

Flagged Issues in the LTVSPA

Table 1a: Drinking Water Quality Parameters Flagged in the Lower Thames Valley Source Protection Area			
System	Flagged Parameter	Brief Description of Screening	Identified as an Issue?
Wheatley (Lake Erie intakes)	Turbidity	The Thames Watershed Characterization report identified turbidity levels in the Wheatley intake raw (untreated) water from 2000 – 2002, and 2004 – 2006. Highest turbidity levels were between 3.5 and 59.3 NTU and average levels were between 2 and 22.9 NTU. In the years 2000 and 2002, turbidity levels were below the AO benchmark of 5 NTU. A noticeable peak occurred in 2005, with the highest maximum, minimum and average turbidity levels.	Yes
Chatham/ South Kent (Lake Erie intake)	Aluminum	The Thames Watershed Characterization report indicated that most of the raw water highest aluminum levels from 1990 - 2005 were above the OG benchmark of 0.1 mg/L. From 1999 - 2005, the average values were below the OG benchmark with the exception of 0.103 mg/L in 2002 and 0.37 mg/L in 2003.	Yes
	Color	Approximately 15% (9 of 59 samples) of the available Drinking Water Surveillance Program raw water data measures above the 100% AO benchmark of 5 TCU. The average value of all samples was 2.8 TCU which is below the AO benchmark.	No
	Organic nitrogen	Approximately 100% of the available Drinking Water Surveillance Program raw water data measured above the 100% OG of 0.15 mg/L. The highest recorded value of the dataset was 0.484 mg/L and the lowest recorded value of the dataset was 0.156 mg/L. The trend line implies that the organic nitrogen levels have been slightly increasing over time.	Yes
	Iron	Approximately 31% (19 of 61) of the available sample Drinking Water Surveillance Program raw water data measured above the AO benchmark. The applied trend line for the data indicates a downward trend with about 20% of the sampled results from 1998-2006 measuring above the benchmark.	No
	Turbidity	The Thames Watershed Characterization report identified that in the raw water, average and most of the highest turbidity levels were more than the AO benchmark of 5 NTU from 1990 - 2005. The highest turbidity level recorded was 75.5 NTU. Average turbidity levels ranged between 2.2 and 60.4 NTU. It was also noted that a considerable peak in turbidity occurred in 2003, with a maximum and average level of 66.2 and 60.4 NTU respectively.	Yes
	Hardness	The Thames Watershed Characterization report identified that hardness levels at the Chatham/South-Kent Intake continuously exceed the OG benchmark range of 80 – 100 mg/L from 1990 – 2005, with average levels ranging from 108 to 127 mg/L.	Yes
West Elgin (Lake Erie intakes)	Turbidity	The Thames Watershed Characterization report identified that from 2001 to 2006 all average and highest recorded turbidity levels in the raw water are higher than the AO benchmark of 5 NTU. The highest turbidity levels ranged between 145.2 and 447 NTU while average levels range between 5.7 and 26.6 NTU.	Yes

Table 1b: Drinking Water Quality Parameters Flagged in the Lower Thames Valley Source Protection Area

System	Flagged Parameter	Brief Description of Screening	Identified as an Issue?
Ridgetown (groundwater wells)	Fluoride	From the O. Reg. 170/03 Annual Report, fluoride concentrations measured as high as 2.05 mg/L. There are 21 instances since 2000 of fluoride concentrations being above the MAC benchmark of 1.5 mg/L in the well system. The Thames Watershed Characterization Report reveals that from 2003-2006, the fluoride concentrations obtained from well samples were above the MAC benchmark 4 times, with concentrations from 1.8 to 2.05 mg/L.	Yes
	Trihalo-methanes (THMs)	There are reported levels of THMs above 50% of the ODWS MAC of 100µg/L in 2003 and 2006. No trends are evident in the reviewed data. THMs are flagged as a concern with a natural origin (natural origin because THMs are not introduced as a contaminant, but are produced as a result of a natural condition)	No
	Sodium	Sodium this parameter is identified in the annual reports as being consistently in excess of the 20mg/L Medical Officer of Health notification level. The Watershed Characterization Report (UTRCA, 2007) also identifies sodium in the range of 75.3-76.4 mg/L. The O. Reg. 170/03 annual reports indicate a highest sodium concentration of 115 mg/L in 2002. The general trend in the data shows peak sodium levels decreasing in the raw water over time.	No
	Methane	Other reports indicate that methane is regularly above the AO benchmark of 3L/m ³ . A cascading aeration system is in place to address high methane levels.	Yes
	Total coliform	Positive test results for total coliforms occur at least once in the years 2000-2001 and 2004-2007. The highest concentration recorded was 5000 cfu/100mL in 2004. Other results of samples containing total coliforms were reported as being equal to or less than 13 cfu/100mL. The total coliform levels are consistently reasonably low, with the exception of 2004. Since high levels of total coliforms haven't occurred since 2004, this parameter is not considered an issue, but is flagged as a parameter for continued close monitoring.	No
Highgate (groundwater wells)	Fluoride	From the O.Reg 170/03 annual reports, fluoride concentrations as high as 2.0mg/L. There are 14 instances since 2003 of fluoride concentrations being above the MAC benchmark of 1.5 mg/L in the well system and a further 6 instances where concentrations were above 50% of the benchmark MAC. The average of the reported fluoride concentrations is 1.65mg/L. The Thames Watershed Characterization Report reveals that from 2003-2006 the fluoride concentrations obtained from well samples were above the MAC benchmark on 10 occasions. The aquifer supplying water to the Highgate system appears to be naturally elevated with fluoride.	Yes
	Trihalo-methanes (THMs)	There are reported levels of THMs above the MAC benchmark of 0.1 mg/L in 2006 and 2007, as well as levels exceeding 50% MAC benchmark in 2006-2008. No specific concentration trends over time are observed in the data, other than that concentration appear higher during the warmer months. THMs are flagged as a concern with a natural origin (natural origin because THMs are not introduced as a contaminant, but are produced as a result of a natural condition).	No
	Sodium	From the O.Reg 170/03 annual reports, sodium is detected at concentrations consistently in excess of the 20 mg/L Medical Officer of Health notification level. The Thames Watershed Characterization Report also identifies sodium in the range of 75.3 to 76.4mg/L. The annual reports identify a highest sodium concentration of 120 mg/L both in 2005 and 2006. The average reported sodium level is 109mg/L.	No
	Methane	The level of reported methane in both wells is very similar and tends to fluctuate in a similar trend between the wells. Reported methane levels range between 1.8 to 55 L/m ³ . The reported levels of methane are regularly above the AO benchmark of 3 L/m ³ .	Yes

	Organic nitrogen	The O. Reg 170/03 annual reports state that organic nitrogen ranges from non-detectable levels to 0.5 mg/L, which is above the 0.15 mg/L OG benchmark. The reported levels of organic nitrogen have been above the criterion every year since 2004.	Yes
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