



February 22, 2010

## **The Lakeshore Water System – 2009 Compliance Summary**

This is a summary of regulatory compliance for the Lakeshore well supply 2009. a complete summary of the flows, sampling results and, chemical use and significant activities is attached.

### **System Description**

The Lakeshore water system is characterized as a “secure ground water” system and is classified as a large municipally owned water system. The plant and its equipment have a daily maximum capacity to deliver 12,000 cubic metres of potable water to the Huron Kinloss Lakeshore community extending from Point Clark in the south to Huronville in the north and the sub system supplying the Courtney/Amberley Beach Rd. subdivision subsystem in Ashfield Colborne Wawanosh.

The water sources are 5 secure deep bed rock wells. Two are located at the Point Clark well house, one at Blairs Grove one at Murdock Glen and one at Huronville South. The well house equipment is SCADA controlled from a central computer in Ripley. Each well house is equipped with well pumps, high lift pumps, iron sequestering, chlorinators, a chlorine contact reservoir and online monitoring.

The well houses, originally constructed in the early 1990’s, were upgraded in 2006 with chlorine contact facilities being added. Improvements to the SCADA system were begun in 2007 and are ongoing.

The production wells were drilled over a period of time. The oldest being well # 1 at Point Clark in 1979, then well # 2 at Blairs Grove in 1982, well # 2at Murdock Glen in 1992, well # 2 at Point Clark in 1994 and well # 2 at Huronville South in 1994. All the production wells were inspected with a video camera in 2006. New well pumps and piping were installed in all the wells in 2006.

The attached distribution system is a combination of PVC and polyethylene water mains. Much of the system has been installed since 1992 and the systematic replacement plan of the older polyethylene pipe begun in that year continues with annual projects scheduled. In addition to the water mains and associated valves and hydrants the distribution system equipment includes a storage facility at Point Clark consisting of a standpipe containing approximately 1500 cubic metres of water. This structure also maintains system pressure for zone 1 of the distribution system. There are three main pressure zones on the Lakeshore system. Zones 2 and 3 have variable speed pumps to provide constant system pressure. All three pressure zones are connected by pressure regulating valves. Should zones 2 and 3 experience a complete pump failure limited system pressure would be maintained throughout the Lakeshore system by the Point Clark standpipe.

## Chemicals Fed

### **Iron Sequestering**

All five of the wells on the Lakeshore system supply water that have iron levels higher than what is considered aesthetically acceptable.

The Lakeshore well houses provide chemically assisted iron sequestering. The product currently used is sodium silicate.

This chemical was fed at the entry to the reservoirs at dosages ranging from 2.5 mg/l to 24.7 mg/l in 2009. The dosage varied depending on the raw water characteristics of the individual well being treated. A full summary of each well's chemical dosage is contained in the attached tables.

### **Disinfectant**

Disinfection was achieved at the Lakeshore well supply through the use of 12% sodium hypochlorite.

This chemical was added prior to the water entering the chlorine contact chambers at dosages high enough to achieve both primary and secondary disinfection objectives.

In 2009 the chlorine dosages ranged from 2.3 mg/l to 3.9 mg/l depending on the demand of the raw water. The free chlorine residual was monitored at the point of entry to the distribution system with a target residual of > 1.00 mg/l and < 1.30 mg/l

## Flows

The Lakeshore water treatment plant has 4 separate permits to take water. These are : Point Clark # 1786-665QUF, Murdock Glen # 7016-6HYKE3, Huronville South # 1166-666NSD, Blairs Grove #93P-0055 which allowed the transfer of 3273, 1814, 3928 and 2621 cubic metres of water per day respectively. These limits were not exceeded in 2009. A full summary of the 2009 flows is attached..

The 4 well houses each have a maximum flow as specified in C of A # 0848-6FKPK2. These are based on the CT calculations for each site and the minimum free chlorine residuals used in those calculations.

The maximum flow allowed by the C of A at Point Clark is 37.9 litres per second, at Blairs Grove 30.3, at Murdock Glen 21.0 and at Huronville 45.5 litres per second.

The limiting factor regarding flow is chlorine contact time in the reservoirs. In order to meet the regulatory CT requirements the maximum allowed flow must correspond with a free chlorine residual of 0.50 mg/l.

The maximum flows through the reservoirs and minimum free chlorine residuals at each well house did not exceed the C of A limitations in 2009 as recorded by the various flow meters and on line chlorine analyzers.

A complete listing of the maximum and average daily flows from the 4 well houses is attached.

### Precautionary Boil Water Notices

There were no precautionary boil water notices issued by the operating authority in 2009 on the Lakeshore system. A number of localized notices were issued on sections of the distribution system during the construction of new mains.

Microbiology analysis of samples collected during the construction related events showed no bacterial contamination.

### Boil Water Advisory

There were no Boil Water Advisories issued by the Grey Bruce MOH on the Lakeshore water system in 2009.



## **Compliance**

There were two incidents of non compliance regarding the water quality in 2009.

The first was a low chlorine residual at the point of entry at the Point Clark well house on May 25. The free chlorine residual dropped to 0.14 mg/l . To achieve the required CT value a residual of 0.50 mg/l is required .

The operator found the chlorine feed line to be broken. She replaced this and boosted the chlorine level in the reservoir by adding sodium hypochlorite directly through the hatch.

The system had not alarmed as the SCADA system was not communicating. A redundant alarm system was installed to prevent a recurrence of this event.

The second non compliance was a high fluoride level found in the treated water. The maximum allowable under O. Reg. 169/03 is 1.50 mg/l. On January 23 levels ranging from 2.17 mg/l to 2.32 mg/l were found. This is naturally occurring in the ground water. The Grey Bruce Health Unit provides a fact sheet regarding the precautions required when using drinking water with high fluoride concentrations.

## **Annual Ontario Ministry of the Environment Inspection**

Shayne Finlay, MOE Drinking Water Inspector, inspected the water system and examined the water quality and operational records on December 15, 2009. He issued a report of his findings on February 18, 2009 . He outlined 3 non compliant issues.

Items 1 & 3 were related to the May 25 low chlorine event at Point Clark and the report acknowledges the corrective actions taken.

