



Water and Waste Department • Service des eaux et des déchets

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July 7, 2016

Melanie Betsill  
Office of Drinking Water  
Manitoba Sustainable Development  
1007 Century Street  
Winnipeg, Manitoba R3H 0W4

Our File: 040-18-18-55-00

Dear Ms. Betsill:

**RE: JUNE 2016 WATER QUALITY COMPLIANCE  
SUBMISSION FOR THE CITY OF WINNIPEG WATER SUPPLY SYSTEM**

Please find attached on-line and grab turbidity summary reports, on-line and grab chlorine summary reports and the UV summary report for the Water Treatment Plant for June 2016. There are no corrective action reports to be submitted for June 2016.

The June on-line and grab sampling turbidity reports include results obtained for the Water Treatment Plant raw water and the eight filters. The turbidity results for the effluent from the filters met the licence requirements.

The June on-line and grab sampling chlorine reports include results obtained for the Deacon Booster Pumping Station at the Water Treatment Plant. The free chlorine results at the Water Treatment Plant met the licence requirements.

The June UV summary report includes results obtained for the six UV reactors at the Water Treatment Plant. The UV disinfection results met the licence requirements.

Please let me know of any concerns or questions respecting this submission. I may be reached by telephone at 204-986-8359 or by e-mail at [rgrosselle@winnipeg.ca](mailto:rgrosselle@winnipeg.ca).

Yours sincerely,

*Original signed by:*

R. Grosselle  
Manager of Environmental Standards  
Attachments

c:(e-mail)

Dr. L. Richards, Winnipeg Regional Health Authority  
Dr. H. Chang, Winnipeg Regional Health Authority  
Dr. S. Roberecki, Manitoba Health, Healthy Living and Seniors  
M. L. Geer, CPA, CA  
G. Patton, P.Eng.  
T. Shanks, P.Eng.  
M. Szmon, P.Eng.  
C. Diduck

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**CITY OF WINNIPEG**  
**WATER AND WASTE DEPARTMENT**  
**WATER SERVICES**

Water System Code: **252.00**  
 Licence Number: **PWS-09-412 01**

**WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT**

June 2016 Turbidity (NTU)

