Fulford Water Service

2020 Annual Report



INTRODUCTION

This report provides a summary of the Fulford Water Service for 2020. It includes a description of the service, summary of the water supply, demand and production, drinking water quality, operations highlights, capital project updates and financial report.

SERVICE DESCRIPTION

The Fulford Water Utility is a semi-rural residential community located on Salt Spring Island. It services the Fulford Elementary School and a small commercial component, including the BC Ferries Terminal. The service was created in 1968 as the Fulford Water Improvement District and became a CRD service in 2004. The Fulford Water Utility (Figure 1) is comprised of 102 parcels of land with 91 of those parcels connected to the water system. Within those 91 parcels, there are 96 single family equivalents (SFE) as the use on some parcels represent more than one dwelling.

The utility obtains its drinking water from Lake Weston, a small lake that lies within an uncontrolled multiuse watershed outside and northeast of the service area. The Capital Regional District (CRD) holds two licenses to divert a total of up to 291.6 cubic metres per day and store up to 49,339 cubic metres. Lake Weston is estimated to have a total volume of 1,090,000 cubic metres. Lake Weston is subject to seasonal water quality changes and is affected by periodic algae blooms.

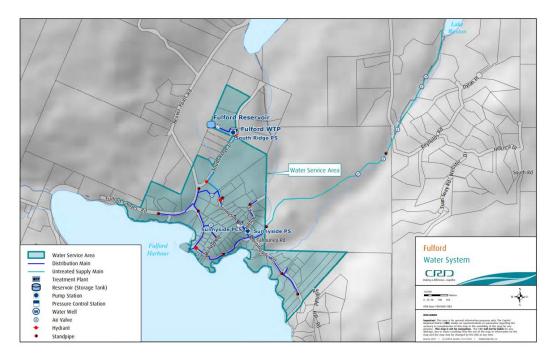


Figure 1: Fulford Water Service

The Fulford water system is primarily comprised of:

- a water treatment plant (WTP) that draws water from Lake Weston and treats it at a location on South Ridge Drive, adjacent to the Fulford Elementary School. The water is treated using a rapid mix system, flocculation, dissolved air floatation (DAF) and filters, ultraviolet disinfection, then chlorination prior to being pumped, via the distribution system to a reservoir. The water treatment plant (WTP) design flow rate is 4.5 litres/sec (60 lgpm);
- one raw water pump station on Sunnyside Drive near Hilltop Road (flow rate of two pumps running is 2.3 litres/sec (30 lgpm);
- approximately 4,500 m of water distribution pipe;
- 1 water reservoir 360 m³ (80,000 lg);
- fire hydrants, standpipes, and gate valves;
- water service connections complete with water meters on commercial properties only;
- 1 pressure reducing valve station on Sunnyside Drive near Hilltop Road.

WATER PRODUCTION AND DEMAND

Annual water production since 2015 is shown in Figure 2. A total of 30,494 m³ of water was extracted from Lake Weston in 2020. This is a 12% increase from the previous year and a 6% increase from the 5 year rolling average.

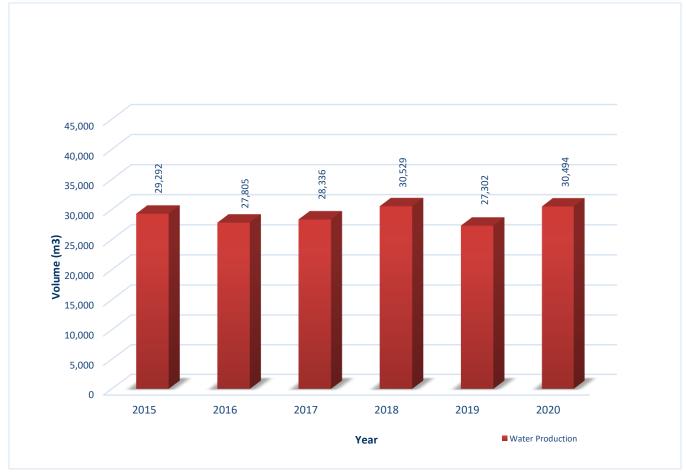


Figure 2: Fulford Water Service Annual Water Production

Water production by month for the past five years is shown in Figure 3. The monthly water production trends are typical for small water systems such as the Fulford water system. Water production during September to November was higher due to two water system leaks that were difficult to locate.

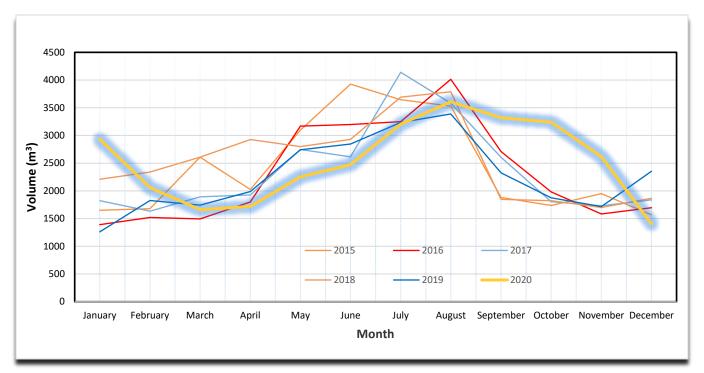


Figure 3: Fulford Water Service Monthly Water Production

The Fulford Water System does not have residential water meters and therefore the average per single family equivalent (SFE) is simply a calculated value. Utilizing 95 SFE and deducting an allowance of 20% for non-revenue water such as water system leaks, fire hydrant usage and water system maintenance and operational use (water main flushing, filter system backwashing), the average SFE is 257m3 per year for 2020. This is a 6% increase from the 5 year rolling average.

