

# Analytical Test Results:

Microbiological Parameters (Required Testing Under O. Reg. 170/03):

(All values are reported in mg/L unless otherwise noted)

Microbiological Parameters	MAC OR IMAC	No. of Samples	No. of Detectable Results	No. of Adverse Results	Sampling Date	Results			Comments
						Min.	Max.	Avg.	
Total Coliform (counts/100ml)	Not Detectable	1900	0	0	Jul-Sep	0	0	0	Parameter sampled is used to test for the possible presence of fecal matter. A ZERO test results indicate that no Total Coliforms were detected.
E. Coli ( <i>Escherichia coli</i> ) (counts/100ml)	Not Detectable	1900	0	0	Jul-Sep	0	0	0	Parameter sampled is used to test for the possible presence of fecal matter. <i>Escherichia coli</i> is a fecal coliform, present in fecal matter & prevalent in sewage but is rapidly destroyed by chlorine; it is a strong indicator of recent fecal pollution. Contamination with sewage as shown by positive E-coli tests would strongly suggest presence of pathogenic bacteria and viruses, as well as more chlorine resistant pathogens such as <i>Giardia</i> and <i>Cryptosporidium</i> which are more difficult to detect.
Background Count (counts/100ml)	N/A	1900	48	0	Jul-Sep	0	31	0	Test parameter is used as an indicator of possible deterioration of water quality. The water quality standard of 200 counts/100ml set by O.Reg 170 for this parameter has been revoked. Sampling will continue and the Min, Max, and Avg test results shown indicate that the water quality surpasses the quality standard that has been revoked.
Heterotrophic Plate Count (counts/1ml)	N/A	759	759	0	Jul-Sep	<10	>2000	N/A	Test parameter is used as an indicator of possible deterioration of water quality. The water quality standard of 500 counts/100ml set by O.Reg 170 for this parameter has been revoked. Sampling will continue and the Min, Max, and Avg test results shown indicate that the water quality surpasses the quality standard that has been revoked.

## Reportable Incidents:

(Precautionary Boil Water Advisories were not included for service line breaks even though in some incidents SAC issued AWQI numbers.)

AWQI # 89211	09-Jul	Sample Station - Howard & Highway 3 - free chlorine reading of 0.02 mg/L - after 2 minutes rdg of 0.72 mg/L
AWQI # 90153	31-Jul	hydrant at 1890 Springarden - free chlorine rdg of 0.03 mg/L - after flushing 30 min 0.24 mg/L
AWQI # 90680	21-Aug	hydrant at 1890 Springarden - free chlorine rdg of 0.00 mg/L - after flushing 60 min 0.24 mg/L
AWQI # 91049	04-Sep	110 Hill St - free chlorine residual of 0.00 mg/L - after flushing 20 minutes 0.26 mg/L
AWQI # 91284	17-Sep	hydrant at 1890 Springarden - free chlorine rdg of 0.03 mg/L - after flushing 25 min 0.27 mg/L
AWQI # 91290	17-Sep	Sample Station - Howard & Highway 3 - free chlorine reading of 0.02 mg/L - after 30 minutes rdg of 0.65 mg/L

## Operational Parameters:

Operational Parameters	MAC OR IMAC	Objective AO/OG	No. of Samples	Sampling Date	Results			Comments
					Min.	Max.	Avg.	
Chlorine Residual <sup>1,2</sup> , Free (mg/L)	4	0.2 - 1.0	61	Jul-Sep	1.15	1.39	1.27	The maintenance of an adequate free chlorine residual is essential to the protection of public health. Values reported are an average of the 24 daily grab samples.
Colour (TCU)	N/A	5	61	Jul-Sep	<2.5	<2.5	<2.5	The aesthetic objective for colour in drinking water is 5 TCU (True Colour Units). Water can have a faint yellow/brown colour which is often caused by organic materials created by the decay of vegetation.
pH		6.5 - 8.5	92	Jul-Sep	6.97	7.19	7.10	pH is a parameter that indicates the acidity of a water sample. The operational guideline recommended in drinking water is to maintain a pH between 6.5 and 8.5. The principal objective in controlling pH is to produce a water that is neither corrosive nor produces incrustation. Values reported are an average of 2 daily grab samples.
Turbidity 1 (NTU)	1.0		92	Jul-Sep	0.06	0.11	0.08	Turbidity (cloudiness) of water is an indication of the presence of particles in the water. If excessive, it may interfere with proper disinfection. Values reported are an average of the 24 daily grab samples.
Aluminum (mg/L)		100	90	Jul-Sep	39	114	72	Aluminum found in coagulant treated water is due to the presence of aluminum left over from use of the coagulant. Optimization of treatment should be applied to reduce this "residual" aluminium to under the operational guideline of 100 mg/L. Medical studies have not provided clear evidence that residual aluminium has any effect on health. Values reported are an average of one grab sample per plant when in operation.
Temperature (Celsius)		15	92	Jul-Sep	15.9	24.8	21.5	An aesthetic objective is set for maximum water temperature to aid in selection of the best water source or the best placement for a water intake. It is desirable that the temperature of drinking water should not exceed 15°C because the palatability of water is enhanced by its coolness. Values reported are an hourly average of raw water temperature.

