

Friends of the Tay Watershed Association

Perth E-Coli Testing Program Phase 3 Sept. 2014



Site 1 — Big Ben outflow, Stewart Park



Site 2 — Gore Street Bridge



Site 3 — Last Duel Park docks

Perth E-Coli Testing Program, Phase 3, Sept. 2014

The focus of this testing program was to investigate how long E-Coli plumes from untreated storm water stay in the Tay River in Perth.

In mid-September 2014, three sites were sampled along the Tay River in Perth.

Initially, five samples each were taken from near two of the approximately 20 storm sewer outflows along the river in Perth. Five more samples were also taken downstream in Perth, but not near any outflows. All were taken within an hour of the start of light rain. Samples taken from near to the outflows all had much higher concentrations of E-Coli than those taken downstream away from outflows. As expressed in geometric means, the outflow counts were between 9 to 20 times higher than the allowable limit of 100 units of E-Coli per 100 ml. water for safe swimming.

All of the previously elevated E-Coli counts had returned to levels close to or within the 100 units limit by 24 hours after the rain had stopped. By then the Big Ben (Wilson St. West) outflow had not yet cleared up to the same extent as at the Gore Street outflow where counts had initially been twice as high. Also, it appears that this outflow pipe structure may be in disrepair as it is now leaning into the downstream direction (see photo on preceding page). There is erosion behind this structure where stormwater has been observed flowing out of both sides, exiting before the end of pipe.

Summary: These new findings show that E-Coli levels can return to near pre-rain 'normal' levels when at least 24 hours have passed after rain has stopped. Levels of E-Coli are consistently high after even one hour of light rain, however, and seriously high near storm sewer outflows along the Tay River.

	1 hour after light rain began	24 hours after rain stopped
Stewart Park, Big Ben outflow	936	120
Gore Street bridge outflow	1958	64
Last Duel docks	86	44
Geometric mean/average	993	83

Temperatures on Sept.13, 10:30 am :
Sept.14, 1:30 pm :

air:12 C and water:15C
air: 13C and water: 14C.



Big Ben outflow after one hour of light rain. Cloudy areas indicated by arrows are untreated storm water.

C.O.C.: G36993

REPORT No. B14-23726

Report To:

Friends Of Tay Watershed
 58 Cockburn St,
 Perth Ontario K7H 2B6 Canada

Attention: Peggy Land

Caduceon Environmental Laboratories

285 Dalton Ave
 Kingston Ontario K7K 6Z1
 Tel: 613-544-2001
 Fax: 613-544-2770

DATE RECEIVED: 13-Sep-14

JOB/PROJECT NO.:

DATE REPORTED: 16-Sep-14

P.O. NUMBER:

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

Parameter	E coli				
Units	cfu/100mL				
M.D.L.	1				
Reference Method	SM9222B				
Date Analyzed/Site	13-Sep-14/K				

Client I.D.	Sample I.D.	Date Collected				
Site #1(5) Samples A Big Ben	B14-23726-1	13-Sep-14	4000			
Site #1(5) Samples B Big Ben	B14-23726-2	13-Sep-14	1000			
Site #1(5) Samples C Big Ben	B14-23726-3	13-Sep-14	900			
Site #1(5) Samples D Big Ben	B14-23726-4	13-Sep-14	1000			
Site #1(5) Samples E Big Ben	B14-23726-5	13-Sep-14	200			
Site #2 (5) Samples A Gore Street Bridge	B14-23726-6	13-Sep-14	1800			
Site #2 (5) Samples B Gore Street Bridge	B14-23726-7	13-Sep-14	2000			
Site #2 (5) Samples C Gore Street Bridge	B14-23726-8	13-Sep-14	2000			
Site #2 (5) Samples D Gore Street Bridge	B14-23726-9	13-Sep-14	1000			
Site #2 (5) Samples E Gore Street Bridge	B14-23726-10	13-Sep-14	4000			
Site #3 (5) Samples A Last Duel Dock	B14-23726-11	13-Sep-14	106			
Site #3 (5) Samples B Last Duel Dock	B14-23726-12	13-Sep-14	83			