WATER QUALITY

In general, the Fulford Water System provided good quality drinking water to its customers in 2020. A number of samples for a variety of water quality parameters were collected and analysed throughout the year and confirmed that the DAF and disinfection treatment stages were effective in treating raw water from Lake Weston.

Typical Fulford drinking water quality characteristics for 2020 are summarized as follows:

Raw Water:

Lake Weston exhibited low concentrations of total coliform bacteria (TC) throughout most parts of the year with higher concentrations during the summer months. E. coli bacteria were only found in very low concentrations with slightly higher concentrations in the summer.

No parasitic cysts and oocysts (Giardia and Cryptosporidium) were detected in the raw source water from the lake.

Raw water from the lake was slightly hard (annual median 34.1 mg/L CaCO3).

A total organic carbon (TOC) concentration range from 4.50 to 5.30 mg/L indicates a mesotrophic (semi-productive) lake status. This has been consistent with historic data.

Four metal test results showed moderately low iron and very low manganese concentrations in the raw water. These metals in exceedance of the Guidelines for Canadian Drinking Water Quality (GCDWQ) limits can cause, if untreated, aesthetic issues such as water discolouration. The raw water colour was consistently elevated which may be a result of iron concentrations plus tannin and lignin, all natural components found in local lakes.

The raw water turbidity (cloudiness) was consistently very low with the highest values slightly over 1 nephelometric turbidity units (NTU) during the winter months.

Treated Water:

Treated water was bacteriologically safe to drink; no indicator bacteria were found in any sample throughout the year.

Treated water turbidity was well below the GCDWQ limit of 1 NTU;

TOC (median 2.20 mg/L) in the treated water was consistent with historic trends. As TOC is a precursor for disinfection by-products, concentrations consistently much higher than 2 mg/L can lead to exceedances with these substances.

Disinfection by-products such as trihalomethanes (THM) were well below the GCDWQ limit of 100 μ g/L with an annual average of 62.5 μ g/L. In the past, there have been occasional single-test results above the guideline limit. Haloacetic acids (HAA) were not tested in 2020 due to a history of concentrations consistently well below the GCDWQ limit of 80 μ g/L. Tests for HAA disinfection by-products will be carried out in 2021.

The water temperature was in exceedance of the aesthetic objective of 15°C between July 8 and October 7, 2020. There is no mitigation for this.

The free chlorine residual concentrations in the distribution system were within the desired range (0.29 – 2.14 mg/L) and indicate an effective secondary disinfection process.

Table 1 and 2 below provide a summary of the 2020 raw and treated water test results.

Water Quality data collected from this drinking water system can be reviewed on the CRD website:

https://www.crd.bc.ca/about/data/drinking-water-quality-reports/

OPERATIONAL HIGHLIGHTS

The following is a summary of the major operational issues that were addressed by during the 2020 reporting period:

- Water system leak repairs:
 - 133 Sunnyside Road
 - o 201 Morningside Road
 - o 2900 Fulford Ganges Road
 - 881 Fulford Ganges Road
 - 2905 Fulford Ganges Road
 - 117 Hilltop Road (Resulted in a boil water advisory)

- o Morningside Road at Orchard Road
- o 112 Beaver Point Road

CAPITAL IMPROVEMENTS

The following is a summary of the major capital improvements including year ending spending for 2020:

<u>Asset Management Plan (CE.641.4501)</u>: A prioritized list of infrastructure replacements, which will serve as the basis for future capital spending plans.

Project	Spending
Budget	\$10,000
Project Management	(\$135)
Contract	(\$9,293)
Project Closed Balance Returned to CWF	\$572

<u>Decommission Reynolds Road Strainer Facility (CE.700.4601)</u>: Demolition of the existing wooden structure in poor condition and remedy to ensure worker safety, maintain a reliable and efficient level of service for potable water supply, as well as reduce overall risk to the water service area. Involves disconnecting electrical services, demolition and disposal of existing wooden building, and design, fabrication and installation of an aluminum access hatch on top of the concrete chamber.

Project	Spending
Budget	\$27,750
Project Management	(\$5,283)
Contract	(\$17,670)
Project Closed Balance Returned to CRF	\$4,788

Weston Creek on Morningside Road (CE.507.4601): The water main along Morningside Road is exposed and spans Weston Creek making it susceptible to damage by people, vehicles, rocks or stream debris. Due to a wet year in 2019 and high stream water level, this project was deferred until the next dry season.

Project	Spending
Budget	\$60,600
Project Management	(\$13,866)
Contract	(\$27,392)
Balance Remaining	\$19,342

<u>Safe Work Procedures (CE.699.4504)</u>: The work scope includes reviewing and developing safe work procedures for operational and maintenance tasks

Project	Spending
Budget	\$11,000
Project Management	(\$296)
Contract	(\$2,292)
Supplies/Materials	(\$209)
Total Project	\$8,204

Back-up Power Design (CE.735): Complete electrical designs for new onsite back up power.

