

Water Quality 2014

7.1 Water Quality Objectives for EPCOR

2014

Parameter	Approval Requirement	EPCOR Internal Limit	EPCOR Target
Turbidity (NTU)			
Individual Filters	<0.3	<0.2 (3)	<0.08
Distribution (Routine Operation)	< 5 (4)	< 1 (2)	< 1
Distribution (After repairs)	< 5 (4)	< 3 (2)	< 1
Colour (TCU)	<15 (4)	<10 (2)	<3
pH (25°C)	6.5 - 8.5	7.3 - 8.3 (2)	7.5 - 8.0
Taste and Odour	Inoffensive	Inoffensive (2)	Inoffensive
E.coli (PA/100 mL)	absent	absent (2)	absent
Total Coliforms (PA/100 mL)	absent (1)	absent (2)	absent
Total Chlorine Residual (mg/L)			
Water Treatment Plant Effluent	>1.0	1.3 - 2.4 (3)	1.9 - 2.2
Reservoirs	>0.5	1.0 - 2.4 (2)	1.2 - 2.2
Distribution	>0.5 (5)	1.0 - 2.4 (2)	1.0 - 2.2
Fluoride: (mg/L)			
Reservoir Effluent	0.5 - 0.9	0.6 - 0.8 (2)	0.6 - 0.8
Trihalomethanes (mg/L)			
Reservoir Effluent	<0.100	<0.050 (2)	<0.040
Distribution System	<0.100	<0.050 (2)	<0.040
UV254 % Transmittance			
E.L. Smith	>88%	>89% (3)	>90%
Rossdale	>86%	>87% (3)	>88%
HAA (mg/L)			
Reservoir Effluent	< 0.080	< 0.040 (2)	<0.035
Distribution System	< 0.080	< 0.040 (2)	<0.035
NDMA (mg/L):			
Reservoir Effluent	< 0.000040	< 0.000010 (2)	<0.00005
Distribution System	< 0.000040	< 0.000010 (2)	<0.00005
Microorganism Log Removal at			
<i>Giardia</i>	≥5.5	≥6.0 (3)	>6.5
<i>Cryptosporidium</i>	≥5.5	≥5.5 (3)	>6.0
Virus	≥4.0	≥6.0 (3)	>8.0

(1) Two consecutive positive samples are a violation

(2) Limit based on City of Edmonton Performance Based Rate (PBR) agreement

(3) Limit based on EPCOR Action Level

(4) Aesthetic Objective

(5) in 75% of samples collected in a day

All values are expressed in units of mg/L unless otherwise stated.

Based on Dec 23, 2013 Summary of Epcor Edmonton Water Quality Standards.

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

2014

Parameter	Unit	MAC*	Average	Median	Min	Max	Count
Alkalinity, total	mg CaCO ₃ /L		129	119	67	152	729
Aluminum	mg/L	(0.1/0.2)	0.077	0.049	0.020	0.180	56
Arsenic	mg/L	0.01	0.0003	0.0003	0.0002	0.0004	24
Bromate, dissolved	mg/L	0.01	<0.005	<0.005	<0.005	<0.005	124
Bromodichloromethane	ug/L		0.6	0.7	<0.5	2.0	729
Cadmium	mg/L	0.005	<0.0001	<0.0001	<0.0001	<0.0001	24
Chlorate, dissolved	mg/L	1	0.05	0.02	<0.01	0.21	124
Chloride, dissolved	mg/L		3.56	3.92	2.65	8.72	124
Chlorine, total	mg/L	3.0	2.04	2.00	1.75	2.26	729
Chlorite, dissolved	mg/L	1	<0.005	<0.005	<0.005	<0.005	124
Chromium	mg/L	0.05	<0.0002	<0.0002	<0.0002	<0.0002	24
Colour	TCU	(15)	1	<1	<1	2	727
Conductivity	uS/cm		356	354	325	433	128
Copper	mg/L	(1)	<0.002	<0.002	<0.002	0.002	24
Cryptosporidium	oocysts/100L		<0.1	<0.1	<0.1	<0.1	28
Fluoride, dissolved	mg/L	1.5	0.71	0.69	0.53	0.80	729
Giardia	cysts/100L		<0.1	<0.1	<0.1	<0.1	28
Haloacetic Acids, total (HAA5)	ug/L		19.4	24.6	9.6	27.6	22
Hardness, Calcium	mg CaCO ₃ /L		119	113	86	138	729
Hardness, total	mg CaCO ₃ /L		175	165	116	201	729
Iron	mg/L	(0.3)	<0.002	<0.002	<0.002	0.007	24
Lead	mg/L	0.01	<0.0001	<0.0001	<0.0001	<0.0001	24
Manganese	mg/L	(0.05)	<0.002	<0.002	<0.002	0.020	24
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	24
NDMA	ng/L	40	2.3	0.7	<0.5	2.4	24
Nitrate (as N), dissolved	mg/L	10	0.07	0.06	<0.01	0.30	124
Nitrite (as N), dissolved	mg/L	1	<0.01	<0.01	<0.01	0.01	124
pH	N/A	(6.5–8.5)	7.9	7.7	7.5	8.1	729
Potassium	mg/L		0.43	0.74	0.07	1.94	24
Sodium	mg/L	(200)	5.4	6.8	3.5	29.3	24
Sulphate, dissolved	mg/L		51	51.2	25.4	110	124
Total Dissolved Solids	mg/L		218	211	179	267	24
Total Organic Carbon	mg/L C		1.3	1.6	0.9	3.5	128
Trihalomethanes	ug/L		9.8	13.3	3.3	31.8	729
Turbidity	NTU		0.07	0.07	0.04	0.15	729
Uranium	mg/L	0.02	<0.0005	<0.0005	<0.0005	0.0006	24
Zinc	mg/L	(5)	<0.002	<0.002	<0.002	0.005	24

Bacteriological Data

Coliforms, total	PA/100 mL	62	Absent	Absent	Absent	729
E. coli	PA/100 mL	62	Absent	Absent	Absent	729

* Health Canada Guidelines for Canadian Drinking Water Quality Maximum Acceptable Concentration and Alberta Environment and Sustainable Resource Development Approval Limit. Limits in brackets indicates an aesthetic objective or operational guideline.

7.3 SUMMARY OF LABORATORY ANALYSIS - 2014

DISTRIBUTION OF TESTING

	<u>No of Samples</u>	<u>No of Tests</u>
Customer Complaints	12	362
System Depressurization/Repair	46	184
Construction Samples	12	60
Externally Contracted Analyses	113	226
Routine Process Testing	390	7,548
Routine Distribution System	156	1,074
Field Reservoirs	60	732
Plant Wastestreams	5	15
Jan-14	794	10,201
Customer Complaints	5	190
System Depressurization/Repair	62	248
Construction Samples	18	90
Externally Contracted Analyses	101	926
Routine Process Testing	335	6,830
Routine Distribution System	148	1,059
Field Reservoirs	47	595
Plant Wastestreams	4	12
Feb-14	720	9,950
Customer Complaints	9	191
System Depressurization/Repair	97	388
Construction Samples	15	75
Externally Contracted Analyses	97	194
Routine Process Testing	398	7,440
Routine Distribution System	149	1,048
Field Reservoirs	48	672
Plant Wastestreams	5	15
Mar-14	818	10,023
Customer Complaints	16	819
System Depressurization/Repair	54	214
Construction Samples	26	130
Externally Contracted Analyses	98	196
Routine Process Testing	458	7,425
Routine Distribution System	150	1,094
Field Reservoirs	48	672
Plant Wastestreams	4	12
Apr-14	854	10,562

7.3 SUMMARY OF LABORATORY ANALYSIS - 2014

DISTRIBUTION OF TESTING

	<u>No of Samples</u>	<u>No of Tests</u>
Customer Complaints	19	729
System Depressurization/Repair	76	302
Construction Samples	18	90
Externally Contracted Analyses	110	220
Routine Process Testing	352	7,530
Routine Distribution System	144	1,103
Field Reservoirs	60	729
Plant Wastestreams	4	12
May-14	783	10,715
Customer Complaints	10	163
System Depressurization/Repair	71	282
Construction Samples	16	80
Externally Contracted Analyses	100	200
Routine Process Testing	338	7,226
Routine Distribution System	147	1,169
Field Reservoirs	50	763
Plant Wastestreams	4	12
Jun-14	736	9,895
Customer Complaints	7	206
System Depressurization/Repair	85	340
Construction Samples	20	100
Externally Contracted Analyses	110	220
Routine Process Testing	366	7,557
Routine Distribution System	172	1,287
Field Reservoirs	60	780
Plant Wastestreams	6	18
Jul-14	826	10,508
Customer Complaints	5	124
System Depressurization/Repair	80	318
Construction Samples	14	73
Externally Contracted Analyses	97	194
Routine Process Testing	348	7,482
Routine Distribution System	159	1,255
Field Reservoirs	49	725
Plant Wastestreams	4	12
Aug-14	756	10,183

7.3 SUMMARY OF LABORATORY ANALYSIS - 2014

DISTRIBUTION OF TESTING

	<u>No of Samples</u>	<u>No of Tests</u>
Customer Complaints	5	64
System Depressurization/Repair	76	304
Construction Samples	15	75
Externally Contracted Analyses	96	916
Routine Process Testing	351	7,288
Routine Distribution System	157	1,162
Field Reservoirs	44	697
Plant Wastestreams	4	12
Sep-14	748	10,518
Customer Complaints	12	332
System Depressurization/Repair	66	268
Construction Samples	43	215
Externally Contracted Analyses	109	958
Routine Process Testing	380	7,552
Routine Distribution System	147	1,183
Field Reservoirs	55	675
Plant Wastestreams	4	12
Oct-14	816	11,195
Customer Complaints	8	178
System Depressurization/Repair	46	184
Construction Samples	47	235
Externally Contracted Analyses	92	184
Routine Process Testing	348	7,249
Routine Distribution System	134	1,018
Field Reservoirs	44	738
Plant Wastestreams	4	12
Nov-14	723	9,798
Customer Complaints	5	122
System Depressurization/Repair	44	176
Construction Samples	77	385
Externally Contracted Analyses	97	194
Routine Process Testing	376	7,576
Routine Distribution System	145	1,109
Field Reservoirs	53	665
Plant Wastestreams	4	12
Dec-14	801	10,239
YTD	9,375	123,787

7.4 Bacteriological Data: Water Treatment Plants

2014

Treated Water Entering the Distribution System

	# of +ve Samples		# of Samples		Limit	Required Frequency - Each Plant*	Unit
	Rossdale	E.L. Smith	Rossdale	E.L. Smith	GCDWQ or Approval		
Coliforms, total	0	0	365	364	0/100 mL	[daily]	PA/100 mL
E. coli	0	0	365	364	0/100 mL	[daily]	PA/100 mL
Heterotrophic Plate Count	9	4	365	363	N/A	[daily]	CFU/mL

Water Entering the Plant Reservoir

	# of +ve Samples		# of Samples		Limit	Required Frequency - Each Plant*	Unit
	Rossdale	E.L. Smith	Rossdale	E.L. Smith	GCDWQ or Approval		
Coliforms, total	0	0	365	365	N/A	[daily]	PA/100 mL
E. coli	0	0	365	365	N/A	[daily]	PA/100 mL
Heterotrophic Plate Count	9	13	365	365	N/A	[daily]	CFU/mL

Raw River Water Entering the Treatment Plants

	Rossdale			E.L. Smith			Rossdale	E.L. Smith	Limit	Required Frequency - Each Plant*	Unit
	Mean	Min	Max	Mean	Min	Max	# of Samples		GCDWQ or Approval		
Coliforms, total	685	<1	28000	302	<1	2200	419	54	N/A	[weekly]	PA/100 mL
E. coli	47	<1	1100	17	<1	99	419	54	N/A	[weekly]	PA/100 mL
Heterotrophic Plate Count	133	31	270	115	43	210	10	5	N/A	[monthly]	CFU/mL

* Indicates EPCOR Operations Program.

7.5 Bacteriological Data: Distribution System

2014

	Coliforms, total			E. coli			HPC		
	Count	# +ve	% +ve	Count	# +ve	% +ve	Count	# +ve	% +ve
January									
FIELD DISTRIBUTION WATER	105	0	0.0	105	0	0.0	103	15	15
FIELD DISTRIBUTION WATER - PLPH	53	1	1.9	53	0	0.0	0		0.0
RESERVOIR WATER	60	0	0.0	60	0	0.0	60	4	6.7
RESERVOIR WATER - PLPH (duplicate-not counted)	60	0	0.0	60	0	0.0	0		0.0
Monthly	218	1	0.5	218	0	0.0	163	19	11.7
February									
FIELD DISTRIBUTION WATER	96	1	1.0	96	0	0.0	96	8	8.3
FIELD DISTRIBUTION WATER - PLPH	50	0	0.0	50	0	0.0	0		0.0
RESERVOIR WATER	47	0	0.0	47	0	0.0	47	1	2.1
RESERVOIR WATER - PLPH (duplicate-not counted)	47	0	0.0	47	0	0.0	0		0.0
Monthly	193	1	0.5	193	0	0.0	143	9	6.3
March									
FIELD DISTRIBUTION WATER	99	0	0.0	99	0	0.0	99	4	4.0
FIELD DISTRIBUTION WATER - PLPH	49	0	0.0	49	0	0.0	0		0.0
RESERVOIR WATER	48	0	0.0	48	0	0.0	48	1	2.1
RESERVOIR WATER - PLPH (duplicate-not counted)	48	0	0.0	48	0	0.0	0		0.0
Monthly	196	0	0.0	196	0	0.0	147	5	3.4
April									
FIELD DISTRIBUTION WATER	96	0	0.0	96	0	0.0	96	5	5.2
FIELD DISTRIBUTION WATER - PLPH	50	0	0.0	50	0	0.0	0		0.0
RESERVOIR WATER	48	0	0.0	48	0	0.0	48	2	4.2
RESERVOIR WATER - PLPH (duplicate-not counted)	48	0	0.0	48	0	0.0	0		0.0
Monthly	194	0	0.0	194	0	0.0	144	7	4.9
May									
FIELD DISTRIBUTION WATER	94	0	0.0	94	0	0.0	94	10	11
FIELD DISTRIBUTION WATER - PLPH	50	0	0.0	50	0	0.0	0		0.0
RESERVOIR WATER	60	0	0.0	60	0	0.0	57	0	0.0
RESERVOIR WATER - PLPH (duplicate-not counted)	60	0	0.0	60	0	0.0	0	0	0.0
Monthly	204	0	0.0	204	0	0.0	151	10	6.6
June									
FIELD DISTRIBUTION WATER	96	0	0.0	96	0	0.0	94	10	11
FIELD DISTRIBUTION WATER - PLPH	52	1	1.9	52	0	0.0	0		0.0
RESERVOIR WATER	47	0	0.0	47	0	0.0	47	0	0.0
RESERVOIR WATER - PLPH (duplicate-not counted)	48	0	0.0	48	0	0.0	0	0	0.0
Monthly	195	1	0.5	195	0	0.0	141	10	7.1

Guidelines for Canadian Drinking Water Quality recommend 178 bacteriological samples for a city the size of Edmonton. HPC are not required.

