Town of Cornwall
so much to offer...

Water & Sewer Utility

WATER ANAYLSIS REPORT 2021

Drinking water quality in the Town of Cornwall is maintained according to the standards set out in the *Guidelines for Canadian Drinking Water Quality*.Throughout the year, our Utility staff sample the Town's water distribution and wastewater treatment plant to ensure residents continue to receive the highest quality of water and wastewater treatment.

Bacteria Testing Results

In the Town's commitment to service and keeping a sustainable environment, our sampling procedures exceed provincial standards.

Samples from Distribution System						
Month	# of Samples	Positive TC Test (TC ≤ 10)	# of Non-Compliant (TC> 10)	Ecoli	Positive BG Tests (BG ≤ 200)	# of Non-Compliant (BG > 200)
January	10	0	0	0	0	0
February	11	0	0	0	0	0
March	11	0	0	0	0	0
April	13	0	0	0	0	0
May	12	0	0	0	0	0
June	19	0	0	0	0	0
July	13	0	0	0	0	0
August	27	1	2	0	0	0
September	16	0	0	0	0	0
October	12	0	0	0	0	0
November	19	1	0	0	0	0
December	12	0	0	0	0	0
Total	175	2	2	0	0	0

*All retests reported negative.

Drinking water within the Town is chlorinated to have a minimum Free Chlorine Residual of at least 0.2 mg/L or higher at all points in the system at all times. This level of chlorination is an industry standard for drinking water disinfection and is recommended by the Guidelines for Canadian Drinking Water Quality.

In accordance with the *Drinking Water and Wastewater Facility Operating Regulations*, a water sample is collected from each source of supply (well) on a monthly basis and analyzed for the presence of coliform bacteria and E.coli.

Following collection, all water samples are sent to the Provincial Department of Environment Analytical Laboratory in Charlottetown. Each sample is tested for Total Coliforms DC and Escherichia Coli DC (E. Coli). In addition to the bacteria tests which are performed at the Provincial Lab, the Free Chlorine Residual is analyzed and recorded by Utility Staff at the time of sample collection, as required by section 11(1)(e) of the Drinking Water and Wastewater Facility Operating Regulations.

Untreated Water (Samples from Wells)										
Month	Meadowbank	Northgate	East Wiltshire	River Point	# of Samples	Positive TC Test (TC ≤ 10)	# of Non-Compliant (TC> 10)	Ecoli	Positive BG Tests (BG ≤ 200)	# of Non-Compliant (BG > 200)
January	3	1	2	3	9	2	1	3	0	0
Febraury	3	1	2	4	10	2	3	1	1	1
March	3	1	2	2	8	1	1	0	0	0
April	3	1	2	1	7	1	0	0	0	0
May	3	1	2	1	7	1	0	0	0	0
June	3	1	2	1	7	1	0	0	0	0
July	4	1	2	1	8	2	1	0	0	0
August	3	1	2	2	8	1	0	0	0	0
September	6	1	4	2	13	4	7	2	0	0
October	3	1	2	1	7	3	1	0	0	0
November	6	2	4	2	14	5	6	0	0	0
December	4	1	2	1	8	2	2	0	0	0
Total	44	13	28	21	106	25	22	6	1	1

*All retests reported negative.

For each non-compliant sample at Meadowbank, Northgate and East Wiltshire, the well is isolated from the system and is flushed and resampled until clear samples are obtained. At River Point the Town uses a UV disinfection system along with chlorine disinfection together to provide safe drinking water.

River Point well #1 is no longer usable for daily use. Ground water sampling has shown the aquifer has persistent contamination that is removed temporarily by shocking the system. Though River Point station has sufficient treatment to treat the water from well #1 to meet drinking water standards, a new water source for the area is being explored.

In 2021, the Town of Cornwall pumped an average of 2,078 cubic meters of water per day. During the summer months the utility pumped an average of 2,330 cubic meters of water per day.

Pesticide Monitoring Program Results

During 2019, 2020 and 2021 sampling was conducted from the source wells and analyzed for up to 54 selected pesticides and all were found to be below lab detection limits. More information is available on the province's open data portal (https://data.princeedwardisland.ca/) project OD0004 Pesticide Analysis.