Project	Spending
Budget	\$10,000
Project Management	(\$73)
Balance Remaining	\$9,927

2020 FINANCIAL REPORT

Please refer to the attached 2020 Financial Report. Revenue includes parcel taxes (Transfers from Government), fixed user fees (User Charges), water sales (Sale-Water), interest on savings (Interest Earnings), a transfer from the Operating Reserve Fund, and miscellaneous revenue such as late payment charges (Other Revenue).

Expenses includes all costs of providing the service. General Government Services includes budget preparation, financial management, utility billing and risk management services. CRD Labour and Operating Costs includes CRD staff time as well as the costs of equipment, tools and vehicles. Debt servicing costs are interest and principal payments on long term debt. Other Expenses includes all other costs to administer and operate the water system, including insurance, supplies, water testing and electricity.

The difference between Revenue and Expenses is reported as Net Revenue (expenses). Any transfers to or from capital or reserve funds for the service (Transfers to Own Funds) are deducted from this amount and it is then added to any surplus or deficit carry forward from the prior year, yielding an Accumulated Surplus (or deficit) that is carried forward to the following year.

WATER SYSTEM PROBLEMS - WHO TO CALL:

To report any event or to leave a message regarding the Fulford water system, call either:

CRD water system emergency call centre: 1-855-822-4426 (toll free)
CRD water system emergency call centre: 1-250-474-9630 (toll)
CRD water system general enquiries 1-800-663-4425 (toll free)

When phoning with respect to an emergency, please specify to the operator, the service area in which the emergency has occurred.

Submitted by:	Matthew McCrank, MSc., P.Eng, Senior Manager, Wastewater Infrastructure Operations
	Glenn Harris, Ph.D., R.P.Bio., Senior Manager, Environmental Protection
	Rianna Lachance, BCom, CPA, CA, Senior Manager Financial Services
	Karla Campbell, BPA, Senior Manager, Salt Spring Island Electoral Area
Concurrence	Ted Robbins, BSc, C.Tech, General Manager, Integrated Water Services

Attachments:

Table 1: 2020 Summary of Raw Water Test Results, Fulford Water System

Table 2: 2020 Summary of Treated Water Test Results, Fulford Water System

Attachment 1: 2020 Financial Report

For questions related to this Annual Report please email saltspring@crd.bc.ca

ble 1: 2020 Summary of Ra PARAMETER		ī	20 ANALYTI	CAL RESUL	ΓS	CANADIAN GUIDELINES		2010 - 201	9 RESULTS
Parameter	Units of	Annual	Samples	Rar				Samples	Range
Name	Measure	Median	Analyzed	Minimum	Maximum	< = Less than or equal to	Median	Analyzed	Minimum-Maximu
means Not Detected by analytical			,					,	
		Phy	sical Pa	rameters	/Riologi	ral			
Chlorophyll a	ug/L	2.54	4	0.87	5.60	Jui	1.16	48	ND - 28.5
Colour, True	TCU	2.54	12	15	32	≤ 15 AO	21	57	1.20 - 29.4
Conductivity @ 25C	uS/cm	20	Last analyz		32	3 13 AO	21	31	1.20 - 29.4
Hardness as CaCO ₃	mg/L	34.1	4	28.9	36.2	No Guideline Required	35.5	14	30.9 - 61.3
pH	pH Units	7.10	3	7.00	7.10	7.0-10.5 AO	7.20	20	6.84 - 7.50
Carbon, total organic	mg/L	5.20	4	4.50	5.30	7.0-10.5 AO	5.54	20	3.92 - 7.00
Turbidity	NTU	0.45	12	0.30	1.50		0.62	97	0.20 - 4.92
Water Temperature	Degrees C	13.6	17	7.5	18.0		12.0	530	2.5 - 20.0
Trate: Temperature			.,		10.0		12.0	000	2.0 20.0
			Microbi	al Param	eters				
Indicator Bacte	ria								
	_								
Coliform, Total	CFU/100 mL	49	10	1	760		23	97	0 - 5500
E. coli	CFU/100 mL	ND	13	ND	3		0.5	97	ND - 4
Hetero. Plate Count, 7 day	CFU/1 mL		Not teste	d in 2020			1110	39	90 - 4000
Parasites			1			No MAC Established			
On a to a manifelium T. C				ND		7	\		0 000
Cryptosporidium, Total oocysts	oocysts/100 L	ND ND	2	ND	0	Zero detection desirable	ND	14	0 - 2.80
Giardia, Total cysts	cysts/100 L	ND	2	ND	0	Zero detection desirable	ND	14	0 - 0.55
Algal Toxins	3								
J									
Anatoxin A	ug/L		Last analyz	zed in 2011			ND	16	ND - 0.0
Cylindrospermopsin	ug/L		Last analyz	zed in 2011			ND	16	ND - 0.0
Microcystin-RR	ug/L		Last analyz	zed in 2011			ND	16	ND - 0.0
Microcystin-YR	ug/L		Last analyz	zed in 2011			ND	16	ND - 3.51
Microcystin-LR	ug/L		Last analyz				ND	16	ND - 0.65
Total Microcystins	ug/L		Last analyz			1.5 MAC	ND	16	ND - 4.16
Nodularin	ug/L		Last analyz	zed in 2011			ND	16	ND - 0.0
				Motolo					
				Metals					
Aluminum	ug/L as Al	17.4	4	5.80	138.0	2900 MAC / 100 OG	17.5	14	ND - 4600
Antimony	ug/L as Sb	ND	4	ND	0.0	6 MAC	ND	14	ND - 0.0
Arsenic	ug/L as As	0.25	4	0.21	0.26	10 MAC	0.25	14	0.20 - 0.82
Barium	ug/L as As	6.10	4	5.70	6.80	100 MAC	6.20	14	ND - 7.80
Beryllium	ug/L as Ba	ND	4	ND	0.00	TOO IVIAC	ND	14	ND - 0.0
Bismuth	ug/L as Bi	ND	4	ND	0.0		ND	12	ND - 0.0
Boron			4			5000 MAC			
Cadmium	ug/L as B ug/L as Cd	ND ND	4	ND ND	0.0	5 MAC	ND ND	14	ND - 0.0 ND - 0.02
Calcium	mg/L as Ca	10.95	4	9.20	11.6	No Guideline Required	11.45	14	9.86 - 17.5
Chromium	ug/L as Cr	ND	4	9.20 ND	0.0	50 MAC	ND	14	9.00 - 17.5 ND - 0.0
Cobalt	ug/L as Co	ND	4	ND	0.0	JU IVIAU	ND	14	ND - 0.0
Copper	ug/L as Cu	7.91	4	6.25	17.5	2000 MAC / ≤ 1000 AO	7.23	14	ND - 55.0
Iron	ug/L as Cu	_	_	_	11.0	≤ 300 AO	65.25	14	12.0 - 156.0
			Δ	517	112 0		00.20	17	
		72.4 0.33	4	51.7 ND	112.0 1.08		_	14	NI 1 - 11 h 3
Lead	ug/L as Pb	0.33	4	ND	1.08	5 MAC	0.35	14 6	ND - 0.63
Lead Lithium	ug/L as Pb ug/L as Li	0.33 ND	4 4	ND ND	1.08 0.0	5 MAC	0.35 ND	6	ND - 0.0
Lead Lithium Magnesium	ug/L as Pb ug/L as Li mg/L as Mg	0.33 ND 1.65	4 4 4	ND ND 1.44	1.08 0.0 1.76	5 MAC No Guideline Required	0.35 ND 1.68	6 14	ND - 0.0 1.51 - 4.28
Lead Lithium Magnesium Manganese	ug/L as Pb ug/L as Li mg/L as Mg ug/L as Mn	0.33 ND 1.65 6.40	4 4 4 4	ND ND 1.44 2.20	1.08 0.0 1.76 15.4	5 MAC	0.35 ND 1.68 4.35	6 14 14	ND - 0.0 1.51 - 4.28 ND - 48.0
Lead Lithium Magnesium Manganese Molybdenum	ug/L as Pb ug/L as Li mg/L as Mg ug/L as Mn ug/L as Mo	0.33 ND 1.65 6.40 ND	4 4 4 4	ND ND 1.44 2.20 ND	1.08 0.0 1.76 15.4 0.0	5 MAC No Guideline Required	0.35 ND 1.68 4.35 ND	6 14 14 14	ND - 0.0 1.51 - 4.28 ND - 48.0 ND - 0.0