| Date       | Raw  | Filter #1 |      | Filter #2 |      | Filter #3 |      | Filter #4 |      | Filter #5 |      | Filter #6 |      | Filter #7 |      | Filter #8 |      |
|------------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|            | Avg  | Avg       | Max  | Avg       | Max  | Avg       | Max  | Avg       | Max  | Avg       | Max  | Avg       | Max  | Avg       | Max  | Avg       | Max  |
| 1/06/2016  | 0.82 | 0.03      | 0.11 | 0.06      | 0.20 | 0.06      | 0.11 | 0.05      | 0.08 | 0.03      | 0.07 | 0.05      | 0.09 | 0.02      | 0.05 | 0.04      | 0.11 |
| 2/06/2016  | 0.89 | 0.03      | 0.09 | 0.07      | 0.09 | 0.05      | 0.07 | 0.05      | 0.10 | 0.04      | 0.05 | 0.04      | 0.12 | 0.02      | 0.05 | 0.03      | 0.08 |
| 3/06/2016  | 0.76 | 0.06      | 0.15 | 0.11      | 0.18 | 0.12      | 0.17 | 0.07      | 0.16 | 0.07      | 0.13 | 0.09      | 0.11 | 0.04      | 0.14 | 0.04      | 0.07 |
| 4/06/2016  | 0.84 | 0.08      | 0.14 | 0.11      | 0.22 | 0.09      | 0.23 | 0.04      | 0.07 | 0.05      | 0.08 | 0.09      | 0.18 | 0.04      | 0.06 | 0.02      | 0.09 |
| 5/06/2016  | 0.90 | 0.07      | 0.18 | 0.08      | 0.16 | 0.07      | 0.20 | 0.06      | 0.13 | 0.08      | 0.14 | 0.08      | 0.18 | 0.04      | 0.10 | 0.02      | 0.12 |
| 6/06/2016  | 0.94 | 0.06      | 0.18 | 0.08      | 0.16 | 0.09      | 0.15 | 0.05      | 0.14 | 0.07      | 0.16 | 0.08      | 0.12 | 0.04      | 0.11 | 0.01      | 0.09 |
| 7/06/2016  | 1.02 | 0.01      | 0.03 | 0.00      | 0.05 | 0.00      | 0.06 | 0.01      | 0.03 | 0.02      | 0.06 | 0.05      | 0.19 | 0.01      | 0.08 | 0.01      | 0.01 |
| 8/06/2016  | 0.90 | 0.01      | 0.04 | 0.00      | 0.05 | 0.01      | 0.06 | 0.01      | 0.02 | 0.02      | 0.04 | 0.03      | 0.09 | 0.01      | 0.02 | 0.00      | 0.03 |
| 9/06/2016  | 0.90 | 0.02      | 0.07 | 0.01      | 0.03 | 0.01      | 0.08 | 0.01      | 0.05 | 0.04      | 0.07 | 0.05      | 0.07 | 0.01      | 0.05 | 0.00      | 0.05 |
| 10/06/2016 | 1.02 | 0.02      | 0.06 | 0.02      | 0.08 | 0.03      | 0.06 | 0.01      | 0.06 | 0.03      | 0.08 | 0.06      | 0.11 | 0.00      | 0.01 | 0.01      | 0.01 |
| 11/06/2016 | 0.93 | 0.02      | 0.05 | 0.01      | 0.06 | 0.02      | 0.07 | 0.02      | 0.04 | 0.04      | 0.07 | 0.06      | 0.11 | 0.00      | 0.00 | 0.01      | 0.03 |
| 12/06/2016 | 0.92 | 0.05      | 0.10 | 0.04      | 0.23 | 0.07      | 0.14 | 0.03      | 0.08 | 0.05      | 0.16 | 0.09      | 0.21 | 0.00      | 0.00 | 0.02      | 0.08 |
| 13/06/2016 | 0.97 | 0.08      | 0.21 | 0.06      | 0.10 | 0.08      | 0.23 | 0.06      | 0.16 | 0.08      | 0.14 | 0.10      | 0.24 | 0.00      | 0.00 | 0.03      | 0.13 |
| 14/06/2016 | 0.74 | 0.05      | 0.16 | 0.06      | 0.16 | 0.05      | 0.20 | 0.04      | 0.12 | 0.07      | 0.18 | 0.06      | 0.12 | 0.02      | 0.15 | 0.02      | 0.11 |
| 15/06/2016 | 0.67 | 0.05      | 0.17 | 0.05      | 0.18 | 0.07      | 0.14 | 0.04      | 0.13 | 0.06      | 0.14 | 0.07      | 0.18 | 0.03      | 0.14 | 0.03      | 0.11 |
| 16/06/2016 | 0.81 | 0.09      | 0.15 | 0.08      | 0.22 | 0.12      | 0.21 | 0.06      | 0.19 | 0.06      | 0.19 | 0.07      | 0.19 | 0.06      | 0.14 | 0.04      | 0.15 |
| 17/06/2016 | 0.72 | 0.10      | 0.21 | 0.11      | 0.25 | 0.09      | 0.24 | 0.07      | 0.16 | 0.04      | 0.09 | 0.05      | 0.14 | 0.04      | 0.16 | 0.02      | 0.08 |
| 18/06/2016 | 0.66 | 0.06      | 0.19 | 0.12      | 0.18 | 0.07      | 0.23 | 0.06      | 0.15 | 0.04      | 0.14 | 0.03      | 0.06 | 0.02      | 0.08 | 0.01      | 0.03 |
| 19/06/2016 | 0.70 | 0.05      | 0.15 | 0.10      | 0.20 | 0.06      | 0.11 | 0.04      | 0.13 | 0.03      | 0.10 | 0.04      | 0.09 | 0.01      | 0.07 | 0.01      | 0.01 |
| 20/06/2016 | 0.83 | 0.05      | 0.10 | 0.08      | 0.20 | 0.08      | 0.19 | 0.03      | 0.12 | 0.02      | 0.08 | 0.02      | 0.11 | 0.01      | 0.03 | 0.00      | 0.03 |
| 21/06/2016 | 0.85 | 0.05      | 0.15 | 0.07      | 0.11 | 0.05      | 0.17 | 0.04      | 0.10 | 0.01      | 0.06 | 0.01      | 0.07 | 0.01      | 0.04 | 0.00      | 0.02 |
| 22/06/2016 | 0.83 | 0.04      | 0.14 | 0.09      | 0.17 | 0.04      | 0.17 | 0.03      | 0.12 | 0.01      | 0.06 | 0.02      | 0.03 | 0.01      | 0.03 | 0.00      | 0.01 |
| 23/06/2016 | 0.82 | 0.03      | 0.14 | 0.07      | 0.18 | 0.06      | 0.09 | 0.02      | 0.11 | 0.01      | 0.07 | 0.02      | 0.13 | 0.01      | 0.01 | 0.01      | 0.04 |
| 24/06/2016 | 0.88 | 0.04      | 0.08 | 0.06      | 0.17 | 0.05      | 0.15 | 0.02      | 0.05 | 0.01      | 0.07 | 0.02      | 0.12 | 0.01      | 0.05 | 0.00      | 0.10 |
| 25/06/2016 | 1.03 | 0.03      | 0.14 | 0.07      | 0.10 | 0.04      | 0.15 | 0.02      | 0.13 | 0.02      | 0.06 | 0.01      | 0.10 | 0.01      | 0.06 | 0.00      | 0.06 |
| 26/06/2016 | 1.08 | 0.03      | 0.14 | 0.07      | 0.16 | 0.04      | 0.07 | 0.02      | 0.13 | 0.02      | 0.07 | 0.03      | 0.05 | 0.01      | 0.06 | 0.01      | 0.01 |
| 27/06/2016 | 1.16 | 0.03      | 0.06 | 0.05      | 0.16 | 0.06      | 0.17 | 0.01      | 0.04 | 0.01      | 0.06 | 0.02      | 0.11 | 0.01      | 0.03 | 0.00      | 0.05 |
| 28/06/2016 | 1.11 | 0.03      | 0.13 | 0.07      | 0.10 | 0.04      | 0.16 | 0.03      | 0.14 | 0.01      | 0.06 | 0.01      | 0.07 | 0.01      | 0.04 | 0.00      | 0.05 |
| 29/06/2016 | 1.22 | 0.02      | 0.09 | 0.07      | 0.16 | 0.04      | 0.07 | 0.03      | 0.18 | 0.03      | 0.10 | 0.03      | 0.08 | 0.01      | 0.06 | 0.01      | 0.01 |
| 30/06/2016 | 1.29 | 0.01      | 0.03 | 0.06      | 0.17 | 0.05      | 0.16 | 0.03      | 0.07 | 0.04      | 0.10 | 0.03      | 0.17 | 0.03      | 0.04 | 0.01      | 0.09 |