Testing conducted by Provincial Laboratory for Public Health labelled with PLPH.

All Total Coliform positive events were investigated by re-sampling according to the ESRD Bacteriological Response protocol and were resolved.

7.5 Bacteriological Data: Distribution System

2014

	Coliforms, total			E. coli			HPC		
	Count	# +ve	% +ve	Count	# +ve	% +ve	Count	# +ve	% +ve
July									
FIELD DISTRIBUTION WATER	120	0	0.0	120	0	0.0	120	5	4.2
FIELD DISTRIBUTION WATER - PLPH	50	0	0.0	50	0	0.0	0		0.0
RESERVOIR WATER	60	0	0.0	60	0	0.0	60	3	5.0
RESERVOIR WATER - PLPH (duplicate-not counted)	60	0	0.0	60	0	0.0	0		0.0
Monthly	230	0	0.0	230	0	0.0	180	8	4.4
August									
FIELD DISTRIBUTION WATER	107	0	0.0	107	0	0.0	107	4	3.7
FIELD DISTRIBUTION WATER - PLPH	49	0	0.0	49	0	0.0	0		0.0
RESERVOIR WATER	49	0	0.0	49	0	0.0	49	1	2.0
RESERVOIR WATER - PLPH (duplicate-not counted)	48	0	0.0	48	0	0.0	0		0.0
Monthly	205	0	0.0	205	0	0.0	156	5	3.2
September									
FIELD DISTRIBUTION WATER	105	1	1.0	105	0	0.0	104	8	7.7
FIELD DISTRIBUTION WATER - PLPH	49	0	0.0	49	0	0.0	0		0.0
RESERVOIR WATER	43	0	0.0	43	0	0.0	43	6	14
RESERVOIR WATER - PLPH (duplicate-not counted)	43	0	0.0	43	0	0.0	0		0.0
Monthly	197	1	0.5	197	0	0.0	147	14	9.5
October									
FIELD DISTRIBUTION WATER	92	2	2.2	92	0	0.0	92	7	7.6
FIELD DISTRIBUTION WATER - PLPH	50	0	0.0	50	0	0.0	0		0.0
RESERVOIR WATER	55	0	0.0	55	0	0.0	55	2	3.6
RESERVOIR WATER - PLPH (duplicate-not counted)	55	0	0.0	55	0	0.0	0		0.0
Monthly	197	2	1.0	197	0	0.0	147	9	6.1
November									
FIELD DISTRIBUTION WATER	83	2	2.4	83	0	0.0	80	13	16
FIELD DISTRIBUTION WATER - PLPH	50	0	0.0	50	0	0.0	0		0.0
RESERVOIR WATER	44	0	0.0	44	0	0.0	42	1	2.4
RESERVOIR WATER - PLPH (duplicate-not counted)	42	0	0.0	42	0	0.0	0		0.0
Monthly	177	2	1.1	177	0	0.0	122	14	11.5
December									
FIELD DISTRIBUTION WATER	95	1	1.1	95	0	0.0	95	9	9.5
FIELD DISTRIBUTION WATER - PLPH	50	0	0.0	50	0	0.0	0		0.0
RESERVOIR WATER	53	0	0.0	53	0	0.0	53	0	0.0
RESERVOIR WATER - PLPH (duplicate-not counted)	47	0	0.0	47	0	0.0	0	0	0.0
Monthly	198	1	0.5	198	0	0.0	148	9	6.1
Year to Date	2,404	9	0.4	2,404	0	0.0	1,789	119	6.7

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All Total Coliform positive events were investigated by re-sampling according to the ESRD Bacteriological Response protocol and were resolved.

7.5 Bacteriological Data: Distribution System

2014

Samples from Depressurizations

	Coliforms, total			E. coli			Heterotrophic Plate Count		
	Count	# +ve	% +ve	Count	# +ve	% +ve	Count	# +ve	% +ve
January	46	0	0.0	46	0	0.0	0	0	0.0
February	62	1	1.6	62	0	0.0	0	0	0.0
March	97	0	0.0	97	0	0.0	0	0	0.0
April	53	1	1.9	53	0	0.0	0	0	0.0
May	75	0	0.0	75	0	0.0	0	0	0.0
June	70	0	0.0	70	0	0.0	0	0	0.0
July	85	1	1.2	85	0	0.0	0	0	0.0
August	79	2	2.5	79	0	0.0	0	0	0.0
September	76	1	1.3	76	0	0.0	0	0	0.0
October	66	1	1.5	66	0	0.0	4	0	0.0
November	46	0	0.0	46	0	0.0	0	0	0.0
December	44	0	0.0	44	0	0.0	0	0	0.0
YTD	799	7	0.9	799	0	0.0	4	0	0.0

Samples from Complaints

	Coliforms, total			E. coli			Heterotrophic Plate Count		
	Count	# +ve	% +ve	Count	# +ve	% +ve	Count	# +ve	% +ve
January	11	0	0.0	11	0	0.0	11	0	0.0
February	5	0	0.0	5	0	0.0	5	0	0.0
March	9	0	0.0	9	0	0.0	9	0	0.0
April	16	0	0.0	16	0	0.0	16	1	6.3
May	19	0	0.0	19	0	0.0	19	1	5.3
June	10	0	0.0	10	0	0.0	10	0	0.0
July	7	0	0.0	7	0	0.0	7	1	14.3
August	5	0	0.0	5	0	0.0	5	1	20.0
September	5	0	0.0	5	0	0.0	5	0	0.0
October	12	1	8.3	12	0	0.0	12	2	16.7
November	8	0	0.0	8	0	0.0	7	0	0.0
December	4	0	0.0	4	0	0.0	4	0	0.0
YTD	111	1	0.9	111	0	0.0	110	6	5.5

7.6 *Giardia* and *Cryptosporidium*

2014

Treated Water entering the distribution system

	<i>Cryptosporidium</i>		<i>Giardia</i>	
	oocysts/100L		cysts/100L	
	E.L. Smith	Rossdale	E.L. Smith	Rossdale
	Res Out	Res Out	Res Out	Res Out
6 - Jan	<0.1	<0.1	<0.1	<0.1
4 - Feb	<0.1	<0.1	<0.1	<0.1
18 - Feb	<0.1	<0.1	<0.1	<0.1
4 - Mar	<0.1	<0.1	<0.1	<0.1
17 - Mar	<0.1	<0.1	<0.1	<0.1
1 - Apr	<0.1	<0.1	<0.1	<0.1
5 - May	<0.1	<0.1	<0.1	<0.1
2 - Jun	<0.1	<0.1	<0.1	<0.1
7 - Jul	<0.1	<0.1	<0.1	<0.1
11 - Aug	<0.1	<0.1	<0.1	<0.1
2 - Sep		<0.1		<0.1
8 - Sep	<0.1		<0.1	
6 - Oct		<0.1		<0.1
7 - Oct	<0.1		<0.1	
10 - Nov		<0.1		<0.1
12 - Nov	<0.1		<0.1	
1 - Dec	<0.1	<0.1	<0.1	<0.1

Water entering plant reservoir

	<i>Cryptosporidium</i>		<i>Giardia</i>	
	oocysts/100L		cysts/100L	
	E.L. Smith	Rossdale	E.L. Smith	Rossdale
	Res In	Res In	Res In	Res In
21 - Jan	<0.1	<0.1	<0.1	<0.1
4 - Feb	<0.1	<0.1	<0.1	<0.1
17 - Mar		<0.1		<0.1
16 - Sep		0.1		<0.1
22 - Sep		<0.1		<0.1
29 - Sep		<0.1		<0.1
6 - Oct		<0.1		<0.1
7 - Oct	0.1		<0.1	
14 - Oct		<0.1		<0.1
15 - Oct	<0.1		<0.1	
20 - Oct	<0.1	<0.1	<0.1	<0.1
27 - Oct	<0.1	<0.1	<0.1	<0.1
3 - Nov		<0.1		<0.1
4 - Nov	<0.1		<0.1	
10 - Nov		<0.1		<0.1
12 - Nov	<0.1		<0.1	
17 - Nov		<0.1		<0.1
24 - Nov		<0.1		<0.1
9 - Dec	<0.1	<0.1	<0.1	<0.1
15 - Dec	<0.1	<0.1	<0.1	<0.1
29 - Dec	<0.1	<0.1	<0.1	<0.1

7.6 Giardia and Cryptosporidium

2014

Raw Water

	<i>Cryptosporidium</i>		<i>Giardia</i>	
	oocysts/100L		cysts/100L	
	E.L. Smith	Rossdale	E.L. Smith	Rossdale
	Raw Water	Raw Water	Raw Water	Raw Water
6 - Jan	1.2	<0.8	1.2	0.8
4 - Feb	<1.0	<0.8	3.1	1.5
18 - Feb		1.6		8.1
4 - Mar	<3.9		12	
17 - Mar	1.5	1.3	3.0	2.5
1 - Apr	<3.4	<2.7	3.4	16
5 - May	810	650	64	91
2 - Jun	<35		35	
4 - Jun		<52		<52
7 - Jul	<4.5	0.7	4.5	6.6
11 - Aug	1.3	7.9	31	14
18 - Aug		4.7		16
25 - Aug		5.7		25
2 - Sep		7.1		41
8 - Sep	1.0		20	
9 - Sep		2.0		32
15 - Sep		1.4		37
22 - Sep		5.2		49
29 - Sep		7.1		110
6 - Oct		5.0		100
7 - Oct	2.9		22	
14 - Oct		<0.7		93
15 - Oct	0.9		56	
20 - Oct	1.8	10	25	46
27 - Oct	<1.1	<0.9	76	110
3 - Nov		2.0		44
4 - Nov	2.1		25	
10 - Nov		5.0		42
12 - Nov	<1.9		22	
17 - Nov	<1.5	1.3	21	12
24 - Nov	<1.2	<1.4	21	36
9 - Dec	<1.1	<1.0	4.6	3.0
15 - Dec	<1.3	<1.0	3.9	1.9
29 - Dec	<1.0	<0.8	1.9	0.8

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

2014

									Limits	
	ROSSDALE				E.L. SMITH				Approval or GCDWQ MAC, (AO or OG)	EPCOR
	Mean	Min	Max	Count	Mean	Min	Max	Count		
Physical										
Colour (TCU)	<1	<1	2	364	<1	<1	2	363	(15)	10
Conductivity (uS/cm)	352	325	398	64	367	333	433	64		
FPA-Intensity (N/A)	0.65	0.38	1.19	75	0.63	0.38	1.25	75		
pH (N/A)	7.8	7.5	8.0	365	7.8	7.5	8.1	364	(6.5–8.5)	7.3-8.3
Total Dissolved Solids (mg/L)	210	179	247	12	219	196	267	12	(500)	
Turbidity (NTU)	0.07	0.04	0.11	365	0.08	0.05	0.15	364		1
UV 254 %T	94	89	97	365	94	90	97	365		
Primary Inorganics (mg/L)										
Antimony	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	0.0002	12	0.006	
Arsenic	0.0003	0.0002	0.0003	12	0.0003	0.0002	0.0004	12	0.01	
Barium	0.063	0.055	0.070	12	0.062	0.051	0.071	12	1	
Boron	0.010	0.005	0.012	12	0.009	0.005	0.013	12	5	
Bromate, dissolved	<0.005	<0.005	<0.005	62	<0.005	<0.005	<0.005	62	0.01	
Cadmium	<0.0001	<0.0001	<0.0001	12	<0.0001	<0.0001	<0.0001	12	0.005	
Chlorate, dissolved	0.01	<0.01	0.15	62	0.12	<0.01	0.21	62	1	
Chlorine, total	1.99	1.75	2.20	365	2.02	1.85	2.26	364	0.5 - 3.0	1.0 -2.4
Chlorite, dissolved	<0.005	<0.005	<0.005	62	<0.005	<0.005	<0.005	62	1	
Chromium	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12	0.05	
Cyanide, dissolved	<0.002	<0.002	<0.002	12	<0.002	<0.002	<0.002	12	0.2	
Fluoride, dissolved	0.69	0.53	0.80	365	0.69	0.53	0.78	364	0.5-0.9	0.6–0.8
Lead	<0.0001	<0.0001	<0.0001	12	<0.0001	<0.0001	<0.0001	12	0.01	
Mercury	<0.0001	<0.0001	<0.0001	12	<0.0001	<0.0001	<0.0001	12	0.001	
Nitrate (as N), dissolved	0.06	<0.01	0.30	62	0.06	<0.01	0.27	62	10	
Nitrite (as N), dissolved	<0.01	<0.01	<0.01	62	<0.01	<0.01	0.01	62	1	
Selenium	<0.0002	<0.0002	0.0002	12	0.0002	<0.0002	0.0003	12	0.01	
Uranium	<0.0005	<0.0005	0.0006	12	<0.0005	<0.0005	0.0006	12	0.02	