Lead Lithium Magnesium Manganese Molybdenum Nickel	ug/L as Pb ug/L as Li mg/L as Mg ug/L as Mn ug/L as Mo ug/L as Ni	0.33 ND 1.65 6.40 ND 0.80	4 4 4 4 4	ND ND 1.44 2.20 ND ND	1.08 0.0 1.76 15.4 0.0 2.30	5 MAC No Guideline Required	0.35 ND 1.68 4.35 ND	6 14 14 14 14	ND - 0.0 1.51 - 4.28 ND - 48.0 ND - 0.0 ND - 2.40
Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium	ug/L as Pb ug/L as Li mg/L as Mg ug/L as Mn ug/L as Mo ug/L as Ni mg/L as K	0.33 ND 1.65 6.40 ND 0.80	4 4 4 4 4 4	ND ND 1.44 2.20 ND ND 0.53	1.08 0.0 1.76 15.4 0.0 2.30 0.59	5 MAC No Guideline Required 120 MAC / ≤ 20 AO	0.35 ND 1.68 4.35 ND ND 0.56	6 14 14 14 14 14	ND - 0.0 1.51 - 4.28 ND - 48.0 ND - 0.0 ND - 2.40 0.03 - 0.67
Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium Selenium	ug/L as Pb ug/L as Li mg/L as Mg ug/L as Mn ug/L as Mo ug/L as Ni mg/L as K ug/L as Se	0.33 ND 1.65 6.40 ND 0.80 0.55 ND	4 4 4 4 4 4 4	ND ND 1.44 2.20 ND ND 0.53 ND	1.08 0.0 1.76 15.4 0.0 2.30 0.59 0.0	5 MAC No Guideline Required	0.35 ND 1.68 4.35 ND ND 0.56 ND	6 14 14 14 14 14 14 13	ND - 0.0 1.51 - 4.28 ND - 48.0 ND - 0.0 ND - 2.40 0.03 - 0.67 ND - 0.10
Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium Selenium Silicon	ug/L as Pb ug/L as Li mg/L as Mg ug/L as Mn ug/L as Mo ug/L as Ni mg/L as K ug/L as Se ug/L as Si	0.33 ND 1.65 6.40 ND 0.80	4 4 4 4 4 4	ND ND 1.44 2.20 ND ND 0.53	1.08 0.0 1.76 15.4 0.0 2.30 0.59 0.0 2990	5 MAC No Guideline Required 120 MAC / ≤ 20 AO 50 MAC	0.35 ND 1.68 4.35 ND ND 0.56	6 14 14 14 14 14	ND - 0.0 1.51 - 4.28 ND - 48.0 ND - 0.0 ND - 2.40 0.03 - 0.67 ND - 0.10 2.48 - 10800
Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium Selenium Silicon Silver	ug/L as Pb ug/L as Li mg/L as Mg ug/L as Mn ug/L as Mo ug/L as Ni mg/L as K ug/L as Se ug/L as Si ug/L as Ag	0.33 ND 1.65 6.40 ND 0.80 0.55 ND 1835 ND	4 4 4 4 4 4 4 4	ND ND 1.44 2.20 ND ND 0.53 ND 409 ND	1.08 0.0 1.76 15.4 0.0 2.30 0.59 0.0 2990	5 MAC No Guideline Required 120 MAC / ≤ 20 AO 50 MAC No Guideline Required	0.35 ND 1.68 4.35 ND ND 0.56 ND 1975	6 14 14 14 14 14 14 13	ND - 0.0 1.51 - 4.28 ND - 48.0 ND - 0.0 ND - 2.40 0.03 - 0.67 ND - 0.10 2.48 - 10800 ND - 0.0
Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium Selenium Silicon	ug/L as Pb ug/L as Li mg/L as Mg ug/L as Mn ug/L as Mo ug/L as No ug/L as No ug/L as Si ug/L as Si ug/L as Ag mg/L as Na	0.33 ND 1.65 6.40 ND 0.80 0.55 ND	4 4 4 4 4 4 4 4 4	ND ND 1.44 2.20 ND ND 0.53 ND 409	1.08 0.0 1.76 15.4 0.0 2.30 0.59 0.0 2990	5 MAC No Guideline Required 120 MAC / ≤ 20 AO 50 MAC	0.35 ND 1.68 4.35 ND ND 0.56 ND 1975	6 14 14 14 14 14 13 14	ND - 0.0 1.51 - 4.28 ND - 48.0 ND - 0.0 ND - 2.40 0.03 - 0.67 ND - 0.10 2.48 - 10800
Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium Selenium Silicon Silver Sodium Sulphur	ug/L as Pb ug/L as Li mg/L as Mg ug/L as Mn ug/L as Mo ug/L as Ni mg/L as Ni mg/L as Se ug/L as Si ug/L as Ag mg/L as Na mg/L as S	0.33 ND 1.65 6.40 ND 0.80 0.55 ND 1835 ND 5.26 ND	4 4 4 4 4 4 4 4 4 4	ND ND 1.44 2.20 ND ND 0.53 ND 409 ND 4.55 ND	1.08 0.0 1.76 15.4 0.0 2.30 0.59 0.0 2990 0.0 5.60 0.0	5 MAC No Guideline Required 120 MAC / ≤ 20 AO 50 MAC No Guideline Required ≤ 200 AO	0.35 ND 1.68 4.35 ND ND 0.56 ND 1975 ND 5.79	6 14 14 14 14 14 13 14 14 14 14 12	ND - 0.0 1.51 - 4.28 ND - 48.0 ND - 0.0 ND - 2.40 0.03 - 0.67 ND - 0.10 2.48 - 10800 ND - 0.0 3.98 - 9.66 ND - 0.0
Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium Selenium Silicon Silver Sodium Sulphur Strontium	ug/L as Pb ug/L as Li mg/L as Mg ug/L as Mn ug/L as Mo ug/L as Ni mg/L as Ni mg/L as Se ug/L as Si ug/L as Ag mg/L as Na mg/L as S ug/L as S	0.33 ND 1.65 6.40 ND 0.80 0.55 ND 1835 ND 5.26 ND 32.25	4 4 4 4 4 4 4 4 4 4 4	ND ND 1.44 2.20 ND ND 0.53 ND 409 ND 4.55 ND	1.08 0.0 1.76 15.4 0.0 2.30 0.59 0.0 2990 0.0 5.60 0.0 34.3	5 MAC No Guideline Required 120 MAC / ≤ 20 AO 50 MAC No Guideline Required	0.35 ND 1.68 4.35 ND ND 0.56 ND 1975 ND 5.79 ND 32.55	6 14 14 14 14 14 13 14 14 14 14 12	ND - 0.0 1.51 - 4.28 ND - 48.0 ND - 0.0 ND - 2.40 0.03 - 0.67 ND - 0.10 2.48 - 10800 ND - 0.0 3.98 - 9.66 ND - 0.0 27.0 - 55.0
Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium Selenium Silicon Silver Sodium Sulphur Strontium	ug/L as Pb ug/L as Li mg/L as Mg ug/L as Mn ug/L as Mo ug/L as Ni mg/L as K ug/L as Se ug/L as Si ug/L as Ag mg/L as S ug/L as S	0.33 ND 1.65 6.40 ND 0.80 0.55 ND 1835 ND 5.26 ND 32.25 ND	4 4 4 4 4 4 4 4 4 4 4 4	ND ND 1.44 2.20 ND ND 0.53 ND 409 ND 4.55 ND 26.3 ND	1.08 0.0 1.76 15.4 0.0 2.30 0.59 0.0 2990 0.0 5.60 0.0 34.3 0.0	5 MAC No Guideline Required 120 MAC / ≤ 20 AO 50 MAC No Guideline Required ≤ 200 AO	0.35 ND 1.68 4.35 ND ND 0.56 ND 1975 ND 5.79 ND 32.55 ND	6 14 14 14 14 14 14 14 12 14 13	ND - 0.0 1.51 - 4.28 ND - 48.0 ND - 0.0 ND - 2.40 0.03 - 0.67 ND - 0.10 2.48 - 10800 ND - 0.0 3.98 - 9.66 ND - 0.0 27.0 - 55.0 ND - 0.0
Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium Selenium Silicon Silver Sodium Sulphur Strontium Tin Thallium	ug/L as Pb ug/L as Li mg/L as Mg ug/L as Mn ug/L as Mo ug/L as Ni mg/L as Ni mg/L as Si ug/L as Si ug/L as Si ug/L as Sa ug/L as Sr ug/L as Sr ug/L as Sr ug/L as Sn ug/L as Sn	0.33 ND 1.65 6.40 ND 0.80 0.55 ND 1835 ND 5.26 ND 32.25 ND	4 4 4 4 4 4 4 4 4 4 4 4 4	ND ND 1.44 2.20 ND ND 0.53 ND 409 ND 4.55 ND 26.3 ND	1.08 0.0 1.76 15.4 0.0 2.30 0.59 0.0 2990 0.0 5.60 0.0 34.3 0.0	5 MAC No Guideline Required 120 MAC / ≤ 20 AO 50 MAC No Guideline Required ≤ 200 AO	0.35 ND 1.68 4.35 ND 0.56 ND 1975 ND 5.79 ND 32.55 ND	6 14 14 14 14 13 14 14 12 14 13 12 12	ND - 0.0 1.51 - 4.28 ND - 48.0 ND - 0.0 ND - 2.40 0.03 - 0.67 ND - 0.10 2.48 - 10800 ND - 0.0 3.98 - 9.66 ND - 0.0 27.0 - 55.0 ND - 0.0
Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium Selenium Silicon Silver Sodium Sulphur Strontium Tin Thallium	ug/L as Pb ug/L as Li mg/L as Mg ug/L as Mn ug/L as Mo ug/L as Ni mg/L as K ug/L as Se ug/L as Se ug/L as Sa	0.33 ND 1.65 6.40 ND 0.80 0.55 ND 1835 ND 5.26 ND 32.25 ND	4 4 4 4 4 4 4 4 4 4 4 4 4	ND ND 1.44 2.20 ND ND 0.53 ND 409 ND 4.55 ND 26.3 ND	1.08 0.0 1.76 15.4 0.0 2.30 0.59 0.0 2990 0.0 5.60 0.0 34.3 0.0 0.0	5 MAC No Guideline Required 120 MAC / ≤ 20 AO 50 MAC No Guideline Required ≤ 200 AO 7000 MAC	0.35 ND 1.68 4.35 ND ND 0.56 ND 1975 ND 5.79 ND 32.55 ND ND	6 14 14 14 14 13 14 14 12 14 13 12 14 14	ND - 0.0 1.51 - 4.28 ND - 48.0 ND - 0.0 ND - 2.40 0.03 - 0.67 ND - 0.10 2.48 - 10800 ND - 0.0 3.98 - 9.66 ND - 0.0 27.0 - 55.0 ND - 0.0 ND - 0.0 ND - 0.0
Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium Selenium Silicon Silver Sodium Sulphur Strontium Tin Thallium Titanium Uranium	ug/L as Pb ug/L as Li mg/L as Mg ug/L as Mn ug/L as Mo ug/L as Ni mg/L as K ug/L as Se ug/L as Si ug/L as Ag mg/L as Na mg/L as S ug/L as Sr ug/L as Sn ug/L as Sr ug/L as TI ug/L as U	0.33 ND 1.65 6.40 ND 0.80 0.55 ND 1835 ND 5.26 ND 32.25 ND ND	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	ND ND 1.44 2.20 ND ND 0.53 ND 409 ND 4.55 ND 26.3 ND ND	1.08 0.0 1.76 15.4 0.0 2.30 0.59 0.0 2990 0.0 5.60 0.0 34.3 0.0 0.0 0.0	5 MAC No Guideline Required 120 MAC / ≤ 20 AO 50 MAC No Guideline Required ≤ 200 AO	0.35 ND 1.68 4.35 ND ND 0.56 ND 1975 ND 5.79 ND 32.55 ND ND	6 14 14 14 14 13 14 14 12 14 13 12 14 12	ND - 0.0 1.51 - 4.28 ND - 48.0 ND - 0.0 ND - 2.40 0.03 - 0.67 ND - 0.10 2.48 - 10800 ND - 0.0 3.98 - 9.66 ND - 0.0 27.0 - 55.0 ND - 0.0 ND - 0.0
Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium Selenium Silicon Silver Sodium Sulphur Strontium Tin Thallium	ug/L as Pb ug/L as Li mg/L as Mg ug/L as Mn ug/L as Mo ug/L as Ni mg/L as K ug/L as Se ug/L as Se ug/L as Sa	0.33 ND 1.65 6.40 ND 0.80 0.55 ND 1835 ND 5.26 ND 32.25 ND	4 4 4 4 4 4 4 4 4 4 4 4 4	ND ND 1.44 2.20 ND ND 0.53 ND 409 ND 4.55 ND 26.3 ND	1.08 0.0 1.76 15.4 0.0 2.30 0.59 0.0 2990 0.0 5.60 0.0 34.3 0.0 0.0	5 MAC No Guideline Required 120 MAC / ≤ 20 AO 50 MAC No Guideline Required ≤ 200 AO 7000 MAC	0.35 ND 1.68 4.35 ND ND 0.56 ND 1975 ND 5.79 ND 32.55 ND ND	6 14 14 14 14 13 14 14 12 14 13 12 14 14	ND - 0.0 1.51 - 4.28 ND - 48.0 ND - 0.0 ND - 2.40 0.03 - 0.67 ND - 0.10 2.48 - 10800 ND - 0.0 3.98 - 9.66 ND - 0.0 27.0 - 55.0 ND - 0.0 ND - 0.0 ND - 0.0