Chemistry Analysis

The Drinking Water and Wastewater Facility Operating Regulations require all active wells to be subject to chemical analysis. A general chemical analysis of each well must be performed annually, and all water chemistry analysis for Town of Cornwall is performed at the Provincial Analytical Laboratory. The Guidelines for Canadian Drinking Water Quality set a Maximum Allowable Concentration (MAC) for various chemical contents of drinking water. A detailed chemical analysis is performed every 3 years and is performed by a private analytical laboratory with a copy of the results provided to the province for review.

The Town of Cornwall drew samples from each active well on Feb 4, 2021, for detailed chemical analysis.

The results showed that all active wells were within the Guidelines for Canadian Drinking Water Quality.

See Appendix A.

WASTEWATER EFFLUENT

In accordance with regulations, the Town of Cornwall's two lagoons are sampled quarterly, and the results are shown in the table below. Due to an operational lowering of the North River Lagoon to replace an outfall manhole; there has been limited discharge of effluent from the lagoon in November and December, and no sample was taken.

WASTEWATER TREATMENT REPORT						
	North River Lagoon			Cornwall Lagoon		
Month	Suspended Solids (MG/L)	CBOD (mg/L)	Average Faecal Coliform (MPN/100ml)	Suspended Solids (MG/L)	cBOD (mg/L)	Average Faecal Coliform (MPN/100ml)
January	N/A	N/A	N/A	N/A	N/A	N/A
February	N/A	N/A	N/A	N/A	N/A	N/A
March	17	12	12	16	22	79
April	N/A	N/A	8	N/A	N/A	4
May	N/A	N/A	N/A	N/A	N/A	N/A
June	<2	<10	4	<10	14	17
July	N/A	N/A	N/A	N/A	N/A	N/A
August	N/A	N/A	N/A	N/A	N/A	N/A
September	<2	< 10	5	<10	4	4
October	N/A	N/A	N/A	N/A	N/A	N/A
November	N/A	N/A	N/A	N/A	N/A	N/A
December	N/A	N/A	N/A	<10	23	20

The Town of Cornwall is required not to exceed 25mg/L of Carbonaceous Biochemical Oxygen Demand (CBOD) and 25 mg/L of Total Suspended Solids (TSS) with Faecal Coliform of 200 Most Probable Number (MPN) / 100ml.

UTILITY PROJECTS

The Town of Cornwall Water and Sewer Utility in 2021 has carried out various projects to expand and maintain the water and sewer system owned and operated by the Town.

Wellfield Development

The new water source for the Town is nearing competition and should be fully operational in 2022. Project started with the exploration in 2017 of a new wellfield site for the production of safe and secure drinking water for the Town. When the project is completed, the new wellfield will double the available drinking water accessible to the Town to allow for future growth and development.

North River Lagoon Improvements

In 2021, the North River Lagoon has been desludged and new aeration system installed. It has been observed that the lagoon cell #2, constructed in 1986, has developed a leak allowing partially treated effluent to escape the lagoon cell and into the ground. A bypass has been constructed around the lagoon cell with work scheduled for 2022 to make the necessary repairs.

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Certificate of Analysis

AGAT WORK ORDER: 21X707713
PROJECT:

CLIENT NAME: TOWN OF CORNWALL
SAMPLING SITE:

ATTENTION TO: Doug Longmore
SAMPLED BY:

Chlorophenols by GC-MS (Water)

DATE RECEIVED: 2021-02-05 **DATE REPORTED: 2021-02-18**

		SAMPLE DESCRIPTION:		Meadowbank Well #1	Meadowbank Well #2	Meadowbank Well #4	Wiltshire Well #1	Wiltshire Well #2	Northgate Well #1	Riverpoint Well #1	Riverpoint Well #2
		SAMPLE TYPE:		Water	Water	Water	Water	Water	Water	Water	Water
		DATE SAMPLED:		2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04
Parameter	Unit	G / S	RDL	2054458	2054460	2054461	2054462	2054463	2054464	2054465	2054466
2,3,4,6-Tetrachlorophenol	µg/L	100, 1 AO	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L	5, 2 AO	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2,4-Dichlorophenol	µg/L	900, 0.3 AO	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Pentachlorophenol	µg/L	60, 30 AO	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate	**Unit**	**Acceptable Limits**									
2,4,6-Tribromophenol	%	50-140		112	115	105	104	105	85	88	117