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

2014

		ROSSDALE				E.L. SMITH				Limits	
		Mean	Min	Max	Count	Mean	Min	Max	Count	Approval or GCDWQ MAC, (AO or OG)	EPCOR
Primary Organics (ug/L)											
	2,4-D	<0.006	<0.005	0.007	3	<0.005	<0.005	<0.005	3	100	
	Atrazine	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3	5	
	Benzene	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366	5	
	Benzo(a)pyrene	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3	0.01	
	Bromoxynil	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3	5	
	Carbon Tetrachloride	<1.0	<0.5	<1.0	367	<1.0	<0.5	<1.0	366	2	
	Chlorobenzene	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366	80 (30)	
	Chlorpyrifos	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3	90	
	Diazinon	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3	20	
	Dicamba	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3	120	
	Dichlorobenzene (1,2)	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366	200 (3)	
	Dichlorobenzene (1,4)	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366	5 (1)	
	Dichloroethane (1,2)	<0.5	<0.5	<0.5	2	<0.5	<0.5	<0.5	2	5	
	Dichloroethylene (1,1)	<3.0	<0.5	<3.0	367	<3.0	<0.5	<3.0	366	14	
	Dichlorophenol (2,4)	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3	900 (0.3)	
	Diclofop-methyl	<0.02	<0.02	<0.02	3	<0.02	<0.02	<0.02	3	9	
	Dimethoate	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3	20	
	Diuron	<0.2	<0.2	<0.2	3	<0.2	<0.2	<0.2	3	150	
	Ethylbenzene	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366	(2.4)	
	Glyphosate	<1.6	<0.1	<3.0	2	<1.6	<0.1	<3.0	2	280	
	Haloacetic Acids, (HAA5)	22.3	10.6	27.6	11	22.0	9.6	27.3	11	80	40
	Malathion	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3	190	
	MCPA	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3	100	
	Methylene Chloride	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366	50	
	Metolachlor	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3	50	
	Metribuzin	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3	80	
	Microcystin LR	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3	1.5	
	NDMA (ng/L)	0.97	<0.50	2.19	12	0.90	0.54	2.42	12	40	10
	Pentachlorophenol	<0.1	<0.1	<0.1	3	<0.1	<0.1	<0.1	3	60 (30)	
	Phorate	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3	2	
	Picloram	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3	190	
	Simazine	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3	10	
	Terbufos	<0.03	<0.03	<0.03	3	<0.03	<0.03	<0.03	3	1	
	Tetrachloroethylene	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366	30	
	Tetrachlorophenol (2,3,4,6)	<0.1	<0.1	<0.1	3	<0.1	<0.1	<0.1	3	100 (1)	
	Toluene	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366	(24)	
	Trichloroethylene	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366	5	
	Trichlorophenol (2,4,6)	<0.1	<0.1	<0.1	3	<0.1	<0.1	<0.1	3	5 (2)	
	Trifluralin	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3	45	
	Trihalomethanes	15.4	3.7	31.8	367	13.5	3.3	29.4	366	100	50
	Vinyl Chloride	<1.0	<1.0	<1.0	2	<1.0	<1.0	<1.0	2	2	

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

2014

										Limits	
		ROSSDALE				E.L. SMITH				Approval or GCDWQ MAC, (AO or OG)	EPCOR
		Mean	Min	Max	Count	Mean	Min	Max	Count		
Radionuclides (Bq/L)											
	Cesium-137	<0.20	<0.20	<0.20	2	<0.20	<0.20	<0.20	2	10	
	Gross Alpha	<0.12	<0.12	<0.12	2	<0.12	<0.12	<0.12	2	(0.5)	
	Gross Beta	<0.10	<0.10	<0.10	2	<0.10	<0.10	0.10	2	(1.0)	
	Iodine-131	<0.30	<0.30	<0.30	2	<0.30	<0.30	<0.30	2	6	
	Lead-210	<0.02	<0.02	<0.02	2	<0.02	<0.02	<0.02	2	0.2	
	Radium-226	<0.01	<0.01	<0.01	2	<0.01	<0.01	0.01	2	0.5	
	Strontium-90	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2	5	
	Tritium	23	<15	30	2	<18	<15	20	2	7000	
Secondary Inorganics (mg/L)											
	Alkalinity, PHP (mg CaCO3/L)	<1	<1	<1	5	<1	<1	<1	5		
	Alkalinity, total (mg CaCO3/L)	117	67	147	365	120	80	152	364		
	Aluminum	0.053	0.020	0.150	28	0.072	0.020	0.180	28	(0.1/0.2)	0.1/0.2
	Aluminum, dissolved	0.040	0.021	0.050	16	0.063	0.025	0.090	16		
	Ammonia as NH3	0.14	0.08	0.24	56	0.14	0.07	0.25	56		
	Beryllium	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12		
	Bromide, dissolved	<0.01	<0.01	<0.01	62	<0.01	<0.01	<0.01	62		
	Calcium	44.5	38.9	48.5	12	44.3	41.3	48.0	12		
	Chloride, dissolved	3.6	2.7	8.2	62	5.0	3.3	8.7	62	(250)	
	Chlorine, free	<0.03	<0.03	<0.03	79	<0.03	<0.03	<0.03	79		
	Cobalt	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12		
	Copper	<0.002	<0.002	0.002	12	<0.002	<0.002	<0.002	12	(1)	
	Hardness, Ca (mg CaCO3/L)	114	86	138	365	114	86	137	364		
	Hardness, total (mg CaCO3/L)	165	116	200	365	165	118	201	364		
	Iron	0.003	<0.002	0.007	12	<0.002	<0.002	0.002	12	(0.3)	0.3
	Lithium	0.0033	0.0028	0.0040	12	0.0030	0.0020	0.0040	12		
	Magnesium	12.3	10.2	13.4	12	12.3	10.4	13.3	12		
	Manganese	<0.003	<0.002	0.009	12	0.004	<0.002	0.020	12	(0.05)	
	Molybdenum	0.0008	0.0006	0.0010	12	0.0008	0.0006	0.0010	12		
	Nickel	0.0004	0.0002	0.0008	12	0.0005	0.0002	0.0008	12		
	Phosphate, Ortho (as P)	<0.02	<0.02	<0.02	12	<0.02	<0.02	<0.02	12		
	Phosphorus	0.03	<0.01	0.04	12	0.02	0.02	0.04	12		
	Potassium	0.78	0.07	1.70	12	0.83	0.62	1.94	12		
	Silicon	1.97	1.52	2.50	12	1.92	1.42	2.51	12		
	Silver	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12		
	Sodium	7.5	3.5	22.2	12	10.9	5.7	29.3	12	(200)	
	Strontium	0.375	0.291	0.410	12	0.374	0.293	0.407	12		
	Sulphate, dissolved	56.7	45.9	102	62	58.9	25.4	110	62	(500)	
	Sulphide	<0.002	<0.002	0.003	12	<0.002	<0.002	0.003	12	(0.05)	
	Thallium	<0.0001	<0.0001	<0.0001	12	<0.0001	<0.0001	<0.0001	12		
	Tin	<0.0002	<0.0002	0.0003	12	<0.0002	<0.0002	0.0002	12		
	Titanium	<0.0005	<0.0005	<0.0005	12	<0.0005	<0.0005	<0.0005	12		
	Vanadium	0.0003	<0.0002	0.0007	12	0.0003	<0.0002	0.0006	12		
	Zinc	<0.002	<0.002	0.005	12	<0.002	<0.002	0.004	12	(5)	
	Zirconium	0.0003	<0.0002	0.0010	12	<0.0003	<0.0002	0.0007	12		

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

2014

		ROSSDALE				E.L. SMITH				Limits	
		Mean	Min	Max	Count	Mean	Min	Max	Count	Approval or GCDWQ (AO or OG)	EPCOR
Secondary Organics (ug/L)											
	2,4-DB	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
	2,4-DP	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
	3-Methylchloranthrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	7,12-Dimethylbenz(a)anthracen	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Acenaphthene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Acenaphthylene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Acetaminophen	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	2		
	Acetylsalicylic acid	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3		
	Acridine	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Aldicarb	<0.1	<0.1	<0.1	3	<0.1	<0.1	<0.1	3		
	Aldicarb Sulfone	<5	<5	<5	1	<5	<5	<5	1		
	Aldicarb Sulfoxide	<5	<5	<5	1	<5	<5	<5	1		
	Aldrin	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
	alpha-Endosulfan	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
	Aminomethyl Phosphonic Acid	<0	<0	<0	1	<0	<0	<0	1		
	Aminopyralid	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3		
	Anthracene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Azinphos-methyl	<0.2	<0.2	<0.2	3	<0.2	<0.2	<0.2	3		
	Bentazon	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
	Benzidine	<0.2	<0.2	<0.2	2	<0.2	<0.2	<0.2	2		
	Benzo(a)anthracene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Benzo(b)fluoranthene	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Benzo(b,j,k)fluoranthene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Benzo(c)phenanthrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Benzo(e)pyrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Benzo(ghi)perylene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Benzo(k)fluoranthene	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Benzoyllecgonine	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	2		
	Bezafibrate	<0.1	<0.1	<0.1	3	<0.1	<0.1	<0.1	3		
	Bis(2-chloroethoxy)methane	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Bis(2-chloroethyl)ether	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Bis(2-chloroisopropyl)ether	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Bis(2-ethylhexyl)phthalate	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Bromacil	<0.030	<0.030	<0.030	3	<0.030	<0.030	<0.030	3		
	Bromoacetic acid	<1	<1	<1	1	<1	<1	<1	1		
	Bromochloroacetic acid	<2	<1	<2	11	<2	<1	<2	11		
	Bromodichloromethane	0.8	<0.5	2.0	367	0.6	<0.5	1.0	366		
	Bromoform	<1.0	<0.5	<1.0	367	<1.0	<0.5	<1.0	366		
	Bromophenyl phenyl ether (4)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Butylbenzylphthalate	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Caffeine	<0.02	<0.02	<0.02	3	<0.02	<0.02	<0.02	3		
	Carbamazepine	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3		
	Carbaryl	<25	<25	<25	1	<25	<25	<25	1		
	Carbathiin	<0.100	<0.100	<0.100	3	<0.100	<0.100	<0.100	3		
	Chloramphenicol	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	2		
	Chloro-2-MethylPhenol (4)	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3		
	Chloro-3-methylphenol (4)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Chloroform	14.7	3.2	31.0	367	12.9	2.9	28.5	366		
	Chloronaphthalene	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Chlorophenol (2)	<0.2	<0.2	<0.2	2	<0.2	<0.2	<0.2	2		

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

2014

									Limits	
	ROSSDALE				E.L. SMITH				Approval or GCDWQ MAC, (AO or OG)	EPCOR
	Mean	Min	Max	Count	Mean	Min	Max	Count		
Secondary Organics	(ug/L)									
Chlorophenyl phenyl ether (4)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
Chlorothalonil	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
Chrysene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
Ciprofloxacin	<0.02	<0.02	<0.02	3	<0.02	<0.02	<0.02	2		
Clindamycin	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	2		
Clodinafop acid metabolite	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3		
Clodinafop-propargyl	<0.040	<0.040	<0.040	3	<0.040	<0.040	<0.040	3		
Clofibric Acid	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3		
Clopyralid	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3		
Codeine	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	2		
Cotinine	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	2		
Cyanazine	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3		
Desethyl Atrazine	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3		
Desisopropyl Atrazine	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3		
Dibenzo(a,h)pyrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
Dibenzo(a,i)pyrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
Dibenzo(a,l)pyrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
Dibenzo(ah)anthracene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
Dibromoacetic acid	<2	<1	<2	11	<2	<1	<2	11		
Dibromochloromethane	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366		
Dichloroacetic acid	11	5	14	11	11	6	13	11		
Dichlorobenzene (1,3)	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366		
Dichloroethylene, cis (1,2)	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366		
Dichloroethylene, trans (1,2)	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366		
Dichloropropane (1,2)	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366		
Diclofenac	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3		
Dieldrin	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
Diethyl phthalate	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
Dimethyl phthalate	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
Dimethylphenol (2,4)	<0.2	<0.2	<0.2	2	<0.2	<0.2	<0.2	2		
Di-n-butylphthalate	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
Dinitrophenol (2,4)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
Dinitrotoluene (2,4)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
Dinitrotoluene (2,6)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
Di-n-octyl phthalate	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
Diphenylhydrazine (1,2)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
Disulfoton	<0.200	<0.200	<0.200	3	<0.200	<0.200	<0.200	3		
Enrofloxacin	<0.02	<0.02	<0.02	3	<0.02	<0.02	<0.02	2		
Erythromycin	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	2		
Ethalfuralin	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
Ethion	<0.10	<0.10	<0.10	3	<0.10	<0.10	<0.10	3		
Ethofumesate	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
Fenoprofen	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
Fenoxaprop-p-ethyl	<0.040	<0.040	<0.040	3	<0.040	<0.040	<0.040	3		
Fluazifop	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3		
Fluoranthene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
Fluorene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
Fluoxetine	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	2		
Fluroxypyr	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3		
Gemfibrozil	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		