**Inorganic Parameters**

(Required Testing Under O. Reg. 170/03 - Schedule 23):

Schedule 23 - Inorganic Parameters	MAC or IMAC	Objective AO/OG	O. Reg. 170/03 Required Frequency of Testing (months)	2008	2009			Reportable Detection Limit	Comments
				Q4	Q1	Q2	Q3		
1	Antimony	0.006	12	0.00019	0.00019	0.0001	0.00034	0.00002	
2	Arsenic	0.025	12	0.0006	0.0012	0.0006	0.0006	0.0002	
3	Barium	1	12	0.0167	0.0168	0.0166	0.0144	0.00001	
4	Boron	5	12	0.0181	0.0302	0.0205	0.0147	0.0002	
5	Cadmium	0.005	12	<0.000003	0.00001	0.000041	0.000003	0.000003	
6	Chromium	0.05	12	0.0009	0.0006	0.0006	0.0008	0.0005	
7	Mercury	0.001	12	<0.00002	<0.00002	<0.00002	<0.00002	0.00002	
8	Selenium	0.01	12	<0.001	<0.001	<0.001	<0.001	0.001	
9	Uranium	0.1	12	0.000113	0.00029	0.000524	0.000120	0.000001	

# Organic Parameters

(Required Testing Under O. Reg. 170/03 - Schedule 23):

Schedule 24 - Organic Parameters		MAC OR IMAC	Objective AO/OG	O. Reg. 170/03 Required Frequency of Testing (months)	2008	2009			Reportable Detection Limit	Comments
					Q4	Q1	Q2	Q3		
1	Alachlor	0.005		12	<0.00011	<0.00011	<0.00011	<0.00011	0.00011	
2	Aldicarb	0.009		12	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	
	Aldrin	0.0007		NR <sup>6</sup>	<0.00006	<0.00006	<0.00006	<0.00006	0.00006	
3	Aldrin + Dieldrin	0.0007		12	<0.000067	<0.000067	<0.000067	<0.000067	0.000067	
4	Atrazine + N-dealkylated metabolites	0.005		12	<0.00012	<0.00012	<0.00012	<0.00012	0.00012	
5	Azinphos-methyl	0.02		12	<0.00021	<0.00021	<0.00021	<0.00021	0.00021	
6	Bendiocarb	0.04		12	<0.00013	<0.00013	<0.00013	<0.00013	0.00013	
7	Benzene	0.005		12	<0.00037	<0.00037	<0.00032	<0.00032	0.00037	
8	Benzo(a)pyrene	0.00001		12	<0.000004	<0.000004	<0.000004	<0.000004	0.000004	
9	Bromoxynil	0.005		12	<0.00033	<0.00033	<0.00033	<0.00033	0.00033	
10	Carbaryl	0.09		12	<0.00016	<0.00016	<0.00016	<0.00016	0.00016	
11	Carbofuran	0.09		12	<0.00037	<0.00037	<0.00037	<0.00037	0.00037	
12	Carbon Tetrachloride	0.005		12	<0.00041	<0.00041	<0.00016	<0.00016	0.00041	
13	Chlordane (total)	0.007		12	<0.00011	<0.00011	<0.00011	<0.00011	0.00011	
14	Chlorpyrifos	0.09		12	<0.00018	<0.00018	<0.00018	<0.00018	0.00018	
15	Cyanazine	0.01		12	<0.00018	<0.00018	<0.00018	<0.00018	0.00018	
16	Diazinon	0.02		12	<0.000081	<0.000081	<0.000081	<0.000081	0.000081	
17	Dicamba	0.12		12	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	
18	1,2-Dichlorobenzene	0.2		12	<0.0005	<0.0005	<0.00041	<0.00041	0.0005	