		SAMPLE DESCRIPTION:		Tower Lane	Cornwall Rd
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2021-02-04	2021-02-04
Parameter	Unit	G / S	RDL	2054467	2054468
2,3,4,6-Tetrachlorophenol	µg/L	100, 1 AO	0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L	5, 2 AO	0.2	<0.2	<0.2
2,4-Dichlorophenol	µg/L	900, 0.3 AO	0.3	<0.3	<0.3
Pentachlorophenol	µg/L	60, 30 AO	0.5	<0.5	<0.5
Surrogate	**Unit**	**Acceptable Limits**			
2,4,6-Tribromophenol	%	50-140		107	108

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Canadian Drinking Water Quality - updated 2020-09
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Analysis performed at AGAT Toronto (unless marked by *)

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Certificate of Analysis

AGAT WORK ORDER: 21X707713

PROJECT:

CLIENT NAME: TOWN OF CORNWALL

ATTENTION TO: Doug Longmore

SAMPLING SITE:

SAMPLED BY:

Polycyclic Aromatic Hydrocarbons in Water - (PAH)

DATE RECEIVED: 2021-02-05

DATE REPORTED: 2021-02-18

Parameter	Unit	G / S	RDL	SAMPLE DESCRIPTION: Meadowbank Well #1 / SAMPLE TYPE: Water / DATE SAMPLED: 2021-02-04 / 2054458	Meadowbank Well #2 / Water / 2021-02-04 / 2054460	Meadowbank Well #4 / Water / 2021-02-04 / 2054461	Wiltshire Well #1 / Water / 2021-02-04 / 2054462	Wiltshire Well #2 / Water / 2021-02-04 / 2054463	Northgate Well #1 / Water / 2021-02-04 / 2054464	Riverpoint Well #1 / Water / 2021-02-04 / 2054465	Riverpoint Well #2 / Water / 2021-02-04 / 2054466
Benzo(a)pyrene	ug/L	0.04	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

Parameter	Unit	G / S	RDL	SAMPLE DESCRIPTION: Tower Lane / SAMPLE TYPE: Water / DATE SAMPLED: 2021-02-04 / 2054467	Cornwall Rd / Water / 2021-02-04 / 2054468
Benzo(a)pyrene	ug/L	0.04	0.010	<0.010	<0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Canadian Drinking Water Quality - updated 2020-09
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

2054458-2054468 Benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample. Benzo(j+k)fluoranthene is not an accredited parameter.
Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Analysis performed at AGAT Halifax (unless marked by *)

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AGAT WORK ORDER: 21X707713
PROJECT:

CLIENT NAME: TOWN OF CORNWALL
SAMPLING SITE:

ATTENTION TO: Doug Longmore
SAMPLED BY:

Volatile Organic Compounds in Water

DATE RECEIVED: 2021-02-05 **DATE REPORTED: 2021-02-18**

SAMPLE DESCRIPTION:				Meadowbank Well #1	Meadowbank Well #2	Meadowbank Well #4	Wiltshire Well #1	Wiltshire Well #2	Northgate Well #1	Riverpoint Well #1	Riverpoint Well #2
SAMPLE TYPE:				Water	Water	Water	Water	Water	Water	Water	Water
DATE SAMPLED:				2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04
Parameter	Unit	G / S	RDL	2054458	2054460	2054461	2054462	2054463	2054464	2054465	2054466
Chloromethane	ug/L		1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl Chloride	ug/L	2	0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Bromomethane	ug/L		0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89
Chloroethane	ug/L		5	<5	<5	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane (FREON 11)	ug/L		5	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	ug/L		10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichloroethylene	ug/L	14	0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Methylene Chloride (Dichloromethane)	ug/L	50	2	<2	<2	<2	<2	<2	<2	<2	9
trans-1,2-Dichloroethylene	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-Dichloroethane	ug/L		1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethylene	ug/L		2	<2	<2	<2	<2	<2	<2	<2	<2
Chloroform	ug/L		1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	5	2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,1-Trichloroethane	ug/L		1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon Tetrachloride	ug/L	2	0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
Benzene	ug/L	5	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L		0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Trichloroethylene	ug/L	5	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L		1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	ug/L		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L		1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	60, 24 AO	2	<2	<2	<2	<2	<2	<2	<2	<2
2-Hexanone	ug/L		10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Dibromochloromethane	ug/L		1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L		0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Tetrachloroethylene	ug/L	10	2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,1,2-Tetrachloroethane	µg/L		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

