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April 2, 2014

PWS 252.00

Ms. Diane Sacher, M.Eng., P. Eng.
Director, Water and Waste Department
City of Winnipeg
101-1199 Pacific Ave
Winnipeg, Manitoba R3E 3S8

**2013 Annual Audit Report
City of Winnipeg Public Water System**

Dear Ms. Sacher

Please find enclosed the 2013 Audit Report for the City of Winnipeg's Public Water System. The report indicates that the public water system has met the terms and conditions of its Operating Licence PWS-09-412A.

On October 8th, 2013 a precautionary localized Boil Water Advisory was issued for an area of the City of Winnipeg between Bishop Grandin, the Perimeter, and the Red and Seine Rivers. The advisory was issued on the basis of positive water samples of low level bacteria within the area. The advisory was rescinded on October 9, 2013 based on satisfactory re-sample results.

The Audit Report is based on information submitted to this office for compliance purposes. If your records conflict with the audit information, or if you have any questions concerning this report, or any other drinking water related issues, please call me at (204) 945-2454.

Sincerely,

Melanie Betsill
A/Manager, Field Operations

copy: T. Shanks,
K. Kjartanson
Dr. L. Richards
K. Philip

Water System: City of Winnipeg - PWS	Code: 252.00	Operating Licence Number: PWS-09-412A	Reporting Period: 2013	Date: April 2, 2014
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Water Quality Standards

**Percent
Compliance**

**Corrective
Action Forms**

Bacterial

<i>E. coli</i>	Less than one <i>E. coli</i> bacteria detectable per 100mL in all treated water	100	
Total coliform	Less than one total coliform bacteria detectable per 100mL in all treated water	100	
<i>E. coli</i>	Less than one <i>E. coli</i> bacteria detectable per 100mL in all distributed water	99.9	Yes
Total coliform	Less than one total coliform bacteria detectable per 100mL in all distributed water	99.6	Yes
Comments:	<p>In 2013, the City of Winnipeg submitted the required 2332 treated water samples for compliance with the bacteriological standard for total coliform and <i>E.coli</i>. 20 water samples from within the distribution system were reported positive for bacteria:</p> <ul style="list-style-type: none"> • 2 samples contained low level <i>E.coli</i> and total coliform bacteria; • 4 samples contained total coliform levels >10 detectable per 100mL; • 14 samples contained total coliform levels < 10 detectable per 100mL. <p>Re-samples submitted for the positive locations did not confirm the presence of bacteria. Free chlorine levels at each site were above the required residual of 0.1 mg/L free chlorine. Corrective action reports were submitted for all non-compliant results as required.</p>		

Disinfection

Chlorine residual	A free chlorine residual of at least 0.5 mg/L in water entering the distribution system following a minimum contact time of 20 minutes	100	
	A free chlorine residual of at least 0.1 mg/L at all times at any point in the water distribution system	100	Yes
Ultra Violet	95% of the volume of water produced per month is disinfected within validated conditions	100	
Comments:	There were 2 occasions where a no or low chlorine residual was reported. These occasions did not correspond to any bacterial positive event. Corrective action reports were submitted as required.		

Physical

Turbidity	Less than or equal to 0.3 NTU in 95% of the measurements in a month of the effluent from each operating particulate filter	100	
	Not exceed 0.3 NTU for more than 12 consecutive hours of filter operation	100	
	Not exceed 1.0 NTU for any continuous measurement	100	

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Comments: No comment required

Chemical

Total trihalomethanes (to include: bromodichloromethane, bromoform, chloroform, dibromochloromethane)	Less than or equal to 0.10 mg/L as annual average of quarterly samples	100%
	McDermot / Ellen location	0.023 mg/L
	Dakota / Warde location	0.028 mg/L
	Hamilton / Buchanan location	0.025 mg/L
	Keewatin / Inkster location	0.023 mg/L
	Kildare / Redonda location	0.027 mg/L
	Pembina / Grandmont location	0.025 mg/L
Lead (throughout the distribution system)	Less than or equal to 0.01 mg/L	100%
Comments:	Trihalomethane running averages above are taken from the November 2013 test results. Water sample results submitted as per the lead loop monitoring system met the lead standard of 0.01mg/L.	