|   |         |         |         |         |         |         |         |         |
|---|---------|---------|---------|---------|---------|---------|---------|---------|
| Total Number of Measurements Taken, A:              | 14233   | 11704   | 14180   | 11636   | 14615   | 14646   | 11510   | 14452   |
| Turbidity Standard for Monitoring Location (NTU):   | 0.30    | 0.30    | 0.30    | 0.30    | 0.30    | 0.30    | 0.30    | 0.30    |
| Number of Measurements Meeting Standard, B:         | 14233   | 11704   | 14180   | 11636   | 14615   | 14646   | 11510   | 14452   |
| Compliance with Turbidity Standard, C = B/A X 100%: | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

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Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



CITY OF WINNIPEG  
 WATER AND WASTE DEPARTMENT  
 ENVIRONMENTAL STANDARDS DIVISION

**WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT**

| Water System Code: 252.00                                 |           | Turbidity (NTU) |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |  |
|---|-----------|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|
| Licence No. PWS-09-412-01                                 |           |                 |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |  |
| Date  | Raw Water |                 | Filter 1 |          | Filter 2 |          | Filter 3 |          | Filter 4 |          | Filter 5 |          | Filter 6 |          | Filter 7 |          | Filter 8 |          |  |
|   | Grab      | Analyser        | Grab     | Analyser | Grab     | Analyser | Grab     | Analyser | Grab     | Analyser | Grab     | Analyser | Grab     | Analyser | Grab     | Analyser | Grab     | Analyser |  |
| 01-Jun-2016   | 0.69      | 0.78            | 0.11     | 0.03     | 0.09     | 0.07     | 0.10     | 0.05     | 0.08     | 0.03     | 0.07     | 0.02     | 0.11     | 0.05     | 0.09     | <0.02    | 0.09     | <0.02    |  |
| 02-Jun-2016   | 0.70      | 0.82            | 0.07     | <0.02    | 0.10     | 0.07     | 0.08     | 0.04     | 0.18     | 0.05     | 0.10     | 0.02     | 0.09     | 0.03     | 0.11     | 0.02     | 0.07     | 0.04     |  |
| 03-Jun-2016   | 0.67      | 0.69            | 0.16     | 0.05     | 0.21     | 0.15     | 0.21     | 0.12     | 0.19     | 0.06     | 0.17     | 0.11     | 0.15     | 0.08     | 0.13     | 0.02     | 0.15     | 0.08     |  |
| 04-Jun-2016   | NS        | NS              | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       |  |
| 05-Jun-2016   | NS        | NS              | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       |  |
| 06-Jun-2016   | 0.53      | 0.82            | 0.22     | 0.06     | 0.23     | <0.02    | 0.23     | 0.09     | 0.23     | 0.06     | 0.16     | 0.07     | 0.14     | 0.09     | 0.21     | 0.09     | 0.12     | 0.02     |  |
| 07-Jun-2016   | 0.91      | 0.94            | 0.06     | <0.02    | 0.08     | <0.02    | 0.11     | 0.02     | 0.07     | <0.02    | OL       | OL       | 0.08     | 0.04     | 0.06     | <0.02    | 0.06     | <0.02    |  |
| 08-Jun-2016   | 0.85      | 0.85            | 0.11     | <0.02    | 0.12     | <0.02    | 0.11     | 0.03     | 0.10     | <0.02    | 0.09     | 0.03     | OL       | OL       | 0.10     | <0.02    | 0.07     | <0.02    |  |
| 09-Jun-2016   | 0.67      | 0.86            | OL       | OL       | 0.09     | 0.02     | 0.08     | 0.02     | 0.10     | <0.02    | 0.09     | 0.04     | 0.09     | 0.05     | 0.08     | <0.02    | 0.08     | <0.02    |  |
| 10-Jun-2016   | 0.75      | 1.08            | 0.09     | <0.02    | 0.12     | 0.03     | 0.12     | 0.03     | 0.09     | <0.02    | 0.12     | 0.07     | 0.11     | 0.07     | 0.08     | <0.02    | 0.07     | <0.02    |  |
| 11-Jun-2016   | NS        | NS              | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       |  |
| 12-Jun-2016   | NS        | NS              | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       |  |
| 13-Jun-2016   | 0.84      | 0.89            | 0.28     | 0.13     | 0.19     | 0.07     | 0.22     | 0.23     | 0.21     | 0.06     | 0.12     | 0.07     | 0.12     | 0.09     | OL       | OL       | 0.09     | 0.02     |  |
| 14-Jun-2016   | 0.71      | 0.72            | 0.24     | 0.08     | 0.19     | 0.06     | 0.18     | 0.05     | 0.26     | 0.09     | 0.16     | <0.02    | 0.15     | 0.07     | 0.22     | 0.15     | 0.14     | 0.04     |  |
