



**Leith**

**Water Distribution System**

**Summary Report**

**2019**



# 2019 Summary report

## Safe Drinking Water Act

Following the Walkerton tragedy in 2000, the Ontario Government developed a new, comprehensive legislative paradigm based on a source to tap, multi-barrier approach to the protection of drinking water. The Safe Drinking Water Act (SDWA), 2002, and its Regulations, contain requirements for Municipalities that provide potable water to their residents.

Under Section 19 Standard of Care of the SDWA, owners of a Drinking Water System are required to:

- a) Exercise the level of care, diligence and skill in respect of a Municipal Drinking Water System that a reasonable prudent person would be expected to exercise in a similar situation; and
  - b) Act honestly, competently and with integrity, with a view to ensuring the protection and safety of the users of the Municipal Drinking Water System.
- 2002, c.32, s. 19(1)

## Summary Report

Schedule 22 of Ontario Regulation 170/03 requires, for Large Municipal Residential Systems, that a Summary Report be prepared for distribution to Council by March 31, 2019 for the period from January 1 to December 31, 2018.

This regulation also requires the owner produce a Summary Report that includes the following:

- The requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water license, and any orders applicable to the system that were not met at any time during the period covered by the report and specify the duration of the failure and describe the measures taken to correct the situation.

- A summary of quantities and flow rates of the water supplied during the period covered by the report including monthly average and maximum daily flows
- The summary report must be presented and accepted by Council by March 31<sup>st</sup> of each year.

A hard copy of the Annual and Summary reports will be made available free of charge at the Meaford Water Plant after March 31<sup>st</sup> 2019. It will also be available for viewing on the Municipal website [www.meaford.ca](http://www.meaford.ca).

## System Information – Leith Distribution System

Municipal Drinking Water Licence –089-102

Municipal Drinking Water Permit – 089-202

Permit to Take Water – N/A – Water received from Owen Sound

Financial Plan – 089-302

Accredited Operational Plan – 089-402

## 2019 Leith Distribution Flow Summary

	Date mm/dd/yyyy	Previous Read m3	Current Read m3	Metered Consumption m3	Billing Days	Avg per Day Consumption m3	Actual \$ per m3	Consumption \$
Start	1/9/2019		73176					
Actual	4/4/2019	73176	77047	3871	85	45.5	\$3.11	\$12,056.24
Actual	7/3/2019	77047	81251	4204	90	46.7	\$3.12	\$13,103.20
Actual	10/1/2019	81251	85742	4491	90	49.9	\$3.12	\$14,005.52
End	1/9/2020	84742	89667	4925	100	49.3	\$2.48	\$12,226.02
				<b>17,491</b>	<b>365</b>	<b>47.9</b>	<b>\$2.96</b>	<b>\$51,390.98</b>
				Annual Consumption	Total Billing Days	Annual Avg	Annual Avg	Annual Cost

# Leith 2019 Water Inventory

Owen Sound <u>Metered</u>	Leith <u>Metered</u>	Metered <u>Difference</u>
17491	14042	3449

1754 m3

Flushing

262.8 m3

Analyzer ReCl2 station(runs at  
500ml/min approx.)

**2016.6 m3**

**Total**

**Difference- Total**

1432

1432     **8.19%**  
17491

## DISTRIBUTION SYSTEM CHLORINE RESIDUALS (LEITH)

Date	Free Chlorine Residual	Flow
<b>January</b>	(mg/L)	<b>m3</b>
<b>2019</b>		
1	1.04	50
2	1.08	45
3	1.21	43
4	1.15	42
5	0.94	50
6	1.25	51
7	1.18	41
8	1.18	41
9	1.28	40
10	1.00	42
11	1.08	40
12	1.23	47
13	1.14	51
14	1.05	41
15	1.13	49
16	1.18	40
17	0.75	39
18	0.92	45
19	1.23	53
20	1.23	245
21	1.12	42
22	1.26	41
23	1.15	40
24	1.07	40
25	1.08	39
26	1.23	45
27	1.20	45
28	1.13	39
29	1.31	41
30	1.26	40
31	1.18	40
<b>Total</b>		<b>1545</b>
<b>Average</b>	<b>1.14</b>	<b>50</b>
<b>MIN</b>	<b>0.75</b>	<b>39</b>
<b>MAX</b>	<b>1.31</b>	<b>245</b>