Item 2 identifies a lack of maintenance to the on line turbidimeters. These instruments are no longer required by the drinking water regulations in well houses where the source is considered to be secure groundwater. The turbidimeters were not included in the system description put forward in the owner's application for a license under the SDWA. They will be removed once the license is granted.

## **Exceedences**

### **Fluoride**

O. Reg. 169/03 ( the Ontario Drinking Water Standard) has a MAC (maximum allowable concentration) of 1.5 mg/l for fluoride.

The water from the Lakeshore wells is monitored monthly for this chemical. They have naturally occurring levels that exceed 1.5 mg/l. An annual report is filed with the Grey Bruce Health unit regarding this exceedence.

As required by O. Reg. 170/03 schedule 1 section 13-9 an AWQI (adverse water quality indicator) report is filed with the MOE and the MOH every 60 months. This was done in September of 2007.

The results reported were as follows :

Point Clark	2.23 mg/l
Blairs Grove	1.83 mg/l
Murdock Glen	2.18 mg/l
Huronville South	2.30 mg/l

### **Sodium**

O. Reg. 169/03 has an MAC of 20.0 mg/l for sodium.

As required by O. Reg. 170/03 schedule 13 section 13-8 the water is sampled every 60 months for sodium.

The Blairs Grove well, the Murdock Glen well and the Huronville well waters all exceeded this level when samples were analyzed for this chemical in June of 2006.



An AWQI report was filed with the MOE and MOH at that time. The results reported were as follows :

Blairs Grove	98.0 mg/l
Murdock Glen	43.7 mg/l
Huronville South	43.9 mg/l

Laurie Cox – Project Manager VWC



**Lakeshore Well Supply**

Water Works Name:

Well No. (if applicable):

Year:

Serviced Population:

Laboratories which Performed Analyses:

N/A

2009

SGS Laketfield Research

**Distribution Water**

Month	Total Coliform			Fecal Coliform / Escherichia Coli			HPC or MF			BKG		
	No. of Samples Collected	No. of Samples "Unsafe"	No. of Samples Deteriorating	No. of Samples Collected	No. of Samples "Unsafe"	No. of Samples "Safe"	No. of Samples Collected	No. of Samples "Safe"	No. of Samples Deteriorating	No. of Samples Collected	No. of Samples "Safe"	No. of Samples Deteriorating
Jan '09	28	0	0	28	0	28	13	13	0			
Feb '09	28	0	0	28	0	28	12	12	0			
Mar '09	35	0	0	35	0	35	15	15	0			
Apr '09	31	0	0	31	0	31	11	11	0			
May '09	34	0	0	34	0	34	18	18	0			
Jun '09	39	0	0	39	0	39	19	19	0			
Jul '09	28	0	0	28	0	28	12	12	0			
Aug '09	28	0	0	28	0	28	12	12	0			
Sep '09	40	0	0	40	0	40	15	15	0			
Oct '09	34	0	0	34	0	34	16	16	0			
Nov '09	29	0	0	29	0	29	16	16	0			
Dec '09	35	0	0	35	0	35	15	15	0			
Total	389	0	0	389	0	389	174	174	0	0	0	0

**INDICATORS OF UNSAFE DRINKING WATER QUALITY:**

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

1. Escherichia coli and/or fecal coliforms are detected in any distribution sample by any analytical method;
2. Total coliforms are detected in consecutive samples from the same site or in multiple samples taken as a single submission from a distribution system.

If the water contains any indicators of unsafe water quality for any of the reasons outlined above, the laboratory will immediately notify the MOEE District Officer who will immediately notify the Medical Officer of Health and the operating authority to initiate collection of special samples and/or take corrective action.

**INDICATORS OF DETERIORATING DRINKING WATER QUALITY**

Any of the following conditions indicate a deterioration in drinking water quality:

- a) total coliforms detected as a single occurrence (but not Escherichia coli or other fecal coliforms);
- b) samples contain more than 500 colonies per ml on a heterotrophic plate count analysis;
- c) samples contain more than 200 background colonies on a total coliform membrane filter analysis;
- d) Aeromonas spp., Pseudomonas aeruginosa, Staphylococcus aureus, Clostridium spp. Or members of the Fecal Streptococcus (Enterococcus) group are detected.

If these conditions occur, the MOEE Dist. Mang. Should be notified.

Annual Data Summary - Treated Water Volatile Organic and Inorganic Data  
 (Complete a separate sheet for each input into the Distribution System)  
**Water Works Name:** Lakeshore Well Supply  
**Well No. (if applicable):**  
**Year:** 2009  
**Serviced Population:** 3500  
**Laboratories Which Performer Analyses:** SGS Lakefield Research  
**Water Works #** 220000425

