Water Quality 2021

2.1.1 Water Quality Objectives for EPCOR

December 2021

Parameter	Approval Requirement	EPCOR Internal Limit	EPCOR Target
Turbidity (NTU)			
Individual Filters	<0.3	<0.1 (2)	<0.08
Distribution System	< 5 (3)	< 1 (1)	< 1
Distribution System (Maintenance)	< 5 (3)	< 3 (1)	< 1
Colour (TCU)	<15 (3)	<10 (1)	<3
pH (25°C)	6.5 - 8.5	7.3 - 8.3 (1)	7.4 - 8.0
Taste and Odour	Inoffensive (3)	Inoffensive (1)	Inoffensive
E.coli (PA/100 mL)	absent	absent (1)	absent
Total Coliforms (PA/100 mL)	absent	absent (1)	absent
Total Chlorine Residual (mg/L)			
Water Treatment Plant Effluent	>1.0	1.3 - 2.4 (2)	1.9 - 2.2
Reservoirs	>0.5	1.0 - 2.4 (1)	1.2 - 2.2
Distribution	>0.5 (4)	1.0 - 2.4 (1)	1.0 - 2.2
Fluoride: (mg/L)			
Reservoir Effluent	0.5 - 0.9	0.6 - 0.8 (1)	0.6 - 0.8
Trihalomethanes (mg/L)			
Reservoir Effluent	<0.100	<0.050 (1)	<0.040
Distribution System	<0.100	<0.050 (1)	<0.040
UV254 % Transmittance			
E.L. Smith		>89% (2)	>90%
Rossdale		>87% (2)	>88%
HAA (mg/L)			
Reservoir Effluent	< 0.080	< 0.040 (1)	<0.035
Distribution System	< 0.080	< 0.040 (1)	<0.035
NDMA (mg/L):			
Reservoir Effluent	< 0.000040	< 0.000010 (1)	<0.000005
Distribution System	< 0.000040	< 0.000010 (1)	
Microoganism Log Removal at Water			
Giardia	≥5.5	≥6.0 (2)	>6.5
Cryptosporidium	≥5.5	≥5.3 (2)	>6.0
Virus	≥4.0	≥4.5 (2)	>5.0

(1) Limit based on City of Edmonton Performance Based Rate (PBR) agreement
(2) Limit based on EPCOR Action Level
(3) Aesthetic Objective
(4) in 75% of samples collected in a day
All values are expressed in units of mg/L unless otherwise stated.
Based on January 2017 Summary of Epcor Edmonton Water Quality Standards.

2.1.2 SUMMARY OF MAJOR CHEMICALS, MICROBIOLOGICAL, AND PHYSICAL PARAMETERS OF EDMONTON DRINKING WATER PRODUCED AT WATER TREATMENT PLANTS

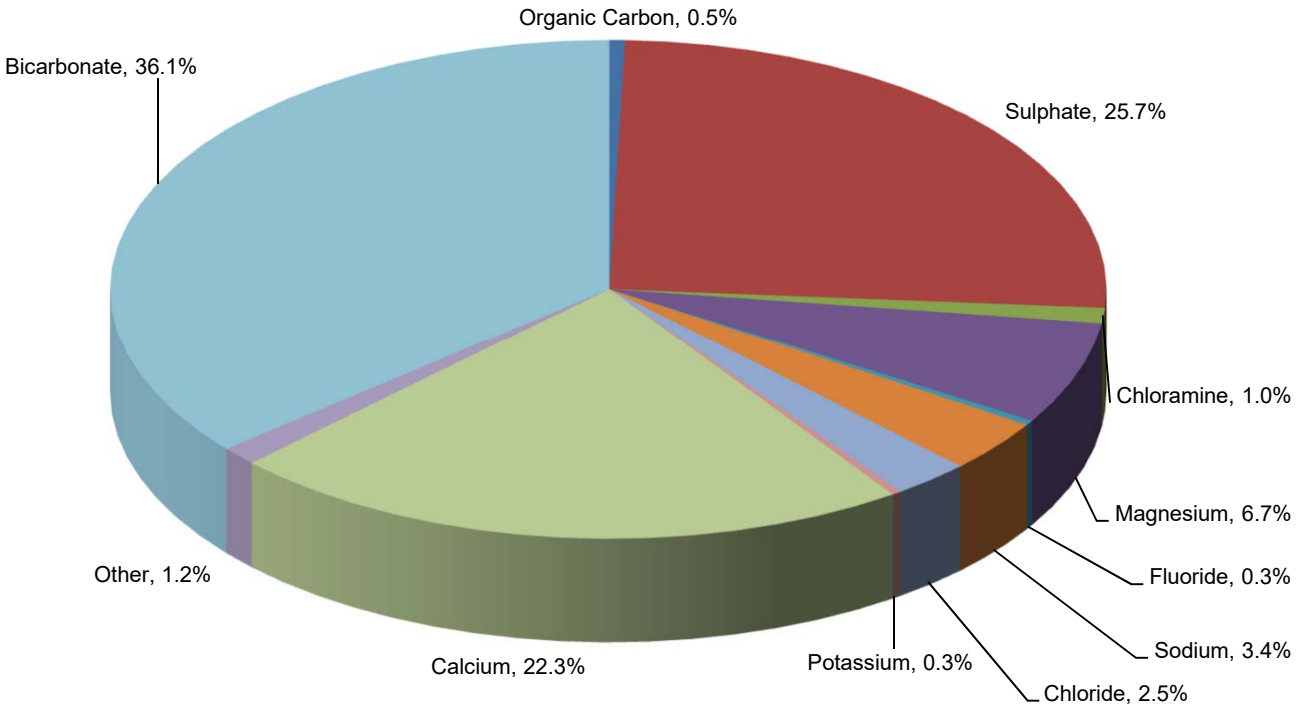
December 2021

Parameter	Unit	Monthly Count	Monthly Average	YTD Median	YTD Min	YTD Max	YTD Count
Alkalinity Total	mg CaCO3/L	62	126	120	96	145	728
Aluminum	mg/L	2	0.114	0.086	0.029	0.179	24
Arsenic	mg/L	2	<0.0002	<0.0002	<0.0002	0.0003	24
Bromate Dissolved	mg/L	8	<0.005	<0.005	<0.005	<0.005	111
Bromodichloromethane	µg/L	62	<0.5	<0.5	<0.5	2.6	728
Cadmium	mg/L	2	<0.0002	<0.0002	<0.0002	<0.0002	24
Calcium Hardness	mg CaCO3/L	62	112	110	87	134	728
Chlorate Dissolved	mg/L	8	0.105	0.116	0.050	0.202	111
Chloride Dissolved	mg/L	8	5.50	5.49	2.96	10.80	111
Chlorite Dissolved	mg/L	8	<0.01	<0.01	<0.01	<0.01	111
Chromium	mg/L	2	<0.0002	<0.0002	<0.0002	<0.0002	24
Colour	TCU	62	0.7	0.7	<0.5	2.4	728
Conductivity	µS/cm	8	371	369	314	455	105
Copper	mg/L	2	<0.0050	<0.0050	<0.0050	<0.0050	24
Cryptosporidium	oocysts/100L	2	<0.1	<0.1	<0.1	<0.1	47
Fluoride	mg/L	62	0.68	0.67	0.55	0.72	728
Giardia	cysts/100L	2	<0.1	<0.1	<0.1	<0.1	47
Haloacetic Acids, total (HAA5)	ug/L	2	15.2	16.2	9.6	27.4	24
Hardness, Total	mg CaCO3/L	62	172	170	137	203	728
Iron	mg/L	2	<0.0050	<0.0050	<0.0050	<0.0050	24
Lead	mg/L	2	<0.0002	<0.0002	<0.0002	<0.0002	24
Manganese	mg/L	2	<0.0020	<0.0020	<0.0020	<0.0020	24
Mercury	mg/L	2	<0.0002	<0.0002	<0.0002	<0.0002	24
Nitrate (as N) Dissolved	mg/L	8	0.080	0.070	0.030	0.175	111
Nitrite (as N) Dissolved	mg/L	8	<0.01	0.02	<0.01	0.05	111
pH	N/A	62	7.9	7.9	7.4	8.2	728
Potassium	mg/L	2	0.70	0.70	0.60	1.00	24
Sodium	mg/L	2	7.24	7.55	5.70	23.90	24
Sulphate Dissolved	mg/L	8	54.8	55.5	48.8	95.1	111
Total Chlorine	mg/L	62	2.04	2.05	1.44	2.49	728
Total Dissolved Solids	mg/L	2	206	220	179	272	24
Total Organic Carbon	mg/L C	8	1.0	1.1	0.7	3.0	105
Trihalomethanes	µg/L	62	8.3	10.4	3.5	36.9	728
Turbidity	NTU	62	0.05	<0.04	<0.04	0.17	728
Uranium	mg/L	2	<0.0005	<0.0005	<0.0005	0.0006	24
Zinc	mg/L	2	<0.0050	<0.0050	<0.0050	<0.0050	24
Bacteriological Data							
Coliforms, total	PA/100mL	62	Absent	Absent	Absent	Absent	728
E. coli	PA/100mL	62	Absent	Absent	Absent	Absent	728

2.1.3 THE COMPOSITION OF EDMONTON WATER
TREATED WATER ENTERING THE DISTRIBUTION SYSTEM MONTHLY DATA

Edmonton Water for the Month of December 2021 is 99.98% pure

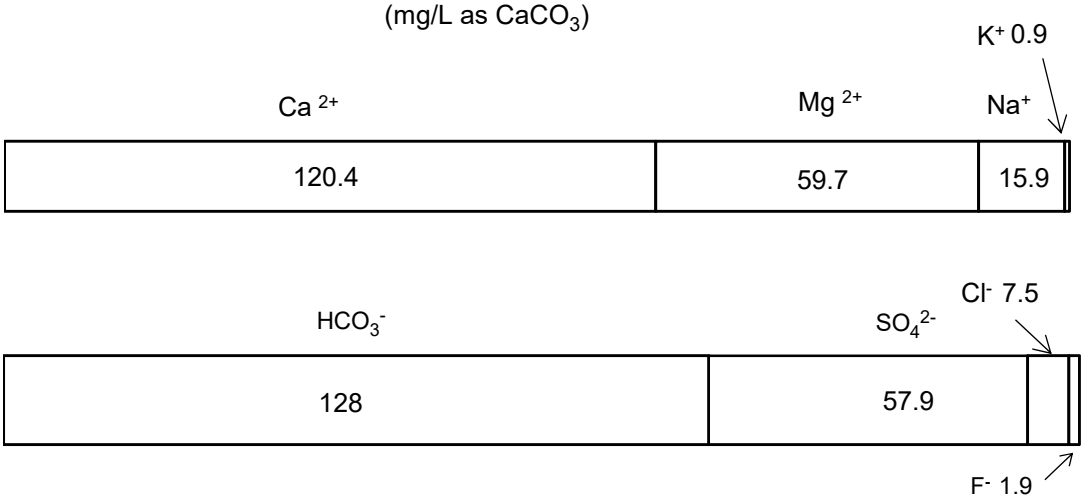
Other Chemicals that make up the remaining 0.02% (in % by weight)



*Other - Includes Trace Metals and Trace Organics

Bar Diagram of the Major Ions in Treated Water

(mg/L as $CaCO_3$)



2.1.4 SUMMARY OF LABORATORY ANALYSIS - 2021

DISTRIBUTION OF TESTING

Drinking Water Testing

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
Water Treatment Plant	# Tests	7,438	6,862	8,099	7,477	7,399	7,314	7,561	7,512	7,204	7,230	7,304	7,462	88,862
	# Samples	273	249	367	301	266	256	265	268	271	268	269	272	3,325
Field Reservoirs	# Tests	801	883	858	814	891	949	805	955	805	874	818	684	10,137
	# Samples	66	57	69	58	57	71	56	73	56	53	61	48	725
Routine Distribution System	# Tests	770	869	811	855	771	779	797	774	776	786	694	710	9,392
	# Samples	178	171	171	158	161	166	162	172	173	159	157	156	1,984
System Depressurization/Repair	# Tests	212	428	192	176	212	340	276	354	316	384	472	296	3,658
	# Samples	53	107	48	44	53	86	69	89	79	96	119	74	917
Customer Complaints	# Tests	200	200	268	340	509	1,192	1,748	1,554	814	1,036	1,034	740	9,635
	# Samples	5	4	4	5	8	17	25	21	11	14	14	10	138
Total	# Tests	9,421	9,242	10,228	9,662	9,782	10,574	11,187	11,149	9,915	10,310	10,322	9,892	121,684
	# Samples	575	588	659	566	545	596	577	623	590	590	620	560	7,089

Additional Testing

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
New Watermain Testing	# Tests	0	10	10	40	10	55	130	65	190	405	765	345	2,025
	# Samples	0	2	2	8	2	11	26	13	38	81	153	69	405
Water Treatment Plant Waste Discharge	# Tests	159	76	75	202	32	122	115	61	84	51	74	102	1,153
	# Samples	38	38	44	38	28	62	54	48	34	38	52	48	522
Quality Control	# Tests	4,257	4,038	4,360	3,405	3,333	4,002	4,416	4,021	4,065	4,057	3,924	4,310	48,188
	# Samples	649	775	761	737	678	793	978	790	787	819	888	755	9,410
Externally Contracted Analyses	# Tests	106	115	142	115	112	138	115	170	112	107	158	104	1,494
	# Samples	53	57	73	57	56	69	57	73	56	55	67	52	725
Total	# Tests	4,522	4,239	4,587	3,762	3,487	4,317	4,776	4,317	4,451	4,620	4,921	4,861	52,860
	# Samples	740	872	880	840	764	935	1,115	924	915	993	1,160	924	11,062

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
Total	# Tests	13,943	13,481	14,815	13,424	13,269	14,891	15,963	15,466	14,366	14,930	15,243	14,753	174,544
	# Samples	1,311	1,455	1,535	1,401	1,305	1,527	1,687	1,543	1,501	1,578	1,776	1,480	18,099

2.1.5 QUALITY ASSURANCE –December 2021

Drinking water quality must meet the requirements in the Alberta Environment and Parks *Approval-to-Operate* (638-04-0) and the limits set out in the latest version of the Health Canada *Guidelines for Canadian Drinking Water Quality (GCDWQ)*. The latest internet edition of the *GCDWQ* was issued in September 2020 and supersedes all previous electronic and printed versions, including the Sixth Edition published 1996. Guideline limits are listed as Maximum Acceptable Concentrations (MACs), Aesthetic Objectives (AO) or Operational Guidelines (OG). The latest edition of the Health Canada Guidelines includes parameter types, commons sources, health considerations and application of the guideline.

In addition, for treated water in the distribution system, total chlorine residual values under 0.5 mg/L are not necessarily violations of the approval, but do require immediate follow-up action and re-sampling. A violation of the current *Approval-to-Operate* (638-04-0) requirements occurs if the chlorine residual in more than 25% of samples collected in a day is < 0.5 mg/L. AEP and Alberta Health Services are to be notified of any single positive total coliform sample and follow-up sampling is done according to the *Communication and Action Protocol for Failed Bacteriological Results in Drinking Water*. Any sample that is positive for *E. coli* is also considered a violation and requires follow-up action and re-sampling. A repeat total coliform positive from the same location is also considered a violation

Critical water quality parameters (e.g. turbidity, residual chlorine, fluoride, pH, & particle counts) in the treated water are monitored continuously using on-line instruments at the water treatment plants. In addition, water quality samples are collected daily at the two Water Treatment Plants, and 180 to 300 samples per month are collected throughout the distribution system (routine and random sampling sites, reservoirs, following system depressurizations and in response to customer complaints).

The EPCOR Water Laboratory is nationally accredited by CALA (Canadian Association for Laboratory Accreditation) to ISO/IEC 17025 for specific water quality analyses, and it also provides quality assurance support for Water Plant Operations labs and on-line analytical monitoring.

"*Violations*" occur when the concentrations of a measured parameter exceeds the AEP *Approval-to-Operate* limits, including the MACs for the GCDWQ parameters listed Schedule 4.

"Variances" occur when the concentration of a measured parameter exceeds EPCOR's own internal water quality objectives. See section 2.1.1 of this report for EPCOR's internal water quality objectives.

2.1.5.1 **Total Water Quality Violations of AEP Approval-to-Operate:**

Current month: **0** YTD Total: **2**

2.1.5.2 **Water Quality Violations for Water Plants (Treated Water)**

Current month**: 0** YTD Total**: 0**

2.1.5.3 **Water Quality Violations (Environmental): Plants Waste Streams**

Current month**: 0** YTD Total**: 0**

2.1.5.4 **Violations for Water Quality in the Field Reservoirs and Distribution System**

Sample Type	This Month	YTD
Depressurization Samples	**0**	**1**
Complaint Samples	**0**	**0**
Random Samples	**0**	**1**
Reservoirs	**0**	**0**
TOTAL (Distribution)	**0**	**2**

2.1.5.5 **Variances from EPCOR Water Services Water Quality Objectives at the Water Treatment Plants**

Variance Category	This Month	YTD
Aluminium > 0.10 mg/L	0	4
Turbidity > 1 NTU	0	0
Chlorine < 1 mg/L	0	0
Cryptosporidium ≥ 1/1000 L	0	0
Giardia ≥ 1/1000 L	0	0
Other	0	2
Total Variances + Violations	0+0 = 0	6 + 0 = 6

Note: variance statistics include any violations.
Aluminum limit adjusted to 0.2 mg/L in accordance with a change of treatment processes to direct filtration.

2.1.5.6 **Variances from EPCOR Water Services Water Quality Objectives in the Field Reservoirs and Distribution System**

Variance Category	This Month	YTD
Turbidity > 1 NTU	1	39
Chlorine < 1 mg/L	2	36
Single Positive Coliform	0	5
THMs > 50 µg/L	0	0
Pipe Lube, Odour, UV positive	3	22
Aluminium > 0.20 mg/L	0	39
Iron > 0.300 mg/L	1	8
Other	0	2
Total Variances + Violations	7+0 = 7	151+ 2 = 153

Note: variance statistics include any violations.
Aluminium limit for June was 0.1 mg/L with water treatment plants in conventional operation.
As of Nov 5, 2021--both Rossdale and EL Smith WTPs were operating in direct filtration mode.

2.1.5.7 **Variances from EPCOR Water Services Water Quality Objectives (Lab Waste Streams)**

No variances to report for lab waste streams.

2.2.1 Bacteriological Data: Water Treatment Plants

2021

	Coliforms, total						E. coli					cATP (pg/mL)			
	Count	# +ve	% +ve	Mean	Min	Max	# +ve	% +ve	Mean	Min	Max	Count	Mean	Min	Max
January															
Rossdale Raw (MPN/100mL)	33	0	0.0	76	1	291	0	0.0	8	1	39	1	15.7	15.7	15.7
E.L. Smith Raw (MPN/100mL)	4	0	0.0	43	25	82	0	0.0	1	1	1	1	15.2	15.2	15.2
Raw River Water Entering the Treatment Plants	37	0	0.0	73	1	291	0	0.0	7	1	39	2	15.4	15.2	15.7
Rossdale Treated (PA/100mL)	31	0	0.0				0	0.0				31	0.22	0.04	1.00
E.L. Smith Treated (PA/100mL)	31	0	0.0				0	0.0				31	0.20	0.02	1.00
Water Entering the Plant Reservoir	62	0	0.0				0	0.0				62	0.21	0.02	1.00
Rossdale Reservoir (PA/100mL)	31	0	0.0				0	0.0				31	0.29	0.03	1.00
E.L. Smith Reservoir (PA/100mL)	31	0	0.0				0	0.0				31	0.31	0.04	1.00
Treated Water Entering the Distribution System	62	0	0.0				0	0.0				62	0.30	0.03	1.00
February															
Rossdale Raw (MPN/100mL)	30	0	0.0	95	1	387	0	0.0	12	1	58	1	10.7	10.7	10.7
E.L. Smith Raw (MPN/100mL)	5	0	0.0	41	20	64	0	0.0	1	1	1	1	8.49	8.49	8.49
Raw River Water Entering the Treatment Plants	35	0	0.0	87	1	387	0	0.0	10	1	58	2	9.61	8.49	10.7
Rossdale Treated (PA/100mL)	28	0	0.0				0	0.0				28	0.25	0.03	1.00
E.L. Smith Treated (PA/100mL)	28	0	0.0				0	0.0				28	0.20	0.03	1.00
Water Entering the Plant Reservoir	56	0	0.0				0	0.0				56	0.23	0.03	1.00
Rossdale Reservoir (PA/100mL)	28	0	0.0				0	0.0				28	0.28	0.03	1.00
E.L. Smith Reservoir (PA/100mL)	28	0	0.0				0	0.0				28	0.21	0.03	1.00
Treated Water Entering the Distribution System	56	0	0.0				0	0.0				56	0.25	0.03	1.00

2.2.1 Bacteriological Data: Water Treatment Plants

2021

	Coliforms, total						E. coli					cATP (pg/mL)			
	Count	# +ve	% +ve	Mean	Min	Max	# +ve	% +ve	Mean	Min	Max	Count	Mean	Min	Max
March															
Rossdale Raw (MPN/100mL)	32	0	0.0	373	1	1,990	0	0.0	31	1	96	1	30.0	30.0	30.0
E.L. Smith Raw (MPN/100mL)	5	0	0.0	108	12	236	0	0.0	7	1	28	1	32.6	32.6	32.6
Raw River Water Entering the Treatment Plants	37	0	0.0	337	1	1,990	0	0.0	28	1	96	2	31.3	30.0	32.6
Rossdale Treated (PA/100mL)	31	0	0.0				0	0.0				31	0.52	0.03	1.00
E.L. Smith Treated (PA/100mL)	31	0	0.0				0	0.0				31	0.35	0.04	1.00
Water Entering the Plant Reservoir	62	0	0.0				0	0.0				62	0.44	0.03	1.00
Rossdale Reservoir (PA/100mL)	31	0	0.0				0	0.0				31	0.45	0.03	1.00
E.L. Smith Reservoir (PA/100mL)	31	0	0.0				0	0.0				31	0.45	0.04	1.00
Treated Water Entering the Distribution System	62	0	0.0				0	0.0				62	0.45	0.03	1.00
April															
Rossdale Raw (MPN/100mL)	31	0	0.0	76	1	921	0	0.0	9	1	105	1	311	311	311
E.L. Smith Raw (MPN/100mL)	4	0	0.0	18	13	20	0	0.0	1	1	1	1	311	311	311
Raw River Water Entering the Treatment Plants	35	0	0.0	70	1	921	0	0.0	8	1	105	2	311	311	311
Rossdale Treated (PA/100mL)	30	0	0.0				0	0.0				30	0.48	0.02	1.00
E.L. Smith Treated (PA/100mL)	30	0	0.0				0	0.0				30	0.34	0.05	1.00
Water Entering the Plant Reservoir	60	0	0.0				0	0.0				60	0.41	0.02	1.00
Rossdale Reservoir (PA/100mL)	30	0	0.0				0	0.0				30	0.60	0.03	1.00
E.L. Smith Reservoir (PA/100mL)	30	0	0.0				0	0.0				30	0.33	0.03	1.00
Treated Water Entering the Distribution System	60	0	0.0				0	0.0				60	0.46	0.03	1.00

2.2.1 Bacteriological Data: Water Treatment Plants

2021

	Coliforms, total						E. coli					cATP (pg/mL)			
	Count	# +ve	% +ve	Mean	Min	Max	# +ve	% +ve	Mean	Min	Max	Count	Mean	Min	Max
May															
Rossdale Raw (MPN/100mL)	31	0	0.0	506	1	3,230	0	0.0	69	1	980	1	176	176	176
E.L. Smith Raw (MPN/100mL)	4	0	0.0	248	52	649	0	0.0	12	2	34	1	114	114	114
Raw River Water Entering the Treatment Plants	35	0	0.0	477	1	3,230	0	0.0	62	1	980	2	145	114	176
Rossdale Treated (PA/100mL)	30	0	0.0				0	0.0				30	0.54	0.02	1.00
E.L. Smith Treated (PA/100mL)	31	0	0.0				0	0.0				31	0.35	0.02	1.00
Water Entering the Plant Reservoir	61	0	0.0				0	0.0				61	0.45	0.02	1.00
Rossdale Reservoir (PA/100mL)	31	0	0.0				0	0.0				31	0.52	0.02	1.00
E.L. Smith Reservoir (PA/100mL)	31	0	0.0				0	0.0				31	0.50	0.02	1.00
Treated Water Entering the Distribution System	62	0	0.0				0	0.0				62	0.51	0.02	1.00
June															
Rossdale Raw (MPN/100mL)	31	0	0.0	519	1	1,730	0	0.0	27	1	105	1	261	261	261
E.L. Smith Raw (MPN/100mL)	6	0	0.0	428	121	1,300	0	0.0	36	4	76	1	268	268	268
Raw River Water Entering the Treatment Plants	37	0	0.0	504	1	1,730	0	0.0	28	1	105	2	265	261	268
Rossdale Treated (PA/100mL)	30	0	0.0				0	0.0				30	0.65	0.02	1.00
E.L. Smith Treated (PA/100mL)	30	0	0.0				0	0.0				30	0.43	0.02	1.00
Water Entering the Plant Reservoir	60	0	0.0				0	0.0				60	0.54	0.02	1.00
Rossdale Reservoir (PA/100mL)	30	0	0.0				0	0.0				30	0.50	0.02	1.00
E.L. Smith Reservoir (PA/100mL)	30	0	0.0				0	0.0				30	0.53	0.02	1.00
Treated Water Entering the Distribution System	60	0	0.0				0	0.0				60	0.51	0.02	1.00