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Certificate of Analysis

AGAT WORK ORDER: 21X707713

PROJECT:

CLIENT NAME: TOWN OF CORNWALL

ATTENTION TO: Doug Longmore

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water

DATE RECEIVED: 2021-02-05

DATE REPORTED: 2021-02-18

		SAMPLE DESCRIPTION:		Meadowbank Well #1	Meadowbank Well #2	Meadowbank Well #4	Wiltshire Well #1	Wiltshire Well #2	Northgate Well #1	Riverpoint Well #1	Riverpoint Well #2
		SAMPLE TYPE:		Water	Water	Water	Water	Water	Water	Water	Water
		DATE SAMPLED:		2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04
Parameter	Unit	G / S	RDL	2054458	2054460	2054461	2054462	2054463	2054464	2054465	2054466
Chlorobenzene	ug/L	80, 30 AO	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	140.1.6 AO	2	<2	<2	<2	<2	<2	<2	<2	<2
m,p-Xylene	ug/L		4	<4	<4	<4	<4	<4	<4	<4	<4
Bromoform	ug/L		1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L		1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L		1	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L		1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L		1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	5, 1 AO	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	200, 3 AO	0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Surrogate	**Unit**	**Acceptable Limits**									
Toluene-d8	%	60-140		97	96	97	98	98	96	94	96
4-Bromofluorobenzene	%	60-140		87	88	92	89	89	88	90	92

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ATTENTION TO: Doug Longmore

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water

DATE RECEIVED: 2021-02-05

DATE REPORTED: 2021-02-18

Parameter	Unit	SAMPLE DESCRIPTION: / SAMPLE TYPE: / DATE SAMPLED: G / S	RDL	Tower Lane Water 2021-02-04 2054467	Cornwall Rd Water 2021-02-04 2054468
Chloromethane	ug/L		1	<1	<1
Vinyl Chloride	ug/L	2	0.6	<0.6	<0.6
Bromomethane	ug/L		0.89	<0.89	<0.89
Chloroethane	ug/L		5	<5	<5
Trichlorofluoromethane (FREON 11)	ug/L		5	<5	<5
Acetone	ug/L		10	<10	<10
1,1-Dichloroethylene	ug/L	14	0.6	<0.6	<0.6
Methylene Chloride (Dichloromethane)	ug/L	50	2	6	<2
trans-1,2-Dichloroethylene	ug/L		2	<2	<2
1,1-Dichloroethane	ug/L		1	<1	<1
cis-1,2-Dichloroethylene	ug/L		2	<2	<2
Chloroform	ug/L		1	<1	<1
1,2-Dichloroethane	ug/L	5	2	<2	<2
1,1,1-Trichloroethane	ug/L		1	<1	<1
Carbon Tetrachloride	ug/L	2	0.56	<0.56	<0.56
Benzene	ug/L	5	1	<1	<1
1,2-Dichloropropane	ug/L		0.7	<0.7	<0.7
Trichloroethylene	ug/L	5	1	<1	<1
Bromodichloromethane	ug/L		1	<1	<1
cis-1,3-Dichloropropene	ug/L		0.5	<0.5	<0.5
trans-1,3-Dichloropropene	ug/L		0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/L		1	<1	<1
Toluene	ug/L	60, 24 AO	2	<2	<2
2-Hexanone	ug/L		10.0	<10.0	<10.0
Dibromochloromethane	ug/L		1	2	<1
1,2-Dibromoethane	ug/L		0.2	<0.2	<0.2
Tetrachloroethylene	ug/L	10	2	<2	<2
1,1,1,2-Tetrachloroethane	µg/L		0.5	<0.5	<0.5
Chlorobenzene	ug/L	80, 30 AO	1	<1	<1

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AGAT WORK ORDER: 21X707713

PROJECT:

CLIENT NAME: TOWN OF CORNWALL

ATTENTION TO: Doug Longmore

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Water

DATE RECEIVED: 2021-02-05

DATE REPORTED: 2021-02-18

		SAMPLE DESCRIPTION:		Tower Lane	Cornwall Rd
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2021-02-04	2021-02-04
Parameter	Unit	G / S	RDL	2054467	2054468
Ethylbenzene	ug/L	140.1.6 AO	2	<2	<2
m,p-Xylene	ug/L		4	<4	<4
Bromoform	ug/L		1	8	4
Styrene	ug/L		1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L		1	<1	<1
o-Xylene	ug/L		1	<1	<1
1,3-Dichlorobenzene	ug/L		1	<1	<1
1,4-Dichlorobenzene	ug/L	5, 1 AO	1	<1	<1
1,2-Dichlorobenzene	ug/L	200, 3 AO	0.7	<0.7	<0.7
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8	%	60-140		98	96
4-Bromofluorobenzene	%	60-140		93	95

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Canadian Drinking Water Quality - updated 2020-09
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Analysis performed at AGAT Halifax (unless marked by *)

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AGAT WORK ORDER: 21X707713

PROJECT:

CLIENT NAME: TOWN OF CORNWALL

ATTENTION TO: Doug Longmore

SAMPLING SITE:

SAMPLED BY:

AGAT Halifax - Total Metals + Cations

DATE RECEIVED: 2021-02-05

DATE REPORTED: 2021-02-18

SAMPLE DESCRIPTION:				Meadowbank Well #1	Meadowbank Well #2	Meadowbank Well #4		Wiltshire Well #1		Wiltshire Well #2
SAMPLE TYPE:				Water	Water	Water		Water		Water
DATE SAMPLED:				2021-02-04	2021-02-04	2021-02-04		2021-02-04		2021-02-04
Parameter	Unit	G / S	RDL	2054458	2054460	2054461	RDL	2054462	RDL	2054463
Total Aluminum	ug/L		4	20	24	24	4	23	4	21
Total Antimony	ug/L		1	<1	<1	<1	1	<1	1	<1
Total Arsenic	ug/L		1	<1	2	2	1	2	1	<1
Total Barium	ug/L		50	682	415	432	50	874	50	850
Total Beryllium	ug/L		1	<1	<1	<1	1	<1	1	<1
Total Bismuth	ug/L		1	<1	<1	<1	1	<1	1	<1
Total Boron	ug/L		10	45	61	23	10	29	10	11
Total Cadmium	ug/L		0.016	0.022	<0.016	<0.016	0.016	<0.016	0.50	<0.50
Total Calcium	ug/L		300	36700	60800	25700	300	25200	300	42700
Total Chromium	ug/L		1	2	2	2	1	2	1	<1
Total Cobalt	ug/L		1	<1	<1	<1	1	<1	1	<1
Total Copper	ug/L		1	9	6	4	1	<1	1	2
Total Iron	ug/L		10	49	60	18	10	15	10	31
Total Lead	ug/L		0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.1	<0.1
Total Magnesium	ug/L		200	26700	46300	16100	200	18100	200	24300
Total Manganese	ug/L		5	<5	<5	<5	5	<5	5	<5
Total Molybdenum	ug/L		1	<1	<1	<1	1	<1	1	<1
Total Nickel	ug/L		3	<3	<3	<3	3	<3	3	<3
Total Potassium	ug/L		600	2760	3550	1460	600	2070	600	1430
Total Selenium	ug/L		0.5	<0.5	<0.5	<0.5	0.5	1.3	0.5	<0.5
Total Silver	ug/L		0.05	2.30	2.18	1.80	0.05	1.48	0.05	1.40
Total Sodium	ug/L		600	94600	203000	24600	600	14200	600	9690
Total Strontium	ug/L		1	816	684	205	1	626	1	104
Total Thallium	ug/L		0.5	<0.5	<0.5	<0.5	0.5	<0.5	0.5	<0.5
Total Tin	ug/L		0.3	<0.3	<0.3	0.7	0.3	<0.3	0.3	<0.3
Total Titanium	ug/L		3	<3	<3	3	30	<30	3	<3
Total Uranium	ug/L		1	17	12	8	1	18	1	1
Total Vanadium	ug/L		1	21	17	26	1	16	1	2
Total Zinc	ug/L		10	<10	<10	10	10	<10	10	<10