Date	Free Chlorine Residual	Flow
<b>February</b>	(mg/L)	<b>m3</b>
<b>2019</b>		
1	1.18	36
2	1.21	44
3	1.05	47
4	1.15	36
5	1.10	41
6	1.01	40
7	1.03	38
8	1.25	36
9	1.03	47
10	1.10	51
11	0.95	39
12	1.01	36
13	1.16	39
14	1.14	40
15	1.02	40
16	0.60	50
17	1.03	54
18	1.00	46
19	1.12	39
20	1.13	39
21	1.15	41
22	0.81	41
23	1.15	50
24	1.01	48
25	0.86	38
26	1.05	38
27	1.01	38
28	0.99	40
<b>Total</b>		<b>1172</b>
<b>Average</b>	<b>1.05</b>	<b>42</b>
<b>MIN</b>	<b>0.60</b>	<b>36</b>
<b>MAX</b>	<b>1.25</b>	<b>54</b>

## DISTRIBUTION SYSTEM CHLORINE RESIDUALS (LEITH)

Date	Free Chlorine Residual	Flow
<b>March</b>	(mg/L)	<b>m3</b>
<b>2019</b>		
1	0.88	<b>38</b>
2	1.27	53
3	1.02	48
4	1.13	37
5	1.04	39
6	1.15	36
7	1.04	42
8	0.96	43
9	1.13	46
10	1.13	48
11	1.04	50
12	1.25	45
13	1.18	43
14	1.18	43
15	1.03	43
16	1.14	48
17	1.07	51
18	1.38	52
19	1.15	46
20	1.13	45
21	1.04	41
22	0.81	39
23	0.81	47
24	1.00	49
25	0.96	47
26	1.02	42
27	1.03	43
28	1.16	41
29	1.18	42
30	1.05	44
31	1.13	48
<b>Total</b>		<b>1379</b>
<b>Average</b>	<b>1.08</b>	<b>44</b>
<b>MIN</b>	<b>0.81</b>	<b>36</b>
<b>MAX</b>	<b>1.38</b>	<b>53</b>

Date	Free Chlorine Residual	Flow
<b>April</b>	(mg/L)	<b>m3</b>
<b>2019</b>		
1	1.22	49
2	1.33	43
3	1.06	39
4	1.10	38
5	1.07	38
6	1.12	48
7	1.12	50
8	1.32	47
9	1.05	38
10	1.03	39
11	1.08	36
12	1.05	35
13	1.11	45
14	1.05	46
15	0.98	44
16	1.15	25
17	1.10	26
18	1.15	43
19	1.19	49
20	1.23	49
21	1.27	61
22	1.39	46
23	1.01	44
24	0.96	42
25	0.90	42
26	0.70	41
27	0.88	46
28	1.00	47
29	0.93	43
30	0.99	43
<b>Total</b>		<b>1282</b>
<b>Average</b>	<b>1.08</b>	<b>43</b>
<b>MIN</b>	<b>0.70</b>	<b>25</b>
<b>MAX</b>	<b>1.39</b>	<b>61</b>

## DISTRIBUTION SYSTEM CHLORINE RESIDUALS (LEITH)

Date	Free Chlorine Residual (mg/L)	Flow m3
<b>May</b>		
<b>2019</b>		
1	0.99	45
2	1.03	44
3	0.73	40
4	0.83	51
5	0.95	51
6	1.02	43
7	1.06	43
8	0.98	49
9	0.90	42
10	1.03	43
11	1.09	51
12	1.20	46
13	1.13	43
14	1.20	48
15	1.18	46
16	1.13	50
17	1.13	52
18	1.13	66
19	1.10	58
20	1.31	54
21	1.10	47
22	1.25	41
23	1.13	41
24	1.11	46
25	1.42	70
26	1.47	67
27	1.35	46
28	1.65	45
29	1.71	42
30	1.40	42
31	1.57	45
<b>Total</b>		<b>1497</b>
<b>Average</b>	<b>1.17</b>	<b>49</b>
<b>MIN</b>	<b>0.73</b>	<b>40</b>
<b>MAX</b>	<b>1.71</b>	<b>70</b>

Date	Free Chlorine Residual (mg/L)	Flow m3
<b>June</b>		
<b>2019</b>		
1	1.62	47
2	1.64	59
3	1.30	48
4	1.25	44
5	1.28	56
6	1.30	56
7	1.30	47
8	1.27	57
9	1.25	62
10	1.37	48
11	1.40	49
12	1.29	47
13	1.23	45
14	1.35	50
15	1.37	52
16	1.27	55
17	1.33	52
18	1.27	48
19	1.22	48
20	1.28	45
21	1.31	50
22	1.27	58
23	1.18	57
24	1.33	52
25	1.29	57
26	1.36	56
27	1.43	57
28	1.38	58
29	1.35	71
30	1.35	77
<b>Total</b>		<b>1608</b>
<b>Average</b>	<b>1.33</b>	<b>53</b>
<b>MIN</b>	<b>1.18</b>	<b>44</b>
<b>MAX</b>	<b>1.64</b>	<b>71</b>