2.2.1 Bacteriological Data: Water Treatment Plants

2021

	Coliforms, total						E. coli					cATP (pg/mL)			
	Count	# +ve	% +ve	Mean	Min	Max	# +ve	% +ve	Mean	Min	Max	Count	Mean	Min	Max
July															
Rossdale Raw (MPN/100mL)	33	0	0.0	1,285	1	5,970	0	0.0	91	1	646	1	38.6	38.6	38.6
E.L. Smith Raw (MPN/100mL)	4	0	0.0	1,089	308	2,420	0	0.0	23	10	60	1	38.5	38.5	38.5
Raw River Water Entering the Treatment Plants	37	0	0.0	1,264	1	5,970	0	0.0	84	1	646	2	38.5	38.5	38.6
Rossdale Treated (PA/100mL)	31	0	0.0				0	0.0				31	0.66	0.03	1.00
E.L. Smith Treated (PA/100mL)	31	0	0.0				0	0.0				31	0.50	0.03	1.00
Water Entering the Plant Reservoir	62	0	0.0				0	0.0				62	0.58	0.03	1.00
Rossdale Reservoir (PA/100mL)	31	0	0.0				0	0.0				31	0.68	0.03	1.00
E.L. Smith Reservoir (PA/100mL)	31	0	0.0				0	0.0				31	0.64	0.03	1.00
Treated Water Entering the Distribution System	62	0	0.0				0	0.0				62	0.66	0.03	1.00
August															
Rossdale Raw (MPN/100mL)	32	0	0.0	289	1	980	0	0.0	21	1	74	1	70.4	70.4	70.4
E.L. Smith Raw (MPN/100mL)	4	0	0.0	376	194	517	0	0.0	10	5	23	1	71.3	71.3	71.3
Raw River Water Entering the Treatment Plants	36	0	0.0	299	1	980	0	0.0	20	1	74	2	70.8	70.4	71.3
Rossdale Treated (PA/100mL)	31	0	0.0				0	0.0				31	0.76	0.04	1.00
E.L. Smith Treated (PA/100mL)	31	0	0.0				0	0.0				31	0.71	0.03	1.00
Water Entering the Plant Reservoir	62	0	0.0				0	0.0				62	0.73	0.03	1.00
Rossdale Reservoir (PA/100mL)	31	0	0.0				0	0.0				31	0.88	0.03	1.00
E.L. Smith Reservoir (PA/100mL)	31	0	0.0				0	0.0				31	0.62	0.03	1.00
Treated Water Entering the Distribution System	62	0	0.0				0	0.0				62	0.75	0.03	1.00

2.2.1 Bacteriological Data: Water Treatment Plants

2021

	Coliforms, total						E. coli					cATP (pg/mL)			
	Count	# +ve	% +ve	Mean	Min	Max	# +ve	% +ve	Mean	Min	Max	Count	Mean	Min	Max
September															
Rossdale Raw (MPN/100mL)	30	0	0.0	565	1	4,290	0	0.0	37	1	365	1	58.7	58.7	58.7
E.L. Smith Raw (MPN/100mL)	6	0	0.0	129	12	249	0	0.0	12	2	30	1	19.5	19.5	19.5
Raw River Water Entering the Treatment Plants	36	0	0.0	492	1	4,290	0	0.0	33	1	365	2	39.1	19.5	58.7
Rossdale Treated (PA/100mL)	29	0	0.0				0	0.0				29	0.52	0.03	1.00
E.L. Smith Treated (PA/100mL)	30	0	0.0				0	0.0				30	0.42	0.03	1.00
Water Entering the Plant Reservoir	59	0	0.0				0	0.0				59	0.47	0.03	1.00
Rossdale Reservoir (PA/100mL)	29	0	0.0				0	0.0				29	0.68	0.03	1.00
E.L. Smith Reservoir (PA/100mL)	31	0	0.0				0	0.0				31	0.43	0.03	1.00
Treated Water Entering the Distribution System	60	0	0.0				0	0.0				60	0.55	0.03	1.00
October															
Rossdale Raw (MPN/100mL)	30	0	0.0	222	47	1,990	0	0.0	12	1	116	1	27.5	27.5	27.5
E.L. Smith Raw (MPN/100mL)	4	0	0.0	152	114	210	0	0.0	5	3	7	1	14.6	14.6	14.6
Raw River Water Entering the Treatment Plants	34	0	0.0	214	47	1,990	0	0.0	11	1	116	2	21.0	14.6	27.5
Rossdale Treated (PA/100mL)	30	0	0.0				0	0.0				30	0.81	0.03	1.00
E.L. Smith Treated (PA/100mL)	30	0	0.0				0	0.0				30	0.61	0.03	1.00
Water Entering the Plant Reservoir	60	0	0.0				0	0.0				60	0.71	0.03	1.00
Rossdale Reservoir (PA/100mL)	30	0	0.0				0	0.0				30	0.75	0.03	1.00
E.L. Smith Reservoir (PA/100mL)	30	0	0.0				0	0.0				30	0.61	0.03	1.00
Treated Water Entering the Distribution System	60	0	0.0				0	0.0				60	0.68	0.03	1.00

2.2.1 Bacteriological Data: Water Treatment Plants

2021

	Coliforms, total						E. coli					cATP (pg/mL)			
	Count	# +ve	% +ve	Mean	Min	Max	# +ve	% +ve	Mean	Min	Max	Count	Mean	Min	Max
November															
Rossdale Raw (MPN/100mL)	31	0	0.0	162	1	866	0	0.0	6	1	44	1	50.7	50.7	50.7
E.L. Smith Raw (MPN/100mL)	4	0	0.0	109	91	116	0	0.0	1	1	2	1	39.8	39.8	39.8
Raw River Water Entering the Treatment Plants	35	0	0.0	156	1	866	0	0.0	5	1	44	2	45.3	39.8	50.7
Rossdale Treated (PA/100mL)	30	0	0.0				0	0.0				30	0.39	0.03	1.00
E.L. Smith Treated (PA/100mL)	30	0	0.0				0	0.0				30	0.29	0.03	1.00
Water Entering the Plant Reservoir	60	0	0.0				0	0.0				60	0.34	0.03	1.00
Rossdale Reservoir (PA/100mL)	30	0	0.0				0	0.0				30	0.40	0.03	1.00
E.L. Smith Reservoir (PA/100mL)	30	0	0.0				0	0.0				30	0.22	0.03	1.00
Treated Water Entering the Distribution System	60	0	0.0				0	0.0				60	0.31	0.03	1.00
December															
Rossdale Raw (MPN/100mL)	32	0	0.0	99	1	238	0	0.0	7	1	40	1	24.4	24.4	24.4
E.L. Smith Raw (MPN/100mL)	5	0	0.0	90	43	118	0	0.0	1	1	2	1	27.9	27.9	27.9
Raw River Water Entering the Treatment Plants	37	0	0.0	98	1	238	0	0.0	7	1	40	2	26.1	24.4	27.9
Rossdale Treated (PA/100mL)	31	0	0.0				0	0.0				31	0.27	0.03	1.00
E.L. Smith Treated (PA/100mL)	31	0	0.0				0	0.0				31	0.36	0.03	1.00
Water Entering the Plant Reservoir	62	0	0.0				0	0.0				62	0.31	0.03	1.00
Rossdale Reservoir (PA/100mL)	31	0	0.0				0	0.0				31	0.35	0.03	1.00
E.L. Smith Reservoir (PA/100mL)	31	0	0.0				0	0.0				31	0.26	0.04	1.00
Treated Water Entering the Distribution System	62	0	0.0				0	0.0				62	0.31	0.03	1.00

PA = present or absent, MPN = most probable number, cATP = cellular adenosine triphosphate

2.2.2 Bacteriological Data: Distribution System

December 2021

	Coliforms, total (PA/100 mL)			E. coli (PA/100 mL)		cATP (pg/mL)			
	Count	# +ve	% +ve	# +ve	% +ve	Count	Mean	Min	Max
January									
FIELD DISTRIBUTION	108	0	0.0	0	0.0	62	0.15	0.03	0.76
FIELD DISTRIBUTION - PLPH	60	0	0.0	0	0.0				
FIELD RESERVOIR	53	0	0.0	0	0.0	53	0.15	0.01	0.38
FIELD RESERVOIR - PLPH (duplicate-not counted)	49	0	0.0	0	0.0				
Monthly	221	0	0.0	0	0.0	115	0.15	0.01	0.76
February									
FIELD DISTRIBUTION	111	0	0.0	0	0.0	61	0.17	0.03	1.83
FIELD DISTRIBUTION - PLPH	60	0	0.0	0	0.0				
FIELD RESERVOIR	57	0	0.0	0	0.0	57	0.26	0.05	5.38
FIELD RESERVOIR - PLPH (duplicate-not counted)	52	0	0.0	0	0.0				
Monthly	228	0	0.0	0	0.0	118	0.20	0.03	5.38
March									
FIELD DISTRIBUTION	110	0	0.0	0	0.0	61	0.15	0.03	0.39
FIELD DISTRIBUTION - PLPH	60	0	0.0	0	0.0				
FIELD RESERVOIR	69	0	0.0	0	0.0	69	0.19	0.03	0.55
FIELD RESERVOIR - PLPH (duplicate-not counted)	65	0	0.0	0	0.0				
Monthly	239	0	0.0	0	0.0	130	0.18	0.03	0.55
April									
FIELD DISTRIBUTION	97	0	0.0	0	0.0	62	0.08	0.01	0.19
FIELD DISTRIBUTION - PLPH	60	0	0.0	0	0.0				
FIELD RESERVOIR	58	0	0.0	0	0.0	58	0.13	0.01	0.30
FIELD RESERVOIR - PLPH (duplicate-not counted)	52	0	0.0	0	0.0				
Monthly	215	0	0.0	0	0.0	120	0.10	0.01	0.30

2.2.2 Bacteriological Data: Distribution System

December 2021

	Coliforms, total (PA/100 mL)			E. coli (PA/100 mL)		cATP (pg/mL)			
	Count	# +ve	% +ve	# +ve	% +ve	Count	Mean	Min	Max
May									
FIELD DISTRIBUTION	101	0	0.0	0	0.0	60	0.07	0.02	0.15
FIELD DISTRIBUTION - PLPH	60	0	0.0	0	0.0				
FIELD RESERVOIR	57	0	0.0	0	0.0	57	0.12	0.02	0.66
FIELD RESERVOIR - PLPH (duplicate-not counted)	52	0	0.0	0	0.0				
Monthly	218	0	0.0	0	0.0	117	0.10	0.02	0.66
June									
FIELD DISTRIBUTION	103	0	0.0	0	0.0	62	0.14	0.03	0.56
FIELD DISTRIBUTION - PLPH	60	0	0.0	0	0.0				
FIELD RESERVOIR	71	0	0.0	0	0.0	71	0.12	0.03	0.83
FIELD RESERVOIR - PLPH (duplicate-not counted)	65	0	0.0	0	0.0				
Monthly	234	0	0.0	0	0.0	133	0.13	0.03	0.83
July									
FIELD DISTRIBUTION	99	0	0.0	0	0.0	62	0.21	0.03	0.70
FIELD DISTRIBUTION - PLPH	60	0	0.0	0	0.0				
FIELD RESERVOIR	56	0	0.0	0	0.0	56	0.42	0.03	3.32
FIELD RESERVOIR - PLPH (duplicate-not counted)	52	0	0.0	0	0.0				
Monthly	215	0	0.0	0	0.0	118	0.31	0.03	3.32
August									
FIELD DISTRIBUTION	110	1	0.9	0	0.0	60	0.14	0.03	0.51
FIELD DISTRIBUTION - PLPH	60	0	0.0	0	0.0				
FIELD RESERVOIR	72	0	0.0	0	0.0	72	0.21	0.02	1.01
FIELD RESERVOIR - PLPH (duplicate-not counted)	65	0	0.0	0	0.0				
Monthly	242	1	0.4	0	0.0	132	0.18	0.02	1.01

2.2.2 Bacteriological Data: Distribution System

December 2021

	Coliforms, total (PA/100 mL)			E. coli (PA/100 mL)		cATP (pg/mL)			
	Count	# +ve	% +ve	# +ve	% +ve	Count	Mean	Min	Max
September									
FIELD DISTRIBUTION	111	1	0.9	0	0.0	62	0.16	0.03	0.61
FIELD DISTRIBUTION - PLPH	60	0	0.0	0	0.0				
FIELD RESERVOIR	56	0	0.0	0	0.0	56	0.17	0.03	0.80
FIELD RESERVOIR - PLPH (duplicate-not counted)	52	0	0.0	0	0.0				
Monthly	227	1	0.4	0	0.0	118	0.17	0.03	0.80
October									
FIELD DISTRIBUTION	99	1	1.0	0	0.0	60	0.13	0.03	0.35
FIELD DISTRIBUTION - PLPH	60	0	0.0	0	0.0				
FIELD RESERVOIR	53	0	0.0	0	0.0	53	0.17	0.03	0.76
FIELD RESERVOIR - PLPH (duplicate-not counted)	46	0	0.0	0	0.0				
Monthly	212	1	0.5	0	0.0	113	0.14	0.03	0.76
November									
FIELD DISTRIBUTION	97	0	0.0	0	0.0	60	0.12	0.03	0.28
FIELD DISTRIBUTION - PLPH	60	0	0.0	0	0.0				
FIELD RESERVOIR	61	0	0.0	0	0.0	61	0.14	0.03	0.34
FIELD RESERVOIR - PLPH (duplicate-not counted)	59	0	0.0	0	0.0				
Monthly	218	0	0.0	0	0.0	121	0.13	0.03	0.34
December									
FIELD DISTRIBUTION	95	0	0.0	0	0.0	61	0.09	0.03	0.49
FIELD DISTRIBUTION - PLPH	60	0	0.0	0	0.0				
FIELD RESERVOIR	48	0	0.0	0	0.0	48	0.12	0.03	0.43
FIELD RESERVOIR - PLPH (duplicate-not counted)	48	0	0.0	0	0.0				
Monthly	203	0	0.0	0	0.0	109	0.11	0.03	0.49
Year to Date	2,672	3	0.1	0	0.0	1,444	0.16	0.01	5.38

2.2.2 Bacteriological Data: Distribution System

December 2021

Guidelines for Canadian Drinking Water Quality recommend 190 bacteriological samples for a city the size of Edmonton. Total Coliform and E.coli testing is required in the AEP Approval. At least 95 of the 190 samples must be tested at ProvLab each month according to our Operations Program.

Testing conducted by Laboratory for Provincial Laboratory for Public Health (ProvLAB) are labelled with PLPH.

2.2.2 Bacteriological Data: Distribution System

December 2021

	Coliforms, total (PA/100 mL)			E. coli (PA/100 mL)		cATP (pg/mL)			
	Count	# +ve	% +ve	# +ve	% +ve	Count	Mean	Min	Max
Samples from Complaints									
January	4	0	0.0	0	0.0	4	0.24	0.13	0.29
February	4	0	0.0	0	0.0	4	0.13	0.12	0.14
March	4	0	0.0	0	0.0	4	0.11	0.05	0.24
April	5	0	0.0	0	0.0	5	0.11	0.06	0.14
May	8	0	0.0	0	0.0	8	0.09	0.03	0.17
June	15	0	0.0	0	0.0	15	0.33	0.02	2.44
July	25	0	0.0	0	0.0	25	0.29	0.03	1.10
August	21	0	0.0	0	0.0	21	0.16	0.03	0.34
September	11	0	0.0	0	0.0	11	0.15	0.03	0.33
October	14	0	0.0	0	0.0	14	0.20	0.06	0.45
November	13	0	0.0	0	0.0	13	0.15	0.04	0.32
December	10	0	0.0	0	0.0	10	0.54	0.06	2.26
Year to Date	134	0	0.0	0	0.0	134	0.22	0.02	2.44
Samples from Depressurizations									
January	53	0	0.0	0	0.0				
February	107	0	0.0	0	0.0				
March	48	0	0.0	0	0.0				
April	44	0	0.0	0	0.0				
May	53	0	0.0	0	0.0				
June	86	0	0.0	0	0.0				
July	69	2	2.9	0	0.0				
August	89	0	0.0	0	0.0				
September	79	0	0.0	0	0.0				
October	96	2	2.1	0	0.0				
November	118	0	0.0	0	0.0				
December	74	0	0.0	0	0.0				
Year to Date	916	4	0.4	0	0.0				

2.2.3 Giardia and Cryptosporidium

December 2021

Treated Water entering the distribution system

	Cryptosporidium oocysts/100L		Giardia cysts/100L	
	E.L. Smith	Rossdale	E.L. Smith	Rossdale
4 - Jan	<0.1		<0.1	
18 - Jan	<0.1		<0.1	
19 - Jan		<0.1		<0.1
1 - Feb		<0.1		<0.1
	<0.1		<0.1	
16 - Feb		<0.1		<0.1
	<0.1		<0.1	
1 - Mar		<0.1		<0.1
	<0.1		<0.1	
8 - Mar		<0.1		<0.1
9 - Mar	<0.1		<0.1	
15 - Mar		<0.1		<0.1
	<0.1		<0.1	
22 - Mar		<0.1		<0.1
	<0.1		<0.1	
31 - Mar	<0.1		<0.1	
		<0.1		<0.1
6 - Apr		<0.1		<0.1
	<0.1		<0.1	
10 - May	<0.1		<0.1	
11 - May		<0.1		<0.1
8 - Jun		<0.1		<0.1
14 - Jun	<0.1		<0.1	
12 - Jul	<0.1		<0.1	
13 - Jul		<0.1		<0.1
4 - Aug		<0.1		<0.1
9 - Aug	<0.1		<0.1	
13 - Sep		<0.1		<0.1
14 - Sep	<0.1		<0.1	
20 - Sep		<0.1		<0.1
21 - Sep	<0.1		<0.1	
27 - Sep		<0.1		<0.1
28 - Sep	<0.1		<0.1	
4 - Oct		<0.1		<0.1
	<0.1		<0.1	
12 - Oct		<0.1		0.1
13 - Oct	<0.1		<0.1	
25 - Oct		<0.1		<0.1
26 - Oct	<0.1		<0.1	
1 - Nov		<0.1		<0.1
	<0.1		<0.1	
15 - Nov		<0.1		<0.1
16 - Nov	<0.1		<0.1	
29 - Nov		<0.1		<0.1
	<0.1		<0.1	
13 - Dec	<0.1		<0.1	
14 - Dec		<0.1		<0.1

2.2.3 Giardia and Cryptosporidium

December 2021

Water entering plant reservoir

	Cryptosporidium oocysts/100L Rossdale	Giardia cysts/100L Rossdale
1 - Feb	<0.1	<0.1
6 - Apr	<0.1	<0.1
13 - Sep	<0.1	<0.1
29 - Nov	<0.1	<0.1

2.2.3 Giardia and Cryptosporidium

December 2021

Raw Water

	Cryptosporidium oocysts/100L		Giardia cysts/100L	
	E.L. Smith	Rossdale	E.L. Smith	Rossdale
4 - Jan	<1.0		1.0	
5 - Jan		<0.1		<0.1
		<1.0		1.0
18 - Jan	<0.8		<0.8	
19 - Jan		<0.7		<0.7
1 - Feb		<1.0		<1.0
	<1.1		<1.1	
16 - Feb		<0.8		<0.8
	<1.0		<1.0	
1 - Mar		<0.9		<0.9
	<1.0		<1.0	
8 - Mar		<0.9		<0.9
9 - Mar	<0.9		<0.9	
15 - Mar		<0.8		<0.8
	<1.1		<1.1	
22 - Mar		<1.8		<1.8
	<1.9		<1.9	
31 - Mar	<1.3		<1.3	
		<1.1		<1.1
6 - Apr		<1.5		<1.5
	<1.9		<1.9	
10 - May	<1.8		3.5	
11 - May		<6.8		<6.8
9 - Jun		<7.5		<7.5
14 - Jun	<9.4		38.0	
12 - Jul	<12.0		35.0	
13 - Jul		2.9		2.9
9 - Aug	1.9		14.0	
10 - Aug		2.6		13.0
13 - Sep		<3.7		11.0
14 - Sep	<2.5		<2.5	
20 - Sep		6.0		32.0
21 - Sep	9.7		19.0	
27 - Sep		10.0		90.0
28 - Sep	12.0		16.0	
4 - Oct		2.7		73.0
	3.8		66.0	
12 - Oct		5.3		71.0
13 - Oct	16.0		170.0	
25 - Oct		9.3		47.0
26 - Oct	<2.4		70.0	
1 - Nov		4.5		150.0
	<3.2		42.0	
15 - Nov		14.0		600.0
16 - Nov	8.2		160.0	
29 - Nov		<2.1		17.0
	<3.8		19.0	
13 - Dec	<1.9		1.9	
14 - Dec		1.8		18.0

2.2.4 Treated Water Entering the Distribution System: Physical, Inorganic, and Organic

December 2021

	Current Month								YTD								Limits	
	ROSSDALE				E.L. SMITH				ROSSDALE				E.L. SMITH				*Approval or GCDWQ MAC, (AO or OG)	EPCOR
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count		
Microbiologicals																		
Microcystin	<0.10	<0.10	<0.10	1	<0.1	<0.1	<0.1	1	<0.10	<0.10	0.14	12	<0.1	<0.1	0.1	12	1.5	
Physical																		
Colour (TCU)	0.7	<0.5	1.0	31	0.7	<0.5	0.9	31	0.8	<0.5	2.3	363	0.8	<0.5	2.4	365	(15)	10
Conductivity (uS/cm)	372	356	398	4	371	357	393	4	366	314	440	52	371	315	455	53	(<1)	<1
FPA-Intensity (N/A)	0.73	0.44	0.94	5	0.69	0.56	0.88	5	0.72	0.38	1.12	64	0.64	0.38	1.12	64		
pH (N/A)	8.0	7.9	8.1	31	7.9	7.7	8.0	31	7.9	7.4	8.2	363	7.8	7.4	8.2	365	(7.0 - 10.5)	7.3-8.3
Total Dissolved Solids (mg/L)	204	204	204	1	207	207	207	1	219	189	267	12	223	179	272	12	(500)	
Turbidity (NTU)	0.04	<0.04	0.06	31	0.06	<0.04	0.09	31	0.04	<0.02	0.12	363	0.05	<0.02	0.17	365		0.3
Primary Inorganics (mg/L)																		
Aluminum	0.113	0.113	0.113	1	0.115	0.115	0.115	1	0.089	0.030	0.179	12	0.086	0.029	0.172	12	2.9	0.1/0.2
Antimony	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	0.0003	12	<0.0002	<0.0002	<0.0002	12	0.006	
Arsenic	0.0002	0.0002	0.0002	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	0.0003	12	<0.0002	<0.0002	<0.0002	12	0.01	
Barium	0.057	0.057	0.057	1	0.057	0.057	0.057	1	0.059	0.050	0.073	12	0.059	0.049	0.073	12	2	
Boron	0.009	0.009	0.009	1	0.009	0.009	0.009	1	0.009	0.007	0.012	12	0.008	0.007	0.012	12	5	
Bromate Dissolved	<0.005	<0.005	<0.005	4	<0.005	<0.005	<0.005	4	<0.005	<0.005	<0.005	55	<0.005	<0.005	<0.005	56	0.01	
Cadmium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12	0.005	
Chlorate Dissolved	0.14	0.12	0.15	4	0.08	0.06	0.10	4	0.15	0.06	0.20	55	0.09	0.05	0.14	56	1	
Chlorite Dissolved	<0.005	<0.005	<0.005	4	<0.005	<0.005	<0.005	4	<0.005	<0.005	<0.005	55	<0.005	<0.005	<0.005	56	1	
Chromium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12	0.05	
Copper	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	12	<0.005	<0.005	<0.005	12	(1)	
Cyanide Dissolved	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	12	<0.002	<0.002	<0.002	12	0.2	
Fluoride	0.70	0.67	0.72	31	0.67	0.63	0.71	31	0.68	0.56	0.72	363	0.66	0.55	0.71	365	1.5	0.6–0.8
Lead	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12	0.005	
Manganese	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	12	<0.002	<0.002	<0.002	12	0.12 (0.02)	
Mercury	<0.0002	<0.00020	<0.0002	1	<0.0002	<0.00020	<0.0002	1	<0.0002	<0.00001	<0.0002	16	<0.0002	<0.00001	<0.0002	16	0.001	
Nitrate (as N) Dissolved	0.08	0.07	0.09	4	0.08	0.07	0.09	4	0.07	0.03	0.18	55	0.07	0.03	0.14	56	10	
Nitrite (as N) Dissolved	<0.01	<0.01	0.01	4	<0.01	<0.01	0.01	4	0.02	<0.01	0.05	55	0.03	<0.01	0.05	56	1	
Selenium	0.0002	0.0002	0.0002	1	0.0003	0.0003	0.0003	1	<0.0002	<0.0002	0.0003	12	0.0002	<0.0002	0.0003	12	0.05	
Total Chlorine	2.10	2.01	2.24	31	2.00	1.90	2.08	31	2.10	1.44	2.49	363	1.99	1.73	2.18	365	>1.0	>1.0 and <2.4
Uranium	0.0005	0.0005	0.0005	1	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	0.0006	12	<0.0005	<0.0005	0.0006	12	0.02	