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

2014

		ROSSDALE				E.L. SMITH				Limits	
		Mean	Min	Max	Count	Mean	Min	Max	Count	Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L)											
	Glufosinate	<1	<1	<1	1	<1	<1	<1	1		
	Hexachlorobenzene	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Hexachlorobutadiene	<0.5	<0.5	<0.5	2	<0.5	<0.5	<0.5	2		
	Hexachlorocyclopentadiene	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Hexachloroethane	<0.5	<0.5	<0.5	2	<0.5	<0.5	<0.5	2		
	Hexaconazole	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3		
	Hydroxy Carbofuran (3)	<25	<25	<25	1	<25	<25	<25	1		
	Ibuprofen	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
	Imazamethabenz-methyl	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3		
	Imazamox	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3		
	Imazethapyr	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3		
	Indeno(1,2,3-cd)pyrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Indomethacin	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3		
	Iprodione	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3		
	Isophorone	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Ketoprofen	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3		
	Lincomycin	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	2		
	Lindane (alpha-BHC)	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
	Lindane (gamma-BHC)	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
	Linuron	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3		
	MCPB	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3		
	MCPP	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
	Meclofenamic acid	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3		
	Metalaxyl-M	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3		
	Methamphetamine	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	2		
	Methomyl	<0.1	<0.1	<0.1	3	<0.1	<0.1	<0.1	3		
	Methyl t-Butyl Ether (MTBE)	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366	(15)	
	Methyl Triclosan	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3		
	Methyl-4,6-dinitrophenol (2)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	MIBK	<1.0	<1.0	<1.0	367	<1.0	<1.0	<1.0	366		
	Microcystin LA	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3		
	Microcystin RR	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3		
	Microcystin Total	<0.010	<0.010	<0.010	1	<0.010	<0.010	<0.010	1		
	Microcystin YR	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3		
	Monobromoacetic acid	<2	<2	<2	10	<2	<2	<2	10		
	Monochloroacetic acid	<2	<1	6	11	<2	<1	7	11		
	N,N-diethyl-m-toluamide (DEET)	0.011	<0.005	0.022	3	<0.005	<0.005	<0.005	3		
	Naphthalene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Napropamide	<0.02	<0.02	<0.02	3	<0.02	<0.02	<0.02	3		
	Naproxen	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
	Nitrobenzene	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Nitrophenol (2)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Nitrophenol (4)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	N-Nitroso-di-n-propylamine	<0.2	<0.2	<0.2	2	<0.2	<0.2	<0.2	2		
	N-Nitrosodiphenylamine	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Norfloxacin	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	2		
	Norfluoxetine	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	2		
	Ofloxacin	<0.02	<0.02	<0.02	3	<0.02	<0.02	<0.02	2		
	Oxolinic acid	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	2		
	Oxycarboxin	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3		

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

2014

		ROSSDALE				E.L. SMITH				Limits	
		Mean	Min	Max	Count	Mean	Min	Max	Count	Approval or GCDWQ MAC, (AO or OG)	EPCOR
Secondary Organics (ug/L)											
	p, p' - Methoxychlor	<0.03	<0.03	<0.03	3	<0.03	<0.03	<0.03	3		
	Parathion	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3		
	Pentoxifylline	<0.500	<0.500	<0.500	3	<0.500	<0.500	<0.500	2		
	Perylene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Phenanthrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Phenol	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2		
	Pipemidic acid	<0.5	<0.5	<0.5	3	<0.5	<0.5	<0.5	2		
	Propiconazole	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3		
	Pyrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Pyridaben	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3		
	Quinlorac	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
	Quizalofop	<0.030	<0.030	<0.030	3	<0.030	<0.030	<0.030	3		
	Retene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2		
	Salicylic acid	<0.025	<0.025	<0.025	3	<0.025	<0.025	<0.025	3		
	Styrene	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366		
	Sulfabenzamide	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	2		
	Sulfadimethoxine	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	2		
	Sulfadoxine	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	2		
	Sulfamerazine	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	2		
	Sulfamethazine	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	2		
	Sulfamethoxazole	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	2		
	Sulfapyridine	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	2		
	Sulfaquinoxaline	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	2		
	Sulfathiazole	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	2		
	Tetrachloroethane (1,1,2,2)	<1.0	<0.5	<1.0	367	<1.0	<0.5	<1.0	366		
	Thiamethoxam	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3		
	Tolfenamic acid	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
	Total Organic Carbon	1.8	0.9	3.5	64	1.8	1.1	3.5	64		
	Total Volatile Organics (NonTHM)	<1.0	<1.0	1.3	367	<1.0	<1.0	<1.0	366		
	Total Volatile Organics (Unknown)	<1.0	<1.0	1.3	365	<1.0	<1.0	<1.0	364		
	Triallate	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3		
	Trichloroacetic acid	11	5	16	11	10	4	15	11		
	Trichlorobenzene (1,2,4)	<0.5	<0.1	1.2	369	<0.5	<0.1	<0.5	368		
	Trichlorocarbaniide (3,4,4)	<0.025	<0.025	<0.025	3	<0.025	<0.025	<0.025	3		
	Trichloroethane (1,1,1)	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366		
	Triclopyr	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3		
	Triclosan	<0.025	<0.025	<0.025	3	<0.025	<0.025	<0.025	3		
	Trimethoprim	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	2		
	Vinclozolin	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3		
	Xylene (1,2)	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366		
	Xylene (1,4)	<0.5	<0.5	<0.5	367	<0.5	<0.5	<0.5	366		

* Health Canada Guidelines for Canadian Drinking Water Quality Maximum Acceptable Concentration and Alberta Environment and Sustainable Resource Development (ESRD) Approval Limit. Limits in brackets indicate aesthetic objective or operational guidelines.

7.8 ROSSDALE AND E.L. SMITH COMBINED FILTER EFFLUENT WATER ANALYSIS

2014

									Limits	
	ROSSDALE				E.L. SMITH				Approval or GCDWQ MAC, (AO or OG)	EPCOR
	Mean	Min	Max	Count	Mean	Min	Max	Count		
Physical										
Turbidity (NTU)	0.07	0.04	0.17	365	0.08	0.05	0.21	365		0.3
UV 254 %T	94	89	97	365	94	90	97	365	86/88	
Primary Inorganics (mg/L)										
Antimony	<0.0002	<0.0002	<0.0002	16	<0.0002	<0.0002	<0.0002	16	0.006	
Bromate, dissolved	<0.005	<0.005	<0.005	51	<0.005	<0.005	<0.005	51	0.01	
Chlorate, dissolved	0.01	<0.01	0.02	51	0.13	<0.01	0.23	51	1	
Chlorite, dissolved	<0.005	<0.005	<0.005	51	<0.005	<0.005	<0.005	51	1	
Nitrate (as N), dissolved	0.05	<0.01	0.28	51	0.06	<0.01	0.26	51	10	
Nitrite (as N), dissolved	<0.01	<0.01	<0.01	51	<0.01	<0.01	<0.01	51	1	
Primary Organics (ug/L)										
Benzene	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365	5	
Carbon Tetrachloride	<1.0	<1.0	<1.0	364	<1.0	<1.0	<1.0	365	2	
Chlorobenzene	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365	80 (30)	
Dichlorobenzene (1,2)	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365	200 (3)	
Dichlorobenzene (1,4)	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365	5 (1)	
Dichloroethylene (1,1)	<3.0	<3.0	<3.0	364	<3.0	<3.0	<3.0	365	14	
Methylene Chloride	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365	50	
Tetrachloroethylene	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365	30	
Trichloroethylene	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365	5	
Trihalomethanes	12.6	3.5	25.1	364	10.6	2.1	20.0	365	100	50
Secondary Inorganics (mg/L)										
Ammonia as NH3	0.13	0.08	0.35	54	0.13	<0.05	0.29	55		
Bromide, dissolved	<0.01	<0.01	<0.01	51	<0.01	<0.01	<0.01	51		
Chloride, dissolved	3.7	2.7	13.1	51	5.0	3.0	9.4	51	(250)	
Sulphate, dissolved	56.2	44.7	98.7	51	58.0	20.4	108.0	51	(500)	
Secondary Organics (ug/L)										
Bromodichloromethane	0.7	<0.5	1.6	364	<0.5	<0.5	0.8	365		16
Bromoform	<1.0	<1.0	<1.0	364	<1.0	<1.0	<1.0	365		
Chloroform	11.9	3.1	24.1	364	10.1	2.1	19.3	365		
Dibromochloromethane	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365		
Dichlorobenzene (1,3)	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365		
Dichloroethylene, cis (1,2)	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365		
Dichloroethylene, trans (1,2)	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365		
Dichloropropane (1,2)	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365		
Ethylbenzene	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365	140 (1.6)	
Methyl t-Butyl Ether (MTBE)	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365	(15)	
MIBK	<1.0	<1.0	<1.0	364	<1.0	<1.0	<1.0	365		
Styrene	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365		
Tetrachloroethane (1,1,2,2)	<1.0	<1.0	<1.0	364	<1.0	<1.0	<1.0	365		
Toluene	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365	60 (24)	
Total Volatile Organics (NonTHM)	<1.0	<1.0	13.1	364	<1.0	<1.0	<1.0	365		
Total Volatile Organics (Unknown)	<1.0	<1.0	<1.0	364	<1.0	<1.0	<1.0	365		
Trichlorobenzene (1,2,4)	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365		
Trichloroethane (1,1,1)	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365		
Xylene (1,2)	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365		
Xylene (1,4)	<0.5	<0.5	<0.5	364	<0.5	<0.5	<0.5	365		

* Health Canada Guidelines for Canadian Drinking Water Quality Maximum Acceptable Concentration and Alberta Environment and Sustainable Resource Development (ESRD) Approval Limit. Limits in brackets indicate aesthetic objective or operational guidelines.

7.9 Routine Distribution System including Field Reservoirs

2014

Parameter	Mean	Min	Max	Count	Limits	
					GCDWQ or Approval or MAC* or (AO or OG)	EPCOR
Physical						
Colour (TCU)	<1	<1	2	74	(15)	10
Conductivity (uS/cm)	364	332	440	69		
Odour	Inoff	Inoff	Inoff	69	(Inoffensive)	Inoffensive
pH (N/A)	7.8	7.1	8.3	198	(6.5 – 8.5)	7.3-8.3
Total Dissolved Solids (mg/L)	212	202	227	5	(500)	
UV 254 %T	93	90	95	5		
Primary Inorganics (mg/L)						
Antimony	<0.0002	<0.0002	0.0007	76	0.006	
Arsenic	0.0003	<0.0002	0.0004	76	0.01	
Barium	0.063	0.049	0.075	76	1	
Boron	0.010	0.003	0.020	76	5	
Bromate, dissolved	<0.005	<0.005	<0.005	132	0.01	
Cadmium	<0.0001	<0.0001	<0.0001	76	0.005	
Chlorate, dissolved	0.09	<0.01	0.22	132	1	
Chlorite, dissolved	<0.005	<0.005	<0.005	132	1	
Chromium	<0.0002	<0.0002	0.0002	76	0.05	
Cyanide, dissolved	<0.002	<0.002	<0.002	5	0.2	
Fluoride, dissolved	0.69	0.62	0.76	74	0.5-0.9	0.6-0.8
Lead	<0.0001	<0.0001	0.0010	76	0.01	
Mercury	<0.0001	<0.0001	0.0001	76	0.001	
Nitrate (as N), dissolved	0.06	<0.01	0.18	175	10	
Nitrite (as N), dissolved	<0.01	<0.01	0.06	132	1	
Selenium	<0.0002	<0.0002	0.0003	76	0.01	
Uranium	<0.0005	<0.0005	0.0006	76	0.02	

7.9 Routine Distribution System including Field Reservoirs

2014

Parameter	Mean	Min	Max	Count	Limits	
					GCDWQ or Approval or MAC* or (AO or OG)	EPCOR
Primary Organics (ug/L)						
2,4-D	<0.005	<0.005	<0.005	5	100	
Atrazine	<0.005	<0.005	<0.005	5	5	
Benzene	<0.5	<0.1	<1.0	242	5	
Benzo(a)pyrene	<0.006	<0.003	<0.010	5	0.01	
Bromoxynil	<0.005	<0.005	<0.005	5	5	
Carbon Tetrachloride	<1.0	<0.1	<1.0	242	5	
Chlorobenzene	<0.5	<0.1	<1.0	242	80	
Chlorpyrifos	<0.005	<0.005	<0.005	5	90	
Cyanazine	<0.050	<0.050	<0.050	5	10	
Diazinon	<0.005	<0.005	<0.005	5	20	
Dicamba	<0.005	<0.005	<0.005	5	120	
Dichlorobenzene (1,2)	<0.5	<0.1	<1.0	242	200 (3)	
Dichlorobenzene (1,4)	<0.5	<0.1	<1.0	242	5 (1)	
Dichloroethane (1,2)	<0.3	<0.1	<1.0	4	5	
Dichloroethylene (1,1)	<3.0	<3.0	<3.0	238	14	
Dichlorophenol (2,4)	<0.10	<0.10	<0.10	5	900 (0.3)	
Diclofop-methyl	<0.02	<0.02	<0.02	5	9	
Dimethoate	<0.032	<0.005	<0.050	5	20	
Diuron	<0.3	<0.2	<0.5	5	150	
Ethylbenzene	<0.5	<0.1	<1.0	242	(2.4)	
Glyphosate	<0.1	<0.1	<0.2	5	280	
Malathion	<0.050	<0.050	<0.050	5	190	
MCPA	<0.005	<0.005	<0.005	5	0.1	
Methylene Chloride	<0.5	<0.4	<2.0	242	50	
Metolachlor	<0.005	<0.005	<0.005	5	50	
Metribuzin	<0.010	<0.010	<0.010	5	80	
Microcystin LR	<0.10	<0.01	0.20	11		
NTA (mg/L)	<0.200	<0.200	<0.200	5	0.4	
Pentachlorophenol	<0.1	<0.1	<0.1	5	60 (30)	
Picloram	<0.005	<0.005	<0.005	5	190	
Simazine	<0.010	<0.010	<0.010	5	10	
Terbufos	<0.03	<0.03	<0.03	5	1	
Tetrachloroethylene	<0.5	<0.1	<1.0	242	30	
Tetrachlorophenol (2,3,4,6)	<0.1	<0.1	<0.1	5	100 (1)	
Toluene	<0.5	<0.1	<1.0	242	(24)	
Trichloroethylene	<0.5	<0.1	<1.0	242	5	
Trichlorophenol (2,4,6)	<0.1	<0.1	<0.1	5	5 (2)	
Trifluralin	<0.005	<0.005	<0.005	5	45	
Vinyl Chloride	<0.5	<0.2	<1.0	4	2	
Xylenes	<0.325	<0.100	<1.000	4	(300)	