Parameter	Analysis		Analysis Murdoch Glen (ug/L)	Analysis Blairs Grove (ug/L)	Analysis Huronville (ug/L)	Maximum Allowable Level (ug/L)	Analysis Pt. Clarke mg/l	Analysis Murdoch Glen mg/l	Analysis Blairs Grove mg/l	Analysis Huronville mg/l	Maximum Allowable Level mg/l
	Date (MM/DD/YY)	Pt. Clarke (ug/L)									
<b>Schedule 23 &amp; 24</b>											
Antimony	6/2/2009	<0.02	<0.02	<0.02	<0.02	6					
Arsenic	"	6.7	2.7	3.3	1.6	25					
Barium	"	27.5	27.7	5.41	23.5	1000					
Boron	"	61.1	125	124	144	5000					
Cadmium	"	<0.003	0.012	<0.003	<0.003	5					
Chromium	"	<0.5	<0.5	0.7	<0.5	50					
Mercury	"	<0.02	<0.02	<0.02	<0.02	1					
Sodium	6/7/2006										
Lead	12/1/2009	0.08	0.51	0.17	0.03	10	17.9	43.7	98	43.9	20
Fluoride	12/1/2009						1.92	1.8	1.65	2.01	1.5
Selenium	6/2/2009	<1	<1	<1	<1	10					
Uranium	"	0.608	1.56	0.449	0.349	20					
Benzene	"	<0.37	<0.37	<0.37	<0.37	5					
Carbon Tetrachloride	"	<0.41	<0.41	<0.41	<0.41	5					
1,2-Dichlorobenzene	"	<0.50	<0.50	<0.50	<0.50	200					
1,4-Dichlorobenzene	"	<0.21	<0.21	<0.21	<0.21	5					
1,1-Dichloroethylene	"	<0.41	<0.41	<0.41	<0.41	14					
1,2-Dichloroethane	"	<0.43	<0.43	<0.43	<0.43	5					
Dichloromethane	"	<0.34	<0.34	<0.34	<0.34	50					
Monochlorobenzene	"	<0.58	<0.58	<0.58	<0.58	80					
Tetrachloroethylene	"	<0.45	<0.45	<0.45	<0.45	30					
Trichloroethylene	"	<0.38	<0.38	<0.38	<0.38	5					
Vinyl Chloride	"	<0.17	<0.17	<0.17	<0.17	2					
Diquat	"	<1	<1	<1	<1	70					
Paraquat	"	<1	<1	<1	<1	10					
Glyphosate	"	<6	<6	<6	<6	280					
Polychlorinated Biphenyls	"	<0.04	<0.04	<0.04	<0.04	3					
Benzo(a)pyrene	"	<0.004	<0.004	<0.004	<0.004	0.01					
2,4-dichlorophenol	"	<0.15	<0.15	<0.15	<0.15	900					
2,4,6-Trichlorophenol	"	<0.25	<0.25	<0.25	<0.25	5					
2,3,4,5-tetrachlorophenol	"	<0.14	<0.14	<0.14	<0.14	100					
Pentachlorophenol	"	<0.15	<0.15	<0.15	<0.15	60					
Alachlor	"	<0.11	<0.11	<0.11	<0.11	5					
Aldicarb	"	<0.30	<0.30	<0.30	<0.30	9					
Aldrin+Dieldrin	"	<0.067	<0.067	<0.067	<0.067	0.7					
Aldrin	"	<0.060	<0.060	<0.060	<0.060						
Dieldrin	"	<0.067	<0.067	<0.067	<0.067						
Atrazine+N-dealkylated metabolites	"	<0.12	<0.12	<0.12	<0.12	5					
Atrazine	"	<0.11	<0.11	<0.11	<0.11						
De-ethylated atrazine	"	<0.12	<0.12	<0.12	<0.12						
Azinphos-methyl	"	<0.21	<0.21	<0.21	<0.21	20					
Bendiocarb	"	<0.13	<0.13	<0.13	<0.13	40					
Carbaryl	"	<0.16	<0.16	<0.16	<0.16	90					
Carbofuran	"	<0.37	<0.37	<0.37	<0.37	90					



	A	B	C	D	E	F	G	H	I	J
1	Lakeshore Well System									
2	Chemical Usage									
3	2009									
4	Blairs Grove									
5										
6		Sodium Silicate				Sodium Hypochlorite				
7	Month	Usage	Dosage		Usage	Dosage				
8		kg.	mg/L		Kg.	mg/L				
9	Jan '09	8.36	37.01		1.38	6.11				
10	Feb '09	5.58	30.30		0.83	4.50				
11	Mar '09	1.39	7.45		0.97	5.17				
12	Apr '09	1.39	7.15		1.10	5.66				
13	May '09	11.15	15.98		2.76	3.95				
14	Jun '09	16.73	14.10		5.80	4.89				
15	Jul '09	33.46	16.02		9.25	4.43				
16	Aug '09	34.85	17.10		11.73	5.76				
17	Sep '09	40.43	15.06		12.14	4.52				
18	Oct '09	55.76	13.05		17.80	4.17				
19	Nov '09	5.58	18.84		1.10	3.73				
20	Dec '09	1.39	11.06		0.69	5.48				
21	Total	216.07	15.24		65.55	4.62				
22										
23										
24	Notes:									
25	1) The sodium hypochlorite is used as a source of chlorine									
26	2) The sodium silicate is used as a treatment for iron.									
27	All quantities of chemicals are listed as the available chemical in the solutions and not the total physical quantities.									



A	B	C	D	E	F	G	H	I	J	K	
1											
2	Water Works Name:					Lakeshore Well Supply					
3	Well No. (if applicable):					Blairs Grove					
4	Year:					2009					
5	Serviced Population					3500					
6	Laboratories Which Performed Analyses:					SGS Lakefield Research					
7	Water Works Number					220000425					
8											
9	Raw Water										
10	Month	Total Coliform			Fecal Coliform / Escherichia Coli			Raw Water Turbidity			
11		No. of Samples Collected	No. of Samples 0-100	No. of Samples 101-9000	No. of Samples >9000	No. of Samples Collected	No. of Samples 0-10	No. of Samples 11-900	No. of Samples >900	Number Samples >1 NTU	Average NTU
12											
13											
14	Jan '09	2	2	0	0	2	2	0	0	0	0.22
15	Feb '09	4	4	0	0	4	4	0	0	0	0.38
16	Mar '09	5	5	0	0	5	5	0	0	0	0.26
17	Apr '09	4	4	0	0	4	4	0	0	0	0.23
18	May '09	4	4	0	0	4	4	0	0	0	0.22
19	Jun '09	5	5	0	0	5	5	0	0	0	0.18
20	Jul '09	4	4	0	0	4	4	0	0	0	0.16
21	Aug '09	4	4	0	0	4	4	0	0	0	0.31
22	Sep '09	5	5	0	0	5	5	0	0	0	0.36
23	Oct '09	4	4	0	0	4	4	0	0	0	0.15
24	Nov '09	4	4	0	0	4	4	0	0	0	0.14
25	Dec '09	5	5	0	0	5	5	0	0	0	0.15
26	Total	50	50	0	0	50	50	0	0	0	0.22

Water Works Name: Lakeshore Well Supply  
 Well No. (if applicable): Blairs Grove  
 Year: 2009  
 Serviced Population: \_\_\_\_\_  
 Laboratories which Performed Analyses: SGS Lakefield Research