2.2.4 Treated Water Entering the Distribution System: Physical, Inorganic, and Organic

December 2021

	Current Month								YTD								Limits	
	ROSSDALE				E.L. SMITH				ROSSDALE				E.L. SMITH				*Approval or GCDWQ MAC, (AO or OG)	EPCOR
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count		
Primary Organics (ug/L)																		
2,4-D				0				0	<10	<10	<10	4	<10	<10	<10	4	100	
Atrazine				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4	5	
Benzene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367	5	
Benzo(a)pyrene				0				0	<0.005	<0.005	<0.005	4	<0.005	<0.005	<0.005	4	0.04	
Bromoxynil				0				0	<0.5	<0.5	<0.5	4	<0.5	<0.5	<0.5	4	5	
Carbon Tetrachloride	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	366	<1.0	<0.5	<1.0	368	2	
Chlorobenzene	<0.5000	<0.5000	<0.5000	32	<0.5000	<0.5000	<0.5000	32	<0.4946	<0.0005	<0.5000	369	<0.4946	<0.0005	<0.5000	371	80 (30)	
Chlorpyrifos				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4	90	
Cyanazine				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4		
Diazinon				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4	20	
Dicamba				0				0	<12	<12	<12	4	<12	<12	<12	4	120	
Dichlorobenzene (1,2)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367	200 (3)	
Dichlorobenzene (1,4)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367	5 (1)	
Dichloroethane (1,2)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	2	<0.5	<0.5	<0.5	2	5	
Dichloroethylene (1,1)	<3	<3	<3	32	<3	<3	<3	32	<3	<3	<3	365	<3	<3	<3	367	14	
Dichlorophenol (2,4)				0				0	<0.3	<0.3	<0.3	4	<0.3	<0.3	<0.3	4	900 (0.3)	
Diclofop-methyl				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4	9	
Dimethoate				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4	20	
Diuron				0				0	<1	<1	<1	4	<1	<1	<1	4	150	
Ethylbenzene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367	140 (1.6)	
Glyphosate				0				0	<2.51	<0.01	<5.00	4	<2.51	<0.01	<5.00	4	280	
Haloacetic Acids, (HAA5)	16.1	16.1	16.1	1	14.6	14.6	14.6	1	17.6	11.8	27.4	12	15.4	9.6	24.8	12	80	40
Haloacetic Acids, total (HAA6)	16.3	16.3	16.3	1	14.8	14.8	14.8	1	17.8	11.9	27.9	12	15.6	9.7	25.2	12		
Malathion				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4	190	
MCPA				0				0	<0.5	<0.5	<0.5	4	<0.5	<0.5	<0.5	4	100	
Methylene Chloride	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367	50	
Metolachlor				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4	50	
Metribuzin				0				0	<1	<1	<1	4	<1	<1	<1	4	80	
NDMA	<0.0009	<0.0009	<0.0009	1	<0.0009	<0.0009	<0.0009	1	<0.0022	<0.0009	<0.0090	14	<0.0021	<0.0009	<0.0090	14	0.040	10
NTA (mg/L)				0				0	<0.2	<0.2	<0.2	4	<0.2	<0.2	<0.2	4	0.4	
Pentachlorophenol				0				0	<6	<6	<6	4	<6	<6	<6	4	60 (30)	
Perfluorooctane sulfonic acid (PFOS)				0				0	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4	0.6	
Perfluorooctanoic acid (PFOA)				0				0	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4	0.0002	
Phorate				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4	2	
Picloram				0				0	<19	<19	<19	4	<19	<19	<19	4	190	
Simazine				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4	10	
Terbufos				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4	1	
Tetrachloroethylene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	368	10	

2.2.4 Treated Water Entering the Distribution System: Physical, Inorganic, and Organic

December 2021

	Current Month								YTD								Limits	
	ROSSDALE				E.L. SMITH				ROSSDALE				E.L. SMITH				*Approval or GCDWQ MAC, (AO or OG)	EPCOR
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count		
Primary Organics (ug/L)																		
Toluene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367	60 (24)	
Total Xylenes	<2.5	<2.5	<2.5	32	<2.5	<2.5	<2.5	32	<2.5	<2.5	<2.5	329	<2.5	<2.5	<2.5	331	90	
Trichloroethylene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	368	5	
Trifluralin				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4	45	
Trihalomethanes	9.7	7.8	12.0	32	7.2	6.0	8.6	32	13.7	4.4	36.9	366	11.6	3.5	32.6	368	100	50
Vinyl Chloride	<1.0000	<1.0000	<1.0000	1	<1.0000	<1.0000	<1.0000	1	<0.3339	<0.0005	<1.0000	6	<0.3339	<0.0005	<1.0000	6	2	
Radionuclides (Bq/L)																		
Cesium-137				0				0	<0.2	<0.2	<0.2	2	<0.09	<0.08	<0.10	2	10	
Gross Alpha				0				0	<0.11	<0.09	<0.13	2	<0.12	<0.09	<0.14	2	(0.5)	
Gross Beta				0				0	<0.07	<0.06	<0.07	2	<0.07	<0.07	0.07	2	(1.0)	
Iodine-131				0				0	<0.5	<0.5	<0.5	2	<0.5	<0.4	<0.5	2	6	
Lead-210				0				0	<0.02	<0.02	<0.02	2	<0.02	<0.02	<0.02	2	0.2	
Radium-226				0				0	<0.005	<0.005	<0.005	2	<0.006	<0.005	0.007	2	0.5	
Strontium-90				0				0	<0.05	<0.05	<0.05	2	<0.05	<0.05	<0.05	2	5	
Tritium				0				0	<28	<15	<40	2	<28	<15	<40	2	7000	

2.2.4 Treated Water Entering the Distribution System: Physical, Inorganic, and Organic

December 2021

	Current Month								YTD								Limits	
	ROSSDALE				E.L. SMITH				ROSSDALE				E.L. SMITH				*Approval or GCDWQ MAC, (AO or OG)	EPCOR
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count		
Secondary Inorganics (mg/L)																		
Alkalinity Total (mg CaCO3/L)	128	116	138	31	125	114	138	31	120	99	145	363	121	96	145	365		
Ammonia as NH3	0.17	0.16	0.18	4	0.11	0.08	0.13	4	0.12	0.06	0.20	67	0.11	<0.05	0.16	68		
Beryllium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12		
Bromide Dissolved	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4	0.02	<0.01	0.08	55	0.03	<0.01	0.11	56		
Calcium	48.2	48.2	48.2	1	47.8	47.8	47.8	1	46.3	40.6	54.9	12	46.7	41.3	56.5	12		
Chloride Dissolved	5.2	4.7	5.5	4	5.7	5.1	7.2	4	5.6	3.0	10.8	55	5.8	4.8	8.1	56	(250)	
Chlorine Free	<0.03	<0.03	<0.03	1	<0.03	<0.03	<0.03	1	<0.03	<0.03	<0.03	16	<0.03	<0.03	<0.03	16		
Cobalt	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12		
Hardness, Ca (mg CaCO3/L)	114	104	124	31	111	100	125	31	111	91	134	363	110	87	132	365		
Hardness, Total (mg CaCO3/L)	173	154	191	31	172	156	190	31	170	137	203	363	169	143	201	365		
Iron	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	12	<0.005	<0.005	<0.005	12	(0.3)	0.3
Lanthanum	<0.001	<0.001	<0.001	1	<0.001	<0.001	<0.001	1	<0.001	<0.001	<0.001	12	<0.001	<0.001	<0.001	12		
Lithium	0.0033	0.0033	0.0033	1	0.0033	0.0033	0.0033	1	0.0033	0.0029	0.0040	12	0.0031	0.0026	0.0036	12		
Magnesium	14.5	14.5	14.5	1	14.8	14.8	14.8	1	14.0	12.2	16.2	12	14.1	12.1	16.7	12		
Molybdenum	0.0008	0.0008	0.0008	1	0.0008	0.0008	0.0008	1	0.0007	0.0006	0.0008	12	0.0007	0.0006	0.0008	12		
Nickel	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	0.0006	12	<0.0005	<0.0005	0.0007	12		
Phosphate,Ortho (as P)	<0.02	<0.02	<0.02	1	<0.02	<0.02	<0.02	1	<0.02	<0.02	<0.02	12	<0.02	<0.02	<0.02	12		
Phosphorus	<0.02	<0.02	<0.02	1	<0.02	<0.02	<0.02	1	<0.02	<0.02	<0.02	12	<0.02	<0.02	<0.02	12		
Potassium	0.7	0.7	0.7	1	0.7	0.7	0.7	1	0.7	0.6	1.0	12	0.7	0.6	0.9	12		
Silicon	1.84	1.84	1.84	1	1.88	1.88	1.88	1	1.87	1.39	2.56	12	1.86	1.42	2.51	12		
Silver	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12		
Sodium	7.3	7.3	7.3	1	7.2	7.2	7.2	1	8.1	5.7	16.8	12	10.2	6.9	23.9	12	(200)	
Strontium	0.447	0.447	0.447	1	0.453	0.453	0.453	1	0.423	0.356	0.463	12	0.423	0.357	0.457	12		
Sulphate Dissolved	53.9	50.7	56.2	4	55.4	53.8	57.2	4	57.3	49.8	84.9	55	59.2	48.8	95.1	56	(500)	
Sulphide	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	12	<0.002	<0.002	<0.002	12	(0.05)	
Thallium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	12	<0.0005	<0.0005	<0.0005	12		
Tin	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	12	<0.0005	<0.0005	<0.0005	12		
Titanium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	12	<0.0005	<0.0005	<0.0005	12		
Vanadium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	12	<0.0005	<0.0005	<0.0005	12		
Zinc	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	12	<0.005	<0.005	<0.005	12	(5.0)	
Zirconium	<0.001	<0.001	<0.001	1	<0.001	<0.001	<0.001	1	<0.001	<0.001	<0.001	12	<0.001	<0.001	<0.001	12		

2.2.4 Treated Water Entering the Distribution System: Physical, Inorganic, and Organic

December 2021

	Current Month								YTD								Limits	
	ROSSDALE				E.L. SMITH				ROSSDALE				E.L. SMITH				*Approval or GCDWQ MAC, (AO or OG)	EPCOR
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count		
Secondary Organics (ug/L)																		
Aldicarb				0				0	<0.9	<0.9	<0.9	4	<0.9	<0.9	<0.9	4		
Aldrin				0				0	<0.008	<0.008	<0.008	4	<0.008	<0.008	<0.008	4		
Azinphos-methyl				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4		
Bromochloroacetic acid	<1	<1	<1	1	<1	<1	<1	1	<1	<1	<1	12	<1	<1	<1	12		
Bromodichloromethane	<0.5	<0.5	0.9	32	<0.5	<0.5	0.8	32	<0.5	<0.5	2.6	366	<0.5	<0.5	2.1	368		16
Bromoform	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	366	<1.0	<0.5	<1.0	368		
Carbaryl				0				0	<0.5	<0.5	<0.5	4	<0.5	<0.5	<0.5	4	90	
Carbofuran				0				0	<0.5	<0.5	<0.5	4	<0.5	<0.5	<0.5	4	90	
Chloroform	9.7	6.90	12.0	32	7.2	5.10	8.6	32	13.5	<0.01	35.8	370	11.5	<0.01	32.6	372		
Dibromoacetic acid	<1	<1	<1	1	<1	<1	<1	1	<1	<1	<1	12	<1	<1	<1	12		
Dibromochloromethane	<0.5000	<0.5000	<0.5000	32	<0.5000	<0.5000	<0.5000	32	<0.4947	<0.0005	<0.5000	370	<0.4947	<0.0005	<0.5000	372		
Dichloroacetic acid	5.6	5.6	5.6	1	5.4	5.4	5.4	1	7.3	4.3	11.7	12	6.8	3.5	11.3	12		
Dichlorobenzene (1,3)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367		
Dichloroethylene, cis (1,2)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367		
Dichloroethylene, trans (1,2)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367		
Dichloropropane (1,2)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367		
Dieldrin				0				0	<0.008	<0.008	<0.008	4	<0.008	<0.008	<0.008	4		
Methyl t-Butyl Ether (MTBE)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367	(15)	
MIBK	<1	<1	<1	32	<1	<1	<1	32	<1	<1	<1	365	<1	<1	<1	367		
Monobromoacetic acid	<1	<1	<1	1	<1	<1	<1	1	<1	<1	<1	12	<1	<1	<1	12		
Monochloroacetic acid	<5	<5	<5	1	<5	<5	<5	1	<5	<5	<5	12	<5	<5	<5	12		
Parathion				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4		
Perfluorobutanoic acid (PFBA)				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4		
Perfluorohexane sulfonic acid (PFHxS)				0				0	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4		
Perfluorohexanoic acid (PFHxA)				0				0	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4		
Perfluorononanoic acid (PFNA)				0				0	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4		
Perfluoropentanoic acid (PFPeA)				0				0	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4		
Styrene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367		
Tetrachloroethane (1,1,2,2)	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	366	<1.0	<0.5	<1.0	368		
Total Organic Carbon	1.1	1.0	1.2	4	1.0	0.9	1.1	4	1.3	0.8	3.0	52	1.2	0.7	2.6	53		
Total Volatile Organics (NonTHM)	<1	<1	<1	32	<1	<1	<1	32	<1	<1	<1	365	<1	<1	<1	367		
Total Volatile Organics (Unknown)	<1	<1	<1	31	<1	<1	<1	31	<1	<1	<1	363	<1	<1	<1	365		
Triallate				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4		
Trichloroacetic acid	6.7	6.7	6.7	1	6.3	6.3	6.3	1	8.2	5.3	14.1	12	7.0	4.1	11.3	12		
Trichlorobenzene (1,2,4)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367		
Trichloroethane (1,1,1)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	368		
Xylene (1,2)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367		
Xylene (1,4)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval limits. The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638-04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

2.2.5 ROSSDALE AND E.L. SMITH TREATED WATER ENTERING PLANT RESERVOIR

December 2021

	Current Month								YTD								Limits	
	ROSSDALE				E.L. SMITH				ROSSDALE				E.L. SMITH				*Approval or GCDWQ MAC, (AO or OG)	EPCOR
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count		
Physical																		
FPA-Intensity (N/A)				0				0	0.70	0.38	1.06	15	0.55	0.31	1.00	14		
Turbidity (NTU)	0.05	<0.04	0.07	31	0.05	<0.04	0.08	31	<0.04	<0.03	0.09	362	0.05	<0.03	0.11	364		0.3
UV 254 %T ****	<96.1	<95.5	<96.7	31	<96.0	<95.4	<96.9	31	<95.2	<89.2	<97.8	363	<95.4	<90.1	<97.7	365		
Primary Inorganics (mg/L)																		
Bromate Dissolved	<0.005	<0.005	<0.005	4	<0.005	<0.005	<0.005	4	<0.005	<0.005	<0.005	55	<0.005	<0.005	<0.005	55	0.01	
Chlorate Dissolved	0.13	0.11	0.15	4	0.06	0.05	0.08	4	0.15	0.06	0.20	55	0.09	0.05	0.15	55	1	
Chlorite Dissolved	<0.005	<0.005	<0.005	4	<0.005	<0.005	<0.005	4	<0.005	<0.005	<0.005	55	<0.005	<0.005	<0.005	55	1	
Nitrate (as N) Dissolved	0.08	0.07	0.09	4	0.08	0.08	0.09	4	0.07	0.03	0.17	55	0.07	0.03	0.14	55	10	
Nitrite (as N) Dissolved	<0.01	<0.01	0.01	4	<0.01	<0.01	0.01	4	0.02	<0.01	0.05	55	0.02	<0.01	0.05	55	1	
Primary Organics (ug/L)																		
Benzene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366	5	
Carbon Tetrachloride	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	365	<1.0	<0.5	<1.0	367	2	
Chlorobenzene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366	80 (30)	
Dichlorobenzene (1,2)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366	200 (3)	
Dichlorobenzene (1,4)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366	5 (1)	
Dichloroethane (1,2)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	2	<0.5	<0.5	<0.5	2	5	
Dichloroethylene (1,1)	<3	<3	<3	32	<3	<3	<3	32	<3	<3	<3	364	<3	<3	<3	366	14	
Ethylbenzene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366	140 (1.6)	
Methylene Chloride	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366	50	
Tetrachloroethylene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367	10	
Toluene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366	60 (24)	
Total Xylenes	<2.5	<2.5	<2.5	32	<2.5	<2.5	<2.5	32	<2.5	<2.5	<2.5	328	<2.5	<2.5	<2.5	330	90	
Trichloroethylene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367	5	
Trihalomethanes	8.2	6.7	10.3	32	6.0	5.1	8.4	32	12.1	3.8	32.1	365	9.0	2.6	25.5	367	100	50
Vinyl Chloride	<1	<1	<1	1	<1	<1	<1	1	<1	<1	<1	2	<1	<1	<1	2	2	
Secondary Inorganics (mg/L)																		
Ammonia as NH3	0.18	0.16	0.20	4	0.11	0.08	0.12	4	0.12	0.05	0.21	67	0.10	<0.05	0.16	67		
Bromide Dissolved	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4	0.03	<0.01	0.11	55	0.03	<0.01	0.11	55		
Chloride Dissolved	5.0	4.7	5.3	4	6.4	5.1	8.0	4	5.8	2.8	15.0	55	5.8	4.5	8.0	55	(250)	
Sulphate Dissolved	54.1	52.4	56.3	4	55.3	53.4	57.3	4	57.4	49.4	85.2	55	59.2	48.4	93.9	55	(500)	

2.2.5 ROSSDALE AND E.L. SMITH TREATED WATER ENTERING PLANT RESERVOIR

December 2021

	Current Month								YTD								Limits	
	ROSSDALE				E.L. SMITH				ROSSDALE				E.L. SMITH				*Approval or GCDWQ MAC, (AO or OG)	EPCOR
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count		
Secondary Organics (ug/L)																		
Bromodichloromethane	<0.5	<0.5	0.9	32	<0.5	<0.5	0.8	32	<0.5	<0.5	2.6	365	<0.5	<0.5	2.0	367		16
Bromoform	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	365	<1.0	<0.5	<1.0	367		
Chloroform	8.2	6.20	10.3	32	6.0	4.60	8.4	32	12.0	3.80	32.1	365	9.0	2.60	25.5	367		
Dibromochloromethane	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367		
Dichlorobenzene (1,3)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366		
Dichloroethylene, cis (1,2)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366		
Dichloroethylene, trans (1,2)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366		
Dichloropropane (1,2)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366		
Methyl t-Butyl Ether (MTBE)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366	(15)	
MIBK	<1	<1	<1	32	<1	<1	<1	32	<1	<1	<1	364	<1	<1	<1	366		
Styrene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366		
Tetrachloroethane (1,1,2,2)	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	365	<1.0	<0.5	<1.0	367		
Total Volatile Organics (NonTHM)	<1	<1	<1	32	<1	<1	<1	32	<1	<1	<1	364	<1	<1	<1	366		
Total Volatile Organics (Unknown)	<1	<1	<1	31	<1	<1	<1	31	<1	<1	<1	362	<1	<1	<1	364		
Trichlorobenzene (1,2,4)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366		
Trichloroethane (1,1,1)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367		
Xylene (1,2)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366		
Xylene (1,4)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	366		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and/o limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638-04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

**** UV 254 %T for Rossdale based on a sample collected daily from one of the nine filters selected randomly. For E.L. Smith it is based on a daily sample of Combined Filter Effluent

2.2.6.a Routine Distribution System (does not include Field Reservoirs)

December 2021

	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Microbiologicals										
Microcystin				0	<0.10	<0.10	<0.10	6	1.5	
Physical										
Colour (TCU)				0	1.6	<0.5	4.4	4	(15)	10
pH (N/A)	8.0	8.0	8.1	2	7.9	7.8	8.1	28	(7.0 - 10.5)	7.3 - 8.3
Total Dissolved Solids (mg/L)				0	213	206	216	4	(500)	
Turbidity (NTU)	0.11	<0.04	0.44	156	0.13	<0.03	3.25	1977		1.0
UV 254 %T				0	<93.6	<92.3	<95.2	4		
Primary Inorganics (mg/L) **										
Aluminum				0	0.075	0.031	0.098	4	2.9	0.1/0.2
Antimony				0	<0.0002	<0.0002	<0.0002	4	0.006	
Arsenic				0	<0.0002	<0.0002	<0.0002	4	0.01	
Barium				0	0.058	0.053	0.064	4	2	
Boron				0	0.009	0.008	0.010	4	5	
Bromate Dissolved	<0.005	<0.005	<0.005	2	<0.005	<0.005	<0.005	33	0.01	
Cadmium				0	<0.0002	<0.0002	<0.0002	4	0.005	
Chlorate Dissolved	0.121	0.090	0.151	2	0.113	0.070	0.172	33	1	
Chlorine, total	1.86	0.87	2.11	156	1.74	0.77	2.19	1983	>0.5 and <3.0	>1.0 and <2.4
Chlorite Dissolved	<0.005	<0.005	<0.005	2	<0.005	<0.005	<0.005	33	1	
Chromium				0	<0.0002	<0.0002	<0.0002	4	0.05	
Copper				0	<0.005	<0.005	<0.005	4	(1)	
Cyanide Dissolved				0	<0.002	<0.002	<0.002	4	0.2	
Fluoride				0	0.68	0.66	0.69	4	1.5	0.6 - 0.8
Lead				0	<0.0002	<0.0002	<0.0002	4	0.005	
Manganese				0	<0.002	<0.002	<0.002	4	0.12 (0.02)	
Mercury				0	<0.0001	<0.000005	<0.0002	8	0.001	
Nitrate (as N) Dissolved	0.065	0.060	0.070	2	0.085	0.060	0.144	33	10	
Nitrite (as N) Dissolved	<0.010	<0.010	<0.010	2	0.026	<0.010	0.050	33	1	
Selenium				0	0.0003	<0.0002	0.0003	4	0.05	
Strontium				0	0.428	0.417	0.448	4	7.0	
Uranium				0	0.0005	<0.0005	0.0006	4	0.02	

2.2.6.a Routine Distribution System (does not include Field Reservoirs)

December 2021

	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Primary Organics (ug/L) **										
2,4-D				0	<10.000	<10.000	<10.000	4	100	
Atrazine				0	<0.100	<0.100	<0.100	4	5	
Atrazine+N-Dealkylated Metabolites				0	<0.2	<0.2	<0.2	4	0.005	
Azinphos-methyl				0	<0.1	<0.1	<0.1	4	0.02	
Benzene	<0.50	<0.50	<0.50	6	<0.50	<0.50	<0.50	78	5	
Benzo(a)pyrene				0	<0.005	<0.005	<0.005	4	0.04	
Bromoxynil				0	<0.500	<0.500	<0.500	4	5	
Carbon Tetrachloride	<1.00	<1.0000	<1.00	6	<0.95	<0.0005	<1.00	82	2	
Chlorobenzene	<0.500	<0.500	<0.500	6	<0.476	<0.001	<0.500	82	80 (30)	
Chlorpyrifos				0	<0.100	<0.100	<0.100	4	90	
Cyanazine				0	<0.100	<0.100	<0.100	4		
Diazinon				0	<0.100	<0.100	<0.100	4	20	
Dicamba				0	<12.000	<12.000	<12.000	4	120	
Dichlorobenzene (1,2)	<0.5000	<0.5000	<0.5000	6	<0.4756	<0.0005	<0.5000	82	200 (3)	
Dichlorobenzene (1,4)	<0.500	<0.500	<0.500	6	<0.476	<0.001	<0.500	82	5 (1)	
Dichloroethane (1,2)				0	<0.001	<0.001	<0.001	4	5	
Dichloroethene (1,1)				0	<0.001	<0.001	<0.001	4	14	
Dichloroethylene (1,1)	<3.0	<3.0	<3.0	6	<3.0	<3.0	<3.0	78	14	
Dichlorophenol(2,4)				0	<0.30	<0.30	<0.30	4	900 (0.3)	
Diclofop-methyl				0	<0.10	<0.10	<0.10	4	9	
Dimethoate				0	<0.100	<0.100	<0.100	4	20	
Diquat				0	<1	<1	<1	4	0.07	
Diuron				0	<1.0	<1.0	<1.0	4	150	
Ethylbenzene	<0.50	<0.50	<0.50	6	<0.50	<0.50	<0.50	78	140 (1.6)	
Glyphosate				0	<0.01	<0.01	<0.01	4	280	
Malathion				0	<0.100	<0.100	<0.100	4	190	
MCPA				0	0.835	<0.500	1.840	4	100	
Methylene Chloride	<0.50	<0.50	<0.50	6	<0.50	<0.50	<0.50	78	50	
Metolachlor				0	<0.100	<0.100	<0.100	4	50	
Metribuzin				0	<1.000	<1.000	<1.000	4	80	
Nitrilotriacetic acid				0	<0.20	<0.20	<0.20	4	0.4	
Paraquat				0	<1	<1	<1	4	0.07	
Pentachlorophenol				0	<6.0	<6.0	<6.0	4	60 (30)	
Perfluorooctane sulfonic acid (PFOS)				0	<0.01	<0.01	<0.01	4	0.0006	
Perfluorooctanoic acid (PFOA)				0	<0.01	<0.01	<0.01	4	0.0002	
Phorate				0	<0.100	<0.100	<0.100	4	0.002	
Picloram				0	<19.000	<19.000	<19.000	4	190	
Simazine				0	<0.100	<0.100	<0.100	4	10	
Terbufos				0	<0.10	<0.10	<0.10	4	1	
Tetrachloroethene				0	<0.001	<0.001	<0.001	4	0.01	
Tetrachloroethylene	<0.50	<0.50	<0.50	6	<0.50	<0.50	<0.50	78	10	

2.2.6.a Routine Distribution System (does not include Field Reservoirs)

