



SECTION 11 ANNUAL REPORT

Drinking-Water System Number:	260091936
Drinking-Water System Name:	Lutterworth Pines DWS
Drinking-Water System Owner:	Township of Minden Hills
Drinking-Water System Category:	Small Municipal Residential
Period being reported:	January 1, 2016 – December 31, 2016

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [X]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [ x ] No [ ]</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>7 Milne Street Minden, Ontario K0M 2K0</p> </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p>Number of Designated Facilities served: <input style="width: 50px; text-align: center;" type="text" value="0"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [X]</p> <p>Number of Interested Authorities you report to: <input style="width: 50px; text-align: center;" type="text" value="0"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [X]</p>
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List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
Not Applicable	

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Yes [ ] No [X]



Indicate how you notified system users that your annual report is available, and is free of charge.

- Public access/notice via the web
- Public access/notice via Government Office
- Public access/notice via a newspaper
- Public access/notice via Public Request
- Public access/notice via a Public Library
- Public access/notice via other method

**Description of the Drinking-Water System**

The Lutterworth Well Supply includes 2 groundwater wells providing duty/standby capability. Three 450L pressure tanks are located on the distribution header and provide a minimum pump cycle time of 4 minutes. Uranium removal is accomplished with the use of one Kinetico media vessel using ion exchange technology along with a 20um cartridge filter upstream of the ion exchange vessel. Disinfection is accomplished using 12% undiluted sodium hypochlorite injected in the common well pump discharge header just upstream of 4 - 452L chlorine contact tanks. A continuous on-line free chlorine residual analyzer is located downstream of the chlorine contact tanks. Magnetic flow meters are located on each well pump discharge line and on the distribution header. There is a emergency standby diesel generator on site.

**List all water treatment chemicals used over this reporting period**

Sodium Hypochlorite

**Were any significant expenses incurred to?**

- Install required equipment
- Repair required equipment
- Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

Uranium filter system replaced.

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
19-Dec-2016	Chlorine - TW	0.30	mg/L	Increased chlorine dose, fixed fitting on injector, sampled chlorine in distribution and collected bacti sample. Based on flow CT was met.	22-Dec-2016

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

Location	Number of Samples	Range of E.Coli or Fecal Results (min) - (max)	Range of Total Coliform Results (min) - (max)	Number of HPC Samples	Range of HPC Results (min) - (max)
Raw - RW1	12	0 - 0	0 - 0	-	-
Raw - RW2	12	0 - 0	0 - 0	-	-
Distribution - DW	27	0 - 0	0 - 0	27	0 - 25

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min)-(max)
Turbidity – Raw 1	12	0.08 - 0.24 NTU
Turbidity – Raw 2	12	0.09 - 0.29 NTU
Chlorine (free) – Treated Water	8760	0.00 - 5.00
Chlorine (free) - Distribution	2/week minimum	0.96 – 1.99
Fluoride (If the DWS provides fluoridation)	N/A	N/A

*NOTE: For continuous monitors use 8760 as the number of samples.*

**NOTE:** Record the unit of measure if it is **not** milligrams per litre.

**Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.**

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
04 August 2016 – MDWL 246-102	Uranium	Quarterly (sampled monthly)	<0.002 – 3.14 Treated Water Uranium Results 2016 attached	ug/L
Reg. 170/03, SDWA 2002	Alkalinity	2016/04/11 2016/09/20	176 165	mg/L mg/L

**Summary of Inorganic parameters tested during this reporting period or the most recent sample results**

Parameter	Sample Date	Result Value	Exceedance
See attached Summary – Schedule 23 and Additional Inorganics	2015/01/13 2016 (quarterly nitrite & nitrate) 2015/01/13 F	See attached Summary – Schedule 23 and Additional Inorganics	No
Sodium	2015/01/13 2015/01/16	22.7mg/L 31.3mg/L	Yes

**Summary of lead testing under Schedule 15.1 during this reporting period**

(applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

Location Type	Number of Samples	Range of Lead Results (min) – (max)	Number of Exceedances
Distribution	2	0.14 – 0.58	0

**Summary of Organic parameters sampled during this reporting period or the most recent sample results**

Parameter	Sample Date	Result Value	Exceedance
See attached Summary – Schedule 24	2015/01/13	See attached Summary – Schedule 24	No
THM - (ug/L)	2016 quarterly	Range 6.4 – 14.0 Running average 9	No

**List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.**

Parameter	Result Value	Unit of Measure	Date of Sample
None			



The Ontario Clean Water Agency aims to strictly adhere to operational and compliance limits, however certain operational circumstances may cause results to be temporarily outside of the limits. Limits that are momentarily surpassed as a result of pump start-ups, power outages/generator tests, pump rotation, calibrations, alarm verification, etc are a normal part of operations and do not indicate a true exceedance. A true exceedance will be noted and documented within the report.

**Attachments**

Ontario Clean Water Agency  
Performance Assessment Report Water

From: 01/01/2016 to 31/12/2016

Facility: [5999] LUTTERWORTH PINES DRINKING WATER SYSTEM

	01/2016	02/2016	03/2016	04/2016	05/2016	06/2016	07/2016	08/2016	09/2016	10/2016	11/2016	12/2016	<--Total-->	<--Avg-->	<--Max-->	<--Min-->	<--Criteria-->
<b>Flows:</b>																	
Raw Flow: Monthly Total - RW1 (m³)	176.00	256.00	214.43	207.55	223.60	262.25	259.15	244.40	187.00	180.00	138.18	100.64	2,449.20				
Raw Flow: Monthly Total - RW2 (m³)	149.00	79.00	189.46	156.75	212.03	242.32	258.70	240.05	148.00	124.00	226.05	267.53	2,292.89				
Raw Flow: Monthly Avg - RW1 (m³/d)	5.68	11.13	6.92	6.92	7.21	8.74	8.36	7.88	6.23	5.81	4.61	3.25		6.89			
Raw Flow: Monthly Avg - RW2 (m³/d)	4.81	3.43	6.11	5.23	6.84	8.08	8.35	7.74	4.93	4.00	7.53	8.63		6.31			
Raw Flow: Monthly Max - RW1 (m³/d)	14.00	27.00	17.06	13.59	20.92	33.76	22.61	18.23	14.00	11.00	14.04	13.62			33.76		120.40
Raw Flow: Monthly Max - RW2 (m³/d)	17.00	17.00	14.61	14.69	24.58	19.35	23.24	20.67	14.00	12.00	15.50	14.89			24.58		120.40
Treated Flow: Monthly Total - TW (m³)	303.00	333.00	386.26	343.17	407.48	471.66	503.46	472.02	328.00	298.00	335.04	337.36	4,518.45				
Treated Flow: Monthly Avg - TW (m³/d)	9.77	14.48	12.46	11.44	13.14	15.72	16.24	15.23	10.93	9.61	11.17	10.88		12.59			
Treated Flow: Monthly Max - TW (m³/d)	17.00	27.00	16.77	13.93	24.61	34.31	23.21	20.31	14.00	12.00	14.46	13.98			34.31		120.40
<b>Turbidity:</b>																	
Raw: Max Turbidity - RW1 (NTU)	0.18	0.10	0.14	0.13	0.14	0.21	0.08	0.17	0.15	0.13	0.16	0.24			0.24		
Raw: Max Turbidity - RW2 (NTU)	0.09	0.13	0.19	0.15	0.17	0.28	0.24	0.20	0.21	0.19	0.24	0.29			0.29		
<b>Chemical Parameters:</b>																	
Treated: Max Nitrite - TW (mg/L)	< 0.003			< 0.003			< 0.003			< 0.003					< 0.003		1
Treated: Max Nitrate - TW (mg/L)	0.101			0.053			0.061			0.102					0.102		10
Distribution: Max THM - DW (µg/l)	8.1			7.6			6.4			14					14		100
<b>Chlorine Residuals:</b>																	
Treated: Min Free Cl2 Resid - TW (mg/L)	0.60	0.61	0.51	0.98	0.64	0.00	0.69	0.77	0.88	0.77	0.65	0.30					0.00
Treated: Max Free Cl2 Resid - TW (mg/L)	3.39	3.31	2.82	2.48	5.00	3.60	3.82	3.34	3.16	2.81	2.97	3.10			5.00		
Dist: Min Free Cl2 Resid - DW (mg/L)	0.96	1.40	1.23	1.19	1.30	1.29	1.31	1.06	1.17	1.17	1.15	1.24				0.96	0.05
Dist: Max Free Cl2 Resid - DW (mg/L)	1.71	1.82	1.79	1.51	1.62	1.97	1.99	1.79	1.67	1.51	1.54	1.98			1.99		
<b>Bacti Samples Collected:</b>																	
Raw Bacti: # of samples - RW1	1	1	1	1	1	1	1	1	1	1	1	1	12				
Raw Bacti: # of samples - RW2	1	1	1	1	1	1	1	1	1	1	1	1	12				
Dist Bacti: # of samples - DW	2	3	2	2	2	2	2	3	3	2	2	2	27				
Dist Bacti: # of TC exceedances - DW	0	0	0	0	0	0	0	0	0	0	0	0	0				0
Dist Bacti: # of EC exceedances - DW	0	0	0	0	0	0	0	0	0	0	0	0	0				0

**Sched 23 and Additional Inorganics**

Drinking-Water System Number: 260091936  
 Drinking-Water System Name: LUTTERWORTH PINES DRINKING WATER SYSTEM  
 Drinking-Water System Owner: Title Holder: Municipality  
 Drinking-Water System Category: Small Municipal Residential  
 Period being reported: 01/2016 12/2016

**Summary of Inorganic parameters tested during this reporting period or the most recent sample results**

TREATED WATER	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L) - TW	2015/01/13	0.04	6.0	No	No
Arsenic: As (ug/L) - TW	2015/01/13	0.3	25.0	No	No
Barium: Ba (ug/L) - TW	2015/01/13	41.4	1000.0	No	No
Boron: B (ug/L) - TW	2015/01/13	170.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2015/01/13	0.006	5.0	No	No
Chromium: Cr (ug/L) - TW	2015/01/13	< 0.03	50.0	No	No
Mercury: Hg (ug/L) - TW	2015/01/13	0.02	1.0	No	No
Selenium: Se (ug/L) - TW	2015/01/13	< 1.0	10.0	No	No
Uranium: U (ug/L) - TW	2016/12/05	0.898	20.0	No	No
<b>Additional Inorganics</b>					
Fluoride (mg/L) - TW	2015/01/13	0.68	1.5	No	No
Nitrite (mg/L) - TW	2016/01/05	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2016/04/11	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2016/07/19	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2016/10/03	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2016/01/05	0.101	10.0	No	No
Nitrate (mg/L) - TW	2016/04/11	0.053	10.0	No	No
Nitrate (mg/L) - TW	2016/07/19	0.061	10.0	No	No
Nitrate (mg/L) - TW	2016/10/03	0.102	10.0	No	No
Sodium: Na (mg/L) - TW	2015/01/16	31.3	20*	Yes	Yes

\*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

**Schedule 24**

Drinking-Water System Number: 260091936  
 Drinking-Water System Name: LUTTERWORTH PINES DRINKING WATER SYSTEM  
 Drinking-Water System Owner: Title Holder: Municipality  
 Drinking-Water System Category: Small Municipal Residential  
 Period being reported: 01/2016 12/2016

**Summary of Organic parameters sampled during this reporting period or the most recent sample results**

TREATED WATER	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TW	2015/01/13	< 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2015/01/13	< 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2015/01/13	< 0.02	20.00	No	No
Benzene (ug/L) - TW	2015/01/13	< 0.32	5.00	No	No
Benzo(a)pyrene (ug/L) - TW	2015/01/13	< 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2015/01/13	< 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2015/01/13	< 0.01	90.00	No	No
Carbofuran (ug/L) - TW	2015/01/13	< 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2015/01/13	< 0.16	5.00	No	No
Chlorpyrifos (ug/L) - TW	2015/01/13	< 0.02	90.00	No	No
Diazinon (ug/L) - TW	2015/01/13	< 0.02	20.00	No	No
Dicamba (ug/L) - TW	2015/01/13	< 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2015/01/13	< 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2015/01/13	< 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2015/01/13	< 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2015/01/13	< 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2015/01/13	< 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2015/01/13	< 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2015/01/13	< 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2015/01/13	< 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2015/01/13	< 0.03	20.00	No	No
Diquat (ug/L) - TW	2015/01/13	< 1.0	70.00	No	No
Diuron (ug/L) - TW	2015/01/13	< 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2015/01/13	< 1.0	280.00	No	No
Malathion (ug/L) - TW	2015/01/13	< 0.02	190.00	No	No
Metolachlor (ug/L) - TW	2015/01/13	< 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2015/01/13	< 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2015/01/13	< 0.3	80.00	No	No
Paraquat (ug/L) - TW	2015/01/13	< 1.0	10.00	No	No
PCB (ug/L) - TW	2015/01/13	< 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2015/01/13	< 0.15	60.00	No	No
Phorate (ug/L) - TW	2015/01/13	< 0.01	2.00	No	No
Picloram (ug/L) - TW	2015/01/13	< 1.0	190.00	No	No
Prometryne (ug/L) - TW	2015/01/13	< 0.03	1.00	No	No
Simazine (ug/L) - TW	2015/01/13	< 0.01	10.00	No	No
Terbufos (ug/L) - TW	2015/01/13	< 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2015/01/13	< 0.35	30.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2015/01/13	< 0.2	100.00	No	No
Triallate (ug/L) - TW	2015/01/13	< 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2015/01/13	< 0.44	50.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2015/01/13	< 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2015/01/13	< 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2015/01/13	< 0.17	2.00	No	No
DISTRIBUTION WATER					
Trihalomethane: Total (ug/L) Annual Average - DW	2016/01/01	9.025	100.00	No	No



**Ontario Clean Water Agency  
Time Series Info Report**

From: 01/01/2016 to 31/12/2016

**Facility Org Number:** 5999  
**Facility Works Number:** 260091936  
**Facility Name:** LUTTERWORTH PINES DRINKING WATER SYSTEM  
**Facility Owner:** Municipality: Township of Minden Hills  
**Facility Classification:** Limited System  
**Service Population:** 70.0  
**Total Design Capacity:** 120.4 m3/day

	01/2016	02/2016	03/2016	04/2016	05/2016	06/2016	07/2016	08/2016	09/2016	10/2016	11/2016	12/2016	Max	Min
TW / Uranium: U - µg/l														
Count Lab	1	1	1	1	1	1	1	1	1	1	1	1		
Max Lab	0.302	0.488	1.58	3.14	2.42	0.025	0.08	0.015	0.154	< 0.002	0.598	0.898	< 3.14	
Min Lab	0.302	0.488	1.58	3.14	2.42	0.025	0.08	0.015	0.154	< 0.002	0.598	0.898		< 0.002