines for Canadian Drinking Water Quality", which Health Canada publishes on current guidelines and updates each spring on their website.

Attachment "A"

City of Quesnel Water Quality Monitoring Program

SITE	LOCATION	PARAMETERS
BI-WEEKLY (Distribution System) (every other Tues between 10am and 2pm)		
First Week		Parameters: Total coliforms, Ecoli, HPC's, turbidity temp
S-A	Airport (Watertrax Locator #94E4)	
S-C	Mills Rd (94E5)	
S-E	Marsh Dr- (94E7)	
S-G	Graham Avenue (94E8)	
S-I	W. Fraser Rd. (94E9)	
S-L	Pederson Rd (94FO)	
S-N	Standpipe at Carson Pit (94EF)	
S-O	Dennis Road (179CA)	
Third Week		Parameters: Total coliforms, Ecoli, HPC's, turbidity temp
S-B	Carradice Rd (94E6)	
S-D	Dixon St (94F1)	
S-F	Front St – Hospital (94F2)	
S-H	Nason St (94F3)	
S-J	N Star Rd – Booster Dragon Hill Feed (94F4)	
S-K	N Star Booster -S. Hill Feed (94F6)	
S-M	Chew Rd (94F7)	
MONTHLY (Reservoirs)		Parameters: Total coliforms, Ecoli, Temp
R-1	Hwy 97 – Shadow Heights (94EA)	
R-2	Pinecrest Rd (94F9)	
R-3	Baker Dr – Sugar Loaf (94FA)	
R-4 (2)	Abbott Dr (Abbott #1, Abbott #2) (94EB) (94EC)	
R-5	Dragon Hill (94FC)	
R-6 (2)	Tatchell (Southills #1, Southills #2) (94FF) (old) (new)	
MONTHLY (Wells)		Parameters: Total coliforms, Ecoli, Temp
W-A	Sword Rd – Soccer Field Well (94ED)	
W-3	Rolph St at Roddis Dr (94D1)	
W-5	Hillborn Rd (94D8)	
W-6	Rolph St at Robertson Ave (94DC)	
W-7	Off North Fraser Dr (94EO)	
W-8	Hillborn Rd (94E1)	
W-9	Carson Subdivision Flats (94DF)	

City of Quesnel Water Quality Monitoring Program

QUARTERLY (Wells) (first week of March, June, Sept, Dec)		Parameters: Chloride, Nitrate, Nitrite, Temperature
W-A	Sword Rd - Soccer Field Well	
W-3	Rolph St at Roddis Dr	
W-5	Hillborn Rd	
W-6	Rolph St at Robertson Ave	
W-7	Off North Fraser Dr	
W-8	Hillborn Rd	
W-9	Carson Subdivision Flats	
SEMI - ANNUALLY (Distribution System) (first week Oct & April)		Parameters: Copper, Zinc, Lead, Iron, Vinyl chloride, Manganese, Temperature
S-C	Mills Rd (94E5)	
S-L	Pederson Rd (94F0)	
ANNUALLY (Wells)		Parameters: Enhanced Potability, molybdenum, nickel, phosphorus, silver, Aggressive Index Number (Langelier saturation index), Volatile Organic Compounds, Temperature
W-A	Sword Rd – Soccer Field well	
W-3	Rolph St at Roddis Dr.	
W-5	Hillborn Rd	
W-6	Rolph St at Robertson Ave	
W-7	Off North Fraser Dr	
W-8	Hillborn Rd	
W-9	Carson Sub Flats	

Attachment "B"

Water sample result reports in pdf format :

- 2009 Quesnel Main System Coliform Summary**
- 2009 Quesnel Small System Coliform Summary**
- 2009 Quesnel Main System Coliform/Ecoli Exceedences**
- 2009 Quesnel Small System Coliform/Ecoli Exceedences**
- 2009 April & October Semi-Annual Summary**
- 2009 Quarterly March & Sept Small & Main System**

Attachment "C"

Q- City News Special Edition in pdf format:

- 09 06 29 Water System Mailout**

Q-City News Special edition

Information you need about City services

Telephone: 250-992-2111 · Fax: 250-992-2206 · www.city.quesnel.bc.ca

Your City's drinking water - safe, reliable, good.

The City's water system is a safe and reliable one. In addition, as many of you know, we enjoy a plentiful source of great tasting water.

Recently, however, the City had to issue a Boil Water Advisory for South Quesnel. This was the first time the City had to take this measure.

A sampling irregularity occurred and fortunately there was no danger to the public. However, this is a good time to explain the situation and provide some basic information about your drinking water.

Public safety is the City's number one priority. Your water is sampled and tested

regularly by trained professionals to ensure a safe supply of drinking water is in place.

Should you have questions about your water, please do not hesitate to contact us at City Hall at 250-992-2111 or at the utilities department at 250-992-6330.

The Boil Water Advisory - what happened?

Water samples on public utilities are typically restricted to the utility operator and/or Northern Health Staff.

In this case, a resident who had a concern with discoloured water submitted a water sample. The sample was sent to the lab for testing, which is not normal operating procedure. It tested positive for E. coli.

On April 25, the City and Northern Health issued a Boil Water Advisory for six streets in South Quesnel; the advisory was expanded to all areas of South Quesnel on April 27.

Northern Health collected 33 water samples on April 27 and



28. The Boil Water Advisory was rescinded on April 30 following **no detection of E.Coli in any of the samples.**

After the event, Northern Health determined that **proper sampling procedure was not followed.**

Northern Health staff have been reminded that samples should not come from the public on public utilities.

Any samples on the City's

water system should be submitted by the Northern Health Environmental Health Officer or the City's utility staff.

More information about the City's water distribution system

City water comes from six wells that can provide approximately 15,900 litres (3,500 Imperial gallons) per minute.

This water is stored in six reservoirs, with the City maintaining some 87 kilometres of water mains throughout the City.

Water testing

Water testing is done weekly

throughout the City system for total Coliform and E. coli. Water is tested at the wellheads, reservoirs and 15 testing sites on a rotational basis, including:

- The airport
- Mills Road
- Graham Avenue
- West Fraser Road
- Pederson Road
- Carson Pit Road
- Dennis Road

- Carradice Road
- Dixon Street
- Nason Street
- North Star Road (two sites)
- Chew Road
- Marsh Drive
- Walkem Street

Results may be found in the City's Annual Report on Drinking Water, which is on the City's website or available by contacting City Hall at 250-992-2111.