**Treated Water**

Month	Total Coliform			Fecal Coliform / Escherichia Coli			HPC or MF			BKG		
	No. of Samples Collected	No. of Samples "Unsafe"	No. of Samples Deteriorating	No. of Samples Collected	No. of Samples "Unsafe"	No. of Samples Deteriorating	No. of Samples Collected	No. of Samples "Safe"	No. of Samples Deteriorating	No. of Samples Collected	No. of Samples "Safe"	No. of Samples Deteriorating
Jan '09	2	0	0	2	0	0	2	2	0	0	0	0
Feb '09	4	4	0	4	4	0	4	4	0	0	0	0
Mar '09	5	0	0	5	0	0	5	5	0	0	0	0
Apr '09	4	0	0	4	0	0	4	4	0	0	0	0
May '09	4	0	0	4	0	0	4	4	0	0	0	0
Jun '09	5	0	0	5	0	0	5	5	0	0	0	0
Jul '09	4	0	0	4	0	0	4	4	0	0	0	0
Aug '09	4	0	0	4	0	0	4	4	0	0	0	0
Sep '09	5	0	0	5	0	0	5	5	0	0	0	0
Oct '09	4	0	0	4	0	0	4	4	0	0	0	0
Nov '09	4	0	0	4	0	0	4	4	0	0	0	0
Dec '09	5	0	0	5	0	0	5	5	0	0	0	0
Total	50	0	0	50	0	0	50	50	0	0	0	0

**INDICATORS OF UNSAFE DRINKING WATER QUALITY:**

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

1. Escherichia coli and/or fecal coliforms are detected in any distribution sample by any analytical method;
2. Total coliforms are detected in consecutive samples from the same site or in multiple samples taken as a single submission from a distribution system.

If the water contains any indicators of unsafe water quality for any of the reasons outlined above, the laboratory will immediately notify the MOEE District Officer who will immediately notify the Medical Officer of Health and the operating authority to initiate collection of special samples and/or take corrective action.

**INDICATORS OF DETERIORATING DRINKING WATER QUALITY**

Any of the following conditions indicate a deterioration in drinking water quality:

- a) total coliforms detected as a single occurrence (but not Escherichia coli or other fecal coliforms);
- b) samples contain more than 500 colonies per ml on a heterotrophic plate count analysis;
- c) samples contain more than 200 background colonies on a total coliform membrane filter analysis;
- d) Aeromonas spp., Pseudomonas aeruginosa, Staphylococcus aureus, Clostridium spp. Or members of the Fecal Streptococcus (Enterococcus) group are detected.

If these conditions occur, the MOEE Dist. Mang. Should be notified.

**Water Works Name:**  
**Well No. (if applicable):**  
**Year:**

Lakeshore Well Supply  
 Blairs Grove  
 2009

**Serviced Population**

3500

**Laboratories Which Performed Analyses:** SGS Lakefield Research & Veolia Water Canada  
**Water Works** 220000425

Month	Fluoride		Treated Water Nitrite		Treated Water Nitrate		THM's		
	No. of Samples Collected	Average Residual mg/L	No. of Samples Collected	Average Nitrite mg/L	No. of Treated Samples Collected	Average Nitrate (mg/L)	Maximum Nitrate mg/L	No of Samples	Result ug/l
Jan.									
Feb.			1	<0.005		<0.013	<0.013	1	6.6
Mar.									
Apr.									
May			1	<0.005		<0.013	<0.013	1	13
June									
July									
August			1	<0.005		<0.013	<0.013	1	5.9
Sept									
Oct.									
Nov			1	<0.005		<0.013	<0.013	1	10
Dec	1	1.65							
Total	1		4						
Average				#DIV/0!					
Maximum		1.65					0		
ODWQS									

Where nitrate and nitrite are present, the total of the two should not exceed 10 mg/L  
 The maximum allowable level of THM's is 100 ug/l  
 Fluoride levels above 1.5 mg/L should be reported to the Medical Officer of Health

Lakeshore Well System  
 Chemical Usage  
 2009  
 Huronville

Month	Sodium Hypochlorite		Sodium Silicate	
	Usage kg.	Dosage mg/L	Usage Kg.	Dosage mg/L
Jan '09	17.94	2.81	19.52	3.05
Feb '09	17.25	2.86	27.88	4.62
Mar '09	16.97	2.69	32.06	5.08
Apr '09	17.66	2.66	26.49	3.98
May '09	34.78	2.56	58.55	4.31
Jun '09	36.02	2.78	68.31	5.27
Jul '09	62.10	3.02	147.76	7.20
Aug '09	67.21	3.14	80.85	3.78
Sep '09	62.93	3.13	178.43	8.86
Oct '09	20.15	2.83	43.21	6.07
Nov '09	15.46	2.81	33.46	6.09
Dec '09	16.70	2.99	46.00	8.22
Total	385.16	2.91	762.52	5.77

Notes:

- 1) The sodium hypochlorite is used as the disinfectant
- 2) The sodium silicate is used as a treatment for iron.

All quantities of chemicals are listed as the available chemical in the solutions and not the total physical quantities.

A	B	C	D	E	F	G	H	I	J	K	L	M	N
1													
2	Water Works Name:						Lakeshore Well Supply						
3	Well No. (if applicable):						Huronville						
4	Year:						2009						
5	Serviced Population						3500						
6	Laboratories Which Performed Analyses:						Veolia Water Canada						
7	Water Works Number						220000425						
8													
9													
10	Month	Treated Water Flow		Process Wastewater		Treated Water Turbidity		Treated Disinfectant		Treated Disinfectant- SCADA		Dist. System Disinfectant	
11		Average Daily (1000 m3)	Maximum Daily (1000 m3)	Monthly Total (1000 m3)	Monthly Total (1000 m3)	No. of Samples Collected	Average Turbidity NTU	No. of Treated Sample Collected	Average Residual (mg/L)	Minimum Online Residual (mg/L)	Maximum Online Residual (mg/L)	No. of Dist. Samp. Collected	No. of Samples < 0.05
12													
13													
14	Jan '09	0.206	0.298	6.394		31	0.193	31	1.33	1.19	1.52	31	0
15	Feb '09	0.216	0.307	6.039		28	0.188	28	1.41	1.32	1.54	28	0
16	Mar '09	0.204	0.343	6.317		29	0.252	31	1.22	1.07	1.49	31	0
17	Apr '09	0.222	0.354	6.653		30	0.936	30	1.22	1.12	1.55	30	0
18	May '09	0.438	0.664	13.585		31	0.574	31	1.14	0.96	1.54	31	0
19	Jun '09	0.447	1.091	12.952		29	0.581	29	1.19	0.91	1.46	29	0
20	Jul '09	0.662	1.422	20.535		31	0.938	31	1.36	1.07	1.76	31	0
21	Aug '09	0.690	1.118	21.401		31	0.684	31	1.31	1.16	1.58	31	0
22	Sep '09	0.671	1.171	20.135		30	0.480	30	1.41	1.22	1.86	30	0
23	Oct '09	0.230	0.470	7.116		31	0.693	31	1.32	1.12	1.51	31	0
24	Nov '09	0.183	0.285	5.496		30	0.465	30	1.17	0.99	1.52	30	0
25	Dec '09	0.180	0.264	5.593		31	0.316	31	1.23	1.13	1.43	31	0
26	Total			132.216		362		364				364	0
27	Average	0.363	1.422				0.528						
28	Maximum												
29													
30													
31	Disinfectant Compound Used	Sodium Hypochlorite											
32	(EG. Chlorine Gas, NaOCl, etc.)												
33													
34	Form of Residual Displayed on above table:	Free											
35	(EG. Free, Combined, or Total)												
36													
37	Quantity of Disinfectant used during the year (kg):	385.16											
38													
39	Distribution system target residual (mg/L)	> 0.20											