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Certificate of Analysis

AGAT WORK ORDER: 21X707713

PROJECT:

CLIENT NAME: TOWN OF CORNWALL

ATTENTION TO: Doug Longmore

SAMPLING SITE:

SAMPLED BY:

AGAT Halifax - Total Metals + Cations

DATE RECEIVED: 2021-02-05

DATE REPORTED: 2021-02-18

SAMPLE DESCRIPTION:				Northgate Well #1	Riverpoint Well #1	Riverpoint Well #2	Tower Lane	Cornwall Rd
SAMPLE TYPE:				Water	Water	Water	Water	Water
DATE SAMPLED:				2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04
Parameter	Unit	G / S	RDL	2054464	2054465	2054466	2054467	2054468
Total Aluminum	ug/L		4	21	62	24	25	23
Total Antimony	ug/L		1	<1	<1	<1	<1	<1
Total Arsenic	ug/L		1	1	<1	<1	<1	3
Total Barium	ug/L		50	649	104	259	626	<50
Total Beryllium	ug/L		1	<1	<1	<1	<1	<1
Total Bismuth	ug/L		1	<1	<1	<1	<1	<1
Total Boron	ug/L		10	13	24	19	19	43
Total Cadmium	ug/L		0.016	0.033	<0.016	<0.016	<0.016	<0.016
Total Calcium	ug/L		300	36000	26000	36100	32700	<300
Total Chromium	ug/L		1	<1	<1	<1	2	2
Total Cobalt	ug/L		1	<1	<1	<1	<1	<1
Total Copper	ug/L		1	80	8	6	51	15
Total Iron	ug/L		10	325	73	15	14	16
Total Lead	ug/L		0.1	1.6	0.3	0.5	0.2	<0.1
Total Magnesium	ug/L		200	22900	16400	21300	21600	<200
Total Manganese	ug/L		5	<5	5	<5	<5	<5
Total Molybdenum	ug/L		1	<1	<1	<1	<1	<1
Total Nickel	ug/L		3	<3	<3	<3	<3	<3
Total Potassium	ug/L		600	1560	1650	1400	1960	767
Total Selenium	ug/L		0.5	<0.5	<0.5	<0.5	<0.5	1.8
Total Silver	ug/L		0.05	3.44	2.83	2.17	1.69	1.54
Total Sodium	ug/L		600	7840	8070	10900	18200	168000
Total Strontium	ug/L		1	285	21	22	398	<1
Total Thallium	ug/L		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Tin	ug/L		0.3	0.9	<0.3	<0.3	<0.3	<0.3
Total Titanium	ug/L		3	<3	<3	<3	<3	6
Total Uranium	ug/L		1	5	<1	<1	9	16
Total Vanadium	ug/L		1	4	1	2	8	26
Total Zinc	ug/L		10	66	<10	10	<10	<10

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Certificate of Analysis

AGAT WORK ORDER: 21X707713

PROJECT:

CLIENT NAME: TOWN OF CORNWALL

ATTENTION TO: Doug Longmore

SAMPLING SITE:

SAMPLED BY:

Bromate

DATE RECEIVED: 2021-02-05 **DATE REPORTED: 2021-02-18**

Parameter	Unit	G / S	RDL	SAMPLE DESCRIPTION: Meadowbank Well #1 / SAMPLE TYPE: Water / DATE SAMPLED: 2021-02-04	Meadowbank Well #2 / Water / 2021-02-04	Meadowbank Well #4 / Water / 2021-02-04	Wiltshire Well #1 / Water / 2021-02-04	Wiltshire Well #2 / Water / 2021-02-04	Northgate Well #1 / Water / 2021-02-04	Riverpoint Well #1 / Water / 2021-02-04	Riverpoint Well #2 / Water / 2021-02-04
				2054458	2054460	2054461	2054462	2054463	2054464	2054465	2054466
Bromate	mg/L	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Parameter	Unit	G / S	RDL	SAMPLE DESCRIPTION: Tower Lane / SAMPLE TYPE: Water / DATE SAMPLED: 2021-02-04	Cornwall Rd / Water / 2021-02-04
				2054467	2054468
Bromate	mg/L	0.01	0.01	<0.01	<0.01