| 15-Jun-2016   | 0.73      | 0.70            | 0.14     | 0.03     | 0.25     | 0.11     | 0.18     | 0.07     | OL       | OL       | 0.18     | 0.11     | 0.20     | 0.09     | 0.13     | 0.02     | 0.13     | 0.05     |  |
| 16-Jun-2016   | 0.67      | 0.62            | 0.24     | 0.08     | 0.26     | 0.21     | 0.26     | 0.14     | 0.20     | 0.06     | 0.12     | 0.07     | 0.26     | 0.14     | 0.21     | 0.06     | 0.21     | 0.11     |  |
| 17-Jun-2016   | 0.79      | 0.70            | 0.24     | 0.12     | 0.20     | 0.16     | 0.27     | 0.15     | 0.21     | 0.07     | 0.13     | 0.05     | 0.13     | 0.04     | 0.18     | 0.06     | 0.21     | 0.08     |  |
| 18-Jun-2016   | NS        | NS              | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       |  |
| 19-Jun-2016   | NS        | NS              | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       |  |
| 20-Jun-2016   | 1.02      | 0.85            | 0.17     | 0.17     | OL       | OL       | 0.23     | 0.10     | 0.25     | 0.03     | 0.13     | <0.02    | 0.13     | 0.03     | 0.13     | <0.02    | 0.13     | <0.02    |  |
| 21-Jun-2016   | 0.71      | 0.81            | 0.18     | 0.06     | 0.15     | 0.09     | 0.19     | 0.10     | 0.17     | 0.03     | 0.12     | <0.02    | 0.09     | <0.02    | 0.10     | <0.02    | 0.07     | <0.02    |  |
| 22-Jun-2016   | 0.79      | 0.82            | 0.19     | 0.07     | 0.14     | 0.11     | 0.14     | 0.06     | 0.16     | 0.03     | 0.14     | 0.04     | 0.07     | <0.02    | 0.08     | <0.02    | 0.07     | <0.02    |  |
| 23-Jun-2016   | 0.99      | 0.75            | 0.12     | 0.03     | 0.16     | 0.11     | 0.13     | 0.07     | 0.11     | <0.02    | 0.16     | 0.05     | 0.08     | 0.02     | 0.07     | <0.02    | 0.07     | <0.02    |  |
| 24-Jun-2016   | 1.21      | 0.80            | 0.11     | 0.03     | 0.12     | 0.07     | 0.15     | 0.08     | 0.09     | <0.02    | 0.06     | <0.02    | OL       | OL       | 0.08     | <0.02    | 0.08     | <0.02    |  |
| 25-Jun-2016   | NS        | NS              | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       |  |
| 26-Jun-2016   | NS        | NS              | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       | NS       |  |
| 27-Jun-2016   | 1.12      | 1.13            | 0.11     | 0.02     | 0.17     | 0.10     | 0.14     | 0.07     | 0.10     | <0.02    | 0.07     | <0.02    | 0.10     | 0.03     | 0.08     | <0.02    | 0.11     | 0.02     |  |
| 28-Jun-2016   | 1.18      | 1.02            | 0.16     | 0.05     | 0.13     | 0.08     | 0.14     | 0.07     | 0.13     | <0.02    | 0.08     | <0.02    | 0.09     | 0.02     | 0.09     | <0.02    | 0.09     | <0.02    |  |
| 29-Jun-2016   | 1.33      | 1.11            | 0.12     | 0.02     | 0.13     | 0.10     | 0.11     | 0.05     | 0.13     | 0.08     | 0.10     | 0.05     | 0.09     | 0.02     | 0.07     | <0.02    | 0.07     | <0.02    |  |
| 30-Jun-2016   | 1.22      | 1.20            | 0.14     | <0.02    | 0.09     | 0.08     | 0.12     | 0.07     | 0.09     | <0.02    | 0.07     | 0.03     | 0.09     | 0.04     | 0.07     | 0.02     | 0.08     | <0.02    |  |
| <b>Total number of measurements taken, A:</b>             |           |                 | 21       |          | 21       |          | 22       |          | 21       |          | 21       |          | 20       |          | 21       |          | 22       |          |  |
| <b>Turbidity Standard for Monitoring Location (NTU):</b>  |           |                 | 0.30     |          | 0.30     |          | 0.30     |          | 0.30     |          | 0.30     |          | 0.30     |          | 0.30     |          | 0.30     |          |  |
| <b>Number of measurements meeting standard, B:</b>        |           |                 | 21       |          | 21       |          | 22       |          | 21       |          | 21       |          | 20       |          | 21       |          | 22       |          |  |
| <b>Compliance with Turbidity Standard, C= B/A X 100%:</b> |           |                 | 100%     |          | 100%     |          | 100%     |          | 100%     |          | 100%     |          | 100%     |          | 100%     |          | 100%     |          |  |

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 2-Jul-16



WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT  
Deacon Booster Pumping Station