D. D. L. L.		est Results	,	ICAL RESULT	re	CANADIAN GUIDELINES		2010 - 2019	DECLUTE
PARAMETER	I leave of				-	CANADIAN GUIDELINES			
Parameter Name	Units of Measure	Annual Median	Samples Analyzed	Rar Min.	ige Max.	\leq = Less than or equal to	Median	Samples Analyzed	Range MinMax.
means Not Detected by analytic		Median	Analyzeu	IVIII I.	IVIAX.		Wedian	Analyzeu	IVIIIIVIAX.
ricans Not Detected by analytics	ai metrioù useu		Phys	sical Para	meters				
			1 1190	Journ are					
Alkalinity, Total	mg/L		Last analy:	zed in 2014			25.0	1	25.0 - 25.0
Carbon, Total Organic	mg/L as C	2.20	4	2.00	2.70		2.4	35	ND - 8.04
Colour, True	TCU		Last analy:	zed in 2011		≤ 15 AO	1	3	ND - 23
Hardness as CaCO ₃	mg/L	33.4	4	28.8	35.2	No Guideline Required	34.0	8	30.5 - 46.7
pН	pH units	6.90	3	6.10	6.90	7.0-10.5 AO	6.92	23	6.75 - 7.53
Turbidity	NTU	ND	12	ND	0.0	1 MAC and ≤ 5 AO	0.16	124	ND - 6.44
Water Temperature	Degress C	8.0	147	5.5	19.5		11.5	2105	0.0 - 22.0
	•	•				- .			
Indiantas Banta		I	Micro	bial Para	ameters	•			
Indicator Bacte	eria								
Coliform, Total	CFU/100 mL	ND	78	ND	0	0 MAC	ND	439	0 - 9
E. coli	CFU/100 mL	ND	78	ND	0	0 MAC	ND	437	ND - 0
Hetero. Plate Count, 7 day	CFU/1 mL		Not teste	d in 2020		No Guideline Required	ND	40	0 - 110
A11 T									
Algal Toxin	<u> </u>								
Anatoxin A	ug/L		Last analy	zed in 2011			ND	1	ND - 0.0
Cylindrospermopsin	ug/L			zed in 2011 zed in 2011			ND	1	ND - 0.0
Microcystin-RR				zed in 2011 zed in 2011			ND ND	1	ND - 0.0
	ug/L			zed in 2011 zed in 2011			ND ND	1	ND - 0.0
Microcystin-YR	ug/L							1	
Microcystin-LR	ug/L		Last analy:			45340	ND		ND - 0.0
Total Microcystins	ug/L			zed in 2011		1.5 MAC	ND	1	ND - 0.0
Nodularin	ug/L		Last analy:	zed in 2011			ND	1	ND - 0.0
				Disinfecta	ints				
Disinfectant	s								
Chlorine, Free Residual	mg/L as Cl2	0.77	151	0.29	2.14	No Guideline Required	0.64	2436	0.08 - 2.20
Chlorine, Total Residual	mg/L as Cl ₂	0.77	151	0.42	2.14	No Guideline Required	0.64	2279	0.06 - 2.20
									0.0 =.=0
			Disinfe	ction By-	Produc	ets			
Trihalomethanes	(THMs)								
	1								
Bromodichloromethane	ug/L	12.5	4	12.0	14.0		13.0	31	8.76 - 24.0
Bromoform	ug/L	ND	4	ND	0.0		ND	13	ND - 1.59
Chloroform	ug/L	49.5	4	41.0	52.0		56.8	30	27. 0 - 130.0
Chlorodibromomethane	ug/L	1.60	4	1.50	2.00		1.80	31	ND - 5.46
Total Trihalomethanes	ug/L	63.5	4	56.0	67.0	100 MAC	77.0	31	38.8 - 160.0
HAA5	ug/L		Not analyz	zed in 2020			24.3	5	5.10 - 28.6
				Metals					
				ivietals					
Aluminum	ug/L as AI	11.0	4	7.30	14.9	2900 MAC / 100 OG	32.50	9	ND - 228.0
Antimony	ug/L as Sb	ND	4	ND	0.0	6 MAC	ND	8	ND - 0.0
Arsenic	ug/L as As	0.13	4	ND	0.18	10 MAC	0.24	8	ND - 0.84
Barium	ug/L as Ba	5.85	4	5.20	6.40	100 MAC	5.15	8	ND - 6.3
Beryllium	ug/L as Be	ND	4	ND	0.0		ND	8	ND - 0.0
Bismuth	ug/L as Bi	ND	4	ND	0.0		ND	4	ND - 0.0
Boron	ug/L as B	ND	4	ND	0.0	5000 MAC	ND	8	ND - 0.0
Cadmium	ug/L as Cd	ND	4	ND	0.0	5 MAC	ND	8	ND - 0.04
Calcium	mg/L as Ca	10.7	4	9.20	11.3	No Guideline Required	11.25	8	9.74 - 15.6
Chromium	ug/L as Cr	ND	4	ND	0.0	50 MAC	ND	8	ND - 0.0
Cobalt	ug/L as Co	ND	4	ND	0.0	JU IVINO	ND ND	8	ND - 0.0
	ug/L as Cu	14.55	4	10.6	18.0	2000 MAC / ≤ 1000 AO	ND	8	ND - 0.0
Copper									
Iron	ug/L as Fe	ND 0.04	4	ND	0.0	≤ 300 AO	15.3	8	ND - 47.0
Lead	ug/L as Pb	0.31	4	0.27	0.42	5 MAC	0.35	8	ND - 2.43
Lithium	ug/L as Li	ND	1	ND	0.0				
Magnesium	mg/L as Mg	1.62	4	1.42	1.71	No Guideline Required	1.56	8	0.89 - 1.85
Manganese	ug/L as Mn	ND	4	ND	0.0	120 MAC / ≤ 20 AO	ND	8	ND - 1.2
Molybdenum	ug/L as Mo	ND	4	ND	0.0		ND	8	ND - 0.0
Nickel	ug/L as Ni	ND	4	ND	0.0		ND	8	ND - 0.0
Potassium	mg/L as K	0.53	4	0.52	0.59		0.50	8	ND - 0.62
Selenium	ug/L as Se	ND	4	ND	0.0	50 MAC	ND	7	ND - 0.0
Silicon	ug/L as Si	1665	4	353	2760		1600	8	3.17 - 2680
Silver	ug/L as Ag	ND	4	ND	0.0	No Guideline Required	ND	8	ND - 0.0
Sodium	mg/L as Na	7.16	4	6.46	7.64	≤ 200 AO	6.86	8	4.56 - 7.6
						≥ 200 AU			
Sulphur	mg/L as S	ND 20.05	4	ND 00.0	0.0	7000111	ND 04.45	4	ND - 0.0
Strontium	ug/L as Sr	32.25	4	26.2	33.2	7000 MAC	31.15	8	26.0 - 39.0
Tin	ug/L as Sn	ND	4	ND	0.0		ND	7	ND - 0.0
Thallium	ug/L as TI	ND	4	ND	0.0		ND	4	ND - 0.0
Titanium	ug/L as Ti	ND	4	ND	0.0		ND	8	ND - 0.0
Uranium	ug/L as U	ND	4	ND	0.0	20 MAC	ND	4	ND - 0.0
		ND	4				ND	8	ND - 0.0
Vanadium	ud/Las v	IND		שמו	0.0				
Vanadium	ug/L as V	I ND	4	ND	0.0		ND	0	140