## DISTRIBUTION SYSTEM CHLORINE RESIDUALS (LEITH)

Date	Free Chlorine Residual (mg/L)	Flow (m3)
<b>July 2019</b>		
1	1.40	68
2	1.42	56
3	1.20	56
4	1.35	58
5	1.33	62
6	1.36	65
7	1.32	69
8	1.25	56
9	1.29	57
10	1.36	58
11	1.52	74
12	1.27	61
13	1.25	70
14	1.29	97
15	1.30	57
16	1.35	55
17	1.25	58
18	1.41	55
19	1.03	58
20	1.15	58
21	1.10	70
22	1.31	46
23	1.35	58
24	1.32	53
25	1.41	60
26	1.38	69
27	1.25	57
28	1.26	59
29	1.21	49
30	1.27	41
31	1.32	43
<b>Total</b>		<b>1853</b>
<b>Average</b>	<b>1.30</b>	<b>61</b>
<b>MIN</b>	<b>1.03</b>	<b>46</b>
<b>MAX</b>	<b>1.52</b>	<b>97</b>

Date	Free Chlorine Residual (mg/L)	Flow (m3)
<b>August 2019</b>		
1	1.18	49
2	1.27	58
3	1.25	59
4	1.10	58
5	1.08	61
6	1.42	42
7	1.25	42
8	1.18	42
9	1.27	51
10	1.30	65
11	1.24	67
12	1.20	46
13	1.32	50
14	1.51	56
15	1.37	43
16	1.45	61
17	1.10	60
18	1.20	60
19	1.21	49
20	1.13	43
21	1.23	39
22	1.13	40
23	1.09	43
24	1.10	52
25	1.08	57
26	1.13	52
27	1.20	44
28	1.11	51
29	1.07	43
30	1.13	45
31	1.08	58
<b>Total</b>		<b>1586</b>
<b>Average</b>	<b>1.21</b>	<b>51</b>
<b>MIN</b>	<b>1.07</b>	<b>39</b>
<b>MAX</b>	<b>1.51</b>	<b>67</b>

## DISTRIBUTION SYSTEM CHLORINE RESIDUALS (LEITH)

Date	Free Chlorine Residual (mg/L)	Flow (m3)
<b>September 2019</b>		
1	0.93	56
2	1.08	70
3	1.10	56
4	1.13	53
5	1.16	42
6	1.11	40
7	1.20	47
8	1.10	52
9	1.15	
10	1.15	
11	1.14	
12	1.05	26
13	1.05	27
14	1.03	29
15	1.05	28
16	1.17	21
17	1.25	21
18	1.22	24
19	1.22	24
20	1.20	21
21	1.09	26
22	1.05	25
23	1.06	24
24	1.22	24
25	1.08	23
26	1.11	22
27	1.15	22
28	1.18	26
29	1.07	29
30	1.20	24
<b>Total</b>		<b>882</b>
<b>Average</b>	<b>1.12</b>	<b>33</b>
<b>MIN</b>	<b>0.93</b>	<b>21</b>
<b>MAX</b>	<b>1.25</b>	<b>70</b>

Date	Free Chlorine Residual (mg/L)	Flow (m3)
<b>October 2019</b>		
1	1.20	24
2	1.09	24
3	1.13	24
4	1.40	23
5	1.44	26
6	1.55	28
7	1.23	30
8	1.26	27
9	1.17	29
10	1.23	32
11	1.30	29
12	1.13	33
13	1.15	37
14	1.27	36
15	1.13	29
16	1.11	28
17	1.20	29
18	1.29	29
19	1.20	38
20	1.25	39
21	1.40	32
22	1.27	28
23	1.09	29
24	1.27	27
25	1.36	28
26	1.28	36
27	1.16	35
28	1.32	32
29	1.27	33
30	1.18	28
31	1.32	39
<b>Total</b>		<b>941</b>
<b>Average</b>	<b>1.25</b>	<b>30</b>
<b>MIN</b>	<b>1.09</b>	<b>23</b>
<b>MAX</b>	<b>1.55</b>	<b>39</b>

## DISTRIBUTION SYSTEM CHLORINE RESIDUALS (LEITH)

Date	Free Chlorine Residual (mg/L)	Flow (m3)
<b>November 2019</b>		
1	1.29	54
2	1.22	35
3	1.25	37
4	1.22	30
5	1.09	29
6	1.13	29
7	1.08	34
8	0.98	29
9	1.03	39
10	1.01	40
11	0.96	33
12	0.80	31
13	1.11	31
14	1.05	32
15	1.06	31
16	0.74	33
17	1.06	35
18	1.42	29
19	1.44	31
20	1.43	31
21	1.22	29
22	1.08	30
23	1.16	37
24	1.14	40
25	1.14	33
26	1.31	32
27	1.16	30
28	1.12	31
29	1.13	30
30	1.07	35
<b>Total</b>		<b>1000</b>
<b>Average</b>	<b>1.13</b>	<b>33</b>
<b>MIN</b>	<b>0.74</b>	<b>29</b>
<b>MAX</b>	<b>1.44</b>	<b>54</b>