Water System Code: 252.00  
Licence Number: PWS-09-412 01  
Report Created: 04 July 2016

Report Period: June 2016

| Date       | BRANCH 1<br>[mg/L] |         | BRANCH 2<br>[mg/L] |         |
|------------|--------------------|---------|--------------------|---------|
|            | Average            | Minimum | Average            | Minimum |
| 01/06/2016 | 1.04               | 0.97    | 0.95               | 0.91    |
| 02/06/2016 | 1.14               | 1.04    | 1.08               | 0.96    |
| 03/06/2016 | 1.19               | 1.04    | 1.16               | 1.04    |
| 04/06/2016 | 1.17               | 1.10    | 1.17               | 1.10    |
| 05/06/2016 | 1.12               | 1.04    | 1.17               | 1.08    |
| 06/06/2016 | 1.13               | 1.05    | 1.15               | 1.09    |
| 07/06/2016 | 1.06               | 0.96    | 1.09               | 1.00    |
| 08/06/2016 | 0.93               | 0.85    | 0.97               | 0.89    |
| 09/06/2016 | 1.04               | 0.90    | 1.04               | 0.91    |
| 10/06/2016 | 1.15               | 1.07    | 1.15               | 1.06    |
| 11/06/2016 | 1.12               | 1.05    | 1.17               | 1.11    |
| 12/06/2016 | 1.12               | 1.06    | 1.19               | 1.14    |
| 13/06/2016 | 1.12               | 1.03    | 1.18               | 1.09    |
| 14/06/2016 | 1.10               | 1.04    | 1.14               | 1.08    |
| 15/06/2016 | 1.10               | 0.93    | 1.12               | 1.00    |
| 16/06/2016 | 1.08               | 0.97    | 1.12               | 1.04    |
| 17/06/2016 | 1.02               | 0.95    | 1.06               | 0.98    |
| 18/06/2016 | 1.02               | 0.94    | 1.06               | 1.00    |
| 19/06/2016 | 1.09               | 1.00    | 1.15               | 1.04    |
| 20/06/2016 | 1.00               | 0.94    | 1.06               | 0.95    |
| 21/06/2016 | 1.05               | 0.96    | 1.10               | 1.04    |
| 22/06/2016 | 1.00               | 0.91    | 1.01               | 0.92    |
| 23/06/2016 | 1.10               | 1.00    | 1.10               | 1.02    |
| 24/06/2016 | 1.15               | 1.02    | 1.17               | 1.08    |
| 25/06/2016 | 1.20               | 1.12    | 1.22               | 1.16    |
| 26/06/2016 | 1.23               | 1.14    | 1.26               | 1.16    |
| 27/06/2016 | 1.28               | 1.20    | 1.24               | 1.19    |
| 28/06/2016 | 1.23               | 1.15    | 1.26               | 1.16    |
| 29/06/2016 | 1.14               | 0.72    | 1.05               | 0.69    |
| 30/06/2016 | 1.06               | 0.93    | 1.01               | 0.91    |

|   |       |       |
|---|-------|-------|
| Total Number of Measurements, A:            | 20878 | 20879 |
| Minimum Free Chlorine Standard:             | 0.50  | 0.50  |
| Number of Measurements Meeting Standard, B: | 20878 | 20879 |
| COMPLIANCE, C = B/A X 100%:                 | 100   | 100   |