Schedule 24 - Organic Parameters		MAC OR IMAC	Objective AO/OG	O. Reg. 170/03 Required Frequency of Testing (months)	2008	2009			Reportable Detection Limit	Comments
					Q4	Q1	Q2	Q3		
19	1,4-Dichlorobenzene	0.005		12	<0.00021	<0.00021	<0.00036	<0.00036	0.00021	
20	Dichlorodiphenyltrichloroethane (DDT) + metabolites	0.03		12	<0.00014	<0.00014	<0.00014	<0.00014	0.00014	
21	1,2-Dichloroethane	0.005		12	<0.00043	<0.00043	<0.00035	<0.00035	0.00043	
22	1,1-Dichloroethylene (vinylidene chloride)	0.014		12	<0.00041	<0.00041	<0.00033	<0.00033	0.00041	
23	Dichloromethane	0.05		12	<0.00034	<0.00034	<0.00035	<0.00035	0.00034	
24	2,4-Dichlorophenol	0.9		12	<0.00015	<0.00015	<0.00015	<0.00015	0.00015	
25	2,4-Dichlorophenoxy acetic acid (2,4-D)	0.1		12	<0.00019	<0.00019	<0.00019	<0.00019	0.00019	
26	Diclofop-methyl	0.009		12	<0.00040	<0.00040	<0.0004	<0.0004	0.0004	
	Dieldrin	0.0007		NR	<0.000067	<0.000067	<0.000067	<0.000067	0.000067	
27	Dimethoate	0.02		12	<0.00012	<0.00012	<0.00012	<0.00012	0.00012	
28	Dinoseb	0.01		12	<0.00036	<0.00036	<0.00036	<0.00036	0.00036	
29	Diquat	0.07		12	<0.001	<0.001	<0.001	<0.001	0.001	
30	Diuron	0.15		12	<0.000087	<0.000087	<0.000087	<0.000087	0.000087	
31	Glyphosate	0.28		12	<0.006	<0.006	<0.006	<0.006	0.006	
32	Heptachlor + Heptachlor Epoxide	0.003		12	<0.00011	<0.00011	<0.00011	<0.00011	0.00011	
33	Lindane (Total)	0.004		12	<0.000056	<0.000056	<0.000056	<0.000056	0.000056	
34	Malathion	0.19		12	<0.000091	<0.000091	<0.000091	<0.000091	0.000091	
35	Methoxychlor	0.9		12	<0.00014	<0.00014	<0.00014	<0.00014	0.00014	
36	Metolachlor	0.05		12	<0.000092	<0.000092	<0.000092	<0.000092	0.000092	
37	Metribuzin	0.08		12	<0.00012	<0.00012	<0.00012	<0.00012	0.00012	

Schedule 24 - Organic Parameters		MAC OR IMAC	Objective AO/OG	O. Reg. 170/03 Required Frequency of Testing (months)	2008	2009			Reportable Detection Limit	Comments
					Q4	Q1	Q2	Q3		
38	Monochlorobenzene	0.08		12	<0.00058	<0.00058	<0.0003	<0.0003	0.00058	
39	Paraquat	0.01		12	<0.001	<0.001	<0.001	<0.001	0.001	
40	Parathion	0.05		12	<0.00018	<0.00018	<0.00018	<0.00018	0.00018	
41	Pentachlorophenol	0.06		12	<0.00015	<0.00015	<0.00015	<0.00015	0.00015	
42	Phorate	0.002		12	<0.00011	<0.00011	<0.00011	<0.00011	0.00011	
43	Picloram	0.19		12	<0.00025	<0.00025	<0.00025	<0.00025	0.00025	
44	Polychlorinated Biphenyls (PCB)	0.003		12	<0.00004	<0.00004	<0.00004	<0.00004	0.00004	
45	Prometryne	0.001		12	<0.00023	<0.00023	<0.00023	<0.00023	0.00023	
46	Simazine	0.01		12	<0.00015	<0.00015	<0.00015	<0.00015	0.00015	
47	Temephos	0.28		12	<0.00031	<0.00031	<0.00031	<0.00031	0.00031	
48	Terbufos	0.001		12	<0.00012	<0.00012	<0.00012	<0.00012	0.00012	
49	Tetrachloroethylene (perchloroethylene)	0.03		12	<0.00045	<0.00045	<0.00035	<0.00035	0.00045	
50	2,3,4,6-Tetrachlorophenol	0.1		12	<0.00014	<0.00014	<0.00014	<0.00014	0.00014	
51	Triallate	0.23		12	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	
52	Trichloroethylene	0.05		12	<0.00038	<0.00038	<0.00043	<0.00043	0.00038	
53	2,4,6-Trichlorophenol	0.005		12	<0.00025	<0.00025	<0.00025	<0.00025	0.00025	
54	2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	0.28		12	<0.00022	<0.00022	<0.00022	<0.00022	0.00022	
55	Trifluralin	0.045		12	<0.00012	<0.00012	<0.00012	<0.00012	0.00012	
56	Vinyl Chloride	0.002		12	<0.00017	<0.00017	<0.00017	<0.00017	0.00017	