December 2021

	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Primary Organics (ug/L) **										
Tetrachlorophenol(2,3,4,6)				0	<1	<1	<1	4	100 (1)	
Toluene	<0.50	<0.50	<0.50	6	<0.50	<0.50	<0.50	78	60 (24)	
Total Xylenes	<3	<3	<3	6	<3	<3	<3	72	90	
Trichloroethene				0	<0.001	<0.001	<0.001	4	0.005	
Trichloroethylene	<0.50	<0.50	<0.50	6	<0.50	<0.50	<0.50	78	5	
Trichlorophenol(2,4,6)				0	<0.5	<0.5	<0.5	4	5 (2)	
Trifluralin				0	<0.100	<0.100	<0.100	4	45	
Secondary Inorganics (mg/L) ***										
Alkalinity Total				0	124	120	135	4		
Alkalinity, PHP (mg CaCO3/L)				0	<1	<1	<1	4		
Ammonia as N	0.13	0.11	0.15	2	0.14	0.11	0.16	29		
Beryllium				0	<0.0002	<0.0002	<0.0002	4		
Bromide Dissolved	<0.010	<0.010	<0.010	2	0.025	<0.010	0.080	33		
Calcium				0	46.7	44.3	48.5	4		
Chloride Dissolved	6.1	5.9	6.2	2	6.0	3.7	7.6	33	(250)	
Chlorine Free				0	<0.030	<0.030	<0.030	4		
Cobalt				0	<0.0002	<0.0002	<0.0002	4		
Hardness, Total (mg CaCO3/L)				0	173	163	181	4		
Iron				0	<0.005	<0.005	<0.005	4	(0.3)	0.3
Lanthanum				0	<0.001	<0.001	<0.001	4		
Lithium				0	0.0034	0.0032	0.0036	4		
Magnesium				0	14.0	13.6	14.5	4		
Molybdenum				0	0.0007	0.0007	0.0008	4		
Nickel				0	<0.0005	<0.0005	<0.0005	4		
Phosphorus				0	<0.02	<0.02	<0.02	4		
Potassium				0	0.93	0.70	1.40	4		
Silicon				0	1.94	1.55	2.44	4		
Silver				0	<0.0002	<0.0002	<0.0002	4		
Sodium				0	9.5	7.3	12.9	4	(200)	
Sulphate Dissolved	54	54	54	2	59	51	79	33	(500)	
Sulphide				0	<0.002	<0.002	<0.002	4	(0.05)	
Thallium				0	<0.0005	<0.0005	<0.0005	4		
Tin				0	<0.0005	<0.0005	<0.0005	4		
Titanium				0	<0.0005	<0.0005	<0.0005	4		
Total Kjeldahl Nitrogen				0	0.58	0.50	0.70	4		
Vanadium				0	<0.0005	<0.0005	<0.0005	4		
Zinc				0	<0.005	<0.005	<0.005	4	(5.0)	
Zirconium				0	<0.0010	<0.0010	<0.0010	4		

2.2.6.a Routine Distribution System (does not include Field Reservoirs)

December 2021

	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
2,4,5-T				0	<28	<28	<28	4		
6:2 Fluorotelomer sulfonic acid(6:2 FTS)				0	<0.01	<0.01	<0.01	4		
8:2 Fluorotelomer sulfonic acid(8:2 FTS)				0	<0.01	<0.01	<0.01	4		
a-chlordane				0	<0.031	<0.008	<0.100	4		
Alachlor				0	<0.1	<0.1	<0.1	4		
Aldicarb				0	<0.9	<0.9	<0.9	4		
Aldrin				0	<0.031	<0.008	<0.100	4		
Ametryn				0	<0.1	<0.1	<0.1	4		
Atrazine Desethyl				0	<0.1	<0.1	<0.1	4		
Bendiocarb				0	<1	<1	<1	4		
Bromochloroacetic acid	<1	<1	<1	6	<1	<1	<1	76		
Bromodichloromethane	<0.5	<0.5	<0.5	6	<0.5	<0.5	<0.5	78		16
Bromoform	<1.0	<1.0	<1.0	6	<1.0	<1.0	<1.0	78		
Carbaryl				0	<0.500	<0.500	<0.500	4	90	
Carbofuran				0	<0.500	<0.500	<0.500	4	90	
Chloroform	14.3	13.30	15.4	6	15.5	<0.01	37.0	82		
Dibromoacetic acid	<1	<1	<1	6	<1	<1	<1	76		
Dibromochloromethane	<0.50	<0.50	<0.50	6	<0.48	<0.01	<0.50	82		
Dichloroacetic acid	5	5	6	6	9	5	19	76		
Dichlorobenzene (1,3)	<0.50	<0.50	<0.50	6	<0.50	<0.50	<0.50	78		
Dichloroethylene, cis (1,2)	<0.50	<0.50	<0.50	6	<0.50	<0.50	<0.50	78		
Dichloroethylene, trans (1,2)	<0.50	<0.50	<0.50	6	<0.50	<0.50	<0.50	78		
Dichloropropane (1,2)	<0.5	<0.5	<0.5	6	<0.5	<0.5	<0.5	78		
Dieldrin				0	<0.031	<0.008	<0.100	4		
Dinoseb				0	<1	<1	<1	4		
gamma-hexachlorocyclohexane				0	<0.031	<0.008	<0.100	4		
g-chlordane				0	<0.031	<0.008	<0.100	4		
Heptachlor				0	<0.031	<0.008	<0.100	4		
Heptachlor Epoxide				0	<0.031	<0.008	<0.100	4		
Methoxychlor				0	<67.5	<0.1	<90.0	4		
Methyl Parathion				0	<0.1	<0.1	<0.1	4		
Methyl t-Butyl Ether (MTBE)	<0.5	<0.5	<0.5	6	<0.5	<0.5	<0.5	78	(15)	
Methylene chloride				0	<0.01	<0.01	<0.01	4		
MIBK	<1.0	<1.0	<1.0	6	<1.0	<1.0	<1.0	78		
Monobromoacetic acid	<1	<1	<1	6	<1	<1	<1	76		
Monochloroacetic acid	<5	<5	<5	6	<5	<5	<5	76		
op-DDT				0	<0.028	<0.004	<0.100	4		
Oxychlordane				0	<0.031	<0.008	<0.100	4		
Parathion				0	<0.100	<0.100	<0.100	4		
Perfluorobutane sulfonic acid (PFBS)				0	<0.01	<0.01	<0.02	4		
Perfluorobutanoic acid (PFBA)				0	<0.275	<0.100	<0.800	4		

2.2.6.a Routine Distribution System (does not include Field Reservoirs)

December 2021

	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
Perfluoroheptanoic acid (PFHpA)				0	<0.01	<0.01	<0.02	4		
Perfluorohexane sulfonic acid (PFHxS)				0	<0.01	<0.01	<0.02	4		
Perfluorohexanoic acid (PFHxA)				0	<0.01	<0.01	<0.02	4		
Perfluorononanoic acid (PFNA)				0	<0.01	<0.01	<0.02	4		
Perfluoropentanoic acid (PFPeA)				0	<0.01	<0.01	<0.02	4		
pp-DDD				0	<0.028	<0.004	<0.100	4		
pp-DDE				0	<0.028	<0.004	<0.100	4		
pp-DDT				0	<0.028	<0.004	<0.100	4		
Prometon				0	<0.1	<0.1	<0.1	4		
Prometryne				0	<0.1	<0.1	<0.1	4		
Propazine				0	<0.1	<0.1	<0.1	4		
Styrene	<0.50	<0.50	<0.50	6	<0.50	<0.50	<0.50	78		
Temephos				0	<1	<1	<1	4		
Terbutryn				0	<0.1	<0.1	<0.1	4		
Tetrachloroethane (1,1,2,2)	<1.0	<1.0	<1.0	6	<1.0	<1.0	<1.0	78		
Total Organic Carbon				0	1.3	1.0	1.5	4		
Total Volatile Organics (NonTHM)	<1.0	<1.0	<1.0	6	<1.0	<1.0	<1.0	78		
Total Volatile Organics (Unknown)	<1.0	<1.0	<1.0	6	<1.0	<1.0	<1.0	78		
Triallate				0	<0.100	<0.100	<0.100	4		
Trichloroacetic acid	6	5	6	6	8	4	16	76		
Trichlorobenzene (1,2,4)	<0.500	<0.500	<0.500	6	<0.500	<0.500	<0.500	78		
Trichlorobenzene(1,2,3)				0	<0.001	<0.001	<0.001	4		
Trichlorobenzene(1,2,4)				0	<0.001	<0.001	<0.001	4		
Trichloroethane (1,1,1)	<0.5	<0.5	<0.5	6	<0.5	<0.5	<0.5	78		
Xylene (1,2)	<0.5	<0.5	<0.5	6	<0.5	<0.5	<0.5	78		
Xylene (1,4)	<0.5	<0.5	<0.5	6	<0.5	<0.5	<0.5	78		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and/or a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638 -04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

2.2.6.b Additional Distribution System Samples Collected from Water Quality Complaint Investigations

December 2021

	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Physical										
Colour (TCU)	1.2	<0.5	5.7	10	0.9	<0.5	5.7	138	(15)	10
pH (N/A)	8.0	7.9	8.2	10	7.9	7.5	8.2	126	(7.0 - 10.5)	7.3 - 8.3
Turbidity (NTU)	0.50	0.05	2.47	10	0.49	<0.04	8.55	138		1.0
Primary Inorganics (mg/L) **										
Aluminum	0.090	0.078	0.106	10	0.096	0.027	0.260	135	2.9	0.1/0.2
Antimony	<0.0002	<0.0002	<0.0002	10	<0.0002	<0.0002	<0.0002	135	0.006	
Arsenic	<0.0002	<0.0002	<0.0002	10	<0.0002	<0.0002	<0.0002	135	0.01	
Barium	0.055	0.049	0.061	10	0.057	0.032	0.074	135	2	
Boron	0.009	0.007	0.010	10	0.009	0.006	0.015	135	5	
Cadmium	<0.0002	<0.0002	<0.0002	10	<0.0002	<0.0002	<0.0002	135	0.005	
Chlorine, total	1.69	1.15	1.99	10	1.69	0.56	2.09	138	>0.5 and <3.0	>1.0 and <2.4
Chromium	<0.0002	<0.0002	<0.0002	10	0.0002	<0.0002	0.0003	135	0.05	
Copper	0.006	<0.005	0.009	10	0.007	<0.005	0.042	135	(1)	
Lead	<0.0002	<0.0002	<0.0002	10	0.0011	<0.0002	0.0761	135	0.005	
Manganese	0.002	<0.002	0.004	10	0.002	<0.002	0.013	135	0.12 (0.02)	
Mercury	<0.00020	<0.00020	<0.00020	10	<0.00020	<0.00020	<0.00020	135	0.001	
Selenium	0.0002	<0.0002	0.0003	10	0.0002	<0.0002	0.0004	135	0.05	
Strontium	0.456	0.434	0.494	10	0.422	0.265	0.494	135	7.0	
Uranium	0.0005	<0.0005	0.0006	10	0.0005	<0.0005	0.0006	135	0.02	
Primary Organics (ug/L) **										
Benzene	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132	5	
Carbon Tetrachloride	<1.0	<1.0	<1.0	10	<1.0	<0.5	<1.0	132	2	
Chlorobenzene	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132	80 (30)	
Dichlorobenzene (1,2)	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132	200 (3)	
Dichlorobenzene (1,4)	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132	5 (1)	
Dichloroethane (1,2)				0	<0.5	<0.5	<0.5	3	5	
Dichloroethylene (1,1)	<3	<3	<3	10	<3	<3	<3	132	14	
Ethylbenzene	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132	140 (1.6)	
Methylene Chloride	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132	50	
Tetrachloroethylene	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132	10	
Toluene	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132	60 (24)	
Total Xylenes	<2.5	<2.5	<2.5	10	<2.5	<2.5	<2.5	128	90	
Trichloroethylene	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132	5	
Vinyl Chloride				0	<1	<1	<1	3	2	

2.2.6.b Additional Distribution System Samples Collected from Water Quality Complaint Investigations

December 2021

	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Inorganics (mg/L) * **										
Beryllium	<0.0002	<0.0002	<0.0002	10	<0.0002	<0.0002	<0.0002	135		
Calcium	47.0	45.6	51.9	10	44.5	27.9	51.9	109		
Cobalt	0.0002	<0.0002	0.0003	10	0.0002	<0.0002	0.0003	135		
Hardness, Total (mg CaCO3/L)	172	166	187	10	166	103	192	128		
Iron	0.065	<0.005	0.318	10	0.065	<0.005	1.080	135	(0.3)	0.3
Lanthanum	<0.001	<0.001	<0.001	10	<0.001	<0.001	<0.001	135		
Lithium	0.0031	0.0029	0.0034	10	0.0032	0.0020	0.0044	135		
Magnesium	14.5	13.9	15.8	10	13.7	8.7	15.8	109		
Molybdenum	0.0007	0.0006	0.0008	10	0.0007	0.0005	0.0009	135		
Nickel	0.0005	<0.0005	0.0007	10	0.0005	<0.0005	0.0012	135		
Phosphorus	<0.02	<0.02	<0.02	10	<0.02	<0.02	<0.02	109		
Potassium	0.7	0.7	0.7	10	0.7	0.5	1.1	109		
Silicon	1.89	1.80	2.07	10	1.91	1.43	2.59	109		
Silver	<0.0002	<0.0002	<0.0002	10	<0.0002	<0.0002	<0.0002	135		
Sodium	7.2	6.5	8.0	10	8.3	5.6	36.5	109	(200)	
Thallium	<0.0005	<0.0005	<0.0005	10	<0.0005	<0.0005	<0.0005	135		
Tin	<0.0005	<0.0005	<0.0005	10	0.0005	<0.0005	0.0039	135		
Titanium	<0.0005	<0.0005	<0.0005	10	0.0005	<0.0005	0.0021	135		
Vanadium	<0.0005	<0.0005	<0.0005	10	<0.0005	<0.0005	<0.0005	135		
Zinc	<0.005	<0.005	<0.005	10	0.006	<0.005	0.026	135	(5.0)	
Zirconium	<0.001	<0.001	<0.001	10	<0.001	<0.001	<0.001	135		

2.2.6.b Additional Distribution System Samples Collected from Water Quality Complaint Investigations

December 2021

	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
Bromodichloromethane	<0.5	<0.5	<0.5	10	0.6	<0.5	2.2	132		16
Bromoform	<1.0	<1.0	<1.0	10	<1.0	<0.5	<1.0	132		
Chloroform	11.7	9.4	14.1	10	16.1	5.2	35.5	132		
Dibromochloromethane	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132		
Dichlorobenzene (1,3)	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132		
Dichloroethylene, cis (1,2)	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132		
Dichloroethylene, trans (1,2)	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132		
Dichloropropane (1,2)	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132		
Methyl t-Butyl Ether (MTBE)	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132	(15)	
MIBK	<1	<1	<1	10	<1	<1	<1	132		
Styrene	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132		
Tetrachloroethane (1,1,2,2)	<1.0	<1.0	<1.0	10	<1.0	<0.5	<1.0	132		
Total Volatile Organics (NonTHM)	<1	<1	<1	10	<1	<1	<1	132		
Total Volatile Organics (Unknown)	<1.0	<1.0	<1.0	10	1.1	<1.0	10.2	129		
Trichlorobenzene (1,2,4)	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132		
Trichloroethane (1,1,1)	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132		
Xylene (1,2)	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132		
Xylene (1,4)	<0.5	<0.5	<0.5	10	<0.5	<0.5	<0.5	132		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximu Acceptable Concentrations (MAC) and/or a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638-04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

2.2.7 Castledowns Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Physical										
Colour (TCU)	0.7	0.7	0.7	1	1.0	<0.5	1.5	7	(15)	10
Conductivity (uS/cm)	364	364	364	1	376	328	450	7		
Odour	Inoff	Inoff	Inoff	1	Inoff	Inoff	Inoff	7		
pH (N/A)	8.0	8.0	8.0	1	7.9	7.5	8.0	7	(7.0 - 10.5)	7.3 - 8.3
Turbidity (NTU)	0.10	0.09	0.10	4	0.06	<0.03	0.21	53		1
Primary Inorganics (mg/L) **										
Aluminum	0.102	0.102	0.102	1	0.086	0.031	0.160	7	2.9	0.1/0.2
Antimony	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.006	
Arsenic	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	0.0002	7	0.01	
Barium	0.054	0.054	0.054	1	0.058	0.049	0.073	7	2	
Boron	0.009	0.009	0.009	1	0.009	0.007	0.012	7	5	
Bromate Dissolved	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	7	0.01	
Cadmium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.005	
Chlorate Dissolved	0.070	0.070	0.070	1	0.089	0.060	0.114	7	1	
Chlorine, total	1.95	1.91	2.00	4	1.79	1.55	2.00	54	>0.5 and <3.0	>1.0 and <2.4
Chlorite Dissolved	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	7	1	
Chromium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.05	
Copper	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	7	(1)	
Fluoride	0.69	0.69	0.69	1	0.66	0.63	0.69	7	1.5	0.6 - 0.8
Lead	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.005	
Manganese	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	7	0.12 (0.02)	
Mercury	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.001	
Nitrate (as N) Dissolved	0.070	0.070	0.070	1	0.079	0.060	0.101	7	10	
Nitrite (as N) Dissolved	0.010	0.010	0.010	1	0.023	<0.010	0.040	7	1	
Selenium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	0.0003	7	0.05	
Strontium	0.445	0.445	0.445	1	0.425	0.391	0.453	7	7.0	
Uranium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	0.0005	7	0.02	
Primary Organics (ug/L) **										
Benzene	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	5	
Carbon Tetrachloride	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7	2	
Chlorobenzene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	80 (30)	
Dichlorobenzene (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	200 (3)	
Dichlorobenzene (1,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	5 (1)	
Dichloroethylene (1,1)	<3.0	<3.0	<3.0	1	<3.0	<3.0	<3.0	7	14	
Ethylbenzene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	140 (1.6)	
Methylene Chloride	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	50	
Tetrachloroethylene	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	10	
Toluene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	60 (24)	
Total Xylenes	<3	<3	<3	1	<3	<3	<3	5	90	
Trichloroethylene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	5	

2.2.7 Castledowns Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Inorganics (mg/L) ***										
Alkalinity Total	125	125	125	1	122	110	137	7		
Beryllium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7		
Bromide Dissolved	<0.010	<0.010	<0.010	1	0.021	<0.010	0.050	7		
Calcium	46.6	46.6	46.6	1	46.5	40.9	51.7	7		
Calcium Hardness	113	113	113	1	112	104	121	7		
Chloride Dissolved	6.7	6.7	6.7	1	6.1	5.3	6.7	7	(250)	
Cobalt	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7		
Hardness, Total (mg CaCO3/L)	173	173	173	1	170	154	183	7		
Iron	<0.005	<0.005	<0.005	1	<0.005	<0.005	0.006	7	(0.3)	0.3
Lanthanum	<0.0010	<0.0010	<0.0010	1	<0.0010	<0.0010	<0.0010	7		
Lithium	0.0031	0.0031	0.0031	1	0.0031	0.0026	0.0039	7		
Magnesium	14.2	14.2	14.2	1	13.9	12.4	15.0	7		
Molybdenum	0.0008	0.0008	0.0008	1	0.0007	0.0006	0.0008	7		
Nickel	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	0.0006	7		
Phosphorus	<0.02	<0.02	<0.02	1	<0.02	<0.02	<0.02	7		
Potassium	0.70	0.70	0.70	1	0.80	0.60	1.10	7		
Silicon	1.80	1.80	1.80	1	1.89	1.47	2.81	7		
Silver	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7		
Sodium	8.0	8.0	8.0	1	11.0	7.2	27.2	7	(200)	
Sulphate Dissolved	55	55	55	1	61	52	94	7	(500)	
Thallium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Tin	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Titanium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Vanadium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Zinc	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	7	(5.0)	
Zirconium	<0.0010	<0.0010	<0.0010	1	<0.0010	<0.0010	<0.0010	7		

2.2.7 Castledowns Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
Bromodichloromethane	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		16
Bromoform	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Chloroform	10.3	10.3	10.3	1	13.3	6.0	26.7	7		
Dibromochloromethane	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichlorobenzene (1,3)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichloroethylene, cis (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichloroethylene, trans (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichloropropane (1,2)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Methyl t-Butyl Ether (MTBE)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	(15)	
MIBK	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Styrene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Tetrachloroethane (1,1,2,2)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Total Organic Carbon	1.0	1.0	1.0	1	1.3	0.9	2.4	7		
Total Volatile Organics (NonTHM)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Total Volatile Organics (Unknown)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Trichlorobenzene (1,2,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Trichloroethane (1,1,1)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Xylene (1,2)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Xylene (1,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and/or a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638-04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

2.2.8 Clareview Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Physical										
Colour (TCU)				0	0.9	<0.5	1.8	10	(15)	10
Conductivity (uS/cm)				0	368	319	431	85		
Odour				0	Inoff	Inoff	Inoff	10		
pH (N/A)				0	7.8	7.5	8.0	10	(7.0 - 10.5)	7.3 - 8.3
Turbidity (NTU)				0	0.11	0.05	0.68	85		1
Primary Inorganics (mg/L) **										
Aluminum				0	0.086	0.030	0.173	10	2.9	0.1/0.2
Antimony				0	<0.0002	<0.0002	<0.0002	10	0.006	
Arsenic				0	<0.0002	<0.0002	0.0002	10	0.01	
Barium				0	0.060	0.053	0.072	10	2	
Boron				0	0.009	0.008	0.011	10	5	
Bromate Dissolved				0	<0.005	<0.005	<0.005	10	0.01	
Cadmium				0	<0.0002	<0.0002	<0.0002	10	0.005	
Chlorate Dissolved				0	0.135	0.100	0.161	10	1	
Chlorine, total				0	1.74	1.48	2.03	86	>0.5 and <3.0	>1.0 and <2.4
Chlorite Dissolved				0	<0.005	<0.005	<0.005	10	1	
Chromium				0	<0.0002	<0.0002	<0.0002	10	0.05	
Copper				0	<0.005	<0.005	<0.005	10	(1)	
Fluoride				0	0.68	0.66	0.71	10	1.5	0.6 - 0.8
Lead				0	<0.0002	<0.0002	<0.0002	10	0.005	
Manganese				0	<0.002	<0.002	<0.002	10	0.12 (0.02)	
Mercury				0	<0.0002	<0.0002	<0.0002	10	0.001	
Nitrate (as N) Dissolved				0	0.077	0.050	0.114	10	10	
Nitrite (as N) Dissolved				0	0.027	<0.010	0.040	10	1	
Selenium				0	<0.0002	<0.0002	0.0003	10	0.05	
Strontium				0	0.426	0.376	0.465	10	7.0	
Uranium				0	<0.0005	<0.0005	0.0006	10	0.02	
Primary Organics (ug/L) **										
Benzene				0	<0.5	<0.5	<0.5	10	5	
Carbon Tetrachloride				0	<1.0	<1.0	<1.0	10	2	
Chlorobenzene				0	<0.50	<0.50	<0.50	10	80 (30)	
Dichlorobenzene (1,2)				0	<0.50	<0.50	<0.50	10	200 (3)	
Dichlorobenzene (1,4)				0	<0.5	<0.5	<0.5	10	5 (1)	
Dichloroethylene (1,1)				0	<3.0	<3.0	<3.0	10	14	
Ethylbenzene				0	<0.50	<0.50	<0.50	10	140 (1.6)	
Methylene Chloride				0	<0.5	<0.5	<0.5	10	50	
Tetrachloroethylene				0	<0.5	<0.5	<0.5	10	10	
Toluene				0	<0.50	<0.50	<0.50	10	60 (24)	
Total Xylenes				0	<3	<3	<3	8	90	
Trichloroethylene				0	<0.50	<0.50	<0.50	10	5	

2.2.8 Clareview Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Inorganics (mg/L) * **										
Alkalinity Total				0	121	108	133	10		
Beryllium				0	<0.0002	<0.0002	<0.0002	10		
Bromide Dissolved				0	0.023	<0.010	0.050	10		
Calcium				0	46.8	41.0	52.8	10		
Calcium Hardness				0	115	103	130	10		
Chloride Dissolved				0	5.6	4.2	7.3	10	(250)	
Cobalt				0	<0.0002	<0.0002	<0.0002	10		
Hardness, Total (mg CaCO3/L)				0	171	152	191	10		
Iron				0	0.011	0.009	0.016	10	(0.3)	0.3
Lanthanum				0	<0.0010	<0.0010	<0.0010	10		
Lithium				0	0.0034	0.0030	0.0041	10		
Magnesium				0	14.0	12.5	15.5	10		
Molybdenum				0	0.0007	0.0006	0.0009	10		
Nickel				0	<0.0005	<0.0005	0.0007	10		
Phosphorus				0	<0.02	<0.02	<0.02	10		
Potassium				0	0.81	0.60	1.10	10		
Silicon				0	1.93	1.47	2.52	10		
Silver				0	<0.0002	<0.0002	<0.0002	10		
Sodium				0	8.9	5.6	19.5	10	(200)	
Sulphate Dissolved				0	59	52	83	10	(500)	
Thallium				0	<0.0005	<0.0005	<0.0005	10		
Tin				0	<0.0005	<0.0005	<0.0005	10		
Titanium				0	<0.0005	<0.0005	<0.0005	10		
Vanadium				0	<0.0005	<0.0005	<0.0005	10		
Zinc				0	<0.005	<0.005	<0.005	10	(5.0)	
Zirconium				0	<0.0010	<0.0010	<0.0010	10		