M.D.L. = Method Detection Limit
 Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Natasha Popkie
 for Richard Lecompte Lab Supervisor

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Reference Method	SM9222B				
Date Analyzed/Site	13-Sep-14/K				

Client I.D.	Sample I.D.	Date Collected				
Site #3 (5) Samples C Last Duel Dock	B14-23726-13	13-Sep-14	92			
Site #3 (5) Samples D Last Duel Dock	B14-23726-14	13-Sep-14	85			
Site #3 (5) Samples E Last Duel Dock	B14-23726-15	13-Sep-14	67			



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REPORT No. B14-23804

Report To:

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 58 Cockburn St,
 Perth Ontario K7H 2B6 Canada

Attention: Peggy Land

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285 Dalton Ave
 Kingston Ontario K7K 6Z1
 Tel: 613-544-2001
 Fax: 613-544-2770

DATE RECEIVED: 15-Sep-14

JOB/PROJECT NO.:

DATE REPORTED: 17-Sep-14

P.O. NUMBER:

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

Parameter	E coli				
Units	cfu/100mL				
M.D.L.	1				
Reference Method	SM9222B				
Date Analyzed/Site	15-Sep-14/K				

Client I.D.	Sample I.D.	Date Collected				
Site #1-Green Bridge Sample A	B14-23804-1	14-Sep-14	106			
Site #1-Green Bridge Sample B	B14-23804-2	14-Sep-14	100			
Site #1-Green Bridge Sample C	B14-23804-3	14-Sep-14	100			
Site #1-Green Bridge Sample D	B14-23804-4	14-Sep-14	100			
Site #1-Green Bridge Sample E	B14-23804-5	14-Sep-14	240			
Site #2-Gore Street Bridge Sample A	B14-23804-6	14-Sep-14	100			
Site #2-Gore Street Bridge Sample B	B14-23804-7	14-Sep-14	84			
Site #2-Gore Street Bridge Sample C	B14-23804-8	14-Sep-14	100			
Site #2-Gore Street Bridge Sample D	B14-23804-9	14-Sep-14	100			
Site #2-Gore Street Bridge Sample E	B14-23804-10	14-Sep-14	88			
Site #3 Last Duel Docks Sample A	B14-23804-11	14-Sep-14	88			
Site #3 Last Duel Docks Sample B	B14-23804-12	14-Sep-14	15			



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Units	cfu/100mL				
M.D.L.	1				
Reference Method	SM9222B				
Date Analyzed/Site	15-Sep-14/K				

Client I.D.	Sample I.D.	Date Collected				
Site #3 Last Duel Docks Sample C	B14-23804-13	14-Sep-14	27			
Site #3 Last Duel Docks Sample D	B14-23804-14	14-Sep-14	61			
Site #3 Last Duel Docks Sample E	B14-23804-15	14-Sep-14	76			



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Invoice

Date	Invoice #
25-Sep-14	14-11981

Bill To:
Friends Of Tay Watershed 58 Cockburn St Perth Ontario K7H 2B6 Canada

Quote Number	PO Number	GST Number
P140526_PL		898699194
Currency	Project Number	Terms
CAD		NET 30 2%/month

Line	Item	Ref	Description	Qty	Rate	Amount
1	Analysis	B14-23726	EC	15	10.00	150.00
2	Analysis	B14-23804	EC	15	10.00	150.00
3	Environmental		Environmental Surcharge :	30	1.50	45.00
Sub Total						345.00
HST 13%						44.85
Total						389.85

Phase 3 Project Accounting

Balance remaining from 2012 Perth Community Foundation Grant: \$265.08
 Friends of the Tay Watershed Association contribution: 124.77
 Total cost: \$389.85

Report prepared by

Peggy Land
 for Friends of the Tay Watershed Association