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Canadian Drinking Water Quality - updated 2020-09
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Halifax (unless marked by *)

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AGAT WORK ORDER: 21X707713

PROJECT:

CLIENT NAME: TOWN OF CORNWALL

ATTENTION TO: Doug Longmore

SAMPLING SITE:

SAMPLED BY:

Chloramines

DATE RECEIVED: 2021-02-05 **DATE REPORTED: 2021-02-18**

				Meadowbank	Meadowbank	Meadowbank	Wiltshire Well	Wiltshire Well	Northgate Well	Riverpoint Well	Riverpoint Well
		SAMPLE DESCRIPTION:		Well #1	Well #2	Well #4	#1	#2	#1	#1	#2
		SAMPLE TYPE:		Water	Water	Water	Water	Water	Water	Water	Water
		DATE SAMPLED:		2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04	2021-02-04
Parameter	Unit	G / S	RDL	2054458	2054460	2054461	2054462	2054463	2054464	2054465	2054466
Chloramines - Total	mg/L		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

				Tower Lane	Cornwall Rd
		SAMPLE DESCRIPTION:		Water	Water
		SAMPLE TYPE:		2021-02-04	2021-02-04
		DATE SAMPLED:		2054467	2054468
Parameter	Unit	G / S	RDL		
Chloramines - Total	mg/L		0.1	<0.1	<0.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Canadian Drinking Water Quality - updated 2020-09
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

2054458-2054468 Chloramines is a calculated parameter. The calculated parameter is non-accredited. The component parameters of the calculation are accredited.

Analysis performed at AGAT Halifax (unless marked by *)

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AGAT WORK ORDER: 21X707713

PROJECT:

CLIENT NAME: TOWN OF CORNWALL

ATTENTION TO: Doug Longmore

SAMPLING SITE:

SAMPLED BY:

Standard Water Analysis + Total Metals

DATE RECEIVED: 2021-02-05

DATE REPORTED: 2021-02-18

SAMPLE DESCRIPTION:				Meadowbank Well #1		Meadowbank Well #2		Meadowbank Well #4	Wiltshire Well #1	Wiltshire Well #2	Northgate Well #1
SAMPLE TYPE:				Water		Water		Water	Water	Water	Water
DATE SAMPLED:				2021-02-04		2021-02-04		2021-02-04	2021-02-04	2021-02-04	2021-02-04
Parameter	Unit	G / S	RDL	2054458	RDL	2054460	RDL	2054461	2054462	2054463	2054464
pH		7.0-10.5		7.76		7.79		7.81	7.79	7.65	7.69
Reactive Silica as SiO2	mg/L		0.5	8.1	0.5	7.8	0.5	7.2	8.8	8.1	7.0
Chloride	mg/L	250 AO	2	188	5	448	1	29	13	28	22
Fluoride	mg/L	1.5	0.12	<0.12	0.12	<0.12	0.12	<0.12	<0.12	<0.12	<0.12
Sulphate	mg/L	500 AO	2	20	2	52	2	6	5	7	6
Alkalinity	mg/L		5	104	5	119	5	120	130	167	132
True Color	TCU	15 AO	5.00	<5.00	5.00	<5.00	5.00	<5.00	<5.00	<5.00	<5.00
Turbidity	NTU	1.0	0.5	<0.5	0.5	0.8	0.5	<0.5	<0.5	0.6	0.5
Electrical Conductivity	umho/cm		1	858	1	1690	1	345	307	423	366
Nitrate + Nitrite as N	mg/L		0.05	0.98	0.05	1.21	0.05	1.51	1.56	1.60	4.05
Nitrate as N	mg/L	10	0.05	0.98	0.05	1.21	0.05	1.51	1.56	1.60	4.05
Nitrite as N	mg/L	1.0	0.05	<0.05	0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05
Ammonia as N	mg/L		0.03	0.24	0.03	0.24	0.03	0.24	0.22	0.22	0.22
Total Organic Carbon	mg/L		0.5	<0.5	0.5	1.9	0.5	0.9	0.8	1.1	0.9
Ortho-Phosphate as P	mg/L		0.01	<0.01	0.01	<0.01	0.01	0.01	<0.01	0.02	0.01
Bicarb. Alkalinity (as CaCO3)	mg/L		5	104	5	119	5	120	130	167	132
Carb. Alkalinity (as CaCO3)	mg/L		10	<10	10	<10	10	<10	<10	<10	<10
Hydroxide	mg/L		5	<5	5	<5	5	<5	<5	<5	<5
Calculated TDS	mg/L	500 AO	1	436	1	891	1	182	163	221	194
Hardness	mg/L			202		342		130	137	207	184
Langelier Index (@20C)	NA			-0.31		-0.03		-0.31	-0.30	-0.12	-0.25
Langelier Index (@ 4C)	NA			-0.63		-0.35		-0.63	-0.62	-0.44	-0.57
Saturation pH (@ 20C)	NA			8.07		7.82		8.12	8.09	7.77	7.94
Saturation pH (@ 4C)	NA			8.39		8.14		8.44	8.41	8.09	8.26
Anion Sum	me/L			7.87		16.2		3.45	3.18	4.39	3.67
Cation sum	me/L			8.23		15.8		3.73	3.43	4.60	4.09
% Difference/ Ion Balance	%			2.2		1.3		3.9	3.8	2.4	5.4