CAPITAL REGIONAL DISTRICT

FULFORD WATER Statement of Operations (Unaudited) For the Year Ended December 31, 2020

	2020	2019
Revenue		
Transfers from government	66,359	74,790
User Charges	132,053	119,835
Sale - Water	17,148	17,053
Other revenue from own sources:		
Interest earnings	44	363
Transfer from Operating Reserve	6,393	8,000
Other revenue	10,028	474
Total Revenue	232,024	220,516
Expenses		
General government services	8,380	8,471
Contract for Services	95,430	68,369
CRD Labour and Operating costs	29,132	19,679
Debt Servicing Costs	53,187	55,473
Other expenses	38,615	37,273
Total Expenses	224,744	189,264
Net revenue (expenses)	7,280	31,252
Transfers to own funds:		
Capital Reserve Fund	_	24,112
Operating Reserve Fund	7,280	7,140
. 5	•	, -
Annual surplus/(deficit)	-	-
Accumulated surplus/(deficit), beginning of year	-	-
Accumulated surplus/(deficit), end of year	\$ -	-

CAPITAL REGIONAL DISTRICT

FULFORD WATER Statement of Reserve Balances (Unaudited) For the Year Ended December 31, 2020

	Capital Reserve		
	2020	2019	
Beginning Balance	89,131	99,187	
Transfer from Operating Budget Transfers from Completed Capital Projects Transfer to Capital Project Interest Income	5,447 (22,750) 1,574	24,112 1,415 (38,100) 2,517	
Ending Balance	73,402	89,131	

	Operating Reserve		
	2020	2019	
Beginning Balance	16,956	17,212	
Transfer from Operating Budget	7,280	7,140	
Transfer to Operating Budget	(6,393)	(8,000)	
Interest Income	413	604	
Ending Balance	18,256	16,956	