A	B	C	D	E	F	G	H	I	J	K	
1											
2	Water Works Name:					Lakeshore Well Supply					
3	Well No. (if applicable):					Huronville					
4	Year:					2009					
5	Served Population					3500					
6	Laboratories Which Performed Analyses:					SGS Lakefield Research					
7	Water Works Number					220000425					
8											
9	<b>Raw Water</b>										
10	Month	Total Coliform			Fecal Coliform / Escherichia Coli			Raw Water Turbidity			
11		No. of Samples Collected	No. of Samples 0-100	No. of Samples 101-9000	No. of Samples >9000	No. of Samples Collected	No. of Samples 0-10	No. of Samples 11-900	No. of Samples >900	No. of Samples	
12										Average	
13										NTU	
14	Jan '09	4	4	0	0	4	4	0	0	0	0.33
15	Feb '09	4	4	0	0	4	4	0	0	0	0.37
16	Mar '09	5	5	0	0	5	5	0	0	0	0.37
17	Apr '09	4	4	0	0	4	4	0	0	0	0.40
18	May '09	4	4	0	0	4	4	0	0	0	0.33
19	Jun '09	5	5	0	0	5	5	0	0	1	0.78
20	Jul '09	4	4	0	0	4	4	0	0	0	0.21
21	Aug '09	4	4	0	0	4	4	0	0	1	0.74
22	Sep '09	5	5	0	0	5	5	0	0	0	0.37
23	Oct '09	4	4	0	0	4	4	0	0	0	0.50
24	Nov '09	4	4	0	0	4	4	0	0	0	0.88
25	Dec '09	5	5	0	0	5	5	0	0	0	0.33
26	Total	52	52	0	0	52	52	0	0	2	0.47

Water Works Name: Lakeshore Well Supply  
 Well No. (if applicable): Huronville  
 Year: 2009  
 Serviced Population: \_\_\_\_\_  
 Laboratories which Performed Analyses: SGS Lakefield Research

**Treated Water**

Month	Total Coliform			Fecal Coliform / Escherichia Coli			HPC or MF			BKG		
	No. of Samples Collected	No. of Samples "Unsafe"	No. of Samples Deteriorating	No. of Samples Collected	No. of Samples "Safe"	No. of Samples "Unsafe"	No. of Samples Collected	No. of Samples "Safe"	No. of Samples Deteriorating	No. of Samples Collected	No. of Samples "Safe"	No. of Samples Deteriorating
Jan '09	4	4	0	4	4	0	4	4	0	0	0	0
Feb '09	4	4	0	4	4	0	4	4	0	0	0	0
Mar '09	5	5	0	5	5	0	5	5	0	0	0	0
Apr '09	5	5	0	5	5	0	3	3	0	0	0	0
May '09	4	4	0	4	4	0	4	4	0	0	0	0
Jun '09	5	5	0	5	5	0	5	5	0	0	0	0
Jul '09	4	4	0	4	4	0	4	4	0	0	0	0
Aug '09	4	4	0	4	4	0	4	4	0	0	0	0
Sep '09	5	5	0	5	5	0	5	5	0	0	0	0
Oct '09	4	4	0	4	4	0	4	4	0	0	0	0
Nov '09	4	4	0	4	4	0	4	4	0	0	0	0
Dec '09	5	5	0	5	5	0	5	5	0	0	0	0
Total	53	53	0	53	53	0	51	51	0	0	0	0

**INDICATORS OF UNSAFE DRINKING WATER QUALITY:**

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

1. Escherichia coli and/or fecal coliforms are detected in any distribution sample by any analytical method;
2. Total coliforms are detected in consecutive samples from the same site or in multiple samples taken as a single submission from a distribution system.

If the water contains any indicators of unsafe water quality for any of the reasons outlined above, the laboratory will immediately notify the MOEE District Officer who will immediately notify the Medical Officer of Health and the operating authority to initiate collection of special samples and/or take corrective action.

**INDICATORS OF DETERIORATING DRINKING WATER QUALITY**

Any of the following conditions indicate a deterioration in drinking water quality:

- a) total coliforms detected as a single occurrence (but not Escherichia coli or other fecal coliforms);
- b) samples contain more than 500 colonies per ml on a heterotrophic plate count analysis;
- c) samples contain more than 200 background colonies on a total coliform membrane filter analysis;
- d) Aeromonas spp., Pseudomonas aeruginosa, Staphylococcus aureus, Clostridium spp. Or members of the Fecal Streptococcus (Enterococcus) group are detected.

If these conditions occur, the MOEE Dist. Mang. Should be notified.