2.2.8 Clareview Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
Bromodichloromethane				0	<0.5	<0.5	<0.5	10		16
Bromoform				0	<1.0	<1.0	<1.0	10		
Chloroform				0	19.3	9.0	38.6	10		
Dibromochloromethane				0	<0.50	<0.50	<0.50	10		
Dichlorobenzene (1,3)				0	<0.50	<0.50	<0.50	10		
Dichloroethylene, cis (1,2)				0	<0.50	<0.50	<0.50	10		
Dichloroethylene, trans (1,2)				0	<0.50	<0.50	<0.50	10		
Dichloropropane (1,2)				0	<0.5	<0.5	<0.5	10		
Methyl t-Butyl Ether (MTBE)				0	<0.5	<0.5	<0.5	10	(15)	
MIBK				0	<1.0	<1.0	<1.0	10		
Styrene				0	<0.50	<0.50	<0.50	10		
Tetrachloroethane (1,1,2,2)				0	<1.0	<1.0	<1.0	10		
Total Organic Carbon				0	1.4	0.9	2.5	10		
Total Volatile Organics (NonTHM)				0	<1.0	<1.0	<1.0	10		
Total Volatile Organics (Unknown)				0	<1.0	<1.0	<1.0	10		
Trichlorobenzene (1,2,4)				0	<0.5	<0.5	<0.5	10		
Trichloroethane (1,1,1)				0	<0.5	<0.5	<0.5	10		
Xylene (1,2)				0	<0.5	<0.5	<0.5	10		
Xylene (1,4)				0	<0.5	<0.5	<0.5	10		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and/or a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638-04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

2.2.9 Discovery Park Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Physical										
Colour (TCU)				0	0.8	<0.5	1.3	6	(15)	10
Conductivity (uS/cm)				0	377	326	415	6		
Odour				0	Inoff	Inoff	Inoff	6		
pH (N/A)				0	8.0	7.9	8.2	6	(7.0 - 10.5)	7.3 - 8.3
Turbidity (NTU)	0.13	0.09	0.21	4	0.10	0.05	0.21	53		1
Primary Inorganics (mg/L) **										
Aluminum				0	0.072	0.043	0.105	6	2.9	0.1/0.2
Antimony				0	<0.0002	<0.0002	<0.0002	6	0.006	
Arsenic				0	<0.0002	<0.0002	0.0002	6	0.01	
Barium				0	0.058	0.050	0.067	6	2	
Boron				0	0.008	0.007	0.009	6	5	
Bromate Dissolved				0	<0.005	<0.005	<0.005	6	0.01	
Cadmium				0	<0.0002	<0.0002	<0.0002	6	0.005	
Chlorate Dissolved				0	0.098	0.080	0.120	6	1	
Chlorine, total	1.11	1.02	1.16	4	1.17	0.74	1.48	67	>0.5 and <3.0	>1.0 and <2.4
Chlorite Dissolved				0	<0.005	<0.005	<0.005	6	1	
Chromium				0	<0.0002	<0.0002	<0.0002	6	0.05	
Copper				0	0.008	<0.005	0.023	6	(1)	
Fluoride				0	0.67	0.65	0.70	6	1.5	0.6 - 0.8
Lead				0	<0.0002	<0.0002	<0.0002	6	0.005	
Manganese				0	<0.002	<0.002	<0.002	6	0.12 (0.02)	
Mercury				0	<0.0002	<0.0002	<0.0002	6	0.001	
Nitrate (as N) Dissolved				0	0.089	0.080	0.116	6	10	
Nitrite (as N) Dissolved				0	0.030	<0.010	0.050	6	1	
Selenium				0	0.0002	<0.0002	0.0003	6	0.05	
Strontium				0	0.422	0.379	0.465	6	7.0	
Uranium				0	<0.0005	<0.0005	0.0005	6	0.02	
Primary Organics (ug/L) **										
Benzene				0	<0.5	<0.5	<0.5	6	5	
Carbon Tetrachloride				0	<1.0	<1.0	<1.0	6	2	
Chlorobenzene				0	<0.50	<0.50	<0.50	6	80 (30)	
Dichlorobenzene (1,2)				0	<0.50	<0.50	<0.50	6	200 (3)	
Dichlorobenzene (1,4)				0	<0.5	<0.5	<0.5	6	5 (1)	
Dichloroethylene (1,1)				0	<3.0	<3.0	<3.0	6	14	
Ethylbenzene				0	<0.50	<0.50	<0.50	6	140 (1.6)	
Methylene Chloride				0	<0.5	<0.5	<0.5	6	50	
Tetrachloroethylene				0	<0.5	<0.5	<0.5	6	10	
Toluene				0	<0.50	<0.50	<0.50	6	60 (24)	
Total Xylenes				0	<3	<3	<3	5	90	
Trichloroethylene				0	<0.50	<0.50	<0.50	6	5	

2.2.9 Discovery Park Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Inorganics (mg/L) * **										
Alkalinity Total				0	124	106	137	6		
Beryllium				0	<0.0002	<0.0002	<0.0002	6		
Bromide Dissolved				0	0.027	<0.010	0.060	6		
Calcium				0	46.6	40.2	50.2	6		
Calcium Hardness				0	113	98	126	6		
Chloride Dissolved				0	5.9	5.6	6.8	6	(250)	
Cobalt				0	<0.0002	<0.0002	<0.0002	6		
Hardness, Total (mg CaCO3/L)				0	171	146	187	6		
Iron				0	0.011	<0.005	0.020	6	(0.3)	0.3
Lanthanum				0	<0.0010	<0.0010	<0.0010	6		
Lithium				0	0.0030	0.0025	0.0034	6		
Magnesium				0	13.9	12.1	15.1	6		
Molybdenum				0	0.0007	0.0006	0.0008	6		
Nickel				0	0.0007	<0.0005	0.0014	6		
Phosphorus				0	<0.02	<0.02	<0.02	6		
Potassium				0	0.83	0.60	1.00	6		
Silicon				0	1.87	1.58	2.15	6		
Silver				0	<0.0002	<0.0002	<0.0002	6		
Sodium				0	9.9	7.4	17.4	6	(200)	
Sulphate Dissolved				0	59	52	78	6	(500)	
Thallium				0	<0.0005	<0.0005	<0.0005	6		
Tin				0	<0.0005	<0.0005	<0.0005	6		
Titanium				0	<0.0005	<0.0005	<0.0005	6		
Vanadium				0	<0.0005	<0.0005	<0.0005	6		
Zinc				0	<0.005	<0.005	0.007	6	(5.0)	
Zirconium				0	<0.0010	<0.0010	<0.0010	6		

2.2.9 Discovery Park Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
Bromodichloromethane				0	<0.5	<0.5	<0.5	6		16
Bromoform				0	<1.0	<1.0	<1.0	6		
Chloroform				0	11.4	5.9	20.0	6		
Dibromochloromethane				0	<0.50	<0.50	<0.50	6		
Dichlorobenzene (1,3)				0	<0.50	<0.50	<0.50	6		
Dichloroethylene, cis (1,2)				0	<0.50	<0.50	<0.50	6		
Dichloroethylene, trans (1,2)				0	<0.50	<0.50	<0.50	6		
Dichloropropane (1,2)				0	<0.5	<0.5	<0.5	6		
Methyl t-Butyl Ether (MTBE)				0	<0.5	<0.5	<0.5	6	(15)	
MIBK				0	<1.0	<1.0	<1.0	6		
Styrene				0	<0.50	<0.50	<0.50	6		
Tetrachloroethane (1,1,2,2)				0	<1.0	<1.0	<1.0	6		
Total Organic Carbon				0	1.2	0.8	1.8	6		
Total Volatile Organics (NonTHM)				0	<1.0	<1.0	<1.0	6		
Total Volatile Organics (Unknown)				0	<1.0	<1.0	<1.0	6		
Trichlorobenzene (1,2,4)				0	<0.5	<0.5	<0.5	6		
Trichloroethane (1,1,1)				0	<0.5	<0.5	<0.5	6		
Xylene (1,2)				0	<0.5	<0.5	<0.5	6		
Xylene (1,4)				0	<0.5	<0.5	<0.5	6		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and/or a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638-04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

Footnote: The Discovery Park reservoir was officially included as part of EWSI's Approval to Operate, Approval 638-04-00, starting on January 19, 2021. From January 1 - 18, 2021 the Discovery Park Waterworks System operated under the Environmental Protection and Enhancement Act (EPEA) Registration no. 462525-00-00. This Registration was issued for Discovery Park Waterworks System to follow the Code of Practice for a Waterworks System Consisting Solely of a Water Distribution System.

2.2.10 Kaskitayo Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Physical										
Colour (TCU)				0	0.8	0.5	1.3	6	(15)	10
Conductivity (uS/cm)				0	376	345	397	6		
Odour				0	Inoff	Inoff	Inoff	6		
pH (N/A)				0	7.9	7.7	8.1	6	(7.0 - 10.5)	7.3 - 8.3
Turbidity (NTU)	0.09	0.08	0.09	4	0.06	<0.02	0.32	53		1
Primary Inorganics (mg/L) **										
Aluminum				0	0.082	0.049	0.125	6	2.9	0.1/0.2
Antimony				0	<0.0002	<0.0002	<0.0002	6	0.006	
Arsenic				0	<0.0002	<0.0002	<0.0002	6	0.01	
Barium				0	0.059	0.049	0.068	6	2	
Boron				0	0.008	0.008	0.010	6	5	
Bromate Dissolved				0	<0.005	<0.005	<0.005	6	0.01	
Cadmium				0	<0.0002	<0.0002	<0.0002	6	0.005	
Chlorate Dissolved				0	0.095	0.080	0.114	6	1	
Chlorine, total	2.00	1.94	2.04	4	1.88	1.70	2.05	54	>0.5 and <3.0	>1.0 and <2.4
Chlorite Dissolved				0	<0.005	<0.005	<0.005	6	1	
Chromium				0	<0.0002	<0.0002	0.0003	6	0.05	
Copper				0	<0.005	<0.005	<0.005	6	(1)	
Fluoride				0	0.69	0.66	0.72	6	1.5	0.6 - 0.8
Lead				0	<0.0002	<0.0002	0.0004	6	0.005	
Manganese				0	<0.002	<0.002	<0.002	6	0.12 (0.02)	
Mercury				0	<0.0002	<0.0002	<0.0002	6	0.001	
Nitrate (as N) Dissolved				0	0.072	0.050	0.090	6	10	
Nitrite (as N) Dissolved				0	0.030	0.010	0.050	6	1	
Selenium				0	<0.0002	<0.0002	0.0003	6	0.05	
Strontium				0	0.426	0.354	0.464	6	7.0	
Uranium				0	<0.0005	<0.0005	0.0006	6	0.02	
Primary Organics (ug/L) **										
Benzene				0	<0.5	<0.5	<0.5	6	5	
Carbon Tetrachloride				0	<1.0	<1.0	<1.0	6	2	
Chlorobenzene				0	<0.50	<0.50	<0.50	6	80 (30)	
Dichlorobenzene (1,2)				0	<0.50	<0.50	<0.50	6	200 (3)	
Dichlorobenzene (1,4)				0	<0.5	<0.5	<0.5	6	5 (1)	
Dichloroethylene (1,1)				0	<3.0	<3.0	<3.0	6	14	
Ethylbenzene				0	<0.50	<0.50	<0.50	6	140 (1.6)	
Methylene Chloride				0	<0.5	<0.5	<0.5	6	50	
Tetrachloroethylene				0	<0.5	<0.5	<0.5	6	10	
Toluene				0	<0.50	<0.50	<0.50	6	60 (24)	
Total Xylenes				0	<3	<3	<3	5	90	
Trichloroethylene				0	<0.50	<0.50	<0.50	6	5	

2.2.10 Kaskitayo Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Inorganics (mg/L) * **										
Alkalinity Total				0	125	109	140	6		
Beryllium				0	<0.0002	<0.0002	<0.0002	6		
Bromide Dissolved				0	0.027	<0.010	0.060	6		
Calcium				0	47.9	41.6	54.0	6		
Calcium Hardness				0	116	105	125	6		
Chloride Dissolved				0	5.7	5.0	6.1	6	(250)	
Cobalt				0	<0.0002	<0.0002	<0.0002	6		
Hardness, Total (mg CaCO3/L)				0	174	143	191	6		
Iron				0	<0.005	<0.005	<0.005	6	(0.3)	0.3
Lanthanum				0	<0.0010	<0.0010	<0.0010	6		
Lithium				0	0.0031	0.0028	0.0036	6		
Magnesium				0	14.3	12.2	15.9	6		
Molybdenum				0	0.0007	0.0006	0.0008	6		
Nickel				0	<0.0006	<0.0005	0.0013	6		
Phosphorus				0	<0.02	<0.02	<0.02	6		
Potassium				0	0.70	0.60	0.80	6		
Silicon				0	1.89	1.46	2.20	6		
Silver				0	<0.0002	<0.0002	<0.0002	6		
Sodium				0	9.8	7.1	13.3	6	(200)	
Sulphate Dissolved				0	60	52	70	6	(500)	
Thallium				0	<0.0005	<0.0005	<0.0005	6		
Tin				0	<0.0005	<0.0005	<0.0005	6		
Titanium				0	<0.0005	<0.0005	<0.0005	6		
Vanadium				0	<0.0005	<0.0005	<0.0005	6		
Zinc				0	<0.005	<0.005	<0.005	6	(5.0)	
Zirconium				0	<0.0010	<0.0010	<0.0010	6		

2.2.10 Kaskitayo Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
Bromodichloromethane				0	<0.5	<0.5	<0.5	6		16
Bromoform				0	<1.0	<1.0	<1.0	6		
Chloroform				0	15.6	8.5	29.3	6		
Dibromochloromethane				0	<0.50	<0.50	<0.50	6		
Dichlorobenzene (1,3)				0	<0.50	<0.50	<0.50	6		
Dichloroethylene, cis (1,2)				0	<0.50	<0.50	<0.50	6		
Dichloroethylene, trans (1,2)				0	<0.50	<0.50	<0.50	6		
Dichloropropane (1,2)				0	<0.5	<0.5	<0.5	6		
Methyl t-Butyl Ether (MTBE)				0	<0.5	<0.5	<0.5	6	(15)	
MIBK				0	<1.0	<1.0	<1.0	6		
Styrene				0	<0.50	<0.50	<0.50	6		
Tetrachloroethane (1,1,2,2)				0	<1.0	<1.0	<1.0	6		
Total Organic Carbon				0	1.2	0.9	1.4	6		
Total Volatile Organics (NonTHM)				0	<1.0	<1.0	<1.0	6		
Total Volatile Organics (Unknown)				0	<1.0	<1.0	<1.0	6		
Trichlorobenzene (1,2,4)				0	<0.5	<0.5	<0.5	6		
Trichloroethane (1,1,1)				0	<0.5	<0.5	<0.5	6		
Xylene (1,2)				0	<0.5	<0.5	<0.5	6		
Xylene (1,4)				0	<0.5	<0.5	<0.5	6		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and/or a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638-04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

2.2.11 Londonderry Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Physical										
Colour (TCU)	0.7	0.7	0.7	1	0.8	<0.5	1.3	6	(15)	10
Conductivity (uS/cm)	361	361	361	1	368	324	426	6		
Odour	Inoff	Inoff	Inoff	1	Inoff	Inoff	Inoff	6		
pH (N/A)	8.0	8.0	8.0	1	7.8	7.4	8.0	6	(7.0 - 10.5)	7.3 - 8.3
Turbidity (NTU)	0.10	0.06	0.20	4	0.07	0.04	0.27	53		1
Primary Inorganics (mg/L) **										
Aluminum	0.110	0.110	0.110	1	0.091	0.031	0.173	6	2.9	0.1/0.2
Antimony	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	6	0.006	
Arsenic	0.0002	0.0002	0.0002	1	<0.0002	<0.0002	0.0002	6	0.01	
Barium	0.054	0.054	0.054	1	0.058	0.052	0.072	6	2	
Boron	0.009	0.009	0.009	1	0.009	0.008	0.012	6	5	
Bromate Dissolved	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	6	0.01	
Cadmium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	6	0.005	
Chlorate Dissolved	0.149	0.149	0.149	1	0.139	0.101	0.166	6	1	
Chlorine, total	2.04	2.01	2.07	4	1.83	1.52	2.07	54	>0.5 and <3.0	>1.0 and <2.4
Chlorite Dissolved	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	6	1	
Chromium	0.0002	0.0002	0.0002	1	<0.0002	<0.0002	0.0002	6	0.05	
Copper	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	6	(1)	
Fluoride	0.71	0.71	0.71	1	0.68	0.66	0.71	6	1.5	0.6 - 0.8
Lead	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	6	0.005	
Manganese	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	6	0.12 (0.02)	
Mercury	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	6	0.001	
Nitrate (as N) Dissolved	0.060	0.060	0.060	1	0.078	0.060	0.109	6	10	
Nitrite (as N) Dissolved	0.010	0.010	0.010	1	0.025	<0.010	0.040	6	1	
Selenium	0.0002	0.0002	0.0002	1	<0.0002	<0.0002	0.0002	6	0.05	
Strontium	0.445	0.445	0.445	1	0.424	0.402	0.445	6	7.0	
Uranium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	0.0005	6	0.02	
Primary Organics (ug/L) **										
Benzene	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6	5	
Carbon Tetrachloride	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	6	2	
Chlorobenzene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6	80 (30)	
Dichlorobenzene (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6	200 (3)	
Dichlorobenzene (1,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6	5 (1)	
Dichloroethylene (1,1)	<3.0	<3.0	<3.0	1	<3.0	<3.0	<3.0	6	14	
Ethylbenzene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6	140 (1.6)	
Methylene Chloride	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6	50	
Tetrachloroethylene	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6	10	
Toluene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6	60 (24)	
Total Xylenes	<3	<3	<3	1	<3	<3	<3	5	90	
Trichloroethylene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6	5	

2.2.11 Londonderry Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Inorganics (mg/L) * **										
Alkalinity Total	127	127	127	1	119	113	134	6		
Beryllium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	6		
Bromide Dissolved	<0.010	<0.010	<0.010	1	0.023	<0.010	0.050	6		
Calcium	46.3	46.3	46.3	1	45.4	41.2	47.8	6		
Calcium Hardness	110	110	110	1	112	102	120	6		
Chloride Dissolved	5.7	5.7	5.7	1	5.6	4.1	6.9	6	(250)	
Cobalt	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	6		
Hardness, Total (mg CaCO3/L)	169	169	169	1	168	156	182	6		
Iron	<0.005	<0.005	<0.005	1	<0.006	<0.005	0.009	6	(0.3)	0.3
Lanthanum	<0.0010	<0.0010	<0.0010	1	<0.0010	<0.0010	<0.0010	6		
Lithium	0.0031	0.0031	0.0031	1	0.0033	0.0030	0.0039	6		
Magnesium	14.2	14.2	14.2	1	13.7	12.6	14.4	6		
Molybdenum	0.0008	0.0008	0.0008	1	0.0007	0.0006	0.0008	6		
Nickel	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	0.0006	6		
Phosphorus	<0.02	<0.02	<0.02	1	<0.02	<0.02	<0.02	6		
Potassium	0.70	0.70	0.70	1	0.82	0.60	1.10	6		
Silicon	1.85	1.85	1.85	1	1.87	1.51	2.60	6		
Silver	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	6		
Sodium	7.4	7.4	7.4	1	9.7	5.6	20.9	6	(200)	
Sulphate Dissolved	54	54	54	1	60	52	85	6	(500)	
Thallium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	6		
Tin	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	6		
Titanium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	6		
Vanadium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	6		
Zinc	0.009	0.009	0.009	1	<0.006	<0.005	0.009	6	(5.0)	
Zirconium	<0.0010	<0.0010	<0.0010	1	<0.0010	<0.0010	<0.0010	6		

2.2.11 Londonderry Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
Bromodichloromethane	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6		16
Bromoform	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	6		
Chloroform	12.0	12.0	12.0	1	15.8	8.3	30.4	6		
Dibromochloromethane	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6		
Dichlorobenzene (1,3)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6		
Dichloroethylene, cis (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6		
Dichloroethylene, trans (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6		
Dichloropropane (1,2)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6		
Methyl t-Butyl Ether (MTBE)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6	(15)	
MIBK	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	6		
Styrene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6		
Tetrachloroethane (1,1,2,2)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	6		
Total Organic Carbon	1.0	1.0	1.0	1	1.3	0.8	2.4	6		
Total Volatile Organics (NonTHM)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	6		
Total Volatile Organics (Unknown)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	6		
Trichlorobenzene (1,2,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6		
Trichloroethane (1,1,1)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6		
Xylene (1,2)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6		
Xylene (1,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and/or a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638-04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

2.2.12 Millwoods Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Physical										
Colour (TCU)	0.7	0.7	0.7	1	1.1	<0.5	2.0	7	(15)	10
Conductivity (uS/cm)	370	370	370	1	382	326	443	7		
Odour	Inoff	Inoff	Inoff	1	Inoff	Inoff	Inoff	7		
pH (N/A)	8.0	8.0	8.0	1	8.0	7.8	8.1	7	(7.0 - 10.5)	7.3 - 8.3
Turbidity (NTU)	0.15	0.10	0.25	4	0.14	0.05	0.50	54		1
Primary Inorganics (mg/L) **										
Aluminum	0.105	0.105	0.105	1	0.078	0.029	0.164	7	2.9	0.1/0.2
Antimony	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.006	
Arsenic	0.0002	0.0002	0.0002	1	<0.0002	<0.0002	0.0002	7	0.01	
Barium	0.055	0.055	0.055	1	0.060	0.048	0.074	7	2	
Boron	0.008	0.008	0.008	1	0.009	0.007	0.011	7	5	
Bromate Dissolved	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	7	0.01	
Cadmium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.005	
Chlorate Dissolved	0.060	0.060	0.060	1	0.090	0.060	0.123	7	1	
Chlorine, total	1.89	1.76	1.98	4	1.80	1.33	2.02	55	>0.5 and <3.0	>1.0 and <2.4
Chlorite Dissolved	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	7	1	
Chromium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.05	
Copper	<0.005	<0.005	<0.005	1	<0.005	<0.005	0.006	7	(1)	
Fluoride	0.68	0.68	0.68	1	0.65	0.64	0.68	7	1.5	0.6 - 0.8
Lead	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.005	
Manganese	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	7	0.12 (0.02)	
Mercury	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.001	
Nitrate (as N) Dissolved	0.080	0.080	0.080	1	0.080	0.070	0.100	7	10	
Nitrite (as N) Dissolved	0.010	0.010	0.010	1	0.027	<0.010	0.040	7	1	
Selenium	0.0003	0.0003	0.0003	1	0.0003	<0.0002	0.0003	7	0.05	
Strontium	0.475	0.475	0.475	1	0.429	0.401	0.475	7	7.0	
Uranium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	0.0005	7	0.02	
Primary Organics (ug/L) **										
Benzene	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	5	
Carbon Tetrachloride	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7	2	
Chlorobenzene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	80 (30)	
Dichlorobenzene (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	200 (3)	
Dichlorobenzene (1,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	5 (1)	
Dichloroethylene (1,1)	<3.0	<3.0	<3.0	1	<3.0	<3.0	<3.0	7	14	
Ethylbenzene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	140 (1.6)	
Methylene Chloride	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	50	
Tetrachloroethylene	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	10	
Toluene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	60 (24)	
Total Xylenes	<3	<3	<3	1	<3	<3	<3	6	90	
Trichloroethylene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	5	

2.2.12 Millwoods Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Inorganics (mg/L) * **										
Alkalinity Total	126	126	126	1	121	110	138	7		
Beryllium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7		
Bromide Dissolved	<0.010	<0.010	<0.010	1	0.021	<0.010	0.050	7		
Calcium	46.8	46.8	46.8	1	45.6	40.5	48.8	7		
Calcium Hardness	114	114	114	1	111	102	116	7		
Chloride Dissolved	7.1	7.1	7.1	1	6.2	5.1	7.1	7	(250)	
Cobalt	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7		
Hardness, Total (mg CaCO3/L)	173	173	173	1	167	154	179	7		
Iron	0.005	0.005	0.005	1	0.008	<0.005	0.013	7	(0.3)	0.3
Lanthanum	<0.0010	<0.0010	<0.0010	1	<0.0010	<0.0010	<0.0010	7		
Lithium	0.0028	0.0028	0.0028	1	0.0030	0.0026	0.0034	7		
Magnesium	14.4	14.4	14.4	1	13.6	12.5	14.6	7		
Molybdenum	0.0008	0.0008	0.0008	1	0.0007	0.0006	0.0008	7		
Nickel	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	0.0006	7		
Phosphorus	<0.02	<0.02	<0.02	1	<0.02	<0.02	<0.02	7		
Potassium	0.70	0.70	0.70	1	0.81	0.60	1.00	7		
Silicon	1.88	1.88	1.88	1	1.91	1.48	2.49	7		
Silver	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7		
Sodium	8.0	8.0	8.0	1	12.7	6.8	24.3	7	(200)	
Sulphate Dissolved	56	56	56	1	64	52	87	7	(500)	
Thallium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Tin	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Titanium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Vanadium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Zinc	<0.005	<0.005	<0.005	1	<0.005	<0.005	0.006	7	(5.0)	
Zirconium	<0.0010	<0.0010	<0.0010	1	<0.0010	<0.0010	<0.0010	7		

2.2.12 Millwoods Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
Bromodichloromethane	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		16
Bromoform	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Chloroform	9.1	9.1	9.1	1	14.6	5.6	29.3	7		
Dibromochloromethane	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichlorobenzene (1,3)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichloroethylene, cis (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichloroethylene, trans (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichloropropane (1,2)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Methyl t-Butyl Ether (MTBE)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	(15)	
MIBK	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Styrene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Tetrachloroethane (1,1,2,2)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Total Organic Carbon	1.0	1.0	1.0	1	1.4	0.8	2.4	7		
Total Volatile Organics (NonTHM)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Total Volatile Organics (Unknown)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Trichlorobenzene (1,2,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Trichloroethane (1,1,1)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Xylene (1,2)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Xylene (1,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and/or a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638-04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

2.2.13 North Jasper Place Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Physical										
Colour (TCU)				0	0.8	<0.5	1.5	6	(15)	10
Conductivity (uS/cm)				0	378	341	398	6		
Odour				0	Inoff	Inoff	Inoff	6		
pH (N/A)				0	7.9	7.7	8.1	6	(7.0 - 10.5)	7.3 - 8.3
Turbidity (NTU)	0.12	0.12	0.13	4	0.08	0.05	0.15	52		1
Primary Inorganics (mg/L) **										
Aluminum				0	0.075	0.044	0.098	6	2.9	0.1/0.2
Antimony				0	<0.0002	<0.0002	<0.0002	6	0.006	
Arsenic				0	<0.0002	<0.0002	0.0002	6	0.01	
Barium				0	0.059	0.052	0.068	6	2	
Boron				0	0.008	0.007	0.010	6	5	
Bromate Dissolved				0	<0.005	<0.005	<0.005	6	0.01	
Cadmium				0	<0.0002	<0.0002	<0.0002	6	0.005	
Chlorate Dissolved				0	0.093	0.070	0.108	6	1	
Chlorine, total	1.67	1.65	1.72	4	1.52	1.12	1.84	53	>0.5 and <3.0	>1.0 and <2.4
Chlorite Dissolved				0	<0.005	<0.005	<0.005	6	1	
Chromium				0	<0.0002	<0.0002	<0.0002	6	0.05	
Copper				0	<0.005	<0.005	<0.005	6	(1)	
Fluoride				0	0.67	0.64	0.69	6	1.5	0.6 - 0.8
Lead				0	<0.0002	<0.0002	<0.0002	6	0.005	
Manganese				0	<0.002	<0.002	<0.002	6	0.12 (0.02)	
Mercury				0	<0.0002	<0.0002	<0.0002	6	0.001	
Nitrate (as N) Dissolved				0	0.077	0.070	0.090	6	10	
Nitrite (as N) Dissolved				0	0.030	<0.010	0.050	6	1	
Selenium				0	<0.0002	<0.0002	0.0003	6	0.05	
Strontium				0	0.425	0.384	0.451	6	7.0	
Uranium				0	<0.0005	<0.0005	0.0005	6	0.02	
Primary Organics (ug/L) **										
Benzene				0	<0.5	<0.5	<0.5	6	5	
Carbon Tetrachloride				0	<1.0	<1.0	<1.0	6	2	
Chlorobenzene				0	<0.50	<0.50	<0.50	6	80 (30)	
Dichlorobenzene (1,2)				0	<0.50	<0.50	<0.50	6	200 (3)	
Dichlorobenzene (1,4)				0	<0.5	<0.5	<0.5	6	5 (1)	
Dichloroethylene (1,1)				0	<3.0	<3.0	<3.0	6	14	
Ethylbenzene				0	<0.50	<0.50	<0.50	6	140 (1.6)	
Methylene Chloride				0	<0.5	<0.5	<0.5	6	50	
Tetrachloroethylene				0	<0.5	<0.5	<0.5	6	10	
Toluene				0	<0.50	<0.50	<0.50	6	60 (24)	
Total Xylenes				0	<3	<3	<3	5	90	
Trichloroethylene				0	<0.50	<0.50	<0.50	6	5	

2.2.13 North Jasper Place Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Inorganics (mg/L) * **										
Alkalinity Total				0	122	108	135	6		
Beryllium				0	<0.0002	<0.0002	<0.0002	6		
Bromide Dissolved				0	0.027	<0.010	0.060	6		
Calcium				0	47.9	42.2	52.3	6		
Calcium Hardness				0	115	103	127	6		
Chloride Dissolved				0	5.9	5.4	6.7	6	(250)	
Cobalt				0	<0.0002	<0.0002	<0.0002	6		
Hardness, Total (mg CaCO3/L)				0	172	153	189	6		
Iron				0	<0.005	<0.005	0.006	6	(0.3)	0.3
Lanthanum				0	<0.0010	<0.0010	<0.0010	6		
Lithium				0	0.0031	0.0028	0.0036	6		
Magnesium				0	14.2	12.4	15.3	6		
Molybdenum				0	0.0007	0.0006	0.0008	6		
Nickel				0	<0.0005	<0.0005	<0.0005	6		
Phosphorus				0	<0.02	<0.02	<0.02	6		
Potassium				0	0.73	0.60	0.90	6		
Silicon				0	1.88	1.49	2.22	6		
Silver				0	<0.0002	<0.0002	<0.0002	6		
Sodium				0	9.8	7.3	14.1	6	(200)	
Sulphate Dissolved				0	59	51	72	6	(500)	
Thallium				0	<0.0005	<0.0005	<0.0005	6		
Tin				0	<0.0005	<0.0005	<0.0005	6		
Titanium				0	0.0008	<0.0005	0.0023	6		
Vanadium				0	<0.0005	<0.0005	<0.0005	6		
Zinc				0	<0.005	<0.005	<0.005	6	(5.0)	
Zirconium				0	<0.0010	<0.0010	<0.0010	6		

2.2.13 North Jasper Place Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
Bromodichloromethane				0	<0.5	<0.5	<0.5	6		16
Bromoform				0	<1.0	<1.0	<1.0	6		
Chloroform				0	17.7	10.0	31.9	6		
Dibromochloromethane				0	<0.50	<0.50	<0.50	6		
Dichlorobenzene (1,3)				0	<0.50	<0.50	<0.50	6		
Dichloroethylene, cis (1,2)				0	<0.50	<0.50	<0.50	6		
Dichloroethylene, trans (1,2)				0	<0.50	<0.50	<0.50	6		
Dichloropropane (1,2)				0	<0.5	<0.5	<0.5	6		
Methyl t-Butyl Ether (MTBE)				0	<0.5	<0.5	<0.5	6	(15)	
MIBK				0	<1.0	<1.0	<1.0	6		
Styrene				0	<0.50	<0.50	<0.50	6		
Tetrachloroethane (1,1,2,2)				0	<1.0	<1.0	<1.0	6		
Total Organic Carbon				0	1.3	0.9	1.7	6		
Total Volatile Organics (NonTHM)				0	<1.0	<1.0	<1.0	6		
Total Volatile Organics (Unknown)				0	<1.0	<1.0	<1.0	6		
Trichlorobenzene (1,2,4)				0	<0.5	<0.5	<0.5	6		
Trichloroethane (1,1,1)				0	<0.5	<0.5	<0.5	6		
Xylene (1,2)				0	<0.5	<0.5	<0.5	6		
Xylene (1,4)				0	<0.5	<0.5	<0.5	6		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and/or a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638-04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

2.2.14 Ormsby Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Physical										
Colour (TCU)	0.8	0.8	0.8	1	0.9	<0.5	2.0	7	(15)	10
Conductivity (uS/cm)	366	366	366	1	367	328	446	7		
Odour	Inoff	Inoff	Inoff	1	Inoff	Inoff	Inoff	7		
pH (N/A)	8.0	8.0	8.0	1	7.8	7.5	8.0	7	(7.0 - 10.5)	7.3 - 8.3
Turbidity (NTU)	0.12	0.10	0.13	4	0.08	0.04	0.33	54		1
Primary Inorganics (mg/L) **										
Aluminum	0.113	0.113	0.113	1	0.102	0.029	0.177	7	2.9	0.1/0.2
Antimony	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	0.0003	7	0.006	
Arsenic	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	0.0003	7	0.01	
Barium	0.055	0.055	0.055	1	0.057	0.049	0.074	7	2	
Boron	0.009	0.009	0.009	1	0.009	0.007	0.011	7	5	
Bromate Dissolved	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	7	0.01	
Cadmium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.005	
Chlorate Dissolved	0.070	0.070	0.070	1	0.092	0.060	0.116	7	1	
Chlorine, total	1.96	1.95	1.97	4	1.81	1.59	2.00	55	>0.5 and <3.0	>1.0 and <2.4
Chlorite Dissolved	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	7	1	
Chromium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.05	
Copper	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	7	(1)	
Fluoride	0.68	0.68	0.68	1	0.66	0.64	0.68	7	1.5	0.6 - 0.8
Lead	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.005	
Manganese	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	7	0.12 (0.02)	
Mercury	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.001	
Nitrate (as N) Dissolved	0.070	0.070	0.070	1	0.074	0.060	0.100	7	10	
Nitrite (as N) Dissolved	<0.010	<0.010	<0.010	1	0.027	<0.010	0.040	7	1	
Selenium	0.0003	0.0003	0.0003	1	<0.0002	<0.0002	0.0003	7	0.05	
Strontium	0.463	0.463	0.463	1	0.422	0.394	0.463	7	7.0	
Uranium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	0.0006	7	0.02	
Primary Organics (ug/L) **										
Benzene	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	5	
Carbon Tetrachloride	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7	2	
Chlorobenzene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	80 (30)	
Dichlorobenzene (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	200 (3)	
Dichlorobenzene (1,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	5 (1)	
Dichloroethylene (1,1)	<3.0	<3.0	<3.0	1	<3.0	<3.0	<3.0	7	14	
Ethylbenzene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	140 (1.6)	
Methylene Chloride	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	50	
Tetrachloroethylene	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	10	
Toluene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	60 (24)	
Total Xylenes	<3	<3	<3	1	<3	<3	<3	6	90	
Trichloroethylene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	5	

2.2.14 Ormsby Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Inorganics (mg/L) ***										
Alkalinity Total	124	124	124	1	119	111	138	7		
Beryllium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7		
Bromide Dissolved	<0.010	<0.010	<0.010	1	0.027	<0.010	0.050	7		
Calcium	46.6	46.6	46.6	1	44.5	40.0	48.4	7		
Calcium Hardness	111	111	111	1	108	98	118	7		
Chloride Dissolved	6.6	6.6	6.6	1	6.0	5.1	6.7	7	(250)	
Cobalt	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7		
Hardness, Total (mg CaCO3/L)	171	171	171	1	165	154	178	7		
Iron	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	7	(0.3)	0.3
Lanthanum	<0.0010	<0.0010	<0.0010	1	<0.0010	<0.0010	<0.0010	7		
Lithium	0.0028	0.0028	0.0028	1	0.0029	0.0026	0.0034	7		
Magnesium	14.3	14.3	14.3	1	13.5	12.3	14.5	7		
Molybdenum	0.0008	0.0008	0.0008	1	0.0007	0.0006	0.0008	7		
Nickel	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	0.0006	7		
Phosphorus	<0.02	<0.02	<0.02	1	<0.02	<0.02	<0.02	7		
Potassium	0.70	0.70	0.70	1	0.76	0.60	1.00	7		
Silicon	1.92	1.92	1.92	1	1.79	1.48	2.50	7		
Silver	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7		
Sodium	7.8	7.8	7.8	1	10.5	7.0	25.5	7	(200)	
Sulphate Dissolved	55	55	55	1	60	52	89	7	(500)	
Thallium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Tin	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Titanium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Vanadium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Zinc	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	7	(5.0)	
Zirconium	<0.0010	<0.0010	<0.0010	1	<0.0010	<0.0010	<0.0010	7		

2.2.14 Ormsby Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
Bromodichloromethane	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		16
Bromoform	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Chloroform	9.5	9.5	9.5	1	13.5	5.7	29.1	7		
Dibromochloromethane	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichlorobenzene (1,3)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichloroethylene, cis (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichloroethylene, trans (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichloropropane (1,2)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Methyl t-Butyl Ether (MTBE)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	(15)	
MIBK	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Styrene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Tetrachloroethane (1,1,2,2)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Total Organic Carbon	1.0	1.0	1.0	1	1.2	0.8	2.4	7		
Total Volatile Organics (NonTHM)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Total Volatile Organics (Unknown)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Trichlorobenzene (1,2,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Trichloroethane (1,1,1)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Xylene (1,2)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Xylene (1,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and/or a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638-04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

2.2.15 Papaschase 1 Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Physical										
Colour (TCU)	0.7	0.7	0.7	1	0.8	<0.5	1.6	7	(15)	10
Conductivity (uS/cm)	359	359	359	1	373	338	425	7		
Odour	Inoff	Inoff	Inoff	1	Inoff	Inoff	Inoff	7		
pH (N/A)	8.0	8.0	8.0	1	7.8	7.5	8.0	7	(7.0 - 10.5)	7.3 - 8.3
Turbidity (NTU)	0.13	0.12	0.14	4	0.11	0.06	0.28	49		1
Primary Inorganics (mg/L) **										
Aluminum	0.101	0.101	0.101	1	0.078	0.037	0.153	7	2.9	0.1/0.2
Antimony	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.006	
Arsenic	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	0.0003	7	0.01	
Barium	0.053	0.053	0.053	1	0.058	0.053	0.073	7	2	
Boron	0.008	0.008	0.008	1	0.009	0.008	0.011	7	5	
Bromate Dissolved	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	7	0.01	
Cadmium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.005	
Chlorate Dissolved	0.119	0.119	0.119	1	0.124	0.100	0.150	7	1	
Chlorine, total	1.88	1.81	1.99	4	1.64	1.13	2.00	50	>0.5 and <3.0	>1.0 and <2.4
Chlorite Dissolved	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	7	1	
Chromium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.05	
Copper	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	7	(1)	
Fluoride	0.70	0.70	0.70	1	0.67	0.64	0.70	7	1.5	0.6 - 0.8
Lead	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.005	
Manganese	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	7	0.12 (0.02)	
Mercury	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7	0.001	
Nitrate (as N) Dissolved	0.070	0.070	0.070	1	0.086	0.070	0.124	7	10	
Nitrite (as N) Dissolved	<0.010	<0.010	<0.010	1	0.029	<0.010	0.050	7	1	
Selenium	0.0002	0.0002	0.0002	1	0.0002	<0.0002	0.0003	7	0.05	
Strontium	0.457	0.457	0.457	1	0.420	0.390	0.457	7	7.0	
Uranium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	0.0005	7	0.02	
Primary Organics (ug/L) **										
Benzene	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	5	
Carbon Tetrachloride	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7	2	
Chlorobenzene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	80 (30)	
Dichlorobenzene (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	200 (3)	
Dichlorobenzene (1,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	5 (1)	
Dichloroethylene (1,1)	<3.0	<3.0	<3.0	1	<3.0	<3.0	<3.0	7	14	
Ethylbenzene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	140 (1.6)	
Methylene Chloride	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	50	
Tetrachloroethylene	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	10	
Toluene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	60 (24)	
Total Xylenes	<3	<3	<3	1	<3	<3	<3	6	90	
Trichloroethylene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7	5	

2.2.15 Papaschase 1 Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Inorganics (mg/L) * **										
Alkalinity Total	125	125	125	1	119	111	135	7		
Beryllium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7		
Bromide Dissolved	<0.010	<0.010	<0.010	1	0.030	<0.010	0.060	7		
Calcium	45.8	45.8	45.8	1	45.7	42.9	48.6	7		
Calcium Hardness	112	112	112	1	108	98	118	7		
Chloride Dissolved	6.0	6.0	6.0	1	5.9	4.5	7.3	7	(250)	
Cobalt	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7		
Hardness, Total (mg CaCO3/L)	169	169	169	1	167	161	178	7		
Iron	0.011	0.011	0.011	1	0.012	0.008	0.019	7	(0.3)	0.3
Lanthanum	<0.0010	<0.0010	<0.0010	1	<0.0010	<0.0010	<0.0010	7		
Lithium	0.0027	0.0027	0.0027	1	0.0032	0.0027	0.0038	7		
Magnesium	14.0	14.0	14.0	1	13.7	12.9	14.6	7		
Molybdenum	0.0008	0.0008	0.0008	1	0.0007	0.0007	0.0008	7		
Nickel	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	0.0006	7		
Phosphorus	<0.02	<0.02	<0.02	1	<0.02	<0.02	<0.02	7		
Potassium	0.70	0.70	0.70	1	0.83	0.70	1.10	7		
Silicon	1.85	1.85	1.85	1	1.87	1.66	2.38	7		
Silver	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	7		
Sodium	7.2	7.2	7.2	1	9.4	6.2	19.5	7	(200)	
Sulphate Dissolved	54	54	54	1	60	53	81	7	(500)	
Thallium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Tin	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Titanium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Vanadium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	7		
Zinc	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	7	(5.0)	
Zirconium	<0.0010	<0.0010	<0.0010	1	<0.0010	<0.0010	<0.0010	7		

2.2.15 Papaschase 1 Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
Bromodichloromethane	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		16
Bromoform	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Chloroform	13.0	13.0	13.0	1	16.0	10.9	30.6	7		
Dibromochloromethane	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichlorobenzene (1,3)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichloroethylene, cis (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichloroethylene, trans (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Dichloropropane (1,2)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Methyl t-Butyl Ether (MTBE)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7	(15)	
MIBK	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Styrene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	7		
Tetrachloroethane (1,1,2,2)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Total Organic Carbon	1.0	1.0	1.0	1	1.3	1.0	2.3	7		
Total Volatile Organics (NonTHM)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Total Volatile Organics (Unknown)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	7		
Trichlorobenzene (1,2,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Trichloroethane (1,1,1)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Xylene (1,2)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		
Xylene (1,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	7		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and/or a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638-04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

2.2.16 Papaschase 2 Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Physical										
Colour (TCU)				0	0.8	<0.5	1.9	7	(15)	10
Conductivity (uS/cm)				0	375	331	392	7		
Odour				0	Inoff	Inoff	Inoff	7		
pH (N/A)				0	7.9	7.7	8.1	7	(7.0 - 10.5)	7.3 - 8.3
Turbidity (NTU)	0.17	0.08	0.41	4	0.08	0.04	0.53	53		1
Primary Inorganics (mg/L) **										
Aluminum				0	0.088	0.053	0.181	7	2.9	0.1/0.2
Antimony				0	<0.0002	<0.0002	<0.0002	7	0.006	
Arsenic				0	<0.0002	<0.0002	0.0002	7	0.01	
Barium				0	0.059	0.049	0.069	7	2	
Boron				0	0.008	0.008	0.010	7	5	
Bromate Dissolved				0	<0.005	<0.005	<0.005	7	0.01	
Cadmium				0	<0.0002	<0.0002	<0.0002	7	0.005	
Chlorate Dissolved				0	0.114	0.100	0.151	7	1	
Chlorine, total	1.96	1.91	2.01	4	1.83	1.14	2.06	54	>0.5 and <3.0	>1.0 and <2.4
Chlorite Dissolved				0	<0.005	<0.005	<0.005	7	1	
Chromium				0	<0.0002	<0.0002	<0.0002	7	0.05	
Copper				0	<0.005	<0.005	<0.005	7	(1)	
Fluoride				0	0.69	0.67	0.72	7	1.5	0.6 - 0.8
Lead				0	<0.0002	<0.0002	<0.0002	7	0.005	
Manganese				0	<0.002	<0.002	<0.002	7	0.12 (0.02)	
Mercury				0	<0.0002	<0.0002	<0.0002	7	0.001	
Nitrate (as N) Dissolved				0	0.073	0.050	0.090	7	10	
Nitrite (as N) Dissolved				0	0.031	<0.010	0.050	7	1	
Selenium				0	<0.0002	<0.0002	0.0003	7	0.05	
Strontium				0	0.431	0.372	0.458	7	7.0	
Uranium				0	<0.0005	<0.0005	0.0005	7	0.02	
Primary Organics (ug/L) **										
Benzene				0	<0.5	<0.5	<0.5	7	5	
Carbon Tetrachloride				0	<1.0	<1.0	<1.0	7	2	
Chlorobenzene				0	<0.50	<0.50	<0.50	7	80 (30)	
Dichlorobenzene (1,2)				0	<0.50	<0.50	<0.50	7	200 (3)	
Dichlorobenzene (1,4)				0	<0.5	<0.5	<0.5	7	5 (1)	
Dichloroethylene (1,1)				0	<3.0	<3.0	<3.0	7	14	
Ethylbenzene				0	<0.50	<0.50	<0.50	7	140 (1.6)	
Methylene Chloride				0	<0.5	<0.5	<0.5	7	50	
Tetrachloroethylene				0	<0.5	<0.5	<0.5	7	10	
Toluene				0	<0.50	<0.50	<0.50	7	60 (24)	
Total Xylenes				0	<3	<3	<3	6	90	
Trichloroethylene				0	<0.50	<0.50	<0.50	7	5	

2.2.16 Papaschase 2 Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Inorganics (mg/L) * **										
Alkalinity Total				0	124	108	137	7		
Beryllium				0	<0.0002	<0.0002	<0.0002	7		
Bromide Dissolved				0	0.024	<0.010	0.060	7		
Calcium				0	47.9	41.2	54.0	7		
Calcium Hardness				0	116	103	124	7		
Chloride Dissolved				0	5.5	4.9	6.2	7	(250)	
Cobalt				0	<0.0002	<0.0002	<0.0002	7		
Hardness, Total (mg CaCO3/L)				0	174	148	189	7		
Iron				0	<0.006	<0.005	0.012	7	(0.3)	0.3
Lanthanum				0	<0.0010	<0.0010	<0.0010	7		
Lithium				0	0.0032	0.0029	0.0039	7		
Magnesium				0	14.4	12.5	15.9	7		
Molybdenum				0	0.0007	0.0006	0.0009	7		
Nickel				0	<0.0005	<0.0005	<0.0005	7		
Phosphorus				0	<0.02	<0.02	<0.02	7		
Potassium				0	0.71	0.60	0.80	7		
Silicon				0	1.82	1.46	2.20	7		
Silver				0	<0.0002	<0.0002	<0.0002	7		
Sodium				0	8.9	7.1	12.1	7	(200)	
Sulphate Dissolved				0	59	52	68	7	(500)	
Thallium				0	<0.0005	<0.0005	<0.0005	7		
Tin				0	<0.0005	<0.0005	<0.0005	7		
Titanium				0	<0.0005	<0.0005	<0.0005	7		
Vanadium				0	<0.0005	<0.0005	<0.0005	7		
Zinc				0	<0.005	<0.005	0.007	7	(5.0)	
Zirconium				0	<0.0010	<0.0010	<0.0010	7		

2.2.16 Papaschase 2 Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
Bromodichloromethane				0	<0.5	<0.5	<0.5	7		16
Bromoform				0	<1.0	<1.0	<1.0	7		
Chloroform				0	16.0	8.4	34.0	7		
Dibromochloromethane				0	<0.50	<0.50	<0.50	7		
Dichlorobenzene (1,3)				0	<0.50	<0.50	<0.50	7		
Dichloroethylene, cis (1,2)				0	<0.50	<0.50	<0.50	7		
Dichloroethylene, trans (1,2)				0	<0.50	<0.50	<0.50	7		
Dichloropropane (1,2)				0	<0.5	<0.5	<0.5	7		
Methyl t-Butyl Ether (MTBE)				0	<0.5	<0.5	<0.5	7	(15)	
MIBK				0	<1.0	<1.0	<1.0	7		
Styrene				0	<0.50	<0.50	<0.50	7		
Tetrachloroethane (1,1,2,2)				0	<1.0	<1.0	<1.0	7		
Total Organic Carbon				0	1.2	0.9	1.5	7		
Total Volatile Organics (NonTHM)				0	<1.0	<1.0	<1.0	7		
Total Volatile Organics (Unknown)				0	<1.0	<1.0	<1.0	7		
Trichlorobenzene (1,2,4)				0	<0.5	<0.5	<0.5	7		
Trichloroethane (1,1,1)				0	<0.5	<0.5	<0.5	7		
Xylene (1,2)				0	<0.5	<0.5	<0.5	7		
Xylene (1,4)				0	<0.5	<0.5	<0.5	7		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and/or a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638-04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

2.2.17 Rosslyn 1 Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Physical										
Colour (TCU)	0.6	0.6	0.6	1	0.8	0.5	1.3	6	(15)	10
Conductivity (uS/cm)	362	362	362	1	373	335	429	6		
Odour	Inoff	Inoff	Inoff	1	Inoff	Inoff	Inoff	6		
pH (N/A)	8.0	8.0	8.0	1	7.8	7.5	8.1	6	(7.0 - 10.5)	7.3 - 8.3
Turbidity (NTU)	0.08	0.07	0.08	4	0.14	0.05	1.20	50		1
Primary Inorganics (mg/L) **										
Aluminum	0.105	0.105	0.105	1	0.086	0.036	0.156	6	2.9	0.1/0.2
Antimony	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	6	0.006	
Arsenic	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	0.0002	6	0.01	
Barium	0.054	0.054	0.054	1	0.059	0.054	0.071	6	2	
Boron	0.009	0.009	0.009	1	0.009	0.008	0.012	6	5	
Bromate Dissolved	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	6	0.01	
Cadmium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	6	0.005	
Chlorate Dissolved	0.140	0.140	0.140	1	0.122	0.090	0.146	6	1	
Chlorine, total	1.95	1.91	1.99	4	1.65	1.26	1.99	51	>0.5 and <3.0	>1.0 and <2.4
Chlorite Dissolved	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	6	1	
Chromium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	6	0.05	
Copper	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	6	(1)	
Fluoride	0.72	0.72	0.72	1	0.68	0.66	0.72	6	1.5	0.6 - 0.8
Lead	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	6	0.005	
Manganese	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	6	0.12 (0.02)	
Mercury	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	6	0.001	
Nitrate (as N) Dissolved	0.060	0.060	0.060	1	0.081	0.060	0.127	6	10	
Nitrite (as N) Dissolved	0.010	0.010	0.010	1	0.025	<0.010	0.040	6	1	
Selenium	0.0002	0.0002	0.0002	1	0.0002	<0.0002	0.0003	6	0.05	
Strontium	0.450	0.450	0.450	1	0.428	0.407	0.450	6	7.0	
Uranium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	0.0005	6	0.02	
Primary Organics (ug/L) **										
Benzene	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6	5	
Carbon Tetrachloride	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	6	2	
Chlorobenzene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6	80 (30)	
Dichlorobenzene (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6	200 (3)	
Dichlorobenzene (1,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6	5 (1)	
Dichloroethylene (1,1)	<3.0	<3.0	<3.0	1	<3.0	<3.0	<3.0	6	14	
Ethylbenzene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6	140 (1.6)	
Methylene Chloride	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6	50	
Tetrachloroethylene	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6	10	
Toluene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6	60 (24)	
Total Xylenes	<3	<3	<3	1	<3	<3	<3	5	90	
Trichloroethylene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6	5	

2.2.17 Rosslyn 1 Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Inorganics (mg/L) ***										
Alkalinity Total	127	127	127	1	121	110	135	6		
Beryllium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	6		
Bromide Dissolved	<0.010	<0.010	<0.010	1	0.023	<0.010	0.050	6		
Calcium	47.2	47.2	47.2	1	46.3	42.2	51.8	6		
Calcium Hardness	112	112	112	1	113	106	123	6		
Chloride Dissolved	5.7	5.7	5.7	1	5.9	4.5	7.7	6	(250)	
Cobalt	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	6		
Hardness, Total (mg CaCO3/L)	170	170	170	1	170	159	179	6		
Iron	0.006	0.006	0.006	1	0.006	<0.005	0.009	6	(0.3)	0.3
Lanthanum	<0.0010	<0.0010	<0.0010	1	<0.0010	<0.0010	<0.0010	6		
Lithium	0.0031	0.0031	0.0031	1	0.0033	0.0031	0.0042	6		
Magnesium	14.4	14.4	14.4	1	14.0	12.8	15.1	6		
Molybdenum	0.0008	0.0008	0.0008	1	0.0007	0.0006	0.0008	6		
Nickel	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	0.0006	6		
Phosphorus	<0.02	<0.02	<0.02	1	<0.02	<0.02	<0.02	6		
Potassium	0.70	0.70	0.70	1	0.87	0.70	1.20	6		
Silicon	1.83	1.83	1.83	1	1.88	1.50	2.56	6		
Silver	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	6		
Sodium	7.6	7.6	7.6	1	10.0	6.2	20.2	6	(200)	
Sulphate Dissolved	54	54	54	1	60	52	81	6	(500)	
Thallium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	6		
Tin	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	6		
Titanium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	6		
Vanadium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	6		
Zinc	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	6	(5.0)	
Zirconium	<0.0010	<0.0010	<0.0010	1	<0.0010	<0.0010	<0.0010	6		

2.2.17 Rosslyn 1 Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
Bromodichloromethane	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6		16
Bromoform	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	6		
Chloroform	12.7	12.7	12.7	1	16.4	10.6	28.6	6		
Dibromochloromethane	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6		
Dichlorobenzene (1,3)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6		
Dichloroethylene, cis (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6		
Dichloroethylene, trans (1,2)	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6		
Dichloropropane (1,2)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6		
Methyl t-Butyl Ether (MTBE)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6	(15)	
MIBK	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	6		
Styrene	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	6		
Tetrachloroethane (1,1,2,2)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	6		
Total Organic Carbon	1.0	1.0	1.0	1	1.3	1.0	2.3	6		
Total Volatile Organics (NonTHM)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	6		
Total Volatile Organics (Unknown)	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	6		
Trichlorobenzene (1,2,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6		
Trichloroethane (1,1,1)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6		
Xylene (1,2)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6		
Xylene (1,4)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	6		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and/or a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638-04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

2.2.18 Rosslyn 2 Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Physical										
Colour (TCU)				0	0.8	<0.5	1.5	7	(15)	10
Conductivity (uS/cm)				0	371	333	393	7		
Odour				0	Inoff	Inoff	Inoff	7		
pH (N/A)				0	7.8	7.7	8.0	7	(7.0 - 10.5)	7.3 - 8.3
Turbidity (NTU)	0.07	0.06	0.08	4	0.07	0.04	0.30	53		1
Primary Inorganics (mg/L) **										
Aluminum				0	0.094	0.048	0.232	7	2.9	0.1/0.2
Antimony				0	<0.0002	<0.0002	<0.0002	7	0.006	
Arsenic				0	<0.0002	<0.0002	0.0002	7	0.01	
Barium				0	0.058	0.052	0.067	7	2	
Boron				0	0.008	0.008	0.010	7	5	
Bromate Dissolved				0	<0.005	<0.005	<0.005	7	0.01	
Cadmium				0	<0.0002	<0.0002	<0.0002	7	0.005	
Chlorate Dissolved				0	0.133	0.107	0.146	7	1	
Chlorine, total	1.95	1.93	2.00	4	1.68	1.17	2.03	54	>0.5 and <3.0	>1.0 and <2.4
Chlorite Dissolved				0	<0.005	<0.005	<0.005	7	1	
Chromium				0	<0.0002	<0.0002	<0.0002	7	0.05	
Copper				0	<0.005	<0.005	<0.005	7	(1)	
Fluoride				0	0.67	0.64	0.70	7	1.5	0.6 - 0.8
Lead				0	<0.0002	<0.0002	<0.0002	7	0.005	
Manganese				0	<0.002	<0.002	<0.002	7	0.12 (0.02)	
Mercury				0	<0.0002	<0.0002	<0.0002	7	0.001	
Nitrate (as N) Dissolved				0	0.076	0.060	0.090	7	10	
Nitrite (as N) Dissolved				0	0.033	<0.010	0.050	7	1	
Selenium				0	0.0003	<0.0002	0.0004	7	0.05	
Strontium				0	0.424	0.381	0.454	7	7.0	
Uranium				0	<0.0005	<0.0005	0.0005	7	0.02	
Primary Organics (ug/L) **										
Benzene				0	<0.5	<0.5	<0.5	7	5	
Carbon Tetrachloride				0	<1.0	<1.0	<1.0	7	2	
Chlorobenzene				0	<0.50	<0.50	<0.50	7	80 (30)	
Dichlorobenzene (1,2)				0	<0.50	<0.50	<0.50	7	200 (3)	
Dichlorobenzene (1,4)				0	<0.5	<0.5	<0.5	7	5 (1)	
Dichloroethylene (1,1)				0	<3.0	<3.0	<3.0	7	14	
Ethylbenzene				0	<0.50	<0.50	<0.50	7	140 (1.6)	
Methylene Chloride				0	<0.5	<0.5	<0.5	7	50	
Tetrachloroethylene				0	<0.5	<0.5	<0.5	7	10	
Toluene				0	<0.50	<0.50	<0.50	7	60 (24)	
Total Xylenes				0	<3	<3	<3	6	90	
Trichloroethylene				0	<0.50	<0.50	<0.50	7	5	

2.2.18 Rosslyn 2 Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Inorganics (mg/L) * **										
Alkalinity Total				0	121	107	136	7		
Beryllium				0	<0.0002	<0.0002	<0.0002	7		
Bromide Dissolved				0	0.031	<0.010	0.060	7		
Calcium				0	46.7	42.0	52.2	7		
Calcium Hardness				0	114	102	126	7		
Chloride Dissolved				0	5.5	4.8	7.2	7	(250)	
Cobalt				0	<0.0002	<0.0002	<0.0002	7		
Hardness, Total (mg CaCO3/L)				0	171	154	191	7		
Iron				0	<0.006	<0.005	0.010	7	(0.3)	0.3
Lanthanum				0	<0.0010	<0.0010	<0.0010	7		
Lithium				0	0.0033	0.0030	0.0038	7		
Magnesium				0	14.1	12.6	15.3	7		
Molybdenum				0	0.0007	0.0006	0.0008	7		
Nickel				0	<0.0005	<0.0005	<0.0005	7		
Phosphorus				0	<0.02	<0.02	<0.02	7		
Potassium				0	0.76	0.70	0.90	7		
Silicon				0	1.82	1.48	2.22	7		
Silver				0	<0.0002	<0.0002	<0.0002	7		
Sodium				0	7.9	7.0	9.2	7	(200)	
Sulphate Dissolved				0	57	52	64	7	(500)	
Thallium				0	<0.0005	<0.0005	<0.0005	7		
Tin				0	<0.0005	<0.0005	<0.0005	7		
Titanium				0	<0.0005	<0.0005	<0.0005	7		
Vanadium				0	<0.0005	<0.0005	<0.0005	7		
Zinc				0	<0.005	<0.005	<0.005	7	(5.0)	
Zirconium				0	<0.0010	<0.0010	<0.0010	7		

2.2.18 Rosslyn 2 Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
Bromodichloromethane				0	<0.5	<0.5	<0.5	7		16
Bromoform				0	<1.0	<1.0	<1.0	7		
Chloroform				0	17.4	10.3	36.9	7		
Dibromochloromethane				0	<0.50	<0.50	<0.50	7		
Dichlorobenzene (1,3)				0	<0.50	<0.50	<0.50	7		
Dichloroethylene, cis (1,2)				0	<0.50	<0.50	<0.50	7		
Dichloroethylene, trans (1,2)				0	<0.50	<0.50	<0.50	7		
Dichloropropane (1,2)				0	<0.5	<0.5	<0.5	7		
Methyl t-Butyl Ether (MTBE)				0	<0.5	<0.5	<0.5	7	(15)	
MIBK				0	<1.0	<1.0	<1.0	7		
Styrene				0	<0.50	<0.50	<0.50	7		
Tetrachloroethane (1,1,2,2)				0	<1.0	<1.0	<1.0	7		
Total Organic Carbon				0	1.2	0.9	1.6	7		
Total Volatile Organics (NonTHM)				0	<1.0	<1.0	<1.0	7		
Total Volatile Organics (Unknown)				0	<1.0	<1.0	<1.0	7		
Trichlorobenzene (1,2,4)				0	<0.5	<0.5	<0.5	7		
Trichloroethane (1,1,1)				0	<0.5	<0.5	<0.5	7		
Xylene (1,2)				0	<0.5	<0.5	<0.5	7		
Xylene (1,4)				0	<0.5	<0.5	<0.5	7		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and/or a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

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*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

2.2.19 Thorncliff Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Physical										
Colour (TCU)				0	0.7	<0.5	0.9	6	(15)	10
Conductivity (uS/cm)				0	375	331	398	6		
Odour				0	Inoff	Inoff	Inoff	6		
pH (N/A)				0	7.9	7.8	8.1	6	(7.0 - 10.5)	7.3 - 8.3
Turbidity (NTU)	0.13	0.13	0.13	4	0.08	0.04	0.16	52		1
Primary Inorganics (mg/L) **										
Aluminum				0	0.087	0.041	0.116	6	2.9	0.1/0.2
Antimony				0	<0.0002	<0.0002	<0.0002	6	0.006	
Arsenic				0	<0.0002	<0.0002	0.0002	6	0.01	
Barium				0	0.059	0.052	0.067	6	2	
Boron				0	0.008	0.007	0.009	6	5	
Bromate Dissolved				0	<0.005	<0.005	<0.005	6	0.01	
Cadmium				0	<0.0002	<0.0002	<0.0002	6	0.005	
Chlorate Dissolved				0	0.093	0.070	0.106	6	1	
Chlorine, total	1.86	1.82	1.92	4	1.62	1.08	1.99	53	>0.5 and <3.0	>1.0 and <2.4
Chlorite Dissolved				0	<0.005	<0.005	<0.005	6	1	
Chromium				0	<0.0002	<0.0002	<0.0002	6	0.05	
Copper				0	<0.005	<0.005	<0.005	6	(1)	
Fluoride				0	0.69	0.65	0.75	6	1.5	0.6 - 0.8
Lead				0	<0.0002	<0.0002	<0.0002	6	0.005	
Manganese				0	<0.002	<0.002	<0.002	6	0.12 (0.02)	
Mercury				0	<0.0002	<0.0002	<0.0002	6	0.001	
Nitrate (as N) Dissolved				0	0.078	0.070	0.090	6	10	
Nitrite (as N) Dissolved				0	0.030	<0.010	0.050	6	1	
Selenium				0	0.0003	<0.0002	0.0003	6	0.05	
Strontium				0	0.422	0.374	0.450	6	7.0	
Uranium				0	<0.0005	<0.0005	0.0005	6	0.02	
Primary Organics (ug/L) **										
Benzene				0	<0.5	<0.5	<0.5	6	5	
Carbon Tetrachloride				0	<1.0	<1.0	<1.0	6	2	
Chlorobenzene				0	<0.50	<0.50	<0.50	6	80 (30)	
Dichlorobenzene (1,2)				0	<0.50	<0.50	<0.50	6	200 (3)	
Dichlorobenzene (1,4)				0	<0.5	<0.5	<0.5	6	5 (1)	
Dichloroethylene (1,1)				0	<3.0	<3.0	<3.0	6	14	
Ethylbenzene				0	<0.50	<0.50	<0.50	6	140 (1.6)	
Methylene Chloride				0	<0.5	<0.5	<0.5	6	50	
Tetrachloroethylene				0	<0.5	<0.5	<0.5	6	10	
Toluene				0	<0.50	<0.50	<0.50	6	60 (24)	
Total Xylenes				0	<3	<3	<3	5	90	
Trichloroethylene				0	<0.50	<0.50	<0.50	6	5	

2.2.19 Thorncliff Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Inorganics (mg/L) * **										
Alkalinity Total				0	124	108	139	6		
Beryllium				0	<0.0002	<0.0002	<0.0002	6		
Bromide Dissolved				0	0.027	<0.010	0.060	6		
Calcium				0	47.5	41.2	52.6	6		
Calcium Hardness				0	116	101	126	6		
Chloride Dissolved				0	5.9	5.4	6.8	6	(250)	
Cobalt				0	<0.0002	<0.0002	<0.0002	6		
Hardness, Total (mg CaCO3/L)				0	174	148	191	6		
Iron				0	<0.005	<0.005	<0.005	6	(0.3)	0.3
Lanthanum				0	<0.0010	<0.0010	<0.0010	6		
Lithium				0	0.0031	0.0027	0.0035	6		
Magnesium				0	14.2	12.2	15.4	6		
Molybdenum				0	0.0007	0.0006	0.0008	6		
Nickel				0	<0.0005	<0.0005	0.0006	6		
Phosphorus				0	<0.02	<0.02	<0.02	6		
Potassium				0	0.73	0.60	0.90	6		
Silicon				0	1.87	1.50	2.24	6		
Silver				0	<0.0002	<0.0002	<0.0002	6		
Sodium				0	9.6	7.3	13.5	6	(200)	
Sulphate Dissolved				0	59	51	72	6	(500)	
Thallium				0	<0.0005	<0.0005	<0.0005	6		
Tin				0	<0.0005	<0.0005	<0.0005	6		
Titanium				0	<0.0005	<0.0005	<0.0005	6		
Vanadium				0	<0.0005	<0.0005	<0.0005	6		
Zinc				0	<0.005	<0.005	<0.005	6	(5.0)	
Zirconium				0	<0.0010	<0.0010	<0.0010	6		

2.2.19 Thorncliff Reservoir

December 2021

Parameter	Monthly				YTD				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	*Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L) * **										
Bromodichloromethane				0	<0.5	<0.5	<0.5	6		16
Bromoform				0	<1.0	<1.0	<1.0	6		
Chloroform				0	16.7	9.4	31.8	6		
Dibromochloromethane				0	<0.50	<0.50	<0.50	6		
Dichlorobenzene (1,3)				0	<0.50	<0.50	<0.50	6		
Dichloroethylene, cis (1,2)				0	<0.50	<0.50	<0.50	6		
Dichloroethylene, trans (1,2)				0	<0.50	<0.50	<0.50	6		
Dichloropropane (1,2)				0	<0.5	<0.5	<0.5	6		
Methyl t-Butyl Ether (MTBE)				0	<0.5	<0.5	<0.5	6	(15)	
MIBK				0	<1.0	<1.0	<1.0	6		
Styrene				0	<0.50	<0.50	<0.50	6		
Tetrachloroethane (1,1,2,2)				0	<1.0	<1.0	<1.0	6		
Total Organic Carbon				0	1.2	0.9	1.6	6		
Total Volatile Organics (NonTHM)				0	<1.0	<1.0	<1.0	6		
Total Volatile Organics (Unknown)				0	<1.0	<1.0	<1.0	6		
Trichlorobenzene (1,2,4)				0	<0.5	<0.5	<0.5	6		
Trichloroethane (1,1,1)				0	<0.5	<0.5	<0.5	6		
Xylene (1,2)				0	<0.5	<0.5	<0.5	6		
Xylene (1,4)				0	<0.5	<0.5	<0.5	6		

TABLE EXPLANATIONS:

* Numbers with no brackets are Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) Maximum Acceptable Concentrations (MAC) and/or a limit set out in the Alberta Environment and Parks (AEP) Operating Approval 638-04-00. Limits in brackets indicate Aesthetic Objectives or Operational Guidelines (OG) and are not Approval Limits The EPCOR limits are internal limits set by EPCOR in the Operations Program.

** Primary parameters are those that have health-based limits (MACs) according the AEP Operating Approval 638-04-00

*** Secondary parameters do not have health-based limits but may have aesthetic or operational objectives

2.2.20 Routine Distribution System, Field Reservoirs, Fire stations and Staff Residences
Disinfection Byproducts, THM, HAA, NDMA

December 2021

Parameter or Location	Monthly				YTD				12 months running				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	GCDWQ or Approval or MAC* or (AO or OG) 12 month running	EPCOR single result
Trihalomethanes (ug/L)													100	50
01-KT				0	19.4	19.4	19.4	1	19.4	19.4	19.4	1		
01-RI				0	19.0	11.4	31.4	4	19.0	11.4	31.4	4		
01-SR				0	20.7	11.0	36.0	4	20.7	11.0	36.0	4		
02-SR				0	15.5	10.0	21.0	2	15.5	10.0	21.0	2		
03-SR	15.1	15.1	15.1	1	14.3	12.2	15.5	3	14.3	12.2	15.5	3		
04-SR				0	18.0	10.4	34.6	5	18.0	10.4	34.6	5		
07-SR				0	12.8	11.2	14.3	2	12.8	11.2	14.3	2		
08-SR				0	17.1	10.1	28.2	4	17.1	10.1	28.2	4		
11-SR	13.8	13.8	13.8	1	19.8	13.8	29.3	3	19.8	13.8	29.3	3		
13-SR				0	13.8	13.5	14.1	2	13.8	13.5	14.1	2		
21-SR				0	15.7	10.0	26.9	4	15.7	10.0	26.9	4		
22-SR				0	14.1	14.1	14.1	1	14.1	14.1	14.1	1		
24-RI	15.4	15.4	15.4	1	17.7	10.2	37.0	8	17.7	10.2	37.0	8		
24-SR	13.9	13.9	13.9	1	14.4	13.9	14.9	2	14.4	13.9	14.9	2		
25-CS				0	17.1	17.1	17.1	1	17.1	17.1	17.1	1		
25-DE	14.2	14.2	14.2	1	16.4	8.8	30.8	11	16.4	8.8	30.8	11		
27-OF				0	12.7	8.7	15.0	5	12.7	8.7	15.0	5		
27-SR				0	11.0	5.3	16.6	2	11.0	5.3	16.6	2		
28-SR				0	16.8	7.7	34.9	7	16.8	7.7	34.9	7		
29-SR				0	7.3	7.3	7.3	1	7.3	7.3	7.3	1		
32-SR	13.3	13.3	13.3	1	11.1	8.6	13.3	3	11.1	8.6	13.3	3		
34-SR				0	11.9	11.9	11.9	1	11.9	11.9	11.9	1		
		Total Count		6				76				76		

2.2.20 Routine Distribution System, Field Reservoirs, Fire stations and Staff Residences
Disinfection Byproducts, THM, HAA, NDMA

December 2021

Parameter or Location	Monthly				YTD				12 months running				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	GCDWQ or Approval or MAC* or (AO or OG) 12 month running	EPCOR single result
HAA (ug/L)													80	40
01-KT				0	21.6	21.6	21.6	1	21.6	21.6	21.6	1		
01-RI				0	20.9	17.6	27.0	4	20.9	17.6	27.0	4		
01-SR				0	22.1	11.3	34.9	4	22.1	11.3	34.9	4		
02-SR				0	20.0	15.8	24.1	2	20.0	15.8	24.1	2		
03-SR	14.4	14.4	14.4	1	13.4	12.9	14.4	3	13.4	12.9	14.4	3		
04-SR				0	18.9	10.3	33.0	5	18.9	10.3	33.0	5		
07-SR				0	13.2	13.1	13.2	2	13.2	13.1	13.2	2		
08-SR				0	20.8	11.5	28.4	4	20.8	11.5	28.4	4		
11-SR	12.4	12.4	12.4	1	18.4	12.4	25.0	3	18.4	12.4	25.0	3		
13-SR				0	12.6	12.3	12.8	2	12.6	12.3	12.8	2		
21-SR				0	18.5	9.9	23.7	4	18.5	9.9	23.7	4		
22-SR				0	20.0	20.0	20.0	1	20.0	20.0	20.0	1		
24-RI	12.7	12.7	12.7	1	17.9	11.7	34.5	8	17.9	11.7	34.5	8		
24-SR	13.8	13.8	13.8	1	15.5	13.8	17.1	2	15.5	13.8	17.1	2		
25-CS				0	19.8	19.8	19.8	1	19.8	19.8	19.8	1		
25-DE	12.8	12.8	12.8	1	16.8	10.6	27.2	11	16.8	10.6	27.2	11		
27-OF				0	19.2	18.2	20.6	3	19.2	18.2	20.6	3		
27-SR				0	13.8	10.0	17.6	2	13.8	10.0	17.6	2		
28-SR				0	18.2	10.9	33.0	7	18.2	10.9	33.0	7		
29-SR				0	13.1	13.1	13.1	1	13.1	13.1	13.1	1		
32-SR	11.4	11.4	11.4	1	11.1	10.5	11.5	3	11.1	10.5	11.5	3		
34-SR				0	17.9	17.9	17.9	1	17.9	17.9	17.9	1		
		Total Count		6				74				74		

2.2.20 Routine Distribution System, Field Reservoirs, Fire stations and Staff Residences
Disinfection Byproducts, THM, HAA, NDMA

December 2021

Parameter or Location	Monthly				YTD				12 months running				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	GCDWQ or Approval or MAC* or (AO or OG) 12 month running	EPCOR single result
NDMA (ug/L)													0.040	10
01-KT				0	<0.009	<0.009	<0.009	1	<0.009	<0.009	<0.009	1		
01-RI				0	0.002	0.002	0.002	1	0.002	0.002	0.002	1		
01-SR				0	<0.004	<0.001	<0.009	3	<0.004	<0.001	<0.009	3		
02-SR				0	<0.005	<0.001	<0.009	2	<0.005	<0.001	<0.009	2		
03-SR				0	<0.002	<0.002	<0.002	2	<0.002	<0.002	<0.002	2		
04-SR				0	<0.001	<0.001	<0.001	1	<0.001	<0.001	<0.001	1		
07-SR				0	0.001	0.001	0.001	1	0.001	0.001	0.001	1		
08-SR				0	<0.001	<0.001	<0.001	1	<0.001	<0.001	<0.001	1		
11-SR	<0.001	<0.001	<0.001	1	<0.001	<0.001	<0.002	2	<0.001	<0.001	<0.002	2		
21-SR				0	<0.009	<0.009	<0.009	1	<0.009	<0.009	<0.009	1		
24-RI				0	<0.001	<0.001	0.001	4	<0.001	<0.001	0.001	4		
24-SR	<0.001	<0.001	<0.001	1	<0.001	<0.001	<0.002	3	<0.001	<0.001	<0.002	3		
25-DE	<0.001	<0.001	<0.001	1	<0.003	<0.001	<0.009	6	<0.003	<0.001	<0.009	6		
27-OF				0	<0.009	<0.009	<0.009	1	<0.009	<0.009	<0.009	1		
27-SR				0	0.001	0.001	0.001	2	0.001	0.001	0.001	2		
28-SR				0	<0.003	<0.001	<0.009	7	<0.003	<0.001	<0.009	7		
		Total Count		3				38				38		

2.2.20 Routine Distribution System, Field Reservoirs, Fire stations and Staff Residences
Disinfection Byproducts, THM, HAA, NDMA

December 2021

Parameter or Location	Monthly				YTD				12 months running				Limits	
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	GCDWQ or Approval or MAC* or (AO or OG) 12 month running	EPCOR single result
Trihalomethanes (ug/L)													100	50
Castledowns Reservoir	10.3	10.3	10.3	1	13.3	6.0	26.7	7	13.3	6.0	26.7	7		
Clareview Reservoir				0	19.3	9.0	38.6	10	19.3	9.0	38.6	10		
Discovery Park Reservoir				0	11.4	5.9	20.0	6	11.4	5.9	20.0	6		
Kaskitayo Reservoir				0	15.6	8.5	29.3	6	15.6	8.5	29.3	6		
Londonderry Reservoir	12.0	12.0	12.0	1	15.8	8.3	30.4	6	15.8	8.3	30.4	6		
Millwoods Reservoir	9.1	9.1	9.1	1	14.6	5.6	29.3	7	14.6	5.6	29.3	7		
North Jasper Place Reservoir				0	17.7	10.0	31.9	6	17.7	10.0	31.9	6		
Ormsby Reservoir	9.5	9.5	9.5	1	13.5	5.7	29.1	7	13.5	5.7	29.1	7		
Papaschase Reservoir 1	13.0	13.0	13.0	1	16.0	10.9	30.6	7	16.0	10.9	30.6	7		
Papaschase Reservoir 2				0	16.0	8.4	34.0	7	16.0	8.4	34.0	7		
Rosslyn Reservoir 1	12.7	12.7	12.7	1	16.4	10.6	28.6	6	16.4	10.6	28.6	6		
Rosslyn Reservoir 2				0	17.4	10.3	36.9	7	17.4	10.3	36.9	7		
Thorncliff Reservoir				0	16.7	9.4	31.8	6	16.7	9.4	31.8	6		
		Total Count		6				88				88		

Location Code: City is divided into 28 zones by population. Location is coded by zone and site type.

DE - Dead End
FS - Firestation
KT - Key Tap
OF - Other Facilities (stores / Restaurant)
PF - Plant First Customer (Guardhouse)
PR - Private Residence (Non-Staff)
RI - Regional Influent
SR - Staff Residence

2.2.21 Raw River Water: Physical, Inorganic, Organic and Pesticide Parameters

December 2021

	Current Month								YTD							
	ROSSDALE				E.L. SMITH				ROSSDALE				E.L. SMITH			
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count
Microbiologicals																
Microcystin	<0.10	<0.10	<0.10	1	<0.10	<0.10	<0.10	1	<0.10	<0.10	0.13	12	<0.12	<0.10	0.30	12
Physical																
Colour (TCU)	2.9	2.5	3.3	31	3.0	2.5	3.8	31	5.8	2.0	29.3	364	5.8	1.9	31.0	365
Conductivity (uS/cm)	356	342	378	4	349	337	368	4	340	284	386	53	336	282	378	53
FPA-Intensity (N/A)	0.55	0.44	0.62	5	0.57	0.44	0.69	5	0.51	0.25	0.94	64	0.51	0.25	0.81	64
pH (N/A)	8.2	8.2	8.2	1	8.1	8.1	8.1	1	8.2	8.0	8.4	13	8.3	8.1	8.4	13
Total Dissolved Solids (mg/L)	199	199	199	1	198	198	198	1	201	171	231	13	205	166	234	13
Total Suspended Solids	<5	<5	<5	1	<5	<5	<5	1	<6	<5	10	14	25	<5	208	13
Turbidity (NTU)	2.51	1.12	9.74	31	2.59	1.32	6.72	31	9.84	1.07	309.00	364	10.68	1.15	238.00	365
Primary Inorganics (mg/L) **																
Aluminum	0.085	0.085	0.085	1	0.100	0.100	0.100	1	0.334	0.071	1.060	13	0.931	0.071	7.340	13
Antimony	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	13	<0.0002	<0.0002	<0.0002	13
Arsenic	0.0003	0.0003	0.0003	1	0.0003	0.0003	0.0003	1	0.0003	<0.0002	0.0006	13	0.0005	<0.0002	0.0022	13
Barium	0.061	0.061	0.061	1	0.062	0.062	0.062	1	0.065	0.054	0.087	13	0.074	0.053	0.174	13
Boron	0.010	0.010	0.010	1	0.009	0.009	0.009	1	0.009	0.007	0.014	13	0.009	0.007	0.018	13
Bromate Dissolved	<0.005	<0.005	<0.005	4	<0.005	<0.005	<0.005	4	<0.005	<0.005	<0.005	56	<0.005	<0.005	<0.005	56
Cadmium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	13	<0.0002	<0.0002	<0.0002	13
Chlorate Dissolved	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	56	<0.01	<0.01	<0.01	56
Chlorine, total	<0.03	<0.03	<0.03	1	<0.03	<0.03	<0.03	1	<0.03	<0.03	<0.03	13	<0.03	<0.03	<0.03	13
Chlorite Dissolved	<0.005	<0.005	<0.005	4	<0.005	<0.005	<0.005	4	<0.005	<0.005	<0.005	56	<0.005	<0.005	<0.005	56
Chromium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	1	0.0004	<0.0002	0.0013	13	0.0012	<0.0002	0.0091	13
Copper	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	13	<0.005	<0.005	0.008	13
Cyanide Dissolved	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	12	<0.002	<0.002	<0.002	12
Fluoride	0.11	0.11	0.12	4	0.11	0.11	0.12	4	0.12	0.10	0.15	53	0.12	0.10	0.15	53
Lead	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	0.0003	13	0.0004	<0.0002	0.0027	13
Manganese	0.003	0.003	0.003	1	0.007	0.007	0.007	1	0.007	<0.002	0.019	13	0.020	0.002	0.151	13
Mercury	<0.00020	<0.00020	<0.00020	1	<0.00020	<0.00020	<0.00020	1	<0.00020	<0.00001	<0.00020	17	<0.00020	<0.00001	<0.00020	17
Nitrate (as N) Dissolved	0.08	0.07	0.09	4	0.08	0.07	0.08	4	0.07	0.02	0.17	56	0.07	0.02	0.13	56
Nitrite (as N) Dissolved	<0.01	<0.01	<0.01	4	<0.01	<0.01	0.01	4	0.02	<0.01	0.05	56	0.02	<0.01	0.05	56
Selenium	0.0003	0.0003	0.0003	1	0.0002	0.0002	0.0002	1	0.0002	<0.0002	0.0003	13	0.0002	<0.0002	0.0003	13
Uranium	0.0005	0.0005	0.0005	1	0.0005	0.0005	0.0005	1	<0.0005	<0.0005	0.0006	13	<0.0005	<0.0005	0.0008	13

2.2.21 Raw River Water: Physical, Inorganic, Organic and Pesticide Parameters

December 2021

	Current Month								YTD							
	ROSSDALE				E.L. SMITH				ROSSDALE				E.L. SMITH			
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count
Primary Organics (ug/L) **																
2,4-D				0				0	<10	<10	<10	4	<10	<10	<10	4
2,4-Dichlorophenol				0				0	<0.3	<0.3	<0.3	4	<0.3	<0.3	<0.3	4
Atrazine				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4
Benzene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	367
Benzo(a)pyrene				0				0	<0.005	<0.005	<0.005	4	<0.005	<0.005	<0.005	4
Bromoxynil				0				0	<0.5	<0.5	<0.5	4	<0.5	<0.5	<0.5	4
Carbon Tetrachloride	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	367	<1.0	<0.5	<1.0	368
Chlorobenzene	<0.5000	<0.5000	<0.5000	32	<0.5000	<0.5000	<0.5000	32	<0.4946	<0.0005	<0.5000	370	<0.4946	<0.0005	<0.5000	371
Chlorpyrifos				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4
Cyanazine				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4
Diazinon				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4
Dicamba				0				0	<12	<12	<12	4	<12	<12	<12	4
Dichlorobenzene (1,2)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	367
Dichlorobenzene (1,4)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	367
Dichloroethane (1,2)	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	2	<0.5	<0.5	<0.5	2
Dichloroethylene (1,1)	<3	<3	<3	32	<3	<3	<3	32	<3	<3	<3	366	<3	<3	<3	367
Diclofop-methyl				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4
Dimethoate				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4
Diuron				0				0	<1	<1	<1	4	<1	<1	<1	4
Ethylbenzene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	367
Glyphosate				0				0	<2.51	<0.01	<5.00	4	<2.51	<0.01	<5.00	4
Malathion				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4
MCPA				0				0	<0.5	<0.5	<0.5	4	<0.5	<0.5	<0.5	4
Methylene Chloride	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	367
Metolachlor				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4
Metribuzin				0				0	<1	<1	<1	4	<1	<1	<1	4
Nitrilotriacetic acid				0				0	<0.2	<0.2	<0.2	4	<0.2	<0.2	<0.2	4
Pentachlorophenol				0				0	<6	<6	<6	4	<6	<6	<6	4
Perfluorooctane sulfonic acid (PFOS)				0				0	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4
Perfluorooctanoic acid (PFOA)				0				0	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4
Phorate				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4
Picloram				0				0	<19	<19	<19	4	<19	<19	<19	4
Simazine				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4
Terbufos				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4
Tetrachloroethylene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	368
Toluene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	367
Total Xylenes	<2.5	<2.5	<2.5	32	<2.5	<2.5	<2.5	32	<2.5	<2.5	<2.5	329	<2.5	<2.5	<2.5	331
Trichloroethylene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	368
Trifluralin				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4

2.2.21 Raw River Water: Physical, Inorganic, Organic and Pesticide Parameters

December 2021

	Current Month								YTD							
	ROSSDALE				E.L. SMITH				ROSSDALE				E.L. SMITH			
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count
Primary Organics (ug/L) **																
Trihalomethanes	<1	<1	<1	32	<1	<1	<1	32	<1	<1	<1	367	<1	<1	<1	368
Vinyl Chloride	<1	<1	<1	1	<1	<1	<1	1	<1	<1	<1	2	<1	<1	<1	2
Radionuclides (Bq/L)																
Cesium-137				0				0	<0.2	<0.1	<0.3	2	<0.2	<0.1	<0.2	2
Gross Alpha				0				0	<0.11	<0.09	<0.12	2	<0.11	<0.09	<0.13	2
Gross Beta				0				0	<0.06	<0.05	<0.07	2	<0.06	<0.04	<0.07	2
Iodine-131				0				0	<0.4	<0.3	<0.4	2	<0.4	<0.3	<0.4	2
Lead-210				0				0	<0.02	<0.02	<0.02	2	<0.02	<0.02	<0.02	2
Radium-226				0				0	<0.005	<0.005	<0.005	2	<0.005	<0.005	<0.005	2
Strontium-90				0				0	<0.05	<0.05	<0.05	2	<0.05	<0.05	<0.05	2
Tritium				0				0	<28	<15	<40	2	<28	<15	<40	2

2.2.21 Raw River Water: Physical, Inorganic, Organic and Pesticide Parameters

December 2021

	Current Month								YTD							
	ROSSDALE				E.L. SMITH				ROSSDALE				E.L. SMITH			
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count
Secondary Inorganics (mg/L) ***																
Alkalinity Total	132	127	140	4	131	125	138	4	128	110	143	53	128	110	145	53
Alkalinity, PHP (mg CaCO3/L)	<1	<1	<1	1	<1	<1	<1	1	<1	<1	2	13	1	<1	3	13
Ammonia as NH3	<0.05	<0.05	<0.05	4	<0.05	<0.05	<0.05	4	<0.05	<0.05	<0.05	68	<0.05	<0.05	<0.05	68
Beryllium	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	13	<0.0002	<0.0002	0.0002	13
Bromide Dissolved	<0.01	<0.01	<0.01	4	0.02	<0.01	0.03	4	0.03	<0.01	0.11	56	0.03	<0.01	0.11	56
Calcium Dissolved	48.0	48.0	48.0	1	48.3	48.3	48.3	1	46.5	40.1	54.1	13	46.0	39.7	53.0	13
Calcium Hardness	117	113	124	4	115	110	121	4	112	93	135	53	109	64	134	53
Chloride Dissolved	0.8	0.6	1.0	4	0.5	0.5	0.6	4	1.3	0.5	4.8	56	0.7	0.4	1.7	56
Chlorine Free	<0.03	<0.03	<0.03	1	<0.03	<0.03	<0.03	1	<0.03	<0.03	<0.03	13	<0.03	<0.03	<0.03	13
Cobalt	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	0.0002	13	0.0004	<0.0002	0.0023	13
Hardness, Total (mg CaCO3/L)	176	165	189	4	175	170	183	4	170	147	199	53	170	145	201	53
Iron	0.088	0.088	0.088	1	0.128	0.128	0.128	1	0.203	0.061	0.600	13	0.698	0.091	5.770	13
Lanthanum	<0.001	<0.001	<0.001	1	<0.001	<0.001	<0.001	1	<0.001	<0.001	<0.001	13	<0.001	<0.001	0.004	13
Lithium	0.0035	0.0035	0.0035	1	0.0029	0.0029	0.0029	1	0.0036	0.0029	0.0050	13	0.0039	0.0028	0.0087	13
Magnesium	15.0	15.0	15.0	1	14.6	14.6	14.6	1	14.4	12.4	16.3	13	14.6	12.2	17.5	13
Manganese Dissolved	<0.002	<0.002	<0.002	1	0.004	0.004	0.004	1	<0.002	<0.002	<0.002	13	0.003	<0.002	0.007	13
Molybdenum	0.0009	0.0009	0.0009	1	0.0008	0.0008	0.0008	1	0.0007	0.0006	0.0009	13	0.0007	0.0006	0.0011	13
Nickel	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	1	0.0007	<0.0005	0.0015	13	0.0017	<0.0005	0.0079	13
Ortho_P	<0.02	<0.02	<0.02	1	<0.02	<0.02	<0.02	1	<0.02	<0.02	<0.02	12	<0.02	<0.02	<0.02	12
Phosphorus	<0.02	<0.02	<0.02	1	<0.02	<0.02	<0.02	1	<0.02	<0.02	0.03	13	0.03	<0.02	0.17	13
Potassium	0.7	0.7	0.7	1	0.7	0.7	0.7	1	0.8	0.6	1.3	13	1.0	0.6	2.9	13
Silicon	1.92	1.92	1.92	1	1.96	1.96	1.96	1	2.43	1.61	4.44	13	3.66	1.63	16.50	13
Silver	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002	13	<0.0002	<0.0002	<0.0002	13
Sodium	3.7	3.7	3.7	1	3.3	3.3	3.3	1	4.0	2.4	6.6	13	3.5	2.3	5.6	13
Strontium	0.470	0.470	0.470	1	0.484	0.484	0.484	1	0.439	0.367	0.470	13	0.443	0.370	0.484	13
Sulphate Dissolved	52.5	50.4	54.1	4	51.4	49.0	53.4	4	48.0	37.7	54.1	56	47.6	37.0	53.4	56
Sulphide	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	1	<0.002	<0.002	<0.002	12	<0.002	<0.002	<0.002	12
Thallium	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	13	<0.0005	<0.0005	<0.0005	13
Tin	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	1	<0.0005	<0.0005	<0.0005	13	<0.0005	<0.0005	<0.0005	13
Titanium	0.0012	0.0012	0.0012	1	0.0014	0.0014	0.0014	1	0.0053	0.0006	0.0157	13	0.0154	0.0014	0.1110	13
Total Kjeldahl Nitrogen	0.1	0.1	0.1	1	0.1	0.1	0.1	1	3.5	<0.1	43.7	13	0.2	<0.1	1.5	13
Vanadium	<0.0005	<0.0005	<0.0005	1	0.0006	0.0006	0.0006	1	0.0009	<0.0005	0.0028	13	0.0024	<0.0005	0.0175	13
Zinc	<0.005	<0.005	<0.005	1	<0.005	<0.005	<0.005	1	<0.005	<0.005	0.008	13	<0.006	<0.005	0.022	13
Zirconium	<0.001	<0.001	<0.001	1	<0.001	<0.001	<0.001	1	<0.001	<0.001	<0.001	13	<0.001	<0.001	0.002	13

2.2.21 Raw River Water: Physical, Inorganic, Organic and Pesticide Parameters

December 2021

	Current Month								YTD							
	ROSSDALE				E.L. SMITH				ROSSDALE				E.L. SMITH			
	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count	Mean	Min	Max	Count
Secondary Organics (ug/L) ***																
Aldicarb				0				0	<0.9	<0.9	<0.9	4	<0.9	<0.9	<0.9	4
Aldrin				0				0	<0.008	<0.008	<0.008	4	<0.008	<0.008	<0.008	4
Azinphos-methyl				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4
Bromodichloromethane	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	368
Bromoform	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	367	<1.0	<0.5	<1.0	368
Carbaryl				0				0	<0.5	<0.5	<0.5	4	<0.5	<0.5	<0.5	4
Carbofuran				0				0	<0.5	<0.5	<0.5	4	<0.5	<0.5	<0.5	4
Chloroform	<0.50	<0.50	<0.50	32	<0.50	<0.50	<0.50	32	<0.49	<0.00	<0.50	371	<0.49	<0.00	<0.50	372
Dibromochloromethane	<0.5000	<0.5000	<0.5000	32	<0.5000	<0.5000	<0.5000	32	<0.4947	<0.0005	<0.5000	371	<0.4947	<0.0005	<0.5000	372
Dichlorobenzene (1,3)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	367
Dichloroethylene, cis (1,2)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	367
Dichloroethylene, trans (1,2)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	367
Dichloropropane (1,2)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	367
Dieldrin				0				0	<0.008	<0.008	<0.008	4	<0.008	<0.008	<0.008	4
Methyl t-Butyl Ether (MTBE)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	367
MIBK	<1	<1	<1	32	<1	<1	<1	32	<1	<1	<1	366	<1	<1	<1	367
Parathion				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4
Perfluorobutanoic acid (PFBA)				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4
Perfluoroheptanoic acid (PFHpA)				0				0	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4
Perfluorohexane sulfonic acid (PFHxS)				0				0	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4
Perfluorohexanoic acid (PFHxA)				0				0	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4
Perfluorononanoic acid (PFNA)				0				0	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4
Perfluoropentanoic acid (PFPeA)				0				0	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01	4
Styrene	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	367
Tetrachloroethane (1,1,2,2)	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	32	<1.0	<0.5	<1.0	367	<1.0	<0.5	<1.0	368
Total Organic Carbon	1.2	1.1	1.2	4	1.1	1.0	1.2	4	1.7	1.1	5.3	53	1.7	0.9	4.9	53
Total Volatile Organics (NonTHM)	<1	<1	<1	32	<1	<1	<1	32	<1	<1	<1	366	<1	<1	<1	367
Total Volatile Organics (Unknown)	<1	<1	<1	31	<1	<1	<1	31	<1	<1	<1	364	<1	<1	<1	365
Triallate				0				0	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1	4
Trichlorobenzene (1,2,4)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	367
Trichloroethane (1,1,1)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	368
Xylene (1,2)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	367
Xylene (1,4)	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	32	<0.5	<0.5	<0.5	366	<0.5	<0.5	<0.5	367

2.2.22 EFFLUENT WASTESTREAM TO SANITARY SEWER (PLANTS) - REGULATED (EPCOR Drainage Bylaw)

(Lab Neutralization Tank in Water Excellence Lab Building)

Date	pH**
01-Dec-2021	7.46
09-Dec-2021	8.97
15-Dec-2021	7.73
21-Dec-2021	7.30
29-Dec-2021	7.77

**Drainage By-Law 18093 Acceptable Range is 6.0 to 11.5

2.2.23 REPORTABLE DETECTION LIMITS

Analyte	RDL	Unit
Alkalinity phenolphthalein	1	mg CaCO3/L
Alkalinity Total	1	mg CaCO3/L
Aluminum	0.005	mg/L
Ammonia as N	0.05	mg/L
Ammonia as NH3	0.05	mg/L
Antimony	0.0002	mg/L
Arsenic	0.0002	mg/L
Barium	0.002	mg/L
Benzene	0.5	µg/L
Beryllium	0.0002	mg/L
Boron	0.005	mg/L
Bromate Dissolved	0.005	mg/L
Bromide Dissolved	0.01	mg/L
Bromochloroacetic acid	1.0	ug/L
Bromodichloromethane	0.5	µg/L
Bromoform	1.0	µg/L
Cadmium	0.0002	mg/L
Calcium	0.1	mg/L
Calcium Dissolved	0.1	mg/L
Calcium Hardness	2	mg CaCO3/L
Carbon Tetrachloride	1.0	µg/L
Cellular ATP	0.01	pg/mL
Chlorate Dissolved	0.01	mg/L
Chloride Dissolved	0.1	mg/L
Chlorine Free	0.03	mg/L
Chlorine, total	0.03	mg/L
Chlorite Dissolved	0.005	mg/L
Chlorobenzene	0.5	µg/L
Chloroform	0.5	µg/L
Chromium	0.0002	mg/L
Cobalt	0.0002	mg/L
Coliforms, total	1.0	MPN/100 mL
Colour	0.5	TCU
Conductivity	1	µS/cm
Copper	0.005	mg/L
Copper Dissolved	0.005	mg/L
Cryptosporidium	1.8	oocysts/100L
Dibromoacetic acid	1.0	ug/L
Dibromochloromethane	0.5	µg/L
Dichloroacetic acid	2.0	ug/L
Dichlorobenzene (1,2)	0.5	µg/L
Dichlorobenzene (1,3)	0.5	µg/L
Dichlorobenzene (1,4)	0.5	µg/L
Dichloroethane (1,2)	0.5	µg/L
Dichloroethylene (1,1)	3.0	µg/L
Dichloroethylene, cis (1,2)	0.5	µg/L
Dichloroethylene, trans (1,2)	0.5	µg/L
Dichloropropane (1,2)	0.5	µg/L
E. coli	1.0	MPN/100 mL
Ethylbenzene	0.5	µg/L

2.2.23 REPORTABLE DETECTION LIMITS

Analyte	RDL	Unit
Fluoride	0.05	mg/L
Giardia	1.8	cysts/100L
Haloacetic Acids, total (HAA5)	5.0	ug/L
Haloacetic Acids, total (HAA6)	5.0	ug/L
Hardness, Total	2	mg CaCO3/L
Iron	0.005	mg/L
Lanthanum	0.001	mg/L
Lead	0.0002	mg/L
Lithium	0.0002	mg/L
Magnesium	0.1	mg/L
Manganese	0.002	mg/L
Manganese Dissolved	0.002	mg/L
Mercury	0.0002	mg/L
Methyl t-Butyl Ether (MTBE)	0.5	µg/L
Methylene Chloride	0.5	µg/L
MIBK	1.0	µg/L
Microcystin	0.10	µg/L
Molybdenum	0.0002	mg/L
Monobromoacetic acid	1.0	ug/L
Monochloroacetic acid	5.0	ug/L
Nickel	0.0005	mg/L
Nitrate (as N) Dissolved	0.01	mg/L
Nitrite (as N) Dissolved	0.01	mg/L
Ortho_P	0.02	mg/L
Phosphorus	0.02	mg/L
Potassium	0.1	mg/L
Selenium	0.0002	mg/L
Silicon	0.05	mg/L
Silver	0.0002	mg/L
Sodium	0.1	mg/L
Strontium	0.002	mg/L
Styrene	0.5	µg/L
Sulphate Dissolved	0.1	mg/L
Tetrachloroethane (1,1,2,2)	1.0	µg/L
Tetrachloroethylene	0.5	µg/L
Thallium	0.0005	mg/L
Tin	0.0005	mg/L
Titanium	0.0005	mg/L
Toluene	0.5	µg/L
Total Dissolved Solids	9	mg/L
Total Kjeldahl Nitrogen	0.1	mg N/L
Total Organic Carbon	0.6	mg/L
Total Suspended Solids	5	mg/L
Total Volatile Organics (NonTHM)	1.0	µg/L
Total Volatile Organics (Unknown)	1.0	µg/L
Total Xylenes	2.5	µg/L
Trichloroacetic acid	3.0	ug/L
Trichlorobenzene (1,2,4)	0.5	µg/L
Trichloroethane (1,1,1)	0.5	µg/L
Trichloroethylene	0.5	µg/L
Trihalomethanes	1.0	µg/L
Turbidity	0.04	NTU

2.2.23 REPORTABLE DETECTION LIMITS

Analyte	RDL	Unit
Uranium	0.0005	mg/L
UV 254 % Transmittance	99.8	%T/cm
Vanadium	0.0005	mg/L
Vinyl Chloride	1.0	µg/L
Xylene (1,2)	0.5	µg/L
Xylene (1,4)	0.5	µg/L
Zinc	0.005	mg/L
Zirconium	0.001	mg/L
Zirconium Dissolved	0.001	mg/L

2.2.23 REPORTABLE DETECTION LIMITS

Analyte	RDL	Unit
Contract Lab Analysis		
Cyanide Dissolved	0.002	mg/L
NDMA	0.0009	µg/L
Sulphide	0.002	mg/L

2.2.24 EXPLANATION OF NOTATIONS USED

Concentrations are reported as mg/L unless otherwise indicated.
Alkalinity and Hardness (Ca and Total) are reported as mg $CaCO_3$/L

%T	=	% Transmission
- ve	=	Absent
+ ve	=	Present
µg/L	=	Micrograms per litre (1 µg/L = 0.001 mg/L)
µS/cm	=	Microsiemens per centimeter (unit of conductivity)
2/Y	=	Twice per Year
AO	=	Aesthetic Objective
Bq/L	=	Becquerel(s) per litre (unit of radionuclide concentration)
CCPP	=	Calcium Carbonate Precipitation Potential
CFU	=	Colony Forming Units
Comm	=	Commercial Laboratories
D	=	Daily
EWSI	=	EPCOR Water Services Inc.
FPA	=	Flavour Profile Analysis
GCDWQ	=	Guidelines for Canadian Drinking Water Quality
GM	=	Geometric Mean
HPC	=	Heterotrophic Plate Count
inoff	=	Inoffensive (no objectionable odour)
M	=	Monthly
MAC	=	Maximum Acceptable Concentration
MDL	=	Method Detection Limit
N/A	=	Not Available
ND	=	Not Detected
NTU	=	Nephelometric Turbidity Units
PA	=	Presence/Absence Testing
PBR	=	Performance Based Rates
PHP	=	phenolphthalein
PLPH	=	Provincial Laboratory of Public Health
ppb	=	Parts Per Billion
ppm	=	Parts Per Million
Q	=	Quarterly
QA	=	Quality Assurance
QC	=	Quality Control
RDL	=	Reportable Detection Limit
TCU	=	True Colour Units
TDS	=	Total Dissolved Solids
TOC	=	Total Organic Carbon
WL	=	Water Laboratory
WTP	=	Water Treatment Plant