7.9 Routine Distribution System including Field Reservoirs

2014

Parameter	Mean	Min	Max	Count	Limits	
					GCDWQ or Approval or MAC* or (AO or OG)	EPCOR
Secondary Inorganics						
Alkalinity, PHP (mg CaCO3/L)	<1	<1	<1	5		
Alkalinity, total (mg CaCO3/L)	119	91	136	74		
Aluminum	0.073	0.020	0.180	76	(0.1/0.2)	0.1/0.2
Ammonia as N	0.16	0.06	0.39	123		
Ammonia as NH3	0.19	0.08	0.47	123		
Beryllium	<0.0002	<0.0002	<0.0002	76		
Bromide, dissolved	<0.01	<0.01	0.01	132		
Calcium	44.3	38.1	48.2	74		
Chloride, dissolved	4.4	3.1	6.9	132	(250)	
Chlorine, free	<0.03	<0.03	<0.03	5		
Cobalt	<0.0002	<0.0002	<0.0002	76		
Copper	0.003	<0.002	0.053	76	(1)	
Hardness, Ca (mg CaCO3/L)	114	102	124	69		
Hardness, total (mg CaCO3/L)	165	144	182	75		
Iron	0.007	<0.002	0.050	76	(0.3)	0.3
Lithium	0.0031	0.0020	0.0042	76		
Magnesium	12.0	1.5	13.6	74		
Manganese	0.003	<0.002	0.021	76	(0.05)	
Molybdenum	0.0008	0.0006	0.0010	76		
Nickel	0.0004	<0.0002	0.0009	76		
Phosphorus	0.02	0.01	0.04	74		
Potassium	0.85	0.60	2.20	74		
Silicon	1.94	1.47	2.59	74		
Silver	<0.00020	<0.00020	<0.00020	76		
Sodium	9.8	3.6	31.1	74	(200)	
Strontium	0.370	0.287	0.411	76		
Sulphate, dissolved	57.4	22.9	108.0	132	(500)	
Sulphide	<0.002	<0.002	<0.002	5	(0.05)	
Thallium	<0.0001	<0.0001	<0.0001	76		
Tin	<0.0002	<0.0002	0.0002	76		
Titanium	<0.0005	<0.0005	0.0006	76		
Total Kjeldahl Nitrogen (TKN)	2.74	0.51	7.20	3		
Vanadium	0.0003	<0.0002	0.0007	76		
Zinc	0.004	<0.002	0.024	76	(5)	
Zirconium	<0.0002	<0.0002	0.0010	76		

7.9 Routine Distribution System including Field Reservoirs

2014

Parameter	Mean	Min	Max	Count	Limits	
					GCDWQ or Approval or MAC* or (AO or OG)	EPCOR
Secondary Organics (ug/L)						
Bromoacetic acid	<1	<1	<1	6		
Bromochloroacetic acid	<2	<1	<2	69		
Bromodichloromethane	<0.7	<0.1	1.1	242		16
Bromoform	<1.0	<1.0	<1.0	238		
Chloroform	16.3	3.6	32.3	238		
Desethyl Atrazine	<0.050	<0.050	<0.050	5		
Desisopropyl Atrazine	<0.050	<0.050	<0.050	5		
Dibromoacetic acid	<2	<1	<2	69		
Dibromochloromethane	<0.5	<0.5	<0.5	238		
Dichloroacetic acid	12	4	20	69		
Dichlorobenzene (1,3)	<0.5	<0.5	<0.5	238		
Dichloroethylene, cis (1,2)	<0.5	<0.5	<0.5	238		
Dichloroethylene, trans (1,2)	<0.5	<0.5	<0.5	238		
Dichloropropane (1,2)	<0.5	<0.5	<0.5	238		
Methyl t-Butyl Ether (MTBE)	<0.5	<0.5	<0.5	238	(15)	
MIBK	<1.0	<1.0	<1.0	238		
Microcystin RR	<0.034	<0.010	<0.050	5		
Microcystin Total	<0.074	<0.010	<0.250	5		
Microcystin YR	<0.034	<0.010	<0.050	5		
Monobromoacetic acid	<2	<2	<2	63		
Monochloroacetic acid	<2	<1	5	69		
p, p' - Methoxychlor	<0.03	<0.03	<0.03	5		
Styrene	<0.5	<0.5	<0.5	238		
Tetrachloroethane (1,1,2,2)	<1.0	<1.0	<1.0	238		
Total Organic Carbon	1.8	1.0	3.1	74		
Total Volatile Organics (NonTHM)	<1.0	<1.0	<1.0	238		
Total Volatile Organics (Unknown)	<1.0	<1.0	1.6	238		
Triallate	<0.005	<0.005	<0.005	5		
Trichloroacetic acid	11	3	17	69		
Trichlorobenzene (1,2,4)	<0.5	<0.5	<0.5	238		
Trichloroethane (1,1,1)	<0.5	<0.5	<0.5	238		
Xylene (1,2)	<0.5	<0.5	<0.5	238		
Xylene (1,4)	<0.5	<0.5	0.7	238		
Xylene (m,p)	<0.325	<0.100	<1.000	4		
Xylene (o)	<0.325	<0.100	<1.000	4		

**7.10 Routine Distribution System, Field Reservoirs, Fire stations and Staff Residences
Chlorine, Turbidity, THM, HAA, NDMA**

2014

Parameter	Mean	Min	Max	Count	Limits		EPCOR required counts		Unit
					GCDWQ or Approval or MAC* or (AO or OG) 12 month running average	EPCOR single result	Monthly	Yearly	
Routine Distribution									
Chlorine, total	1.74	0.64	2.18	1,798	≥ 0.5 for 75% of samples taken on a particular day, and <3.0	>1.0	daily	365	mg/L
NDMA	1.79	<0.50	9.99	39	40	10		12	ng/L
Turbidity	0.13	0.05	1.96	1,797		1.0	172*	2064*	NTU
Field Reservoirs									
Chlorine, total	1.72	0.72	2.10	615	≥ 0.5 for 75% of samples taken on a particular day, and <3.0	>1.0 and <2.4	1	12	mg/L
Turbidity	0.10	0.04	1.02	615		1.0	1	12	NTU

*including Field Reservoirs

**7.10 Routine Distribution System, Field Reservoirs, Fire stations and Staff Residences
Chlorine, Turbidity, THM, HAA, NDMA**

2014

Parameter or Location	12 months running				Limits	
	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-RI*	24.0	19.2	35.8	10		
02-SR	25.8	21.8	29.8	2		
03-SR	24.6	23.5	25.7	2		
04-SR	25.8	25.8	25.8	1		
05-SR	28.0	28.0	28.0	1		
07-SR	28.0	23.0	33.0	2		
09-SR	24.9	23.9	25.8	2		
12-SR	23.7	16.2	28.0	4		
13-RI	21.1	6.3	32.2	10		
14-RI	25.0	25.0	25.0	1		
15-SR	21.8	21.8	21.8	1		
16-SR	21.6	21.6	21.6	1		
17-SR	23.2	15.3	30.0	8		
18-SR	22.2	19.2	25.2	2		
19-OF	25.3	24.2	26.3	2		
19-SR	20.2	10.1	27.3	8		
20-SR	21.7	21.7	21.7	1		
21-SR	24.4	24.4	24.4	1		
22-SR	20.3	20.3	20.3	1		
24-SR	26.2	18.8	33.5	2		
25-SR	22.3	11.6	31.4	3		
26-OF	34.7	34.7	34.7	1		
27-SR	20.6	16.1	23.1	3		
	Total Count			69		

**7.10 Routine Distribution System, Field Reservoirs, Fire stations and Staff Residences
Chlorine, Turbidity, THM, HAA, NDMA**

2014

Parameter or Location	12 months running				Limits	
	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-RI*	16.8	10.8	26.5	12		
02-SR	22.1	13.0	29.5	4		
03-SR	15.9	12.4	19.3	2		
04-SR	14.1	14.1	14.1	1		
05-RI	18.3	5.0	33.2	12		
05-SR	29.7	29.7	29.7	1		
07-SR	11.0	11.0	11.0	1		
09-SR	16.4	11.8	20.9	2		
10-CS	19.4	19.4	19.4	1		
12-DE	16.3	5.1	30.2	12		
12-SR	14.7	8.5	20.6	4		
13-DE	17.8	6.2	30.4	11		
13-RI	17.7	5.3	31.4	11		
14-DE	14.9	4.1	28.1	12		
14-RI	11.6	11.6	11.6	1		
15-SR	17.5	17.5	17.5	1		
16-SR	13.4	13.4	13.4	1		
17-SR	17.5	10.6	32.6	9		
18-SR	12.4	11.4	13.4	2		
19-OF	25.3	18.8	31.1	5		
19-SR	12.9	5.4	18.1	7		
20-DE	17.8	5.4	27.9	12		
20-SR	20.7	18.9	22.4	2		
21-SR	17.7	10.2	25.2	2		
22-SR	11.6	11.6	11.6	1		
23-RI	18.5	9.6	31.8	12		
24-SR	20.1	12.8	27.4	2		
25-SR	13.4	6.7	20.0	2		
26-DE	16.8	6.3	30.2	12		
26-OF	28.2	28.2	28.2	1		
27-RI	19.9	13.6	26.5	12		
27-SR	15.1	9.8	19.1	3		
	Total Count			173		

**7.10 Routine Distribution System, Field Reservoirs, Fire stations and Staff Residences
Chlorine, Turbidity, THM, HAA, NDMA**

2014

Parameter or Location	12 months running				Limits	
	Mean	Min	Max	Count	GCDWQ or Approval or MAC* or (AO or OG) 12 month running	EPCOR single result
Trihalomethanes (ug/L)						
CASTLEDOWNS RESERVOIR	16.0	5.1	23.0	4		
CLAREVIEW RESERVOIR	18.1	11.9	30.2	6		
KASKITAYO RESERVOIR	16.3	10.4	25.6	6		
LONDONDERRY RESERVOIR	16.2	10.9	22.6	6		
MILLWOODS RESERVOIR	14.1	5.0	23.9	6		
NORTH JASPER RESERVOIR	17.7	11.7	27.6	6		
ORMSBY RESERVOIR	15.4	5.2	24.4	6		
PAPASCHASE RESERVOIR 1	16.3	5.5	23.4	5		
PAPASCHASE RESERVOIR 2	16.3	12.3	25.0	6		
ROSSLYN RESERVOIR 1	17.8	13.2	24.2	6		
ROSSLYN RESERVOIR 2	17.9	12.1	26.9	6		
THORNCLIFF RESERVOIR	15.5	11.6	27.6	6		

* Furthest from Treatment.

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

- RI - Regional Influent
- SR - Staff Residence
- DE - Dead End
- PF - Plant First Customer (Guardhouse)
- FS - Firestation
- PR - Private Residence (Non-Staff)

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

2014

		ROSSDALE				E.L. SMITH			
		Mean	Min	Max	Count	Mean	Min	Max	Count
Physical									
	Colour (TCU)	11	2	51	64	11	2	50	64
	Conductivity (uS/cm)	326	272	376	64	325	270	372	64
	FPA-Intensity (N/A)	0.58	<0.06	2.19	75	0.55	<0.06	1.94	75
	pH (N/A)	8.3	8.1	8.5	12	8.3	8.1	8.5	12
	Total Dissolved Solids (Calc)	192	178	203	5	190	178	203	5
	Total Dissolved Solids (mg/L)	197	177	218	12	196	180	218	12
	Total Suspended Solids (mg/L)	23	<5	96	12	30	<5	130	12
	Turbidity (NTU) (daily)	23	1.3	469	364	23	1.6	453	365
Primary Inorganics (mg/L)									
	Antimony	<0.0002	<0.0002	0.0004	12	<0.0002	<0.0002	<0.0002	12
	Antimony, dissolved	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12
	Arsenic	0.0005	0.0002	0.0010	12	0.0005	0.0002	0.0010	12
	Arsenic, dissolved	0.0003	<0.0002	0.0004	12	0.0002	<0.0002	0.0003	12
	Barium	0.075	0.061	0.113	12	0.075	0.059	0.106	12
	Barium, dissolved	0.063	0.056	0.071	12	0.063	0.056	0.072	12
	Boron	0.011	0.006	0.015	12	0.011	0.005	0.015	12
	Boron, dissolved	0.008	0.003	0.013	12	0.009	0.003	0.013	12
	Bromate, dissolved	<0.005	<0.005	<0.005	62	<0.005	<0.005	<0.005	62
	Cadmium	<0.0001	<0.0001	<0.0001	12	<0.0001	<0.0001	<0.0001	12
	Cadmium, dissolved	<0.0001	<0.0001	<0.0001	12	<0.0001	<0.0001	<0.0001	12
	Chlorate, dissolved	<0.01	<0.01	<0.01	62	<0.01	<0.01	<0.01	62
	Chlorine, total	<0.03	<0.03	<0.03	12	<0.03	<0.03	<0.03	12
	Chlorite, dissolved	<0.005	<0.005	<0.005	62	<0.005	<0.005	<0.005	62
	Chromium	0.0011	<0.0002	0.0051	12	0.0009	<0.0002	0.0042	12
	Chromium, dissolved	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12
	Cyanide, dissolved	<0.002	<0.002	<0.002	12	<0.002	<0.002	<0.002	12
	Fluoride, dissolved (weekly)	0.12	0.08	0.17	52	0.12	0.06	0.19	52
	Lead	0.0004	<0.0001	0.0018	12	0.0004	<0.0001	0.0016	12
	Lead, dissolved	<0.0001	<0.0001	<0.0001	12	<0.0001	<0.0001	<0.0001	12
	Mercury	<0.0001	<0.0001	0.0001	12	<0.0001	<0.0001	<0.0001	12
	Mercury, dissolved	<0.0001	<0.0001	0.0001	12	<0.0001	<0.0001	<0.0001	12
	Nitrate (as N), dissolved	0.06	<0.01	0.30	62	0.06	<0.01	0.27	62
	Nitrite (as N), dissolved	0.01	<0.01	0.04	62	0.01	<0.01	0.05	62
	Selenium	0.0002	<0.0002	0.0003	12	<0.0002	<0.0002	0.0003	12
	Selenium, dissolved	<0.0002	<0.0002	0.0003	12	<0.0002	<0.0002	0.0003	12
	Uranium	<0.0005	<0.0005	0.0006	12	<0.0005	<0.0005	0.0006	12
	Uranium, dissolved	<0.0005	<0.0005	0.0006	12	<0.0005	<0.0005	0.0006	12

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

2014

		ROSSDALE				E.L. SMITH			
		Mean	Min	Max	Count	Mean	Min	Max	Count
Primary Organics	(ug/L)								
	2,4-D	0.007	<0.005	0.011	3	<0.005	<0.005	<0.005	3
	Atrazine	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Benzene	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Benzo(a)pyrene	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3
	Bromoxynil	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Carbon Tetrachloride	<1.0	<0.5	<1.0	365	<1.0	<0.5	<1.0	367
	Chlorobenzene	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Chlorpyrifos	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Cyanazine	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3
	Diazinon	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Dicamba	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Dichlorobenzene (1,2)	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Dichlorobenzene (1,4)	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Dichloroethane (1,2)	<0.5	<0.5	<0.5	2	<0.5	<0.5	<0.5	2
	Dichloroethylene (1,1)	<3.0	<0.5	<3.0	365	<3.0	<0.5	<3.0	367
	Dichlorophenol (2,4)	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3
	Diclofop-methyl	<0.02	<0.02	<0.02	3	<0.02	<0.02	<0.02	3
	Dimethoate	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3
	Diuron	<0.2	<0.2	<0.2	3	<0.2	<0.2	<0.2	3
	Ethylbenzene	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Glyphosate	<1.6	<0.1	<3.0	2	<1.6	<0.1	<3.0	2
	Malathion	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3
	MCPA	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Methylene Chloride	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Metolachlor	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Metribuzin	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
	Microcystin LR	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
	Pentachlorophenol	<0.1	<0.1	<0.1	3	<0.1	<0.1	<0.1	3
	Phorate	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Picloram	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Simazine	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
	Terbufos	<0.03	<0.03	<0.03	3	<0.03	<0.03	<0.03	3
	Tetrachloroethylene	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Tetrachlorophenol (2,3,4,6)	<0.1	<0.1	<0.1	3	<0.1	<0.1	<0.1	3
	Toluene	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Trichloroethylene	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Trichlorophenol (2,4,6)	<0.1	<0.1	<0.1	3	<0.1	<0.1	<0.1	3
	Trifluralin	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Trihalomethanes	<1.0	<1.0	<1.0	365	<1.0	<1.0	1.0	367
	Vinyl Chloride	<1.0	<1.0	<1.0	2	<1.0	<1.0	<1.0	2

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

2014

		ROSSDALE				E.L. SMITH			
		Mean	Min	Max	Count	Mean	Min	Max	Count
Radionuclides	(Bq/L)								
	Cesium-137	<0.20	<0.20	<0.20	2	<0.20	<0.20	<0.20	2
	Gross Alpha	<0.14	<0.12	0.15	2	<0.12	<0.12	<0.12	2
	Gross Beta	<0.10	<0.10	<0.10	2	<0.11	<0.10	0.12	2
	Iodine-131	<0.30	<0.30	<0.30	2	<0.30	<0.30	<0.30	2
	Lead-210	0.03	<0.02	0.03	2	<0.02	<0.02	<0.02	2
	Radium-226	0.01	<0.01	0.01	2	0.01	<0.01	0.01	2
	Strontium-90	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Tritium	<15	<15	<15	2	<15	<15	<15	2

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

2014

	ROSSDALE				E.L. SMITH			
	Mean	Min	Max	Count	Mean	Min	Max	Count
	Secondary Inorganics (mg/L)							
Alkalinity, PHP (mg CaCO3/L)	<1	<1	<1	12	<1	<1	1	12
Alkalinity, total (mg CaCO3/L)	130	102	159	64	130	102	159	64
Aluminum	0.706	0.063	3.50	12	0.622	0.069	2.82	12
Aluminum, dissolved	0	<0.003	0.10	12	0.008	<0.003	0.05	12
Ammonia as NH3	<0.07	<0.05	0.32	83	0.07	<0.05	0.30	90
Beryllium	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12
Beryllium, dissolved	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12
Bromide, dissolved	<0.01	<0.01	<0.01	62	<0.01	<0.01	<0.01	62
Calcium	44.6	41.1	48.3	12	44.7	41.7	47.9	12
Calcium, dissolved	43.4	37.3	47.0	12	43.7	36.4	48.9	12
Chloride, dissolved	1.3	0.6	5.7	62	0.7	0.5	2.7	62
Chlorine, free	<0.03	<0.03	<0.03	12	<0.03	<0.03	<0.03	12
Cobalt	0.0003	<0.0002	0.0010	12	0.0003	<0.0002	0.0010	12
Cobalt, dissolved	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12
Copper	0.003	<0.002	0.007	12	<0.002	<0.002	0.004	12
Copper, dissolved	<0.003	<0.002	0.006	12	<0.002	<0.002	<0.002	12
Hardness, Calcium (mg CaCO3/L)	112	86	130	52	112	75	128	52
Hardness, total (mg CaCO3/L)	164	129	189	52	164	128	192	52
Iron	0.65	0.05	3.69	12	0.65	0.07	3.21	12
Iron, dissolved	0.008	<0.002	0.045	12	0.008	<0.002	0.047	12
Lithium	0.0040	0.0033	0.0055	12	0.0038	0.0031	0.0052	12
Lithium, dissolved	0.0034	0.0031	0.0039	12	0.0033	0.0030	0.0038	12
Magnesium	12.6	11.6	13.5	12	12.7	11.9	13.6	12
Magnesium, dissolved	12.6	10.6	13.7	12	12.5	10.2	13.5	12
Manganese	0.017	0.003	0.077	12	0.016	0.004	0.064	12
Manganese, dissolved	<0.002	<0.002	0.003	12	<0.002	<0.002	0.004	12
Molybdenum	0.0009	0.0007	0.0010	12	0.0009	0.0007	0.0010	12
Molybdenum, dissolved	0.0008	0.0006	0.0010	12	0.0008	0.0006	0.0010	12
Nickel	0.0013	0.0003	0.0053	12	0.0013	0.0003	0.0045	12
Nickel, dissolved	0.0005	0.0002	0.0010	12	0.0005	0.0002	0.0010	12
Phosphate,Ortho (as P)	<0.02	<0.02	<0.02	12	<0.02	<0.02	<0.02	12
Phosphorus	0.05	0.02	0.13	12	0.05	0.02	0.12	12
Phosphorus, dissolved	0.03	0.02	0.04	12	0.03	0.02	0.04	12
Potassium	0.99	0.63	2.54	12	0.96	0.61	2.34	12
Potassium, dissolved	0.82	0.61	1.68	12	0.80	0.60	1.59	12
Silicon	3.14	1.48	9.59	12	3.04	1.46	8.27	12
Silicon, dissolved	1.93	1.43	2.68	12	1.95	1.36	2.68	12
Silver	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12
Silver, dissolved	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12
Sodium	4.0	3.3	5.5	12	3.9	3.2	5.1	12
Sodium, dissolved	4.1	3.3	5.7	12	3.9	3.2	5.2	12
Strontium	0.384	0.307	0.416	12	0.381	0.303	0.413	12
Strontium, dissolved	0.380	0.297	0.415	12	0.377	0.286	0.418	12

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

2014

		ROSSDALE				E.L. SMITH			
		Mean	Min	Max	Count	Mean	Min	Max	Count
Secondary Inorganics (mg/L)									
	Sulphate, dissolved	41.6	28.3	51.2	62	41.2	28.9	49.5	62
	Sulphide	<0.002	<0.002	<0.002	12	<0.002	<0.002	0.002	12
	Thallium	<0.0001	<0.0001	<0.0001	12	<0.0001	<0.0001	<0.0001	12
	Thallium, dissolved	<0.0001	<0.0001	<0.0001	12	<0.0001	<0.0001	<0.0001	12
	Tin	<0.0002	<0.0002	0.0003	12	<0.0002	<0.0002	0.0002	12
	Tin, dissolved	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	<0.0002	12
	Titanium	0.0085	0.0006	0.0518	12	0.0084	0.0008	0.0430	12
	Titanium, dissolved	<0.0005	<0.0005	0.0008	12	<0.0005	<0.0005	0.0010	12
	Total Kjeldahl Nitrogen (TKN)	0.18	<0.06	0.42	16	0.14	<0.06	0.39	18
	Vanadium	0.0021	0.0004	0.0093	12	0.0020	0.0005	0.0076	12
	Vanadium, dissolved	<0.0002	<0.0002	<0.0002	12	<0.0002	<0.0002	0.0002	12
	Zinc	0.017	0.010	0.027	12	0.016	0.010	0.027	12
	Zinc, dissolved	<0.002	<0.002	0.005	12	<0.003	<0.002	0.005	12
	Zirconium	0.0005	<0.0002	0.0010	12	0.0004	<0.0002	0.0010	12
	Zirconium, dissolved	<0.0002	<0.0002	0.0004	12	<0.0002	<0.0002	0.0003	12

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

2014

		ROSSDALE				E.L. SMITH			
		Mean	Min	Max	Count	Mean	Min	Max	Count
Secondary Organics (ug/L)									
	2,4-DB	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	2,4-DP	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	3-Methylchloranthrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	7,12-Dimethylbenz(a)anthracen	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Acenaphthene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Acenaphthylene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Acetaminophen	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3
	Acetylsalicylic acid	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3
	Acridine	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Aldicarb	<0.1	<0.1	<0.1	3	<0.1	<0.1	<0.1	3
	Aldicarb Sulfone	<5	<5	<5	1	<5	<5	<5	1
	Aldicarb Sulfoxide	<5	<5	<5	1	<5	<5	<5	1
	Aldrin	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	alpha-Endosulfan	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Aminomethyl Phosphonic Acid	<0	<0	<0	1	<0	<0	<0	1
	Aminopyralid	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3
	Anthracene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Azinphos-methyl	<0.2	<0.2	<0.2	3	<0.2	<0.2	<0.2	3
	Bentazon	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Benzidine	<0.2	<0.2	<0.2	2	<0.2	<0.2	<0.2	2
	Benzo(a)anthracene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Benzo(b)fluoranthene	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Benzo(b,j,k)fluoranthene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Benzo(c)phenanthrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Benzo(e)pyrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Benzo(ghi)perylene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Benzo(k)fluoranthene	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Benzoylcegonine	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3
	Bezafibrate	<0.1	<0.1	<0.1	3	<0.1	<0.1	<0.1	3
	Bis(2-chloroethoxy)methane	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Bis(2-chloroethyl)ether	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Bis(2-chloroisopropyl)ether	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Bis(2-ethylhexyl)phthalate	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Bromacil	<0.030	<0.030	<0.030	3	<0.030	<0.030	<0.030	3
	Bromodichloromethane	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Bromoform	<1.0	<0.5	<1.0	365	<1.0	<0.5	<1.0	367
	Bromophenyl phenyl ether (4)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Butylbenzylphthalate	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Caffeine	0.03	<0.02	0.04	3	<0.02	<0.02	<0.02	3
	Carbamazepine	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
	Carbaryl	<25	<25	<25	1	<25	<25	<25	1
	Carbathiin	<0.100	<0.100	<0.100	3	<0.100	<0.100	<0.100	3
	Chloramphenicol	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3

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

2014

		ROSSDALE				E.L. SMITH			
		Mean	Min	Max	Count	Mean	Min	Max	Count
Secondary Organics (ug/L)									
	Chloro-2-MethylPhenol (4)	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
	Chloro-3-methylphenol (4)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Chloroform	<0.5	<0.5	<0.5	365	<0.5	<0.5	1.0	367
	Chloronaphthalene	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Chlorophenol (2)	<0.2	<0.2	<0.2	2	<0.2	<0.2	<0.2	2
	Chlorophenyl phenyl ether (4)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Chlorothalonil	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Chrysene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Ciprofloxacin	<0.02	<0.02	<0.02	3	<0.02	<0.02	<0.02	3
	Clindamycin	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
	Clodinafop acid metabolite	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3
	Clodinafop-propargyl	<0.040	<0.040	<0.040	3	<0.040	<0.040	<0.040	3
	Clofibric Acid	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3
	Clopyralid	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3
	Codeine	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3
	Cotinine	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3
	Desethyl Atrazine	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3
	Desisopropyl Atrazine	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3
	Dibenzo(a,h)pyrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Dibenzo(a,i)pyrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Dibenzo(a,l)pyrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Dibenzo(ah)anthracene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Dibromochloromethane	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Dichlorobenzene (1,3)	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Dichloroethylene, cis (1,2)	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Dichloroethylene, trans (1,2)	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Dichloropropane (1,2)	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Diclofenac	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
	Dieldrin	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Diethyl phthalate	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Dimethyl phthalate	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Dimethylphenol (2,4)	<0.2	<0.2	<0.2	2	<0.2	<0.2	<0.2	2
	Di-n-butylphthalate	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Dinitrophenol (2,4)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Dinitrotoluene (2,4)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Dinitrotoluene (2,6)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Di-n-octyl phthalate	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Diphenylhydrazine (1,2)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Disulfoton	<0.200	<0.200	<0.200	3	<0.200	<0.200	<0.200	3
	Enrofloxacin	<0.02	<0.02	<0.02	3	<0.02	<0.02	<0.02	3
	Erythromycin	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
	Ethalfuralin	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Ethion	<0.10	<0.10	<0.10	3	<0.10	<0.10	<0.10	3

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

2014

		ROSSDALE				E.L. SMITH			
		Mean	Min	Max	Count	Mean	Min	Max	Count
Secondary Organics	(ug/L)								
	Ethofumesate	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Fenoprofen	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Fenoxaprop-p-ethyl	<0.040	<0.040	<0.040	3	<0.040	<0.040	<0.040	3
	Fluazifop	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
	Fluoranthene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Fluorene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Fluoxetine	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3
	Fluroxypyr	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
	Gemfibrozil	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Glufosinate	<1	<1	<1	1	<1	<1	<1	1
	Hexachlorobenzene	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Hexachlorobutadiene	<0.5	<0.5	<0.5	2	<0.5	<0.5	<0.5	2
	Hexachlorocyclopentadiene	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Hexachloroethane	<0.5	<0.5	<0.5	2	<0.5	<0.5	<0.5	2
	Hexaconazole	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3
	Hydroxy Carbofuran (3)	<25	<25	<25	1	<25	<25	<25	1
	Ibuprofen	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Imazamethabenz-methyl	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3
	Imazamox	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3
	Imazethapyr	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3
	Indeno(1,2,3-cd)pyrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
	Indomethacin	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3
	Iprodione	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3
	Isophorone	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	Ketoprofen	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3
	Lincomycin	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3
	Lindane (alpha-BHC)	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Lindane (gamma-BHC)	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Linuron	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3
	MCPB	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3
	MCPP	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
	Meclofenamic acid	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3
	Metalaxyl-M	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
	Methamphetamine	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3
	Methomyl	<0.1	<0.1	<0.1	3	<0.1	<0.1	<0.1	3
	Methyl t-Butyl Ether (MTBE)	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
	Methyl Triclosan	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
	Methyl-4,6-dinitrophenol (2)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
	MIBK	<1.0	<1.0	<1.0	365	<1.0	<1.0	<1.0	367
	Microcystin LA	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
	Microcystin RR	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
	Microcystin Total	<0	<0	<0	1	<0	<0	<0	1
	Microcystin YR	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3

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

2014

	ROSSDALE				E.L. SMITH			
	Mean	Min	Max	Count	Mean	Min	Max	Count
	Secondary Organics (ug/L)							
N,N-diethyl-m-toluamide (DEET)	0.021	<0.005	0.053	3	<0.005	<0.005	0.006	3
Naphthalene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
Napropamide	<0.02	<0.02	<0.02	3	<0.02	<0.02	<0.02	3
Naproxen	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
Nitrobenzene	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
Nitrophenol (2)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
Nitrophenol (4)	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
N-Nitroso-di-n-propylamine	<0.2	<0.2	<0.2	2	<0.2	<0.2	<0.2	2
N-Nitrosodiphenylamine	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
Norfloxacin	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3
Norfluooxetine	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3
Ofloxacin	<0.02	<0.02	<0.02	3	<0.02	<0.02	<0.02	3
Oxolinic acid	<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3
Oxycarboxin	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3
p, p' - Methoxychlor	<0.03	<0.03	<0.03	3	<0.03	<0.03	<0.03	3
Parathion	<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
Pentoxifylline	<0.500	<0.500	<0.500	3	<0.500	<0.500	<0.500	3
Perylene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
Phenanthrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
Phenol	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	2
Pipemidic acid	<0.5	<0.5	<0.5	3	<0.5	<0.5	<0.5	3
Propiconazole	<0.050	<0.050	<0.050	3	<0.050	<0.050	<0.050	3
Pyrene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
Pyridaben	<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3
Quinclorac	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
Quizalofop	<0.030	<0.030	<0.030	3	<0.030	<0.030	<0.030	3
Retene	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01	2
Salicylic acid	<0.025	<0.025	<0.025	3	<0.025	<0.025	<0.025	3
Styrene	<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
Sulfabenzamide	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3
Sulfadimethoxine	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3
Sulfadoxine	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3
Sulfamerazine	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3
Sulfamethazine	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3
Sulfamethoxazole	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3
Sulfapyridine	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3
Sulfaquinoxaline	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3
Sulfathiazole	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3
Tetrachloroethane (1,1,2,2)	<1.0	<0.5	<1.0	365	<1.0	<0.5	<1.0	367
Thiamethoxam	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	3
Tolfenamic acid	<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
Total Organic Carbon	3.1	1.1	10.8	64	3.1	1.2	10.6	64
Total Volatile Organics (NonTHM)	<1.0	<1.0	<1.0	365	<1.0	<1.0	<1.0	367

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

2014

		ROSSDALE				E.L. SMITH			
		Mean	Min	Max	Count	Mean	Min	Max	Count
Secondary Organics (ug/L)									
Total Volatile Organics (Unknown)		<1.0	<1.0	<1.0	363	<1.0	<1.0	<1.0	365
Triallate		<0.005	<0.005	<0.005	3	<0.005	<0.005	<0.005	3
Trichlorobenzene (1,2,4)		<0.5	<0.1	<0.5	367	<0.5	<0.1	<0.5	369
Trichlorocarbanilide (3,4,4)		<0.025	<0.025	<0.025	3	<0.025	<0.025	<0.025	3
Trichloroethane (1,1,1)		<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
Triclopyr		<0.01	<0.01	<0.01	3	<0.01	<0.01	<0.01	3
Triclosan		<0.025	<0.025	<0.025	3	<0.025	<0.025	<0.025	3
Trimethoprim		<0.020	<0.020	<0.020	3	<0.020	<0.020	<0.020	3
Vinclozolin		<0.010	<0.010	<0.010	3	<0.010	<0.010	<0.010	3
Xylene (1,2)		<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	367
Xylene (1,4)		<0.5	<0.5	<0.5	365	<0.5	<0.5	<0.5	366

7.12 Summary of Laboratory Analysis

Testing of the Edmonton Drinking Water 2014

NUMBER OF TESTS

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
Customer Complaints	363	191	195	821	729	170	208	125	64	332	178	122	3498
Externally Contracted Analysis	226	926	194	196	220	200	220	194	928	958	184	194	4640
Field Reservoirs	1062	595	1002	1002	729	763	780	780	1099	1005	1140	1067	11024
Water Treatment Plant Testing	12845	11319	13474	13000	13993	12805	13634	13149	12805	12963	12947	13469	156403
Random Distribution Water	1132	1339	1106	1203	1163	1233	1423	1437	1211	1365	1130	1157	14899
System Depressurization/Repair	184	248	388	214	302	282	340	318	304	268	184	176	3208
Total Number of Tests	15812	14618	16359	16436	17136	15453	16605	16003	16411	16891	15763	16185	193672
Total Number of Samples	785	714	810	833	761	716	818	746	730	770	672	724	9079

Extra Testing

New Watermain Testing	60	90	75	130	90	80	100	73	75	215	235	385	1608
Water Treatment Plant Waste Discharges	15	12	15	12	12	12	18	12	12	12	12	12	156
QA Testing	6246	4884	6625	5626	5713	6416	6164	5391	6744	6441	6219	6772	73241
Total Number of Tests	6321	4986	6715	5768	5815	6508	6282	5476	6831	6668	6466	7169	75005
Total Number of Samples	684	617	661	675	567	527	610	548	557	639	582	629	7296

**7.13 Statistics on Water Quality Complaint Samples
Submitted for Laboratory Testing 2014**

MONTH	INCIDENT RELATED STATISTICS													SAMPLE RELATED STATISTICS			
	TOTAL INCIDENTS	# VALID (3)	VIOLATION INCIDENTS (2)	AESTHETIC OBJECTIVE	# SATISFIED	PERCENT SATISFIED	COMPLAINT TYPES (1)							# SAMPLES	PBR VARIANCES	VIOLATING TESTS	TOTAL TESTS
							H	C	T	S	TO	TO-PL	O				
JAN	10	1	0	0	10	100%	0	2	1	1	6	0	0	12	0	0	362
FEB	5	2	0	0	5	100%	0	1	0	1	2	1	0	5	0	0	191
MAR	6	0	0	0	6	100%	0	1	1	1	3	0	0	9	0	0	251
APR	9	0	0	0	9	100%	0	1	1	2	5	0	0	16	0	0	821
MAY	8	3	0	1	8	100%	0	0	1	4	2	0	1	19	0	0	729
JUN	7	1	0	0	7	100%	0	3	1	1	2	0	0	10	0	0	170
JUL	6	0	0	0	6	100%	0	2	0	2	1	0	1	7	0	0	208
AUG	5	0	0	0	5	100%	0	1	2	1	1	0	0	5	0	0	126
SEP	5	0	0	0	5	100%	0	2	1	0	1	0	1	5	0	0	64
OCT	8	1	0	0	8	100%	0	1	5	0	2	0	0	12	1	0	332
NOV	8	0	0	0	8	100%	0	2	3	2	1	0	0	8	0	0	178
DEC	6	0	0	0	6	100%	0	0	3	0	2	0	1	6	0	0	157
YTD	83	8	0	1	83	100%	0	16	19	15	28	1	4	114	1	0	3589

(1) Complaint types: H; Hardness, C; Color, T; Turbidity, S; Sickness, TO; Taste & Odor, TO-PL; Pipe lubricants implicated, O; Other

(2) Number of Violations: Incidents where approval levels were exceeded.

(3) Number Valid: Incidents where a test result was found to exceed specified objectives (EPCOR) and required action.

7.14 METHOD DETECTION LIMITS

Analyte	MDL	Unit
Alkalinity phenolphthalein	1	mg CaCO3/L
Alkalinity, total	1	mg CaCO3/L
Aluminum	0.003	mg/L
Aluminum, dissolved	0.003	mg/L
Ammonia as N	0.05	mg/L
Ammonia as NH3	0.05	mg/L
Antimony	0.0002	mg/L
Antimony, dissolved	0.0002	mg/L
Arsenic	0.0002	mg/L
Arsenic, dissolved	0.0002	mg/L
Barium	0.001	mg/L
Barium, dissolved	0.001	mg/L
Benzene	0.5	ug/L
Beryllium	0.0002	mg/L
Beryllium, dissolved	0.0002	mg/L
Bicarbonate	3	mg CaCO3/L
Boron	0.002	mg/L
Boron, dissolved	0.002	mg/L
Bromate, dissolved	0.005	mg/L
Bromide, dissolved	0.005	mg/L
Bromoacetic acid	1	ug/L
Bromochloroacetic acid	1	ug/L
Bromodichloroacetic Acid	1	ug/L
Bromodichloromethane	0.5	ug/L
Bromoform	1.0	ug/L
Cadmium	0.0001	mg/L
Cadmium, dissolved	0.0001	mg/L
Calcium	0.05	mg/L
Calcium, dissolved	0.05	mg/L
Carbon Tetrachloride	1.0	ug/L
Carbonate	3	mg CaCO3/L
Chlorate, dissolved	0.005	mg/L
Chloride, dissolved	0.05	mg/L
Chlorine, free	0.03	mg/L
Chlorine, total	0.03	mg/L
Chlorite, dissolved	0.005	mg/L
Chlorobenzene	0.5	ug/L
Chlorodibromoacetic Acid	2	ug/L
Chloroform	0.5	ug/L
Chromium	0.0002	mg/L
Chromium, dissolved	0.0002	mg/L
Cobalt	0.0002	mg/L
Cobalt, dissolved	0.0002	mg/L
Colour	1	TCU
Conductivity	0.2	uS/cm
Copper	0.002	mg/L
Copper, dissolved	0.002	mg/L
Cryptosporidium	0.8	oocysts/100L
Dibromoacetic acid	1	ug/L
Dibromochloromethane	0.5	ug/L
Dichloroacetic acid	1	ug/L
Dichlorobenzene (1,2)	0.5	ug/L

7.14 METHOD DETECTION LIMITS

Analyte	MDL	Unit
Dichlorobenzene (1,3)	0.5	ug/L
Dichlorobenzene (1,4)	0.5	ug/L
Dichloroethane (1,2)	0.5	ug/L
Dichloroethylene (1,1)	3.0	ug/L
Dichloroethylene, cis (1,2)	0.5	ug/L
Dichloroethylene, trans (1,2)	0.5	ug/L
Dichloropropane (1,2)	0.5	ug/L
Dilution Factor		
Dissolved Organic Carbon	0.1	mg/L
Ethylbenzene	0.5	ug/L
Fluoride, dissolved	0.01	mg/L
FPA-Intensity	0.25	N/A
Giardia	0.8	cysts/100L
Glyphosate	3.0	ug/L
Halooacetic Acids, total (HAA5)	3	ug/L
Hardness, Calcium	2	mg CaCO3/L
Hardness, total	2	mg CaCO3/L
Heterotrophic Plate Count	1	CFU/mL
Iron	0.002	mg/L
Iron, dissolved	0.002	mg/L
Lead	0.0001	mg/L
Lead, dissolved	0.0001	mg/L
Lithium	0.0002	mg/L
Lithium, dissolved	0.0002	mg/L
Magnesium	0.05	mg/L
Magnesium, dissolved	0.05	mg/L
Manganese	0.002	mg/L
Manganese, dissolved	0.002	mg/L
Mercury	0.0001	mg/L
Mercury, dissolved	0.0001	mg/L
Methyl t-Butyl Ether (MTBE)	0.5	ug/L
Methylene Chloride	0.5	ug/L
MIBK	1.0	ug/L
Microcystins (as LR)	0.15	ug/L
Molybdenum	0.0002	mg/L
Molybdenum, dissolved	0.0002	mg/L
Monochloramine	0.01	mg/L
Monochloroacetic acid	1	ug/L
Nickel	0.0002	mg/L
Nickel, dissolved	0.0002	mg/L
Nitrate (as N), dissolved	0.005	mg/L
Nitrite (as N), dissolved	0.005	mg/L
Observation		DESCRIPTION
Phosphate, Ortho (as P)	0.02	mg/L
Phosphorus	0.01	mg/L
Phosphorus, dissolved	0.01	mg/L
Potassium	0.05	mg/L
Potassium, dissolved	0.05	mg/L
Selenium	0.0002	mg/L
Selenium, dissolved	0.0002	mg/L
Silicon	0.01	mg/L
Silicon, dissolved	0.01	mg/L
Silver	0.0002	mg/L
Silver, dissolved	0.0002	mg/L