## General Chemistry and Physical Parameters

General Chemistry and Physical Parameters		MAC OR IMAC	Objective AO/OG	O. Reg. 170/03 Required Frequency of Testing (months)	2008	2009			Reportable Detection Limit	Comments
					Q4	Q1	Q2	Q3		
1	Alkalinity		30 - 500	NR	85	89	86	83	5	Alkalinity is a measure of the resistance of the water to the effects of acids added to water. Alkalinity over 30 mg/L assists in floc formation during the coagulation process. In some circumstances chemicals must be added to boost alkalinity before addition of a coagulant.
2	Fluoride	1.5		60	0.66	0.65	0.65	0.64		Where fluoride is added to drinking water, it is recommended that the concentration be adjusted to 0.5 – 0.8 mg/L, the optimum level for control of tooth decay.
3	Geosmin			NR	ND	NT	ND	2.0	2.0	Indicator of test and odour problems. Threshold for detection is between 6 and 10 parts per trillion.
4	MIB			NR	ND	NT	ND	ND	2.0	Indicator of test and odour problems. Threshold for detection is between 6 and 10 parts per trillion.
5	Hardness (mg/L as CaCO <sub>3</sub> )		80-100	NR	108	120	109	101	0	The operational guideline for hardness in drinking water is set at between 80 and 100 mg/L as calcium carbonate. This value is set to aid in water source selection where a choice exists. Hardness is caused by dissolved calcium and magnesium, and is expressed as the equivalent quantity of calcium carbonate.
6	Lead	0.01		12	<0.00002	0.00022	0.00005	0.00005	0.00002	This standard applies to water that we deliver up to the property line. Since lead is a component in some plumbing systems, first flush water may contain higher concentrations of lead than water that has been flushed for five minutes.
7	Nitrate	10.0 <sup>3</sup>		3	0.339	1.500	1.800	0.255	0.013	The maximum acceptable concentration of nitrates in drinking water is 10 mg/L as nitrogen. Nitrates are present in water (particularly ground water) as a result of decay of plant or animal material, the use of agricultural fertilizers, domestic sewage or treated wastewater contamination. Where both nitrate and nitrite are present, the total nitrate plus nitrite-nitrogen concentration should not exceed 10 mg/L.
8	Nitrite	1.0 <sup>3</sup>		3	<0.005	<0.005	<0.005	<0.005	0.005	The maximum acceptable concentration of nitrite in drinking water is 1.0 mg/L as nitrogen.

General Chemistry and Physical Parameters		MAC OR IMAC	Objective AO/OG	O. Reg. 170/03 Required Frequency of Testing (months)	2008	2009			Reportable Detection Limit	Comments
					Q4	Q1	Q2	Q3		
9	Sodium		200	60	NT	7.87	NT	NT	0.5	The aesthetic objective for sodium in drinking water is 200 mg/L at which it can be detected by a salty taste. Sodium is not toxic. Consumption of sodium in excess of 10 grams per day by normal adults does not result in any apparent adverse health effects.
10	Trihalomethanes	0.100		3	0.015	0.0065	0.0084	0.011	0.00048	The standard is expressed as a running annual average of quarterly samples measured at a point reflecting the maximum residence time in the distribution system. Running annual average: 0.0102 mg/L

### Discussion of Analytical Results:

\* Indicator of adverse water quality

<sup>1</sup> In addition to the analytical samples noted above, chlorine residual and turbidity is measured on a continuous basis at the treatment facility using on-line instrumentation equipment.

<sup>2</sup> The MAC for free chlorine is 4.0 mg/L under the ODWQS, but an Aesthetic Objective range of 0.2 to 1.0 mg/L of chlorine residual is prescribed as an operational parameter within the distribution system.

<sup>3</sup> Where both nitrate and nitrite are present, the total of the two should not exceed 10 mg/L (as nitrogen)

<sup>4</sup> Organic nitrogen is calculated by subtracting Total Ammonia from Total Kjeldahl Nitrogen

<sup>5</sup> NT - Not Tested during this quarter

<sup>6</sup> NR - Not Required