Monitoring Requirements

Percent Compliance

Bacterial

Total coliform and E. coli	Weekly sampling program with each set of samples consisting of one raw, two treated, and a minimum of 42 distribution samples	100
	Consecutive sample sets must be separated by at least 5 days	100
Comments:	No comment required	

Disinfection

Free chlorine (treated water)	Continuous sampling of water downstream of the chlorine contact chamber following at least twenty minutes of contact time	100
	A minimum of five confirmatory grab samples per week (separated by at least 24 hours) downstream of the chlorine contact chamber following a minimum of 20 minutes of chlorine contact time.	100
	A minimum of four samples confirmatory grab samples per week at the same location is acceptable on weeks containing a statutory holiday	
Free chlorine (distribution system)	At the same time and location as bacteriological distribution system sampling	100

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Total chlorine (treated water)	A minimum of five confirmatory grab samples per week (separated by at least 24 hours) downstream of the chlorine contact chamber following a minimum of 20 minutes of chlorine contact time. A minimum of four samples confirmatory grab samples per week at the same location is acceptable on weeks containing a statutory holiday	100
Total chlorine (distribution system)	At the same time and location as bacteriological distribution system sampling	100
UVT (UV transmittance)	Continuous monitoring at Deacon Booster Pumping Stations	100
Flow rate	Continuous monitoring of water entering each UV disinfection unit	100
UV dose	Continuous monitoring of water entering each UV disinfection unit	100
UV intensity	Continuous monitoring of water passing by each operating UV lamp	100
UV lamp status	Continuous monitoring of each UV lamp	100
Comments:	No comment required	
Physical		
Turbidity	Continuous monitoring of the raw water (water treatment plant) and a minimum of three confirmatory grab samples per week from the same location Continuous monitoring of the effluent from each of the operating particulate filters and a minimum of three confirmatory grab samples per week from the same locations	100
Comments:	No comment required	
Chemistry		
General chemistry (parameter list furnished by the Office of Drinking Water)	One sample set taken on a quarterly basis. One sample set consists of: <ul style="list-style-type: none"> • One raw sample (water treatment plant) and • One treated water sample taken alternately from Branch 1 at McPhillips Station and Branch 2 at Hurst Station 	100
Trihalomethanes (THMs)	Six preserved distribution system samples taken on a quarterly basis during February, May, August, and November, every year	100
Lead	As per the lead loop monitoring system approved by the Director	100
Comments:	No comment required	

Reporting Requirements

Disinfection	Submit original monthly disinfection report forms within seven days after the end of each calendar month	100
Physical	Submit original monthly turbidity report forms within seven days after the end of each calendar month	100
Corrective Actions	Submit original corrective action report for minor exceedences as described in the most recent version of the Office of Drinking Water "Operational Guidelines"	100

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	for Public and Semi-public Water Systems”, along with the monthly disinfection, or turbidity report form	
Emergency	Immediately notify the Office of Drinking Water of any condition that may affect the ability of the water system to produce or deliver safe drinking water including treatment upsets or bypass conditions, contamination of the source water or treated water, a filtration or disinfection system failure, or a distribution system failure	100
Comments:	No comment required	

Other Regulatory Requirements

Engineering Assessment

Due Date	February 28, 2011; however, an extension was granted to July 1, 2011
Date Received	June 30, 2011
Comments:	Your next Assessment will be due March 1, 2017 and every five years thereafter

Compliance Plan

Due Date	March 1, 2012
Date Received	February 24, 2012
Comments:	A Statement of Compliance was approved August 31, 2012

Operating Licence Expiry Date

Expiry Date	June 30, 2015
Comments:	Please be advised that you are required to apply for renewal of your operating licence 60 days prior to its expiry

2012 Water System Annual Report

Date Received	March 28 th , 2013
Comments:	Your 2013 Water System Annual Report is due March 31, 2014

Inspection

System Inspected	March 2014
Inspection Letter Sent	pending
Comments:	

Enforcement

Type of Enforcement	N/A
Issue Date	
Act/Regulation/Section	
Offence Description	
Compliance Date	