7.14 METHOD DETECTION LIMITS

Analyte	MDL	Unit
Sodium	0.05	mg/L
Sodium, dissolved	0.05	mg/L
Strontium	0.001	mg/L
Strontium, dissolved	0.001	mg/L
Styrene	0.5	ug/L
Sulphate, dissolved	0.05	mg/L
Tetrachloroethane (1,1,2,2)	1.0	ug/L
Tetrachloroethylene	0.5	ug/L
Thallium	0.0001	mg/L
Thallium, dissolved	0.0001	mg/L
Tin	0.0002	mg/L
Tin, dissolved	0.0002	mg/L
Titanium	0.0005	mg/L
Titanium, dissolved	0.0005	mg/L
Toluene	0.5	ug/L
Total Dissolved Solids	10	mg/L
Total Dissolved Solids (Calc)	10	mg/L
Total Organic Carbon	0.1	mg/L
Total Suspended Solids	5	mg/L
Total Volatile Organics (NonTHM)	1.0	ug/L
Total Volatile Organics (Unknown)	1.0	ug/L
Tribromoacetic Acid	3	ug/L
Trichloroacetic acid	1	ug/L
Trichlorobenzene (1,2,4)	0.5	ug/L
Trichloroethane (1,1,1)	0.5	ug/L
Trichloroethylene	0.5	ug/L
Trihalomethanes	1.0	ug/L
Turbidity	0.02	NTU
Uranium	0.0005	mg/L
Uranium, dissolved	0.0005	mg/L
UV 254 % Transmittance	1	%T/cm
Vanadium	0.0002	mg/L
Vanadium, dissolved	0.0002	mg/L
Vinyl Chloride	1.0	ug/L
Xylene (1,2)	0.5	ug/L
Xylene (1,4)	0.5	ug/L
Zinc	0.002	mg/L
Zinc, dissolved	0.002	mg/L
Zirconium	0.0002	mg/L
Zirconium, dissolved	0.0002	mg/L

Contract Lab Analysis

2,4-D	0.005	ug/L
2,4-DB	0.005	ug/L
2,4-DP	0.005	ug/L
3-Methylchloranthrene	0.01	ug/L
7,12-Dimethylbenz(a)anthracen	0.01	ug/L
Acenaphthene	0.01	ug/L
Acenaphthylene	0.01	ug/L
Acetaminophen	0.050	ug/L
Acetylsalicylic acid	0.01	ug/L
Acridine	0.01	ug/L
Aldicarb	0.1	ug/L
Aldicarb Sulfone	5	ug/L

7.14 METHOD DETECTION LIMITS

Analyte	MDL	Unit
Aldicarb Sulfoxide	5	ug/L
Aldrin	0.005	ug/L
alpha-Endosulfan	0.005	ug/L
Aminomethyl Phosphonic Acid	0.1	ug/L
Aminopyralid	0.01	ug/L
Anthracene	0.01	ug/L
Atrazine	0.005	ug/L
Azinphos-methyl	0.2	ug/L
Bentazon	0.005	ug/L
Benzene	0.1	ug/L
Benzidine	0.2	ug/L
Benzo(a)anthracene	0.01	ug/L
Benzo(a)pyrene	0.01	ug/L
Benzo(b)fluoranthene	0.1	ug/L
Benzo(b,j,k)fluoranthene	0.01	ug/L
Benzo(c)phenanthrene	0.01	ug/L
Benzo(e)pyrene	0.01	ug/L
Benzo(ghi)perylene	0.01	ug/L
Benzo(k)fluoranthene	0.1	ug/L
Benzoylcegonine	0.01	ug/L
Bezafibrate	0.1	ug/L
Bis(2-chloroethoxy)methane	0.1	ug/L
Bis(2-chloroethyl)ether	0.1	ug/L
Bis(2-chloroisopropyl)ether	0.1	ug/L
Bis(2-ethylhexyl)phthalate	0.1	ug/L
Bromacil	0.030	ug/L
Bromochloroacetic acid	2	ug/L
Bromodichloromethane	0.1	ug/L
Bromophenyl phenyl ether (4)	0.1	ug/L
Bromoxynil	0.005	ug/L
Butylbenzylphthalate	0.1	ug/L
Caffeine	0.02	ug/L
Carbamazepine	0.010	ug/L
Carbaryl	25	ug/L
Carbathiin	0.100	ug/L
Carbon Tetrachloride	0.1	ug/L
Cesium-137	0.2	Bq/L
Chloramphenicol	0.01	ug/L
Chloro-2-MethylPhenol (4)	0.010	ug/L
Chloro-3-methylphenol (4)	0.1	ug/L
Chlorobenzene	0.1	ug/L
Chloronaphthalene	0.1	ug/L
Chlorophenol (2)	0.2	ug/L
Chlorophenyl phenyl ether (4)	0.1	ug/L
Chlorothalonil	0.005	ug/L
Chlorpyrifos	0.005	ug/L
Chrysene	0.01	ug/L
Ciprofloxacin	0.02	ug/L
Clindamycin	0.010	ug/L
Clodinafop acid metabolite	0.020	ug/L
Clodinafop-propargyl	0.040	ug/L
Clofibric Acid	0.01	ug/L
Clopyralid	0.020	ug/L
Codeine	0.05	ug/L

7.14 METHOD DETECTION LIMITS

Analyte	MDL	Unit
Cotinine	0.01	ug/L
Cyanazine	0.050	ug/L
Cyanide, dissolved	0.002	mg/L
Desethyl Atrazine	0.050	ug/L
Desisopropyl Atrazine	0.050	ug/L
Diazinon	0.005	ug/L
Dibenzo(a,h)pyrene	0.01	ug/L
Dibenzo(a,i)pyrene	0.01	ug/L
Dibenzo(a,l)pyrene	0.01	ug/L
Dibenzo(ah)anthracene	0.01	ug/L
Dibromoacetic acid	2	ug/L
Dicamba	0.005	ug/L
Dichloroacetic acid	2	ug/L
Dichlorobenzene (1,2)	0.1	ug/L
Dichlorobenzene (1,4)	0.1	ug/L
Dichloroethane (1,2)	0.1	ug/L
Dichlorophenol (2,4)	0.01	ug/L
Diclofenac	0.010	ug/L
Diclofop-methyl	0.02	ug/L
Dieldrin	0.005	ug/L
Diethyl phthalate	0.1	ug/L
Dimethoate	0.050	ug/L
Dimethyl phthalate	0.1	ug/L
Dimethylphenol (2,4)	0.2	ug/L
Di-n-butylphthalate	0.1	ug/L
Dinitrophenol (2,4)	0.1	ug/L
Dinitrotoluene (2,4)	0.1	ug/L
Dinitrotoluene (2,6)	0.1	ug/L
Di-n-octyl phthalate	0.1	ug/L
Diphenylhydrazine (1,2)	0.1	ug/L
Disulfoton	0.200	ug/L
Diuron	0.2	ug/L
Enrofloxacin	0.02	ug/L
Erythromycin	0.010	ug/L
Ethalfuralin	0.005	ug/L
Ethion	0.10	ug/L
Ethofumesate	0.005	ug/L
Ethylbenzene	0.1	ug/L
Fenoprofen	0.005	ug/L
Fenoxaprop-p-ethyl	0.040	ug/L
Fluazifop	0.010	ug/L
Fluoranthene	0.01	ug/L
Fluorene	0.01	ug/L
Fluoxetine	0.01	ug/L
Fluroxypyr	0.010	ug/L
Gemfibrozil	0.005	ug/L
Glufosinate	1.0	ug/L
Glyphosate	0.1	ug/L
Gross Alpha	0.12	Bq/L
Gross Beta	0.10	Bq/L
Haloacetic Acids, total (HAA5)	2	ug/L
Haloacetic Acids, total (HAA6)	2	ug/L
Hexachlorobenzene	0.1	ug/L
Hexachlorobutadiene	0.5	ug/L

7.14 METHOD DETECTION LIMITS

Analyte	MDL	Unit
Hexachlorocyclopentadiene	0.1	ug/L
Hexachloroethane	0.5	ug/L
Hexaconazole	0.050	ug/L
Hydroxy Carbofuran (3)	25	ug/L
Ibuprofen	0.005	ug/L
Imazamethabenz-methyl	0.050	ug/L
Imazamox	0.020	ug/L
Imazethapyr	0.020	ug/L
Indeno(1,2,3-cd)pyrene	0.01	ug/L
Indomethacin	0.05	ug/L
Iodine-131	0.3	Bq/L
Iprodione	0.020	ug/L
Isophorone	0.1	ug/L
Ketoprofen	0.01	ug/L
Lead-210	0.02	Bq/L
Lincomycin	0.05	ug/L
Lindane (alpha-BHC)	0.005	ug/L
Lindane (gamma-BHC)	0.005	ug/L
Linuron	0.020	ug/L
Malathion	0.050	ug/L
MCPA	0.005	ug/L
MCPB	0.020	ug/L
MCPP	0.005	ug/L
Meclofenamic acid	0.01	ug/L
Metalaxyl-M	0.010	ug/L
Methamphetamine	0.020	ug/L
Methomyl	0.1	ug/L
Methyl Triclosan	0.010	ug/L
Methyl-4,6-dinitrophenol (2)	0.1	ug/L
Methylene Chloride	0.4	ug/L
Metolachlor	0.005	ug/L
Metribuzin	0.010	ug/L
Microcystin LA	0.010	ug/L
Microcystin LR	0.010	ug/L
Microcystin RR	0.010	ug/L
Microcystin Total	0.25	ug/L
Microcystin YR	0.010	ug/L
Monobromoacetic acid	2	ug/L
Monochloroacetic acid	2	ug/L
N,N-diethyl-m-toluamide (DEET)	0.005	ug/L
Naphthalene	0.01	ug/L
Napropamide	0.02	ug/L
Naproxen	0.005	ug/L
NDMA	0.50	ng/L
Nitrobenzene	0.1	ug/L
Nitrophenol (2)	0.1	ug/L
Nitrophenol (4)	0.1	ug/L
N-Nitroso-di-n-propylamine	0.2	ug/L
N-Nitrosodiphenylamine	0.1	ug/L
Norfloracin	0.020	ug/L
Norfluoxetine	0.020	ug/L
NTA	0.2	ug/L
Ofloxacin	0.02	ug/L
Oxolinic acid	0.01	ug/L

7.14 METHOD DETECTION LIMITS

Analyte	MDL	Unit
Oxycarboxin	0.05	ug/L
p, p' - Methoxychlor	0.03	ug/L
Parathion	0.010	ug/L
Pentachlorophenol	0.1	ug/L
Pentoxifylline	0.500	ug/L
Perylene	0.01	ug/L
Phenanthrene	0.01	ug/L
Phenol	0.1	ug/L
Phorate	0.005	ug/L
Picloram	0.005	ug/L
Pipemidic acid	0.5	ug/L
Propiconazole	0.050	ug/L
Pyrene	0.01	ug/L
Pyridaben	0.020	ug/L
Quinlorac	0.005	ug/L
Quizalofop	0.030	ug/L
Radium-226	0.005	Bq/L
Retene	0.01	ug/L
Salicylic acid	0.025	ug/L
Simazine	0.010	ug/L
Strontium-90	0.1	Bq/L
Sulfabenzamide	0.05	ug/L
Sulfadimethoxine	0.05	ug/L
Sulfadoxine	0.05	ug/L
Sulfamerazine	0.05	ug/L
Sulfamethazine	0.05	ug/L
Sulfamethoxazole	0.05	ug/L
Sulfapyridine	0.05	ug/L
Sulfaquinoxaline	0.05	ug/L
Sulfathiazole	0.05	ug/L
Sulphide	0.002	mg/L
Terbufos	0.03	ug/L
Tetrachloroethylene	0.1	ug/L
Tetrachlorophenol (2,3,4,6)	0.1	ug/L
Thiamethoxam	0.05	ug/L
Tolfenamic acid	0.005	ug/L
Toluene	0.1	ug/L
Total Kjeldahl Nitrogen (TKN)	0.06	mg/L
Triallate	0.005	ug/L
Trichloroacetic acid	2	ug/L
Trichlorobenzene (1,2,4)	0.1	ug/L
Trichlorocarbanilide (3,4,4)	0.025	ug/L
Trichloroethylene	0.1	ug/L
Trichlorophenol (2,4,6)	0.1	ug/L
Triclopyr	0.010	ug/L
Triclosan	0.025	ug/L
Trifluralin	0.005	ug/L
Trihalomethanes	0.1	ug/L
Trimethoprim	0.020	ug/L
Tritium	15	Bq/L
Vinclozolin	0.010	ug/L
Vinyl Chloride	0.2	ug/L
Xylene (m,p)	0.1	ug/L
Xylene (o)	0.1	ug/L

7.14 METHOD DETECTION LIMITS

Analyte	MDL	Unit
Xylenes	0.1	ug/L

7.15 EXPLANATION OF NOTATIONS USED

Concentrations are reported as mg/L unless otherwise indicated.
Alkalinity and Hardness (Ca and Total) are reported as mg CaCO₃/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
TCU	= True Colour Units
TDS	= Total Dissolved Solids
TOC	= Total Organic Carbon
WL	= Water Laboratory
WTP	= Water Treatment Plant