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2016\06-June

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



CITY OF WINNIPEG  
 WATER AND WASTE DEPARTMENT  
 ENVIRONMENTAL STANDARDS DIVISION

**WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT**

| Water System Code: 252.00                                |          | Deacon Booster Pumping Station Branch 1 |      |                       | Deacon Booster Pumping Station Branch 2 |      |                       |
|--|----------|---|------|-----------------------|---|------|-----------------------|
| Licence No. PWS-09-412-01                                |          | Free Chlorine (mg/L)                    |      | Total Chlorine (mg/L) | Free Chlorine (mg/L)                    |      | Total Chlorine (mg/L) |
| Date   | Analyser | Grab                                    | Grab | Analyser              | Grab                                    | Grab |                       |
| 01-Jun-2016  | 1.04     | 1.05                                    | 1.17 | 0.94                  | 0.98                                    | 1.12 |                       |
| 02-Jun-2016  | 1.13     | 1.15                                    | 1.29 | 0.98                  | 1.07                                    | 1.25 |                       |
| 03-Jun-2016  | 1.19     | 1.17                                    | 1.30 | 1.15                  | 1.20                                    | 1.36 |                       |
| 04-Jun-2016  | NS       | NS                                      | NS   | NS                    | NS                                      | NS   |                       |
| 05-Jun-2016  | NS       | NS                                      | NS   | NS                    | NS                                      | NS   |                       |
| 06-Jun-2016  | 1.17     | 1.20                                    | 1.34 | 1.17                  | 1.14                                    | 1.34 |                       |
| 07-Jun-2016  | 1.12     | 1.15                                    | 1.24 | 1.11                  | 1.20                                    | 1.30 |                       |
| 08-Jun-2016  | 0.99     | 0.98                                    | 1.10 | 0.91                  | 0.99                                    | 1.12 |                       |
| 09-Jun-2016  | 0.94     | 0.93                                    | 1.11 | 0.95                  | 0.98                                    | 1.12 |                       |
| 10-Jun-2016  | 1.13     | 1.15                                    | 1.31 | 1.12                  | 1.18                                    | 1.33 |                       |
| 11-Jun-2016  | NS       | NS                                      | NS   | NS                    | NS                                      | NS   |                       |
| 12-Jun-2016  | NS       | NS                                      | NS   | NS                    | NS                                      | NS   |                       |
| 13-Jun-2016  | 1.14     | 1.15                                    | 1.30 | 1.20                  | 1.20                                    | 1.35 |                       |
| 14-Jun-2016  | 1.10     | 1.15                                    | 1.29 | 1.15                  | 1.16                                    | 1.36 |                       |
| 15-Jun-2016  | 1.15     | 1.17                                    | 1.29 | 1.18                  | 1.20                                    | 1.34 |                       |
| 16-Jun-2016  | 1.10     | 1.14                                    | 1.30 | 1.14                  | 1.14                                    | 1.33 |                       |
| 17-Jun-2016  | 0.99     | 1.08                                    | 1.25 | 1.03                  | 1.13                                    | 1.27 |                       |
| 18-Jun-2016  | NS       | NS                                      | NS   | NS                    | NS                                      | NS   |                       |
| 19-Jun-2016  | NS       | NS                                      | NS   | NS                    | NS                                      | NS   |                       |
| 20-Jun-2016  | 0.98     | 1.14                                    | 1.31 | 1.04                  | 1.21                                    | 1.34 |                       |
| 21-Jun-2016  | 1.04     | 1.08                                    | 1.29 | 1.11                  | 1.15                                    | 1.35 |                       |
| 22-Jun-2016  | 0.96     | 1.04                                    | 1.26 | 0.96                  | 1.04                                    | 1.27 |                       |
| 23-Jun-2016  | 1.09     | 1.18                                    | 1.29 | 1.08                  | 1.16                                    | 1.35 |                       |
| 24-Jun-2016  | 1.10     | 1.19                                    | 1.36 | 1.16                  | 1.20                                    | 1.37 |                       |
| 25-Jun-2016  | NS       | NS                                      | NS   | NS                    | NS                                      | NS   |                       |
| 26-Jun-2016  | NS       | NS                                      | NS   | NS                    | NS                                      | NS   |                       |
| 27-Jun-2016  | 1.26     | 1.28                                    | 1.44 | 1.20                  | 1.26                                    | 1.40 |                       |
| 28-Jun-2016  | 1.24     | 1.26                                    | 1.42 | 1.26                  | 1.28                                    | 1.43 |                       |
| 29-Jun-2016  | 1.21     | 1.17                                    | 1.36 | 1.01                  | 1.04                                    | 1.25 |                       |
| 30-Jun-2016  | 1.12     | 1.11                                    | 1.29 | 1.04                  | 1.04                                    | 1.21 |                       |
| <b>Total number of measurements taken, A:</b>            |          | 22                                      |      |                       | 22                                      |      |                       |
| <b>Chlorine Standard for Monitoring Location (mg/L):</b> |          | 0.50                                    |      |                       | 0.50                                    |      |                       |
| <b>Number of measurements meeting standard, B:</b>       |          | 22                                      |      |                       | 22                                      |      |                       |
| <b>Compliance with Chlorine Standard, C= B/A X 100%:</b> |          | 100%                                    |      |                       | 100%                                    |      |                       |