Date	Free Chlorine Residual (mg/L)	Flow (m3)
<b>December 2019</b>		
1	1.10	34
2	0.93	30
3	1.14	30
4	1.13	27
5	1.07	29
6	0.93	30
7	1.02	33
8	1.02	37
9	1.28	29
10	1.16	31
11	1.23	31
12	1.30	31
13	1.34	33
14	1.18	35
15	1.26	40
16	1.32	36
17	1.13	33
18	1.18	32
19	0.79	33
20	1.22	34
21	1.16	41
22	1.14	50
23	1.19	47
24	1.14	50
25	1.27	51
26	1.18	43
27	1.22	37
28	1.35	42
29	1.36	45
30	1.29	41
31	1.22	41
<b>Total</b>		<b>1136</b>
<b>Average</b>	<b>1.17</b>	<b>36</b>
<b>MIN</b>	<b>0.79</b>	<b>27</b>
<b>MAX</b>	<b>1.36</b>	<b>51</b>

Annual Summary-Distribution Bacteriological Data

WATER WORKS NAME: Leith Water Distribution  
 YEAR 2019  
 SERVICE POPULATION 382.8  
 LABORATORIES WHICH PERFORMED ANALYSES SGS Laboratory

MONTH	TOTAL COLIFORM			ESCHERICHIA COLI. (E. Coli)			H.P.C.			
	# of samples collected	# of samples safe	# of samples unsafe	# of samples collected	# of samples safe	# of samples unsafe	# of samples collected	# of samples safe	# of samples unsafe	Max
JAN.	14	14	0	14	14	0	6	6	0	20
FEB.	9	9	0	9	9	0	4	4	0	<10
MAR.	9	9	0	9	9	0	4	4	0	<10
APR.	11	11	0	11	11	0	5	5	0	<10
MAY	9	9	0	9	9	0	4	4	0	<10
JUN.	9	9	0	9	9	0	4	4	0	<10
JUL.	11	11	0	11	11	0	5	5	0	110
AUG.	9	9	0	9	9	0	4	4	0	<10
SEPT.	9	9	0	9	9	0	4	4	0	30
OCT.	9	9	0	9	9	0	4	4	0	<10
NOV.	9	9	0	9	9	0	4	4	0	<10
DEC.	9	9	0	9	9	0	4	4	0	<10
<b>TOTAL</b>	<b>117</b>	<b>117</b>	<b>0</b>	<b>117</b>	<b>117</b>	<b>0</b>	<b>52</b>	<b>52</b>	<b>0</b>	110

Indicators of adverse water quality

If any of the following conditions exist, the drinking water is judged unsafe:

1. Eschericia coli and/or fecal coliforms are detected in any required sample other than raw water sample.
2. Total coliforms are detected in any required sample other than raw water sample.
3. Unchlorinated water is directed to the distribution system, where chlorination is used or required.

HPC % of Total Samples

**44 %**

This includes water in the distribution system, which has less than 0.05 mg/l of free chlorine residual when tested.

If the water containing indicators of unsafe water quality for any of the reasons listed above, the laboratory will immediately notify the M.O.E. District Officer, M.O.E. Spills Action Centre, the local Medical Officer of Health and the owner / operator to initiate collection of special samples and or corrective action. In addition the owner / operator must notify the M.O.E. Spills Action Centre and the local Medical Officer of Health when they become aware of an adverse water quality condition.

Annual Summary- THM's, Lead

WATER WORKS NAME: Leith Water Distribution  
 YEAR 2019  
 SERVICE POPULATION 382.8  
 LABORATORIES WHICH PERFORMED ANALYSES SGS Laboratory

MONTH		DISTRIBUTION WATER Trihalomethanes (THM's)		Lead		Alkalinity		pH		HAA's (ug/L)	
	NO. OF SAMPLES COLLECTED	THM's (ug/L)									
JAN.											
FEB.	1	34									25.3
MAR.	1		0.12		86			8.03			
APR.											
MAY	1	30									29.5
JUN.											
JUL.											
AUG.	1	48									20.9
SEPT.	2		0.13	0.35	66	66		7.46	7.57		
OCT.											
NOV.	1	44									19.2
DEC.											
RAA		39.0									23.7
MAC		100									100

MAC = Maximum Acceptable Concentration