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Certificate of Analysis

AGAT WORK ORDER: 21X707713

PROJECT:

CLIENT NAME: TOWN OF CORNWALL

ATTENTION TO: Doug Longmore

SAMPLING SITE:

SAMPLED BY:

Standard Water Analysis + Total Metals

DATE RECEIVED: 2021-02-05

DATE REPORTED: 2021-02-18

SAMPLE DESCRIPTION:				Riverpoint Well #1	Riverpoint Well #2	Tower Lane		Cornwall Rd
SAMPLE TYPE:				Water	Water	Water		Water
DATE SAMPLED:				2021-02-04	2021-02-04	2021-02-04		2021-02-04
Parameter	Unit	G / S	RDL	2054465	2054466	2054467	RDL	2054468
pH		7.0-10.5		7.15	7.60	7.73		7.94
Reactive Silica as SiO2	mg/L		0.5	6.5	8.2	7.8	0.5	8.2
Chloride	mg/L	250 AO	1	18	25	34	2	176
Fluoride	mg/L	1.5	0.12	<0.12	<0.12	<0.12	0.12	<0.12
Sulphate	mg/L	500 AO	2	7	7	7	2	19
Alkalinity	mg/L		5	100	135	130	5	110
True Color	TCU	15 AO	5.00	<5.00	9.46	<5.00	5.00	<5.00
Turbidity	NTU	1.0	0.5	5.6	0.7	<0.5	0.5	<0.5
Electrical Conductivity	umho/cm		1	301	382	400	1	827
Nitrate + Nitrite as N	mg/L		0.05	4.01	3.46	2.86	0.05	1.04
Nitrate as N	mg/L	10	0.05	4.01	3.46	2.86	0.05	1.04
Nitrite as N	mg/L	1.0	0.05	<0.05	<0.05	<0.05	0.05	<0.05
Ammonia as N	mg/L		0.03	0.23	0.22	0.22	0.03	0.21
Total Organic Carbon	mg/L		0.5	0.9	0.8	1.0	0.5	0.5
Ortho-Phosphate as P	mg/L		0.01	0.04	0.04	0.01	0.01	<0.01
Bicarb. Alkalinity (as CaCO3)	mg/L		5	100	135	130	5	110
Carb. Alkalinity (as CaCO3)	mg/L		10	<10	<10	<10	10	<10
Hydroxide	mg/L		5	<5	<5	<5	5	<5
Calculated TDS	mg/L	500 AO	1	155	198	207	1	435
Hardness	mg/L			132	178	171		0
Langelier Index (@20C)	NA			-1.04	-0.33	-0.26		-2.19
Langelier Index (@ 4C)	NA			-1.36	-0.65	-0.58		-2.51
Saturation pH (@ 20C)	NA			8.19	7.93	7.99		10.1
Saturation pH (@ 4C)	NA			8.51	8.25	8.31		10.5
Anion Sum	me/L			2.94	3.80	3.91		7.63
Cation sum	me/L			3.07	4.08	4.27		7.34
% Difference/ Ion Balance	%			2.1	3.6	4.4		1.9