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 2-Jul-16



**CITY OF WINNIPEG**  
 WATER AND WASTE DEPARTMENT  
 WATER SERVICES

Water System Code: **252.00**  
 Licence Number: **PWS-09-412-01**

**WATER TREATMENT PLANT UV REPORT**

Report Period: **June 2016**

Report Created: **Tuesday, July 05, 2016**

| Date       | Transmittance % | UVR-D100A         |       |        |        | UVR-D200A         |       |         |         | UVR-D300A         |       |         |         | UVR-D400A         |       |        |        | UVR-D500A         |       |         |         | UVR-D600A         |       |       |       | Total             |       |         |         | % Volume Treated To Dose |           |
|------------|-----------------|-------------------|-------|--------|--------|-------------------|-------|---------|---------|-------------------|-------|---------|---------|-------------------|-------|--------|--------|-------------------|-------|---------|---------|-------------------|-------|-------|-------|-------------------|-------|---------|---------|--------------------------|-----------|
|            |                 | Water Volume [ML] |       |        |        | Water Volume [ML] |       |         |         | Water Volume [ML] |       |         |         | Water Volume [ML] |       |        |        | Water Volume [ML] |       |         |         | Water Volume [ML] |       |       |       | Water Volume [ML] |       |         |         |                          |           |
|            |                 | Untreated         | Below | To     | Total  | Untreated         | Below | To      | Total   | Untreated         | Below | To      | Total   | Untreated         | Below | To     | Total  | Untreated         | Below | To      | Total   | Untreated         | Below | To    | Total | Untreated         | Below | To      | Total   |                          | Untreated |
| 01/06/2016 | 94.77           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.09  | 66.68   | 66.77   | 0.00              | 0.00  | 0.00    | 0.00    | 0.00              | 0.00  | 62.57  | 62.57  | 0.00              | 0.00  | 0.00    | 0.00    | 0.00              | 0.00  | 64.70 | 64.70 | 0.00              | 0.09  | 193.95  | 194.04  | 99.95                    |           |
| 02/06/2016 | 95.12           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.04  | 64.33   | 64.37   | 0.00              | 0.03  | 45.23   | 45.25   | 0.00              | 0.00  | 19.18  | 19.18  | 0.00              | 0.00  | 44.47   | 44.47   | 0.00              | 0.00  | 20.73 | 20.73 | 0.00              | 0.07  | 193.93  | 194.01  | 99.96                    |           |
| 03/06/2016 | 94.51           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.04  | 65.60   | 65.64   | 0.00              | 0.00  | 23.34   | 23.34   | 0.00              | 0.00  | 40.48  | 40.48  | 0.00              | 0.00  | 64.54   | 64.54   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.04  | 193.96  | 194.01  | 99.98                    |           |
| 04/06/2016 | 94.42           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.19  | 67.17   | 67.36   | 0.00              | 0.00  | 0.00    | 0.00    | 0.00              | 0.00  | 63.76  | 63.76  | 0.00              | 0.00  | 62.92   | 62.92   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.19  | 193.85  | 194.04  | 99.90                    |           |
| 05/06/2016 | 94.17           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 67.42   | 67.42   | 0.00              | 0.00  | 0.00    | 0.00    | 0.00              | 0.00  | 64.04  | 64.04  | 0.00              | 0.00  | 62.54   | 62.54   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.00  | 194.00  | 194.00  | 100.00                   |           |
| 06/06/2016 | 94.18           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.14  | 67.04   | 67.18   | 0.00              | 0.00  | 0.00    | 0.00    | 0.00              | 0.00  | 63.32  | 63.32  | 0.00              | 0.00  | 63.49   | 63.49   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.14  | 193.85  | 193.99  | 99.93                    |           |
| 07/06/2016 | 95.33           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.23  | 66.96   | 67.19   | 0.00              | 0.00  | 0.00    | 0.00    | 0.00              | 0.00  | 63.29  | 63.29  | 0.00              | 0.00  | 63.51   | 63.51   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.23  | 193.76  | 194.00  | 99.88                    |           |
| 08/06/2016 | 95.43           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.14  | 67.15   | 67.29   | 0.00              | 0.00  | 0.00    | 0.00    | 0.00              | 0.00  | 63.67  | 63.67  | 0.00              | 0.00  | 63.04   | 63.04   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.14  | 193.86  | 193.99  | 99.93                    |           |
| 09/06/2016 | 95.02           | 0.00              | 0.00  | 27.15  | 27.15  | 0.00              | 0.05  | 38.61   | 38.66   | 0.00              | 0.00  | 0.00    | 0.00    | 0.00              | 0.00  | 64.95  | 64.95  | 0.00              | 0.00  | 63.22   | 63.22   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.05  | 193.94  | 193.98  | 99.98                    |           |
| 10/06/2016 | 94.86           | 0.00              | 0.00  | 40.78  | 40.78  | 0.00              | 0.00  | 23.72   | 23.72   | 0.00              | 0.00  | 48.12   | 48.12   | 0.00              | 0.00  | 21.17  | 21.17  | 0.00              | 0.00  | 68.50   | 68.50   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.00  | 202.29  | 202.29  | 100.00                   |           |
| 11/06/2016 | 94.91           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.05  | 68.84   | 68.89   | 0.00              | 0.00  | 70.66   | 70.66   | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 70.43   | 70.43   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.05  | 209.93  | 209.98  | 99.98                    |           |
| 12/06/2016 | 94.57           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.36  | 65.63   | 65.99   | 0.00              | 0.00  | 67.91   | 67.91   | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 68.69   | 68.69   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.36  | 202.23  | 202.59  | 99.82                    |           |
| 13/06/2016 | 94.02           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.13  | 65.70   | 65.83   | 0.00              | 0.00  | 67.89   | 67.89   | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 68.77   | 68.77   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.13  | 202.36  | 202.49  | 99.93                    |           |