Annual Summary - Fluoride, Nitrite, Nitrate, and Colour  
(Complete a separate sheet for each input into the Distribution System)

**Water Works Name:** Lakeshore Well Supply  
**Well No. (if applicable):** Huronville  
**Year:** 2009  
**Serviced Population:** 3500  
**Laboratories Which Performed Analyses:** SGS Lakefield Research & Veolia Water Canada  
**Water Works:** 220000425

Month	Fluoride			Treated Water Nitrite			Treated Water Nitrate			THM's	
	No. of Samples Collected	Average Residual mg/L	Maximum Residual mg/L	No. of Samples Collected	Average Nitrite mg/L	Maximum Nitrite mg/L	No. of Treated Samples Collected	Average Nitrate (mg/L)	Maximum Nitrate mg/L	No of Samples	Result ug/l
Jan.											
Feb.				1	<0.005	<0.005	1	<0.013	<0.013	1	9
Mar.											
Apr.											
May				1	<0.005	<0.005	1	<0.013	<0.013	1	5.7
June											
July											
August				1	<0.005	<0.005	1	<0.013	<0.013	1	6.4
Sept											
Oct.											
Nov				1	<0.005	<0.005	1	<0.013	<0.013	1	9.1
Dec	1	2.01	2.01								
Total	1			4			4				
Average					#DIV/0!						
Maximum			2.01			0			0		
ODWQS											

Where nitrate and nitrite are present, the total of the two should not exceed 10 mg/L

Fluoride levels above 1.5 mg/L should be reported to the Medical Officer of Health

**Lakeshore Well System**  
**Huronville Raw Water**

Date	Fluoride mg/L	Hardness mg/L	Calcium mg/L	Sodium mg/L
June 24/09	2.25	209	49.4	44.6
Aug. 20/09		222	52.5	46.5

Lakeshore Well System  
 Chemical Usage  
 2009  
 Murdock Glen

Month	Sodium Silicate		Sodium Hypochlorite	
	Usage kg.	Dosage mg/L	Usage Kg.	Dosage mg/L
Jan '09	11.15	10.73	4.00	3.85
Feb '09	12.55	12.34	4.00	3.94
Mar '09	9.76	9.36	4.28	4.11
Apr '09	15.33	11.84	4.69	3.62
May '09	33.46	11.38	9.94	3.38
Jun '09	44.61	13.28	10.07	3.00
Jul '09	65.52	11.93	19.18	3.49
Aug '09	58.55	12.32	15.46	3.25
Sep '09	48.79	11.77	13.94	3.36
Oct '09	41.82	11.97	11.18	3.20
Nov '09	18.12	13.92	4.69	3.60
Dec '09	20.91	13.54	5.66	3.66
Total	380.56	12.05	107.09	3.55

Notes:

- 1) The sodium hypochlorite is used as a source of chlorine
- 2) The sodium silicate is used as a treatment for iron.

All quantities of chemicals are listed as the available chemical in the solutions and not the total physical quantities.

A	B	C	D	E	F	G	H	I	J	K	L	M	N
1													
2	Water Works Name:					Lakeshore Well Supply							
3	Well No. (if applicable):					<b>Murdock Glen</b>							
4	Year:					2009							
5	Serviced Population					3500							
6	Laboratories Which Performed Analyses:					Veolia Water Canada							
7	Water Works Number					220000425							
8													
9													
10	Month	Treated Water Flow		Process	Treated Water Turbidity		Treated Disinfectant		Treated Disinfectant-SCADA		Dist. System Disinfectant		
11		Average	Maximum	Monthly Total	No. of Samples Collected	Average Turbidity	No. of Treated Samples Collected	Average Residual	Minimum Residual	Maximum Residual	No. of Dist. Samp. Collected	No. of Samples < 0.05	
12		Daily (1000 m3)	Daily (1000 m3)	Monthly Total (1000 m3)	> 1NTU	NTU		(mg/L)	(mg/L)	(mg/L)			
13													
14	Jan '09	0.034	0.065	1.039	31	0	31	1.35	1.16	1.55	31	0	
15	Feb '09	0.036	0.091	1.017	28	0	28	1.37	1.18	1.55	28	0	
16	Mar '09	0.034	0.060	1.042	30	0	31	1.39	1.14	1.68	31	0	
17	Apr '09	0.043	0.086	1.295	29	0	30	1.24	1.04	1.42	30	0	
18	May '09	0.095	0.232	2.940	31	0	31	1.38	1.02	1.74	31	0	
19	Jun '09	0.112	0.344	3.360	30	0	30	1.25	0.81	1.61	29	0	
20	Jul '09	0.177	0.855	5.494	31	0	31	1.49	0.89	1.81	31	0	
21	Aug '09	0.153	0.248	4.752	31	0	31	1.30	1.12	2.00	31	0	
22	Sep '09	0.138	0.254	4.144	30	0	30	1.38	1.14	1.74	30	0	
23	Oct '09	0.113	0.361	3.495	31	0	31	1.44	1.16	2.01	31	0	
24	Nov '09	0.043	0.069	1.302	29	0	30	1.22	1.08	1.36	30	0	
25	Dec '09	0.050	0.278	1.544	31	0	31	1.19	1.03	1.32	31	0	
26	Total			31.424	362	0	365				364	0	
27	Average	0.066	0.855					1.33					
28	Maximum												
29													
30													
31		Disinfectant Compound Used				Sodium Hypochlorite							
32		(EG. Chlorine Gas, NaOCl, etc.)											
33													
34		Form of Residual Displayed on above table:				Free							
35		(EG. Free, Combined, or Total)											
36													
37		Quantity of Disinfectant used during the year (kg):				107.09							
38													
39		Distribution system target residual (mg/L)				> 0.20							

A	B	C	D	E	F	G	H	I	J	K
1										
2	Water Works Name:					Lakeshore Well Supply				
3	Well No. (if applicable):					<b>Murdock Glen</b>				
4	Year:					2009				
5	Serviced Population					3500				
6	Laboratories Which Performed Analyses:					SGS Lakefield Research				
7	Water Works Number					220000425				
8										
9	<b>Raw Water</b>									
10	Month	Total Coliform			Fecal Coliform / Escherichia Coll			Raw Turbidity		
11	No. of Samples Collected	No. of Samples 0-100	No. of Samples 101-9000	No. of Samples >9000	No. of Samples Collected	No. of Samples 0-10	No. of Samples 11-900	No. of Samples >900	No. of Samples >1 NTU	Average
12										NTU
13										
14	Jan '09	4	4	0	0	4	4	0	0	0.32
15	Feb '09	4	4	0	0	4	4	0	0	0.38
16	Mar '09	5	5	0	0	5	5	0	0	0.44
17	Apr '09	4	4	0	0	4	4	0	0	0.44
18	May '09	4	4	0	0	4	4	0	0	0.34
19	Jun '09	5	5	0	0	5	5	0	0	0.30
20	Jul '09	4	4	0	0	4	4	0	0	0.61
21	Aug '09	4	4	0	0	4	4	0	0	0.38
22	Sep '09	5	5	0	0	5	5	0	0	0.43
23	Oct '09	4	4	0	0	4	4	0	0	0.33
24	Nov '09	4	4	0	0	4	4	0	0	0.83
25	Dec '09	5	5	0	0	5	5	0	0	0.24
26	Total	52	52	0	0	52	52	0	0	0.40

Water Works Name: Lakeshore Well Supply  
 Well No. (if applicable): Murdock Glen  
 Year: 2009  
 Serviced Population: \_\_\_\_\_  
 Laboratories which Performed Analyses: SGS Lakefield Research

**Treated Water**

Month	Total Coliform			Fecal Coliform / Escherichia Coli			HPC or MF			BKG		
	No. of Samples Collected	No. of Samples "Safe"	No. of Samples Deteriorating	No. of Samples Collected	No. of Samples "Unsafe"	No. of Samples "Unsafe"	No. of Samples Collected	No. of Samples "Safe"	No. of Samples Deteriorating	No. of Samples Collected	No. of Samples "Safe"	No. of Samples Deteriorating
Jan '09	4	4	0	4	4	0	4	4	0	0	0	0
Feb '09	4	4	0	4	4	0	4	4	0	0	0	0
Mar '09	5	5	0	5	5	0	5	5	0	0	0	0
Apr '09	4	4	0	4	4	0	4	4	0	0	0	0
May '09	4	4	0	4	4	0	4	4	0	0	0	0
Jun '09	5	5	0	5	5	0	5	5	0	0	0	0
Jul '09	4	4	0	4	4	0	4	4	0	0	0	0
Aug '09	4	4	0	4	4	0	4	4	0	0	0	0
Sep '09	5	5	0	5	5	0	5	5	0	0	0	0
Oct '09	4	4	0	4	4	0	4	4	0	0	0	0
Nov '09	4	4	0	4	4	0	4	4	0	0	0	0
Dec '09	5	5	0	5	5	0	5	5	0	0	0	0
Total	52	52	0	52	52	0	52	52	0	0	0	0

INDICATORS OF UNSAFE DRINKING WATER QUALITY:

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

1. Escherichia coli and/or fecal coliforms are detected in any distribution sample by any analytical method;
2. Total coliforms are detected in consecutive samples from the same site or in multiple samples taken as a single submission from a distribution system.

If the water contains any indicators of unsafe water quality for any of the reasons outlined above, the laboratory will immediately notify the MOEE District Officer who will immediately notify the Medical Officer of Health and the operating authority to initiate collection of special samples and/or take corrective action.

INDICATORS OF DETERIORATING DRINKING WATER QUALITY

Any of the following conditions indicate a deterioration in drinking water quality:

- a) total coliforms detected as a single occurrence (but not Escherichia coli or other fecal coliforms);
- b) samples contain more than 500 colonies per ml on a heterotrophic plate count analysis;
- c) samples contain more than 200 background colonies on a total coliform membrane filter analysis;
- d) Aeromonas spp., Pseudomonas aeruginosa, Staphylococcus aureus, Clostridium spp. Or members of the Fecal Streptococcus (Enterococcus) group are detected.

If these conditions occur, the MOEE Dist. Mang. Should be notified.

**Water Works Name:**  
**Well No. (if applicable):**  
**Year:**

Lakeshore Well Supply  
 Murdock Glen  
 2009  
 3500

**Serviced Population**

**Laboratories Which Performed Analyses:** SGS Lakefield Research & Veolia Water Canada  
 220000425

Month	Fluoride		Treated Water Nitrite		Treated Water Nitrate		THM's	
	No. of Samples Collected	Average Residual mg/L	No. of Samples Collected	Average Nitrite mg/L	No. of Samples Collected	Average Nitrate (mg/L)	No of Samples	Result ug/l
Jan.								
Feb.			1	<0.005	1	<0.013	1	16
Mar.								
Apr.								
May			1	<0.005	1	<0.013	1	8.5
June								
July								
August			1	<0.005	1	<0.013	1	10
Sept								
Oct.								
Nov			1	<0.005	1	<0.013	1	21
Dec	1	1.8						
Total	1		4		4			
Average				#DIV/0!				
Maximum		1.8						0
ODWQS								

Where nitrate and nitrite are present, the total of the two should not exceed 10 mg/L

Fluoride levels above 1.5 mg/L should be reported to the Medical Officer of Health

Lakeshore Well System  
 Chemical Usage  
 2009  
 Point Clark

Month	Sodium Silicate		Sodium Hypochlorite	
	Usage kg.	Dosage mg/L	Usage Kg.	Dosage mg/L
Jan '09	135.22	7.24	44.44	2.38
Feb '09	119.88	8.41	32.98	2.31
Mar '09	112.91	7.19	37.40	2.38
Apr '09	151.95	9.06	38.09	2.27
May '09	227.22	10.19	50.37	2.26
Jun '09	225.83	9.40	58.24	2.42
Jul '09	303.89	8.38	96.19	2.65
Aug '09	437.72	11.33	103.64	2.68
Sep '09	506.02	13.64	102.81	2.77
Oct '09	168.67	8.49	53.27	2.68
Nov '09	156.13	9.86	39.61	2.50
Dec '09	117.10	7.42	39.05	2.47
Total	2,662.54	9.67	696.07	2.53

Notes:

- 1) The sodium hypochlorite is used as a source of chlorine
  - 2) The sodium silicate is used as a treatment for iron.
- All quantities of chemicals are listed as the available chemical in the solutions and not the total physical quantities.



A	B	C	D	E	F	G	H	I
1								
2	Water Works Name:					Lakeshore Well Supply		
3	Well No. (if applicable):					Well 1	Point Clarke	
4	Year:					2009		
5	Served Population					3500		
6	Laboratories Which Performed Analyses:					SGS Lakefield Research		
7	Water Works Number					220000425		
8								
9	<b>Raw Water</b>							
10	Month	Total Coliform			Fecal Coliform / Escherichia Coli			
11		No. of Samples Collected	No. of Samples 0-100	No. of Samples 101-9000	No. of Samples >9000	No. of Samples Collected	No. of Samples 0-10	No. of Samples 11-900
12								
13								
14	Jan '09	4	4	0	0	4	4	0
15	Feb '09	4	4	0	0	4	4	0
16	Mar '09	5	5	0	0	5	5	0
17	Apr '09	4	4	0	0	4	4	0
18	May '09	4	4	0	0	4	4	0
19	Jun '09	5	5	0	0	5	5	0
20	Jul '09	4	4	0	0	4	4	0
21	Aug '09	4	4	0	0	4	4	0
22	Sep '09	5	5	0	0	5	5	0
23	Oct '09	4	4	0	0	4	4	0
24	Nov '09	4	4	0	0	4	4	0
25	Dec '09	5	5	0	0	5	5	0
26	Total	52	52	0	0	52	52	0

A	B	C	D	E	F	G	H	I
1								
2	Water Works Name:					Lakeshore Well Supply		
3	Well No. (if applicable):					Well 2	Point Clarke	
4	Year:					2009		
5	Serviced Population					3500		
6	Laboratories Which Performed Analyses:					SGS Lakefield Research		
7	Water Works Number					220000425		
8								
9	<b>Raw Water</b>							
10	Month	Total Coliform			Fecal Coliform / Escherichia Coli			
11	No. of Samples Collected	No. of Samples Collected	No. of Samples >9000	No. of Samples >9000	No. of Samples Collected	No. of Samples 0-10	No. of Samples 11-900	No. of Samples >900
12	0-100	101-9000	>9000	>9000	Collected	D-10	11-900	>900
13								
14	Jan '09	4	4	0	0	4	4	0
15	Feb '09	4	4	0	0	4	4	0
16	Mar '09	5	5	0	0	5	5	0
17	Apr '09	4	4	0	0	4	4	0
18	May '09	4	4	0	0	4	4	0
19	Jun '09	5	5	0	0	5	5	0
20	Jul '09	4	4	0	0	4	4	0
21	Aug '09	4	4	0	0	4	4	0
22	Sep '09	5	5	0	0	5	5	0
23	Oct '09	4	4	0	0	4	4	0
24	Nov '09	4	4	0	0	4	4	0
25	Dec '09	5	5	0	0	5	5	0
26	Total	52	52	0	0	52	52	0

Water Works Name: Lakeshore Well Supply  
 Well No. (if applicable): Point Clark  
 Year: 2009  
 Serviced Population: \_\_\_\_\_  
 Laboratories which Performed Analyses: SGS Lakefield Research

**Treated Water**

Month	Total Coliform			Fecal Coliform / Escherichia Coli			HPC or MF			BKG		
	No. of Samples Collected	No. of Samples "Unsafe"	No. of Samples Deteriorating	No. of Samples Collected	No. of Samples "Unsafe"	No. of Samples Deteriorating	No. of Samples Collected	No. of Samples "Safe"	No. of Samples Deteriorating	No. of Samples Collected	No. of Samples "Safe"	No. of Samples Deteriorating
Jan '09	4	0	0	4	0	0	4	4	0	0	0	0
Feb '09	4	0	0	4	0	0	4	4	0	0	0	0
Mar '09	5	0	0	5	0	0	5	5	0	0	0	0
Apr '09	4	0	0	4	0	0	4	4	0	0	0	0
May '09	4	0	0	4	0	0	4	4	0	0	0	0
Jun '09	7	0	0	7	0	0	7	7	0	0	0	0
Jul '09	4	0	0	4	0	0	4	4	0	0	0	0
Aug '09	4	0	0	4	0	0	4	4	0	0	0	0
Sep '09	5	0	0	5	0	0	5	5	0	0	0	0
Oct '09	4	0	0	4	0	0	4	4	0	0	0	0
Nov '09	4	0	0	4	0	0	4	4	0	0	0	0
Dec '09	5	0	0	5	0	0	5	5	0	0	0	0
Total	54	0	0	54	0	0	54	54	0	0	0	0

**INDICATORS OF UNSAFE DRINKING WATER QUALITY:**

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

1. Escherichia coli and/or fecal coliforms are detected in any distribution sample by any analytical method;
2. Total coliforms are detected in consecutive samples from the same site or in multiple samples taken as a single submission from a distribution system.

If the water contains any indicators of unsafe water quality for any of the reasons outlined above, the laboratory will immediately notify the MOEE District Officer who will immediately notify the Medical Officer of Health and the operating authority to initiate collection of special samples and/or take corrective action.

**INDICATORS OF DETERIORATING DRINKING WATER QUALITY**

Any of the following conditions indicate a deterioration in drinking water quality:

- a) total coliforms detected as a single occurrence (but not Escherichia coli or other fecal coliforms);
- b) samples contain more than 500 colonies per ml on a heterotrophic plate count analysis;
- c) samples contain more than 200 background colonies on a total coliform membrane filter analysis;
- d) Aeromonas spp., Pseudomonas aeruginosa, Staphylococcus aureus, Clostridium spp. Or members of the Fecal Streptococcus (Enterococcus) group are detected.

If these conditions occur, the MOEE Dist. Mang. Should be notified.

**Water Works Name:**  
**Well No. (if applicable):**

**Year:**

**Serviced Population**

**Laboratories Which Performed Analyses:**  
**Water Works**

Lakeshore Well Supply

Pt. Clarke

2009

3500

SGS Lakefield Research & Veolia Water Canada  
 220000425

Month	Fluoride		Treated Water Nitrite		Treated Water Nitrate		THM's			
	No. of Samples Collected	Average Residual mg/L	Maximum Residual mg/L	No. of Samples Collected	Average Nitrite mg/L	Maximum Nitrite mg/L	Average Nitrate (mg/L)	Maximum Nitrate mg/L	No of Samples	Result ug/l
Jan.										
Feb.				1	<0.005	<0.005	<0.013	<0.013	1	5.5
Mar.										
Apr.										
May				1	<0.005	<0.005	<0.013	<0.013	1	6.8
June										
July										
August				1	<0.005	<0.005	<0.013	<0.013	1	6
Sept.										
Oct.										
Nov				1	<0.005	<0.005	<0.013	<0.013	1	14
Dec	1	1.92	1.92							
Total	1			4					4	
Average					#DIV/0!					
Maximum			1.92						0	
ODWQS										

Where nitrate and nitrite are present, the total of the two should not exceed 10 mg/L

Fluoride levels above 1.5 mg/L should be reported to the Medical Officer of Health