| 14/06/2016 | 94.07           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.05  | 66.80   | 66.85   | 0.00              | 0.00  | 68.78   | 68.78   | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 69.35   | 69.35   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.05  | 204.94  | 204.99  | 99.98                    |           |
| 15/06/2016 | 93.98           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 67.18   | 67.18   | 0.00              | 0.00  | 68.96   | 68.96   | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 69.24   | 69.24   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.00  | 205.38  | 205.38  | 100.00                   |           |
| 16/06/2016 | 93.35           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 66.86   | 66.86   | 0.00              | 0.00  | 70.91   | 70.91   | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 69.07   | 69.07   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.00  | 206.84  | 206.84  | 100.00                   |           |
| 17/06/2016 | 93.24           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.05  | 67.96   | 68.01   | 0.00              | 0.00  | 72.64   | 72.64   | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 69.99   | 69.99   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.05  | 210.59  | 210.64  | 99.98                    |           |
| 18/06/2016 | 93.31           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.05  | 68.46   | 68.50   | 0.00              | 0.00  | 73.19   | 73.19   | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 70.35   | 70.35   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.05  | 211.99  | 212.04  | 99.98                    |           |
| 19/06/2016 | 93.46           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.05  | 68.48   | 68.52   | 0.00              | 0.00  | 73.20   | 73.20   | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 70.27   | 70.27   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.05  | 211.94  | 211.99  | 99.98                    |           |
| 20/06/2016 | 93.58           | 0.00              | 0.00  | 14.75  | 14.75  | 0.00              | 0.05  | 51.83   | 51.87   | 0.00              | 0.19  | 55.62   | 55.80   | 0.00              | 0.00  | 15.32  | 15.32  | 0.00              | 0.00  | 67.16   | 67.16   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.24  | 204.66  | 204.90  | 99.88                    |           |
| 21/06/2016 | 93.71           | 0.00              | 0.00  | 69.29  | 69.29  | 0.00              | 0.00  | 0.00    | 0.00    | 0.00              | 0.00  | 0.07    | 0.07    | 0.00              | 0.00  | 62.75  | 62.75  | 0.00              | 0.00  | 70.75   | 70.75   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.00  | 202.86  | 202.86  | 100.00                   |           |
| 22/06/2016 | 93.75           | 0.00              | 0.00  | 69.44  | 69.44  | 0.00              | 0.00  | 0.07    | 0.07    | 0.01              | 0.01  | 20.13   | 20.14   | 0.00              | 0.00  | 40.79  | 40.79  | 0.00              | 0.00  | 72.55   | 72.55   | 0.00              | 0.00  | 0.00  | 0.00  | 0.01              | 0.01  | 202.98  | 202.99  | 99.99                    |           |
| 23/06/2016 | 93.85           | 0.00              | 0.00  | 68.70  | 68.70  | 0.00              | 0.00  | 0.00    | 0.00    | 0.00              | 0.00  | 59.82   | 59.82   | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 74.38   | 74.38   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.00  | 202.89  | 202.89  | 100.00                   |           |
| 24/06/2016 | 94.06           | 0.00              | 0.00  | 40.47  | 40.47  | 0.23              | 0.26  | 28.99   | 29.49   | 0.00              | 0.00  | 59.32   | 59.32   | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 73.85   | 73.85   | 0.00              | 0.00  | 0.00  | 0.00  | 0.23              | 0.26  | 202.63  | 203.12  | 99.76                    |           |
| 25/06/2016 | 94.02           | 0.00              | 0.00  | 68.70  | 68.70  | 0.00              | 0.00  | 0.00    | 0.00    | 0.00              | 0.00  | 59.60   | 59.60   | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 74.66   | 74.66   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.00  | 202.96  | 202.96  | 100.00                   |           |
| 26/06/2016 | 94.24           | 0.00              | 0.00  | 65.46  | 65.46  | 0.00              | 0.00  | 0.00    | 0.00    | 0.00              | 0.00  | 58.04   | 58.04   | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 71.91   | 71.91   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.00  | 195.41  | 195.41  | 100.00                   |           |
| 27/06/2016 | 94.44           | 0.00              | 0.00  | 71.57  | 71.57  | 0.00              | 0.00  | 0.00    | 0.00    | 0.00              | 0.00  | 50.48   | 50.48   | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 75.52   | 75.52   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.00  | 197.56  | 197.56  | 100.00                   |           |
| 28/06/2016 | 94.50           | 0.00              | 0.00  | 47.93  | 47.93  | 0.00              | 0.00  | 29.66   | 29.66   | 0.00              | 0.00  | 47.00   | 47.00   | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 78.01   | 78.01   | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.00  | 202.59  | 202.59  | 100.00                   |           |
| 29/06/2016 | 94.31           | 0.00              | 0.11  | 0.23   | 0.34   | 0.01              | 0.01  | 75.23   | 75.25   | 0.02              | 0.02  | 27.95   | 27.98   | 0.01              | 0.01  | 35.10  | 35.11  | 0.17              | 0.33  | 29.12   | 29.62   | 0.00              | 0.00  | 14.32 | 14.32 | 0.21              | 0.47  | 181.95  | 182.62  | 99.63                    |           |
| 30/06/2016 | 94.38           | 0.00              | 0.00  | 0.00   | 0.00   | 0.00              | 0.00  | 84.63   | 84.63   | 0.00              | 0.00  | 46.80   | 46.80   | 0.00              | 0.00  | 71.48  | 71.48  | 0.00              | 0.00  | 0.00    | 0.00    | 0.00              | 0.00  | 0.00  | 0.00  | 0.00              | 0.00  | 202.90  | 202.90  | 100.00                   |           |
|            |                 | 0.00              | 0.11  | 584.47 | 584.58 | 0.24              | 1.98  | 1470.98 | 1473.20 | 0.02              | 0.24  | 1235.63 | 1235.89 | 0.01              | 0.01  | 751.86 | 751.88 | 0.17              | 0.33  | 1870.30 | 1870.80 | 0.00              | 0.00  | 99.75 | 99.75 | 0.45              | 2.67  | 6012.99 | 6016.11 |                          |           |

Water Volume [%]:  
 Untreated: 0.01 %  
 Below Dose 0.04 %  
 To Dose 99.95 %

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew