



Water and Waste Department  
Environmental Standards Division

# 2018 Annual Water Report

## City of Winnipeg Water Supply System



## SUMMARY

The Province of Manitoba and the Winnipeg Regional Health Authority regulate the quality of our drinking water using the Manitoba Drinking Water Safety Act and the Guidelines for Canadian Drinking Water Quality.

The City of Winnipeg ensures that the water is safe by using watershed protection measures, design and construction standards, multi-step water treatment, operator certification programs, standardized operating procedures, and a comprehensive source-to-tap monitoring program.

The City of Winnipeg's Public Water System Operating Licence, PWS-09-412-01, requires that we regularly monitor the quality of our drinking water and submit an annual report to the regulating authority on or before the 31<sup>st</sup> of March of each year as set out in subsection 32(2) of *MR 40/2007, Drinking Water Safety Regulation*.

In keeping with this requirement, the City of Winnipeg hereby submits this report which summarizes the results of the City's 2018 Water Quality Monitoring Program.

## CONTENTS

1.0	DRINKING WATER SYSTEM AND SOURCE .....	1
2.0	DISINFECTION METHODS.....	1
3.0	DRINKING WATER QUALITY STANDARDS .....	2
4.0	DRINKING WATER QUALITY COMPLIANCE AND CORRECTIVE ACTIONS .....	4
5.0	MONTHLY COMPLIANCE REPORTING .....	7
6.0	DRINKING WATER SAFETY ORDERS .....	7
7.0	BOIL WATER ADVISORIES.....	7
8.0	SUMMARY OF OFFENCES.....	8
9.0	MAJOR EXPENSES.....	8
10.0	ADDITIONAL INFORMATION .....	9
11.0	REFERENCES .....	10

## TABLES

TABLE 1.	DRINKING WATER PARAMETERS .....	3
TABLE 2.	DRINKING WATER QUALITY COMPLIANCE AND CORRECTIVE ACTIONS .....	5

## APPENDICES

### APPENDIX A. WATER QUALITY SUMMARY REPORTS

- 2018 SHOAL LAKE WATER QUALITY SUMMARY
- 2018 WATER TREATMENT PLANT – RAW WATER QUALITY SUMMARY
- 2018 WATER TREATMENT PLANT – FINISHED WATER QUALITY SUMMARY
- 2018 DISTRIBUTION SYSTEM WATER QUALITY SUMMARY

### APPENDIX B. COMPLIANCE SUBMISSION REPORTS

- 2018 MONTHLY CHLORINE REPORTS
- 2018 MONTHLY TURBIDITY REPORTS
- 2018 MONTHLY UV MONITORING SUMMARY REPORTS
- 2018 CORRECTIVE ACTION REPORTS
- 2018 QUARTERLY FLUORIDE MONITORING REPORTS
- 2018 QUARTERLY TOTAL TRIHALOMETHANE SUMMARY REPORTS
- 2018 QUARTERLY HALOACETIC ACID SUMMARY REPORTS
- 2018 LEAD LOOP MONITORING REPORT

## **1.0 DRINKING WATER SYSTEM AND SOURCE**

---

***“Section 32(2) (a) a brief description of the drinking water system, including its water supply source.”***

The City of Winnipeg gets its water from Shoal Lake, which is on the border between Manitoba and Ontario, and covers 277 square kilometers. The intake for Winnipeg's water system is on Indian Bay on the western end of Shoal Lake, and is only accessible by rail or boat. Water flows from Shoal Lake to Winnipeg by gravity through a 135 kilometer long aqueduct. The water is stored in Deacon Reservoirs, four large reservoirs that can hold 8.8 billion liters, enough water to supply Winnipeg for about one month, depending on consumption demand. Water passes from the Deacon Reservoirs to a Drinking Water Treatment Plant, and then on to three smaller reservoirs and pumping stations in different areas of the city. Each day, an average of 165 million liters of water is billed to approximately 210,000 accounts in Winnipeg.

## **2.0 DISINFECTION METHODS**

---

***“Section 32(2) (b) a description of the disinfection methods used.”***

The water passes through several disinfection treatment steps at the Water Treatment Plant including ozonation, chlorination, and UV light disinfection. The water is chlorinated again at the pumping stations before being distributed to homes and businesses.

### 3.0 DRINKING WATER QUALITY STANDARDS

---

***“Section 32(2) (c) a list of all bacteriological, chemical, physical and microbial drinking water quality standards that apply to the water system.”***

The bacteriological, chemical, physical, and microbial drinking water quality standards that apply to the City of Winnipeg's Public Water System are listed in Operating Licence PWS-09-412-01<sup>1</sup>, issued by Manitoba Sustainable Development, under the authority of the *Manitoba Drinking Water Safety Act*<sup>2</sup> and its associated Regulations: *MR 40/2007, Drinking Water Safety Regulation*<sup>3</sup> and *MR 41/2007, Drinking Water Quality Standards Regulation*<sup>4</sup>. Table 1 provides a list of the parameters we analyze and analytical results are provided in Appendix A.

**Table 1. Drinking Water Parameters**

Parameter	Shoal Lake	Water Treatment Plant Raw Water	Water Treatment Plant Treated Water	Distribution System
Alkalinity	✓	✓	✓	✓
Bacteria	✓	✓	✓	✓
Bromate				✓
Bromide		✓		✓
Chloride	✓	✓	✓	✓
Chlorine		✓	✓	✓
Chlorophyll-a	✓	✓	✓	
Conductivity	✓	✓	✓	✓
Disinfection By-Products	✓	✓	✓	✓
Dissolved Oxygen		✓	✓	✓
Enteric Protozoa	✓	✓		
Fluoride	✓	✓		✓
Hardness	✓	✓	✓	✓
Langelier Index		✓		✓
Microcystin LR		✓	✓	
Nitrogen	✓	✓		✓
Odour	✓	✓	✓	✓
Organic Carbon	✓	✓	✓	✓
ORP		✓	✓	✓
Perchlorate	✓	✓	✓	✓
Pesticides	✓	✓	✓	
Phenoxy Acid Herbicides	✓	✓	✓	
pH	✓	✓	✓	✓
Phosphorous	✓	✓		✓
Plankton (algae) count	✓	✓	✓	
Polychlorinated Biphenyls	✓	✓	✓	
Solids	✓	✓	✓	✓
Sulphate	✓	✓	✓	✓
Taste and Odour Compounds		✓	✓	
Temperature	✓	✓	✓	✓
Total Metals	✓	✓	✓	✓
True Colour	✓	✓	✓	✓
Turbidity	✓	✓	✓	✓
UV – Transmittance		✓	✓	✓

## 4.0 DRINKING WATER QUALITY COMPLIANCE AND CORRECTIVE ACTIONS

---

***"Section 32(2) (d) a summary of any incidents of failure to meet a drinking water quality standard, and a description of corrective action."***

Because water quality is so important, the City of Winnipeg operates a comprehensive Water Quality Monitoring program that exceeds the requirements of PWS-09-412-01. We monitor the quality of our water from source to tap and respond to customer inquiries and complaints about water quality. Occasionally, test results for some locations do not meet a drinking water quality standard. In these cases, we take corrective action immediately to ensure our water remains safe. Corrective action reports are submitted monthly to the Office of Drinking Water for deviations from the bacteriological, turbidity and chlorine standards. Table 2 lists occasions when a drinking water quality standard was not met and the corrective actions taken for 2018.

**Table 2. Drinking Water Quality Compliance and Corrective Actions**

Date	Location	Corrective Action Report	Type of Water Quality Standard not Being Met	Description of Corrective Actions Taken
Mar 13, 2018	WC04	CAR-01	Total coliform < 1 MPNU/100mL	Re-sampled original location until two consecutive negative results were reported.
May 24, 2018	Hydrant	n/a	Total coliform < 1 MPNU/100mL	*upstream and downstream locations were also sampled until two consecutive negative results were reported.
Jun 1, 2018	Hydrant	n/a	Total coliform < 1 MPNU/100mL	
Jul 9, 2018*	Hydrant	CAR-04	Total coliform < 1 MPNU/100mL	All samples indicated that the chlorine levels at the location were normal and provided adequate disinfection.
Jul 11, 2018*	Eric Street	CAR-11	Total coliform < 1 MPNU/100mL	
Jul 16, 2018	Hydrant	n/a	Total coliform < 1 MPNU/100mL	
Jul 17, 2018	WC05	CAR-02	Total coliform < 1 MPNU/100mL	
Jul 17, 2018	Patricia Avenue	n/a	Total coliform < 1 MPNU/100mL	
Jul 25, 2018	SW11	CAR-03	Total coliform < 1 MPNU/100mL	
Aug 5, 2018*	Dominion Street	CAR-05	Total coliform < 1 MPNU/100mL <i>Escherichia Coli</i> < 1 MPNU/100mL	
Aug 30, 2018	Dudley Avenue	n/a	Total coliform < 1 MPNU/100mL	
Oct 1, 2018	NW06	CAR-08	Total coliform < 1 MPNU/100mL	
Oct 1, 2018	SW07	CAR-08	Total coliform < 1 MPNU/100mL	
Oct 2, 2018	NW02	CAR-09	Total coliform < 1 MPNU/100mL	

**Table 2. Drinking Water Quality Compliance and Corrective Actions**

Date	Location	Corrective Action Report	Type of Water Quality Standard not Being Met	Description of Corrective Actions Taken
Oct 2, 2018	SW09	n/a	Total coliform < 1 MPNU/100mL	Re-sampled original location until two consecutive negative results were reported.
Oct 3, 2018	Linwood Street	n/a	Total coliform < 1 MPNU/100mL	*upstream and downstream locations were also sampled until two consecutive negative results were reported.
Oct 31, 2018	Barker Boulevard	n/a	Total coliform < 1 MPNU/100mL	All samples indicated that the chlorine levels at the location were normal and provided adequate disinfection.
Dec 10, 2018*	Sweetwater Bay	CAR-10	Total coliform < 1 MPNU/100mL	
Jun-Sep 2018	Kildonan Park	n/a	Free chlorine > 0.10 mg/L	All locations were resampled and/or alternate locations were sampled, and/or other actions were taken (checked for closed valves and spot flushed) until chlorine was re-established.
Sep 2018	Assiniboine Park	n/a	Free chlorine > 0.10 mg/L	
Sep 2, 2018	NW02 Analyser	CAR-07	Free chlorine > 0.10 mg/L	
Sep 13, 2018	Armstrong Avenue	CAR-06	Free chlorine > 0.10 mg/L	
Nov 7, 2018	WTP - Filter 7	Yes	Turbidity < 1.0 NTU	Both instances are related to turbidimeter cleaning and are not thought to be representative of water quality moving through the filters at the time of measurement.
Nov 15, 2018	WTP - Filter 1	Yes	Turbidity < 1.0 NTU	

## 5.0 MONTHLY COMPLIANCE REPORTING

---

***"Section 32(2) (e) a summary of the information contained in the records made under Section 31."***

As per the monitoring requirements set out in Table 2 of the City of Winnipeg's Operating Licence, PWS-09-412-01, turbidity, free and total chlorine, UV, and corrective action reports are submitted on a monthly basis. Bacteriological reports and chlorine residual results are sent directly to the Office of Drinking Water by the analytical laboratory that does the bacteriological testing of samples. Monthly compliance reports are provided in Appendix B.

## 6.0 DRINKING WATER SAFETY ORDERS

---

***"Section 32(2) (f) a description of any drinking water safety orders issued."***

No drinking water safety orders were issued to the City of Winnipeg in 2018.

## 7.0 BOIL WATER ADVISORIES

---

***"Section 32(2) (g) a description of any boil water advisories issued."***

There were no boil water advisories issued by the Winnipeg Regional Health Authority Medical Officer of Health in 2018, however, the City of Winnipeg issued two localized precautionary advisories when samples taken after water main repairs did not meet bacteriological standards. The affected water mains were immediately re-flushed and re-sampled, the area was under restricted flow and customers were immediately notified. The precautionary advisories were subsequently rescinded after two consecutive sets of re-samples, taken 24 hours apart, tested negative for bacteria.

## 8.0 SUMMARY OF OFFENCES

---

***"Section 32(2) (h) a summary of any charges laid, pending or disposed of for an offence."***

No charges were laid, pending, or disposed of for any offences against the City of Winnipeg in 2018.

## 9.0 MAJOR EXPENSES

---

***"Section 32(2) (i) a description of any major expenses incurred to repair, replace or install equipment."***

In 2018, the City's major expenses incurred were as follows:

- Water main renewals at 33 locations in the water distribution system.
- Water main work associated with 12 Public Works projects as part of the 2018 Street Renewal program.
- Upgrade of 1.7 km of water mains in North St. Boniface.
- Modifications to the feeder main system in order to facilitate asset inspection and condition assessment.
- Installation of 79 rock filled columns in the Seine riverbank at Rue Notre Dame and Rue Maisonneuve to stabilize the riverbank and protect the Branch 1 Aqueduct.

## **10.0 ADDITIONAL INFORMATION**

---

***"Section 32(2) (j) any other information or description of any other activities that the supplier believes should be communicated."***

On November 20, 2018, the Water Treatment Plant transitioned coagulants to ferric sulphate from ferric chloride. The following upgrades to the Water Treatment Plant were completed in preparation for the transition:

- Replaced the chemical metering and dosing skids
- Modified the chemical storage tanks to accommodate the differences between the two chemicals
- Modified the online control systems to accommodate the differences between the two chemicals
- Installed an additional offline coagulation monitoring system

## 11.0 REFERENCES

---

1. City of Winnipeg Operating Licence PWS-09-412-01.

<http://www.winnipeg.ca/waterandwaste/pdfs/water/PublicWaterSystemOperatingLicense2016.pdf>

2. Manitoba Drinking Water Safety Act C.C.S.M. c. D101 (2002). Manitoba Water Stewardship.

[https://web2.gov.mb.ca/laws/statutes/ccsm/\\_pdf.php?cap=d101](https://web2.gov.mb.ca/laws/statutes/ccsm/_pdf.php?cap=d101)

3. Manitoba Drinking Water Safety Regulation 40/2007. Manitoba Water Stewardship.

[http://web2.gov.mb.ca/laws/regs/current/\\_pdf-reg.php?reg=40/2007](http://web2.gov.mb.ca/laws/regs/current/_pdf-reg.php?reg=40/2007)

4. Manitoba Drinking Water Quality Standards Regulation 41/2007. Manitoba Water Stewardship.

[http://web2.gov.mb.ca/laws/regs/current/\\_pdf-reg.php?reg=41/2007](http://web2.gov.mb.ca/laws/regs/current/_pdf-reg.php?reg=41/2007)

## **APPENDIX A**

## **WATER QUALITY SUMMARY REPORTS**

**City of Winnipeg**  
**Environmental Standards Division**  
**2018 Shoal Lake Water Quality Summary**

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Miscellaneous						
Carbon, Dissolved Organic	parts per million	no guideline	9.2	7.7	15.1	-
Carbon, Total Organic	parts per million	no guideline	9.3	7.6	16.3	-
Chlorophyll-a	parts per billion	no guideline	4	1	10	Chlorophyll is found in algae
Colour, True	TCU	no more than 15 *	9	5	13	Raw water - guideline does not apply
Conductivity	microsiemens per centimetre	no guideline	157	144	178	Another measure of dissolved solids
Odour	units	inoffensive*	93	75	150	Raw water - guideline does not apply
pH	units	between 7.0 and 10.5	8.11	7.47	8.84	Raw water - guideline does not apply
Plankton (algae) count	cells/mL	no guideline	4,807	800	16,000	Algae contribute to odours and may cause filter clogging
Solids, Total	parts per million	no guideline	103	86	121	-
Solids, Total Dissolved	parts per million	no more than 500 *	86	58	120	Raw water - guideline does not apply
Solids, Total Suspended	parts per million	no guideline	3	<3	9	-
Temperature	degrees Celcius	no more than 15 *	10.7	1.2	25.0	Raw water - guideline does not apply
Turbidity (clearness)	NTU	no more than 0.3 in 95% of measurements/month, never to exceed 1.0	0.97	0.08	2.69	Raw water - guideline does not apply
Anions and Nutrients						
Alkalinity, Total	parts per million as calcium carbonate	no guideline	75	69	84	-
Hardness, Total	parts per million as calcium carbonate	no guideline	77	70.3	87	-
Chloride	parts per million	no more than 250 *	2.5	0.6	4.8	Raw water - guideline does not apply
Fluoride	parts per million	no more than 1.5	0.11	0.09	0.12	Raw water - guideline does not apply
Nitrate Nitrogen	parts per million	no more than 10	0.034	<0.003	0.102	Raw water - guideline does not apply
Perchlorate	parts per billion	no guideline	<0.2	<0.2	<0.2	-
Phosphorus, Dissolved Reactive	parts per million	no guideline	0.003	<0.001	0.007	-
Phosphorus, Total	parts per million	no guideline	0.013	0.003	0.024	Phosphorus can contribute to algae growth
Sulphate	parts per million	no more than 500 *	0.7	0.4	<2	Raw water - guideline does not apply
Total Kjeldahl Nitrogen (TKN)	parts per million	no guideline	0.40	<0.20	0.64	TKN is a combination of ammonia and organic nitrogen
Bacteria						
Escherichia Coli	MPN per 100 mL	none detectable per 100 mL	<1	<1	3	Raw water - guideline does not apply
Total Coliforms	MPN per 100 mL	none detectable per 100 mL	92	<1	>200	Raw water - guideline does not apply
Heterotrophic Plate Count	CFU per mL	no guideline	143	7	>300	-
Disinfection By-Products						
Aldehydes	parts per billion	no guideline	2.9	<0.5	6.3	-
Bromodichloromethane	parts per billion	no guideline	<0.4	<0.4	<0.4	-
Haloacetic acids	parts per billion	no more than 80	1.5	<1.1	5.0	Raw water - guideline does not apply
Trihalomethanes	parts per billion	no more than 100	<2.7	<2.7	<3.0	Raw water - guideline does not apply
Enteric Protozoa						
Cryptosporidium	oocysts per 100 L	no guideline	<1	<1	<1	12 samples taken in 2018
Giardia	cysts per 100 L	no guideline	<1	<1	<1	12 samples taken in 2018

**City of Winnipeg**  
**Environmental Standards Division**  
**2018 Shoal Lake Water Quality Summary**

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Total Metals						
Aluminum	parts per million	no guideline	0.0101	0.0012	0.0370	-
Antimony	parts per million	no more than 0.006	<0.0005	<0.000025	<0.0005	Raw water - guideline does not apply
Arsenic	parts per million	no more than 0.010	0.0006	0.0006	0.0010	Raw water - guideline does not apply
Cadmium	parts per million	no more than 0.005	<0.0006	<0.000007	<0.0006	Raw water - guideline does not apply
Calcium	parts per million	no guideline	20.7	18.7	24.0	Contributes to hardness
Chromium	parts per million	no more than 0.05	<0.0006	<0.00004	<0.0006	Raw water - guideline does not apply
Chromium VI	parts per million	no guideline	<0.001	<0.001	<0.001	-
Copper	parts per million	no more than 1.0 *	0.00058	<0.000022	0.00155	Raw water - guideline does not apply
Iron	parts per million	no more than 0.3 *	0.0287	0.0094	0.0569	Raw water - guideline does not apply
Lead	parts per million	no more than 0.010	<0.0006	<0.000065	<0.0006	Raw water - guideline does not apply
Magnesium	parts per million	no guideline	6.29	5.37	7.34	Contributes to hardness
Manganese	parts per million	no more than 0.05 *	0.0098	0.0028	0.0199	Raw water - guideline does not apply
Mercury	parts per billion	no more than 1	<0.0005	<0.0005	0.0005	Raw water - guideline does not apply
Nickel	parts per million	no guideline	0.00023	0.00012	<0.00050	-
Potassium	parts per million	no guideline	1.27	1.10	1.46	-
Sodium	parts per million	no more than 200 *	2.37	2.04	2.85	Raw water - guideline does not apply
Uranium	parts per million	no more than 0.02	<0.0006	<0.000032	<0.0006	Raw water - guideline does not apply
Zinc	parts per million	no more than 5.0 *	0.00094	0.00022	0.00383	Raw water - guideline does not apply
Pesticides						
Alachlor	parts per billion	no guideline	<0.10	<0.10	<0.10	-
Aldrin	parts per billion	no guideline	<0.010	<0.010	<0.010	-
alpha-BHC	parts per billion	no guideline	<0.010	<0.010	<0.010	-
alpha-Chlordane	parts per billion	no guideline	<0.010	<0.010	<0.010	-
alpha-Endosulfan	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Atrazine	parts per billion	no more than 5	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Azinphosmethyl	parts per billion	no more than 20	<0.010	<0.010	<0.010	Raw water - guideline does not apply
beta-BHC	parts per billion	no guideline	<0.010	<0.010	<0.010	-
beta-Endosulfan	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Carbaryl	parts per billion	no guideline	<0.20	<0.20	<0.20	-
Carbofuran	parts per billion	no more than 90	<0.20	<0.20	<0.20	Raw water - guideline does not apply
Chlorothalonil	parts per billion	no guideline	<0.050	<0.050	<0.050	-
Chlorpyrifos	parts per billion	no more than 90	<0.0050	<0.0050	<0.0050	Raw water - guideline does not apply
delta-BHC	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Diazinon	parts per billion	no more than 20	<0.0050	<0.0050	<0.0050	Raw water - guideline does not apply
Diclofop-methyl	parts per billion	no more than 9	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Dieldrin	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Dimethoate	parts per billion	no more than 20	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Endrin	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Eptam	parts per billion	no guideline	<0.20	<0.20	<0.20	-
gamma-Chlordane	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Heptachlor	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Heptachlor Epoxide	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Lindane (gamma-BHC)	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Malathion	parts per billion	no more than 190	<0.10	<0.10	<0.10	Raw water - guideline does not apply

**City of Winnipeg**  
**Environmental Standards Division**  
**2018 Shoal Lake Water Quality Summary**

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Methoxychlor	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Methyl Parathion	parts per billion	no guideline	<0.10	<0.10	<0.10	-
Metribuzin	parts per billion	no more than 80	<0.20	<0.20	<0.20	Raw water - guideline does not apply
Mirex	parts per billion	no guideline	<0.010	<0.010	<0.010	-
o,p-DDD	parts per billion	no guideline	<0.010	<0.010	<0.010	-
o,p-DDE	parts per billion	no guideline	<0.010	<0.010	<0.010	-
o,p-DDT	parts per billion	no guideline	<0.010	<0.010	<0.010	-
p,p-DDD	parts per billion	no guideline	<0.010	<0.010	<0.010	-
p,p-DDE	parts per billion	no guideline	<0.010	<0.010	<0.010	-
p,p-DDT	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Parathion	parts per billion	no guideline	<0.013	<0.013	<0.013	-
Propaclor	parts per billion	no guideline	<0.20	<0.20	<0.20	-
Propanil	parts per billion	no guideline	<0.20	<0.20	<0.20	-
Propoxur	parts per billion	no guideline	<0.20	<0.20	<0.20	-
Simazine	parts per billion	no more than 10	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Terbufos	parts per billion	no more than 1	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Triallate	parts per billion	no guideline	<0.10	<0.10	<0.10	-
Trichlopyr	parts per billion	no guideline	<0.050	<0.050	<0.050	-
Trifluralin	parts per billion	no more than 45	<0.030	<0.030	<0.030	Raw water - guideline does not apply
<b>Polychlorinated Biphenyls</b>						
Arochlor 1016	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1221	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1232	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1242	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1248	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1254	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1260	parts per billion	no guideline	<0.020	<0.020	<0.020	-
<b>Phenoxy Acid Herbicides</b>						
2,4,5-T	parts per billion	no guideline	<0.050	<0.050	<0.050	-
2,4,5-TP	parts per billion	no guideline	<0.050	<0.050	<0.050	-
2,4-D	parts per billion	no more than 100	<0.050	<0.050	<0.050	Raw water - guideline does not apply
2,4-DB	parts per billion	no guideline	<0.050	<0.050	<0.050	-
2,4-DP	parts per billion	no guideline	<0.050	<0.050	<0.050	-
Bromoxynil	parts per billion	no more than 5	<0.020	<0.020	<0.020	Raw water - guideline does not apply
Dicamba	parts per billion	no more than 120	<0.0060	<0.0060	<0.0120	Raw water - guideline does not apply
Dinoseb	parts per billion	no guideline	<0.050	<0.050	<0.050	-
MCPA	parts per billion	no more than 100	<0.025	<0.025	<0.025	Raw water - guideline does not apply
MCPB	parts per billion	no guideline	<0.050	<0.050	<0.050	-
Mecoprop	parts per billion	no guideline	<0.050	<0.050	<0.050	-
Picloram	parts per billion	no more than 190	<0.20	<0.20	<0.20	Raw water - guideline does not apply

\*Aesthetic objective: These guidelines have an objective and not a maximum acceptable limit. These parameters should not impact the safety of the water to drink and there is no anticipated health risk for short-term exposures.

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, February 2017

Note: Where value is expressed as less than (<), the value is halved and used in the calculations, where value is expressed as (>), the value is used in the calculations.

**City of Winnipeg**  
**Environmental Standards Division**  
**2018 Water Treatment Plant - Raw Water**  
**Drinking Water Quality Summary**

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Miscellaneous						
Carbon, Dissolved Organic	parts per million	no guideline	8.8	3.5	14.9	-
Carbon, Total Organic	parts per million	no guideline	9.6	3.6	16.3	-
Chlorine, Free	parts per million	no guideline	0.03	<0.02	0.09	-
Chlorine, Total	parts per million	no guideline	0.04	<0.02	0.16	-
Chlorophyll-a	parts per billion	no guideline	7.0	2.0	19.6	Chlorophyll is found in algae
Colour, True	TCU	no more than 15 *	7.2	1.0	11.0	Raw water - guideline does not apply
Conductivity	microsiemens per centimetre	no guideline	167	154	184	Another measure of dissolved solids
Langelier Index (4 C)	units	no guideline	-0.30	-0.45	-0.11	-
Langelier Index (60 C)	units	no guideline	0.48	0.33	0.67	-
Microcystin LR	parts per billion	no more than 1.5	<0.2	<0.2	<0.2	Raw water - guideline does not apply
Odour	units	inoffensive*	91	75	150	Raw water - guideline does not apply
ORP	millivolts	no guideline	350	206	516	
Oxygen, Dissolved	parts per million	no guideline	11.5	7.1	14.6	-
pH	units	between 7.0 and 10.5	8.01	7.62	8.62	Raw water - guideline does not apply
Plankton (algae) count	cells/mL	no guideline	6,434	945	15,299	Algae contribute to odours and may cause filter clogging
Solids, Total	parts per million	no guideline	107.5	76	154	-
Solids, Total Dissolved	parts per million	no more than 500 *	94	63	131	Raw water - guideline does not apply
Temperature	degrees Celcius	no more than 15 *	9.4	1.0	23.6	Raw water - guideline does not apply
Turbidity (clearness)	NTU	no more than 0.3 in 95% of measurements/month, never to exceed 1.0	0.95	0.38	2.82	Raw water - guideline does not apply
UV Transmittance, Filtered	percent transmissivity	no guideline	75.9	72.0	80.3	-
UV Transmittance, Unfiltered	percent transmissivity	no guideline	74.1	71.2	77.2	-
Anions and Nutrients						
Alkalinity, Total	parts per million as calcium carbonate	no guideline	77	69	88	-
Alkalinity, Bicarbonate	parts per million	no guideline	101	92	107	-
Alkalinity, Carbonate	parts per million	no guideline	<0.60	<0.60	<0.60	-
Alkalinity, Hydroxide	parts per million	no guideline	<0.34	<0.34	<0.34	-
Hardness, Total	parts per million as calcium carbonate	no guideline	81.3	74.3	91.0	-
Ammonia	parts per million	no guideline	0.014	<0.010	0.021	-
Bromide	parts per million	no guideline	<0.010	<0.010	<0.010	-
Chloride	parts per million	no more than 250 *	2.7	<0.4	5.6	Raw water - guideline does not apply
Fluoride	parts per million	no more than 1.5	0.062	0.059	0.065	Raw water - guideline does not apply
Nitrate Nitrogen	parts per million	no more than 10	0.0126	<0.0050	0.0389	Raw water - guideline does not apply
Nitrite	parts per million	no more than 3	<0.0010	<0.0010	<0.0010	Raw water - guideline does not apply
Perchlorate	parts per billion	no guideline	<0.2	<0.2	<0.2	-
Phosphorus,Total	parts per million	no guideline	<0.050	<0.0012	<0.050	Phosphorus can contribute to algae growth
Sulphate	parts per million	no more than 500 *	1.23	<0.40	5.65	Raw water - guideline does not apply
Bacteria						
Escherichia Coli	MPN per 100 mL	none detectable per 100 mL	33	<1	>200	Raw water - guideline does not apply
Total Coliforms	MPN per 100 mL	none detectable per 100 mL	81	<1	>200	Raw water - guideline does not apply
Heterotrophic Plate Count	CFU per mL	no guideline	133	2	>300	-

**City of Winnipeg**  
**Environmental Standards Division**  
**2018 Water Treatment Plant - Raw Water**  
**Drinking Water Quality Summary**

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Disinfection By-Products						
Aldehydes	parts per billion	no guideline	4.0	1.7	9.2	-
Bromodichloromethane	parts per billion	no guideline	<0.4	<0.4	<0.4	-
Haloacetic acids	parts per billion	no more than 80	<4	<1.1	<4	Raw water - guideline does not apply
Trihalomethanes	parts per billion	no more than 100	<1.7	<1.7	<3.0	Raw water - guideline does not apply
Enteric Protozoa						
Cryptosporidium	oocysts per 100 L	no guideline	<1	<1	<1	13 samples taken in 2018
Giardia	cysts per 100 L	no guideline	<1	<1	<1	13 samples taken in 2018
Taste and Odours						
236 TCA - 2,3,6-trichloroanisole	parts per trillion	no guideline	<0.5	<0.5	<0.5	-
246 TCA - 2,4,6-trichloroanisole	parts per trillion	no guideline	<0.5	<0.5	<0.5	-
345 TCV - 3,4,5-trichloroveratrole	parts per trillion	no guideline	<0.2	<0.2	<0.2	-
Geosmin	parts per trillion	no guideline	5.9	1.6	13.1	-
IBMP - 2-isobutyl-3-methoxypyrazine	parts per trillion	no guideline	<0.2	<0.2	<0.2	-
IPMP - 2-isopropyl-3-methoxypyrazine	parts per trillion	no guideline	<0.2	<0.2	<0.2	-
Dichloromethane	parts per million	no more than 0.05	<0.0005	<0.0005	<0.0015	Raw water - guideline does not apply
MIB - 2-methylisoborneol	parts per trillion	no guideline	<10	<10	<10	-
MTBE - methyl tertiary-butyl ether	parts per million	no more than 0.015 *	<0.0005	<0.0005	<0.0005	Raw water - guideline does not apply
NDMA - N-nitrosodimethylamine	parts per trillion	no more than 40	<1.0	<1.0	1.3	Raw water - guideline does not apply
Total Metals						
Aluminum	parts per million	no guideline	0.00310	0.00114	0.01337	-
Antimony	parts per million	no more than 0.006	<0.00050	<0.000025	<0.00050	Raw water - guideline does not apply
Arsenic	parts per million	no more than 0.010	0.00073	0.00056	0.00143	Raw water - guideline does not apply
Barium	parts per million	no more than 1	0.0154	0.0141	0.0192	Raw water - guideline does not apply
Beryllium	parts per million	no guideline	<0.00003	<0.00003	<0.00010	-
Bismuth	parts per million	no guideline	<0.000050	<0.000050	<0.000050	-
Boron	parts per million	no more than 5	0.0041	<0.00208	0.0160	Raw water - guideline does not apply
Cadmium	parts per million	no more than 0.005	<0.00060	<0.000005	<0.00060	Raw water - guideline does not apply
Calcium	parts per million	no guideline	21.5	16.3	25.7	Contributes to hardness
Cesium	parts per million	no guideline	<0.000010	<0.000010	<0.000010	-
Chromium	parts per million	no more than 0.05	<0.00060	<0.00004	<0.00060	Raw water - guideline does not apply
Chromium VI	parts per million	no guideline	<0.001	<0.001	<0.001	-
Cobalt	parts per million	no guideline	<0.00010	<0.00001	<0.00010	-
Copper	parts per million	no more than 1.0 *	0.00055	<0.000022	0.00513	Raw water - guideline does not apply
Iron	parts per million	no more than 0.3 *	0.0529	0.0191	0.1971	Raw water - guideline does not apply
Lead	parts per million	no more than 0.010	<0.00060	<0.00005	<0.00060	Raw water - guideline does not apply
Lithium	parts per million	no guideline	0.0022	0.0014	0.0029	-
Magnesium	parts per million	no guideline	6.58	5.20	7.54	Contributes to hardness
Manganese	parts per million	no more than 0.05 *	0.0112	0.0038	0.0788	Raw water - guideline does not apply
Mercury	parts per billion	no more than 1	<0.0005	<0.0005	<0.0010	Raw water - guideline does not apply

**City of Winnipeg**  
**Environmental Standards Division**  
**2018 Water Treatment Plant - Raw Water**  
**Drinking Water Quality Summary**

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Molybdenum	parts per million	no guideline	0.000087	<0.000012	0.000207	-
Nickel	parts per million	no guideline	0.00026	<0.000021	0.00120	-
Potassium	parts per million	no guideline	1.26	0.97	1.47	-
Rubidium	parts per million	no guideline	0.00167	0.00156	0.00177	-
Selenium	parts per million	no more than 0.05	0.000080	<0.000050	<0.000190	Raw water - guideline does not apply
Silicon	parts per million	no guideline	3.14	2.68	3.45	-
Silver	parts per million	no guideline	<0.000010	<0.000010	<0.000010	-
Sodium	parts per million	no more than 200 *	2.49	2.03	2.81	Raw water - guideline does not apply
Strontium	parts per million	no guideline	0.0380	0.0348	0.0434	-
Tellurium	parts per million	no guideline	<0.00020	<0.00020	<0.00020	-
Thallium	parts per million	no guideline	<0.000010	<0.000010	<0.000016	-
Thorium	parts per million	no guideline	<0.00010	<0.00010	<0.00010	-
Tin	parts per million	no guideline	<0.00010	<0.000025	<0.00010	-
Titanium	parts per million	no guideline	<0.00012	<0.00012	<0.00030	-
Tungsten	parts per million	no guideline	<0.00010	<0.00010	<0.00010	-
Uranium	parts per million	no more than 0.02	<0.00060	<0.00001	<0.00060	Raw water - guideline does not apply
Vanadium	parts per million	no guideline	0.00015	0.00008	<0.00050	-
Zinc	parts per million	no more than 5.0 *	0.00074	<0.00011	0.00727	Raw water - guideline does not apply
Zirconium	parts per million	no guideline	<0.000060	<0.000060	<0.000060	-
<b>Pesticides</b>						
Alachlor	parts per billion	no guideline	<0.10	<0.10	<0.10	-
Aldrin	parts per billion	no guideline	<0.010	<0.010	<0.010	-
alpha-BHC	parts per billion	no guideline	<0.010	<0.010	<0.010	-
alpha-Chlordane	parts per billion	no guideline	<0.010	<0.010	<0.010	-
alpha-Endosulfan	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Atrazine	parts per billion	no more than 5	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Azinphosmethyl	parts per billion	no more than 20	<0.010	<0.010	<0.010	Raw water - guideline does not apply
beta-BHC	parts per billion	no guideline	<0.010	<0.010	<0.010	-
beta-Endosulfan	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Carbaryl	parts per billion	no guideline	<0.20	<0.20	<0.20	-
Carbofuran	parts per billion	no more than 90	<0.20	<0.20	<0.20	Raw water - guideline does not apply
Chlorothalonil	parts per billion	no guideline	<0.050	<0.050	<0.050	-
Chlorpyrifos	parts per billion	no more than 90	<0.0050	<0.0050	<0.0050	Raw water - guideline does not apply
delta-BHC	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Diazinon	parts per billion	no more than 20	<0.0050	<0.0050	<0.0050	Raw water - guideline does not apply
Diclofop-methyl	parts per billion	no more than 9	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Dieldrin	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Dimethoate	parts per billion	no more than 20	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Endrin	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Eptam	parts per billion	no guideline	<0.20	<0.20	<0.20	-
gamma-Chlordane	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Heptachlor	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Heptachlor Epoxide	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Lindane (gamma-BHC)	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Malathion	parts per billion	no more than 190	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Methoxychlor	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Methyl Parathion	parts per billion	no guideline	<0.10	<0.10	<0.10	-
Metribuzin	parts per billion	no more than 80	<0.20	<0.20	<0.20	Raw water - guideline does not apply
Mirex	parts per billion	no guideline	<0.010	<0.010	<0.010	-
o,p-DDD	parts per billion	no guideline	<0.010	<0.010	<0.010	-
o,p-DDE	parts per billion	no guideline	<0.010	<0.010	<0.010	-
o,p-DDT	parts per billion	no guideline	<0.010	<0.010	<0.010	-

**City of Winnipeg**  
**Environmental Standards Division**  
**2018 Water Treatment Plant - Raw Water**  
**Drinking Water Quality Summary**

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
p,p-DDD	parts per billion	no guideline	<0.010	<0.010	<0.010	-
p,p-DDE	parts per billion	no guideline	<0.010	<0.010	<0.010	-
p,p-DDT	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Parathion	parts per billion	no guideline	<0.013	<0.013	<0.013	-
Propaclor	parts per billion	no guideline	<0.20	<0.20	<0.20	-
Propanil	parts per billion	no guideline	<0.20	<0.20	<0.20	-
Propoxur	parts per billion	no guideline	<0.20	<0.20	<0.20	-
Simazine	parts per billion	no more than 10	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Terbufos	parts per billion	no more than 1	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Triallate	parts per billion	no guideline	<0.10	<0.10	<0.10	-
Trichlopyr	parts per billion	no guideline	<0.050	<0.050	0.050	-
Trifluralin	parts per billion	no more than 45	<0.030	<0.030	<0.030	Raw water - guideline does not apply
<b>Polychlorinated Biphenyls</b>						
Arochlor 1016	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1221	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1232	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1242	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1248	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1254	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1260	parts per billion	no guideline	<0.020	<0.020	<0.020	-
<b>Phenoxy Acid Herbicides</b>						
2,4,5-T	parts per billion	no guideline	<0.050	<0.050	<0.050	-
2,4,5-TP	parts per billion	no guideline	<0.050	<0.050	<0.050	-
2,4-D	parts per billion	no more than 100	<0.050	<0.050	<0.050	Raw water - guideline does not apply
2,4-DB	parts per billion	no guideline	<0.050	<0.050	<0.050	-
2,4-DP	parts per billion	no guideline	<0.050	<0.050	<0.050	-
Bromoxynil	parts per billion	no more than 5	<0.020	<0.020	<0.020	Raw water - guideline does not apply
Dicamba	parts per billion	no more than 120	<0.0060	<0.0060	<0.0060	Raw water - guideline does not apply
Dinoseb	parts per billion	no guideline	<0.050	<0.050	<0.050	-
MCPA	parts per billion	no more than 100	<0.025	<0.025	<0.025	Raw water - guideline does not apply
MCPB	parts per billion	no guideline	<0.050	<0.050	<0.050	-
Mecoprop	parts per billion	no guideline	<0.050	<0.050	<0.050	-
Picloram	parts per billion	no more than 190	<0.20	<0.20	<0.40	Raw water - guideline does not apply

\*Aesthetic objective: These guidelines have an objective and not a maximum acceptable limit. These parameters should not impact the safety of the water to drink and there is no anticipated health risk for short-term exposures.

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, February 2017

Note: Where value is expressed as less than (<), the value is halved and used in the calculations, where value is expressed as (>), the value is used in the calculations.

**City of Winnipeg**  
**Environmental Standards Division**  
**2018 Water Treatment Plant**  
**Finished Water - Deacon Booster Pumping Station 1 and 2**  
**Drinking Water Quality Summary**

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
<b>Miscellaneous</b>						
Carbon, Dissolved Organic	parts per million	no guideline	3.9	2.1	8.6	-
Carbon, Total Organic	parts per million	no guideline	3.7	1.8	8.7	-
Chlorine, Free	parts per million	no guideline	1.21	0.81	1.81	-
Chlorine, Total	parts per million	no guideline	1.39	1.02	2.00	-
Chlorophyll-a	parts per billion	no guideline	<1	<1	<1	Chlorophyll is found in algae
Colour, True	TCU	no more than 15 *	1.0	<0.5	2.5	Meets the guideline
Conductivity	microsiemens per centimetre	no guideline	315	293	354	Another measure of dissolved solids
Microcystin LR	parts per billion	no more than 1.5	<0.2	<0.2	<0.2	Meets the guideline
Odour	units	inoffensive*	14	8	25	Meets the guideline
ORP	millivolts	no guideline	380	211	617	
Oxygen, Dissolved	parts per million	no guideline	13.1	8.9	15.5	-
pH	units	between 7.0 and 10.5	7.79	7.35	8.08	Meets the guideline
Plankton (algae) count	cells/mL	no guideline	<100	<100	<100	Algae contribute to odours and may cause filter clogging
Solids, Total	parts per million	no guideline	183	161	210	-
Solids, Total Dissolved	parts per million	no more than 500 *	166	124	204	Meets the guideline
Temperature	degrees Celcius	no more than 15 *	8.7	1.3	23.7	Does not always meet the guideline
Turbidity (clearness)	NTU	no more than 0.3 in 95% of measurements/month, never to exceed 1.0	0.17	0.09	0.45	Meets the guideline
UV Transmittance, Filtered	percent transmissivity	no guideline	95.0	92.1	99.7	-
UV Transmittance, Unfiltered	percent transmissivity	no guideline	93.9	90.7	99.4	-
<b>Anions and Nutrients</b>						
Alkalinity, Total	parts per million as calcium carbonate	no guideline	70	60	81	-
Hardness, Total	parts per million as calcium carbonate	no guideline	81	74	92	-
Chloride	parts per million	no more than 250 *	23	4	39	Meets the guideline
Perchlorate	parts per billion	no guideline	<0.2	<0.2	<0.2	-
Sulphate	parts per million	no more than 500 *	48.1	31.3	76.1	Meets the guideline
<b>Bacteria</b>						
Escherichia Coli	MPN per 100 mL	none detectable per 100 mL	<1	<1	<1	Meets the guideline
Total Coliforms	MPN per 100 mL	none detectable per 100 mL	<1	<1	<1	Meets the guideline
Heterotrophic Plate Count	CFU per mL	no guideline	<1	<1	4	-
<b>Disinfection By-Products</b>						
Aldehydes	parts per billion	no guideline	17.9	8.3	33.7	-
Bromodichloromethane	parts per billion	no guideline	1.3	0.5	2.4	-
Haloacetic acids	parts per billion	no more than 80	9	2	17	Meets the guideline
Trihalomethanes	parts per billion	no more than 100	12	5	20	Meets the guideline
<b>Taste and Odours</b>						
236 TCA - 2,3,6-trichloroanisole	parts per trillion	no guideline	<0.5	<0.5	<0.5	-
246 TCA - 2,4,6-trichloroanisole	parts per trillion	no guideline	<0.5	<0.5	<0.5	-
345 TCV - 3,4,5-trichloroveratrole	parts per trillion	no guideline	<0.2	<0.2	<0.2	-
Geosmin	parts per trillion	no guideline	1.9	<0.50	5.9	-
IBMP - 2-isobutyl-3-methoxypyrazine	parts per trillion	no guideline	<0.2	<0.2	<0.2	-
IPMP - 2-isopropyl-3-methoxypyrazine	parts per trillion	no guideline	<0.2	<0.2	<0.2	-
Dichloromethane	parts per million	no more than 0.05	<0.0005	<0.0005	<0.0015	Meets the guideline
MIB - 2-methylisoborneol	parts per trillion	no guideline	<10	<10	<10	-
MTBE - methyl tertiary-butyl ether	parts per million	no more than 0.015 *	<0.0005	<0.0005	<0.0005	Meets the guideline
NDMA - N-nitrosodimethylamine	parts per trillion	no more than 40	1.2	<1.0	2.3	Meets the guideline

**City of Winnipeg**  
**Environmental Standards Division**  
**2018 Water Treatment Plant**  
**Finished Water - Deacon Booster Pumping Station 1 and 2**  
**Drinking Water Quality Summary**

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Total Metals						
Aluminum	parts per million	no guideline	0.0105	0.0040	0.0471	-
Antimony	parts per million	no more than 0.006	<0.00050	<0.000025	<0.00050	Meets the guideline
Arsenic	parts per million	no more than 0.010	0.0004	0.0002	<0.0010	Meets the guideline
Boron	parts per million	no guideline	0.00243	<0.00208	0.00663	
Cadmium	parts per million	no more than 0.005	<0.00060	<0.000007	<0.00060	Meets the guideline
Calcium	parts per million	no guideline	21.5	15.9	25.6	Contributes to hardness
Chromium	parts per million	no more than 0.05	0.00027	<0.00004	0.00158	Meets the guideline
Chromium VI	parts per million	no guideline	<0.001	<0.001	0.001	-
Copper	parts per million	no more than 1.0 *	0.0023	0.0005	0.0050	Meets the guideline
Iron	parts per million	no more than 0.3 *	0.0406	0.0060	0.2016	Meets the guideline
Lead	parts per million	no more than 0.010	<0.00060	<0.000065	<0.00060	Meets the guideline
Magnesium	parts per million	no guideline	6.53	5.60	7.62	Contributes to hardness
Manganese	parts per million	no more than 0.05 *	0.0267	0.0057	0.0506	Does not always meet the guideline
Mercury	parts per billion	no more than 1	<0.0005	<0.0005	<0.0010	Meets the guideline
Nickel	parts per million	no guideline	0.0023	0.0018	0.0031	-
Potassium	parts per million	no guideline	1.25	1.00	1.51	-
Sodium	parts per million	no more than 200 *	32.3	26.8	39.0	Meets the guideline
Uranium	parts per million	no more than 0.02	<0.00060	<0.000032	<0.00060	Meets the guideline
Zinc	parts per million	no more than 5.0 *	0.00161	0.00022	0.02736	Meets the guideline
Pesticides						
Alachlor	parts per billion	no guideline	<0.10	<0.10	<0.10	-
Aldrin	parts per billion	no guideline	<0.010	<0.010	<0.010	-
alpha-BHC	parts per billion	no guideline	<0.010	<0.010	<0.010	-
alpha-Chlordane	parts per billion	no guideline	<0.010	<0.010	<0.010	-
alpha-Endosulfan	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Atrazine	parts per billion	no more than 5	<0.10	<0.10	<0.10	Meets the guideline
Azinphosmethyl	parts per billion	no more than 20	<0.010	<0.010	<0.010	Meets the guideline
beta-BHC	parts per billion	no guideline	<0.010	<0.010	<0.010	-
beta-Endosulfan	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Carbaryl	parts per billion	no guideline	<0.20	<0.20	<0.20	-
Carbofuran	parts per billion	no more than 90	<0.20	<0.20	<0.20	Meets the guideline
Chlorothalonil	parts per billion	no guideline	<0.050	<0.050	<0.050	-
Chloryrifos	parts per billion	no more than 90	<0.0050	<0.0050	<0.0050	Meets the guideline
delta-BHC	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Diazinon	parts per billion	no more than 20	<0.0050	<0.0050	<0.0050	Meets the guideline
Diclofop-methyl	parts per billion	no more than 9	<0.10	<0.10	<0.10	Meets the guideline
Dieldrin	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Dimethoate	parts per billion	no more than 20	<0.10	<0.10	<0.10	Meets the guideline
Endrin	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Eptam	parts per billion	no guideline	<0.20	<0.20	<0.20	-
gamma-Chlordane	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Heptachlor	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Heptachlor Epoxide	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Lindane (gamma-BHC)	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Malathion	parts per billion	no more than 190	<0.10	<0.10	<0.10	Meets the guideline
Methoxychlor	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Methyl Parathion	parts per billion	no guideline	<0.10	<0.10	<0.10	-
Metribuzin	parts per billion	no more than 80	<0.20	<0.20	<0.20	Meets the guideline
Mirex	parts per billion	no guideline	<0.010	<0.010	<0.010	-
o,p-DDD	parts per billion	no guideline	<0.010	<0.010	<0.010	-
o,p-DDE	parts per billion	no guideline	<0.010	<0.010	<0.010	-
o,p-DDT	parts per billion	no guideline	<0.010	<0.010	<0.010	-
p,p-DDD	parts per billion	no guideline	<0.010	<0.010	<0.010	-
p,p-DDE	parts per billion	no guideline	<0.010	<0.010	<0.010	-
p,p-DDT	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Parathion	parts per billion	no guideline	<0.013	<0.013	<0.013	-
Propaclor	parts per billion	no guideline	<0.20	<0.20	<0.20	-
Propanil	parts per billion	no guideline	<0.20	<0.20	<0.20	-
Propoxur	parts per billion	no guideline	<0.20	<0.20	<0.20	-

**City of Winnipeg**  
**Environmental Standards Division**  
**2018 Water Treatment Plant**  
**Finished Water - Deacon Booster Pumping Station 1 and 2**  
**Drinking Water Quality Summary**

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Simazine	parts per billion	no more than 10	<0.10	<0.10	<0.10	Meets the guideline
Terbufos	parts per billion	no more than 1	<0.10	<0.10	<0.10	Meets the guideline
Triallate	parts per billion	no guideline	<0.10	<0.10	<0.10	-
Trichlopyr	parts per billion	no guideline	<0.050	<0.050	<0.050	-
Trifluralin	parts per billion	no more than 45	<0.030	<0.030	<0.030	Meets the guideline
<b>Polychlorinated Biphenyls</b>						
Arochlor 1016	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1221	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1232	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1242	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1248	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1254	parts per billion	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1260	parts per billion	no guideline	<0.020	<0.020	<0.020	-
<b>Phenoxy Acid Herbicides</b>						
2,4,5-T	parts per billion	no guideline	<0.050	<0.050	<0.050	-
2,4,5-TP	parts per billion	no guideline	<0.050	<0.050	<0.050	-
2,4-D	parts per billion	no more than 100	<0.050	<0.050	<0.050	Meets the guideline
2,4-DB	parts per billion	no guideline	<0.050	<0.050	<0.050	-
2,4-DP	parts per billion	no guideline	<0.050	<0.050	<0.050	-
Bromoxynil	parts per billion	no more than 5	<0.020	<0.020	<0.020	Meets the guideline
Dicamba	parts per billion	no more than 120	<0.0060	<0.0060	<0.0060	Meets the guideline
Dinoseb	parts per billion	no guideline	<0.050	<0.050	<0.050	-
MCPA	parts per billion	no more than 100	<0.025	<0.025	<0.025	Meets the guideline
MCPB	parts per billion	no guideline	<0.050	<0.050	<0.050	-
Mecoprop	parts per billion	no guideline	<0.050	<0.050	<0.050	-
Picloram	parts per billion	no more than 190	<0.20	<0.20	<0.40	Meets the guideline

\*Aesthetic objective: These guidelines have an objective and not a maximum acceptable limit. These parameters should not impact the safety of the water to drink and there is no anticipated health risk for short-term exposures.

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, February 2017

Note: Where value is expressed as less than (<), the value is halved and used in the calculations, where value is expressed as (>), the value is used in the calculations.

**City of Winnipeg**  
**Environmental Standards Division**  
**2018 Winnipeg Distribution System Water Quality Summary**

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
<b>Miscellaneous</b>						
Carbon, Dissolved Organic	parts per million	no guideline	4.2	2.6	8.8	-
Carbon, Total Organic	parts per million	no guideline	4.4	1.8	13.4	-
Chlorine, Free	parts per million	no guideline	0.81	<0.02	1.56	-
Chlorine, Total	parts per million	no guideline	1.04	0.17	1.84	-
Colour, True	TCU	no more than 15 *	0.9	0.5	5.0	Meets the guideline
Conductivity	microsiemens per centimetre	no guideline	304	249	335	Another measure of dissolved solids
Langelier Index (4 C)	units	no guideline	-0.81	-0.94	-0.66	-
Langelier Index (60 C)	units	no guideline	-0.04	-0.17	0.11	-
Odour	units	inoffensive*	10	5	15	Meets the guideline
ORP	millivolts	no guideline	463	216	595	
Oxygen, Dissolved	parts per million	no guideline	12.9	4.6	16.8	-
pH	units	between 7.0 and 10.5	7.52	7.33	7.86	Meets the guideline
Solids, Total Dissolved	parts per million	no more than 500 *	164	123	208	Meets the guideline
Temperature	degrees Celcius	no more than 15 *	10.3	0.3	24.6	Does not always meet the guideline
Turbidity (clearness)	NTU	no guideline	0.24	0.01	6.0	-
UV Transmittance, Unfiltered	percent transmissivity	no guideline	93.7	91.6	95.9	-
<b>Anions and Nutrients</b>						
Alkalinity, Total	parts per million as calcium carbonate	no guideline	67	56	78	-
Alkalinity, Bicarbonate	parts per million	no guideline	88	76	93	-
Alkalinity, Carbonate	parts per million	no guideline	<0.60	<0.60	<0.60	-
Alkalinity, Hydroxide	parts per million	no guideline	<0.34	<0.34	<0.34	-
Hardness, Total	parts per million as calcium carbonate	no guideline	82	76	90	-
Ammonia	parts per million	no guideline	<0.010	<0.010	<0.013	-
Bromate	parts per million	no more than 0.01	<0.050	<0.010	<0.050	Detection limit above guideline (not detected)
Bromide	parts per million	no guideline	<0.010	<0.010	<0.010	-
Chloride	parts per million	no more than 250 *	22	4	36	Meets the guideline
Fluoride	parts per million	no more than 1.5	0.69	0.53	0.76	Meets the guideline
Nitrate Nitrogen	parts per million	no more than 10	0.0203	0.0089	0.0479	Meets the guideline
Nitrite	parts per million	no more than 3	<0.0010	<0.0010	<0.0010	Meets the guideline
Perchlorate	parts per billion	no guideline	<0.2	<0.2	<0.2	-
Phosphate, Soluble	parts per million as phosphate	no guideline	1.80	0.05	2.15	Added for Lead Control Program
Phosphorus, Total	parts per million	no guideline	0.63	0.38	0.75	Phosphorus can contribute to algae growth
Sulphate	parts per million	no more than 500 *	50	31	75	Meets the guideline
<b>Bacteria</b>						
Escherichia Coli	MPN per 100 mL	none detectable per 100 mL	<1	<1	<1	Meets the guideline
Total Coliforms	MPN per 100 mL	none detectable per 100 mL	<1	<1	2	Does not always meet the guideline
Heterotrophic Plate Count	CFU per mL	no guideline	2	<1	97	-
<b>Disinfection By-Products</b>						
Aldehydes	parts per billion	no guideline	19.3	7.8	32.5	-
Bromodichloromethane	parts per billion	no guideline	3.0	1.0	5.3	-
Haloacetic acids	parts per billion	no more than 80	22	6	42	Meets the guideline
Trihalomethanes	parts per billion	no more than 100	31	9	58	Meets the guideline
<b>Total Metals</b>						
Aluminum	parts per million	no guideline	0.0096	0.0027	0.0860	-
Antimony	parts per million	no more than 0.006	<0.00050	<0.000025	<0.000050	Meets the guideline
Arsenic	parts per million	no more than 0.010	0.0005	0.0004	<0.0010	Meets the guideline
Barium	parts per million	no more than 1	0.0151	0.0126	0.0201	Meets the guideline
Beryllium	parts per million	no guideline	<0.00003	<0.00003	<0.00010	-
Bismuth	parts per million	no guideline	<0.000050	<0.000050	<0.000050	-
Boron	parts per million	no more than 5	0.0034	<0.00208	0.0150	Meets the guideline
Cadmium	parts per million	no more than 0.005	<0.00060	<0.000005	<0.00060	Meets the guideline

**City of Winnipeg**  
**Environmental Standards Division**  
**2018 Winnipeg Distribution System Water Quality Summary**

Calcium	parts per million	no guideline	22.5	19.3	26.7	Contributes to hardness
Cesium	parts per million	no guideline	<0.000010	<0.000010	<0.000010	-
Chromium	parts per million	no more than 0.05	0.00025	<0.00004	0.01210	Meets the guideline
Chromium VI	parts per million	no guideline	<0.001	<0.001	0.001	-
Cobalt	parts per million	no guideline	0.00033	0.00001	0.00114	-
Copper	parts per million	no more than 1.0 *	0.03661	0.00059	0.19844	Meets the guideline
Iron	parts per million	no more than 0.3 *	0.057	0.004	0.930	Does not always meet the guideline
Lead	parts per million	no more than 0.010	0.00017	<0.00005	0.00180	Meets the guideline
Lithium	parts per million	no guideline	0.0020	0.0016	0.0028	-
Magnesium	parts per million	no guideline	6.62	5.55	7.69	Contributes to hardness
Manganese	parts per million	no more than 0.05 *	0.0234	0.0036	0.2760	Does not always meet the guideline
Mercury	parts per billion	no more than 1	0.0005	<0.0005	0.0023	Meets the guideline
Molybdenum	parts per million	no guideline	<0.00002	<0.00002	0.00010	-
Nickel	parts per million	no guideline	0.0023	0.0012	0.0298	-
Potassium	parts per million	no guideline	1.29	0.99	1.51	-
Rubidium	parts per million	no guideline	0.00163	0.00150	0.00178	-
Selenium	parts per million	no more than 0.05	0.00013	0.00002	0.00038	Meets the guideline
Silicon	parts per million	no guideline	3.13	2.75	3.35	-
Silver	parts per million	no guideline	<0.000010	<0.000010	<0.000010	-
Sodium	parts per million	no more than 200 *	32.8	28.5	38.6	Meets the guideline
Strontium	parts per million	no guideline	0.0397	0.0350	0.0464	-
Tellurium	parts per million	no guideline	<0.000020	<0.000020	<0.000020	-
Thallium	parts per million	no guideline	<0.000010	<0.000010	<0.000016	-
Thorium	parts per million	no guideline	<0.000010	<0.000010	<0.000010	-
Tin	parts per million	no guideline	0.000019	<0.000025	0.000130	-
Titanium	parts per million	no guideline	0.000078	<0.000012	0.000420	-
Tungsten	parts per million	no guideline	<0.000010	<0.000010	<0.000010	-
Uranium	parts per million	no more than 0.02	<0.000060	<0.000001	<0.000060	Meets the guideline
Vanadium	parts per million	no guideline	<0.000050	<0.000011	<0.000050	-
Zinc	parts per million	no more than 5.0 *	0.00441	0.00028	0.0553	Meets the guideline
Zirconium	parts per million	no guideline	<0.000060	<0.000060	<0.000060	-

\*Aesthetic objective: These guidelines have an objective and not a maximum acceptable limit. These parameters should not impact the safety of the water to drink and there is no anticipated health risk for short-term exposures.

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, February 2017

Data reported was collected from a combination of MacLean, Hurst, and McPhillips Pumping Station Discharges, 57 distribution system locations, and/or Branch I at McPhillips and Branch II at Hurst.

Note: Where value is expressed as less than (<), the value is halved and used in the calculations, where value is expressed as (>), the value is used in the calculations.

**City of Winnipeg**  
**Environmental Standards Division**  
**2018 Winnipeg Distribution System Bacteriological Summary**

PARAMETER	REQUIREMENT	OUR TEST RESULTS	COMMENTS
Number of total coliform bacteria tests in year	2028 samples/year	3,164	
Number of times that total coliform bacteria show up in a test	none detectable per 100 mL	0.22% (7 positive tests)	All resamples were negative and met the operating licence requirements
Number of Escherichia coli bacteria tests in year	2028 samples/year	3,164	
Number of times that Escherichia coli bacteria show up in a test	none detectable per 100 mL	0.00% (0 positive tests)	
Number of heterotrophic (bacteria) plate count (HPC) tests done	no requirement	2,218	Heterotrophic plate count testing is not required under the operating licence

Requirements from City of Winnipeg Operating Licence PWS-09-412-01

Data reported was collected from 57 distribution system locations and MacLean, Hurst, and McPhillips Pumping Station Discharges

## **APPENDIX B**

## **COMPLIANCE SUBMISSION REPORTS**

## **2018 Monthly Chlorine Reports**



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-Jan-2018	NA	NA	NA	NA	NA	NA
02-Jan-2018	1.10	1.18	1.31	1.15	1.26	1.43
03-Jan-2018	OL	OL	OL	1.09	1.22	1.37
04-Jan-2018	1.08	1.13	1.32	1.06	1.17	1.36
05-Jan-2018	1.09	1.11	1.30	NA	NA	NA
06-Jan-2018	NA	NA	NA	NA	NA	NA
07-Jan-2018	1.00	1.06	1.21	0.96	1.04	1.27
08-Jan-2018	1.04	1.08	1.29	1.09	1.19	1.38
09-Jan-2018	1.21	1.28	1.50	1.21	1.27	1.46
10-Jan-2018	1.08	1.25	1.38	1.16	1.20	1.40
11-Jan-2018	1.16	1.32	1.48	1.25	1.31	1.52
12-Jan-2018	NA	NA	NA	NA	NA	NA
13-Jan-2018	NA	NA	NA	NA	NA	NA
14-Jan-2018	1.24	1.26	1.47	1.40	1.27	1.47
15-Jan-2018	1.14	1.22	1.39	1.19	1.21	1.40
16-Jan-2018	1.15	1.20	1.36	1.19	1.21	1.42
17-Jan-2018	1.21	1.18	1.38	1.19	1.15	1.34
18-Jan-2018	1.14	1.12	1.30	1.10	1.11	1.35
19-Jan-2018	NA	NA	NA	NA	NA	NA
20-Jan-2018	NA	NA	NA	NA	NA	NA
21-Jan-2018	1.12	1.20	1.31	1.23	1.17	1.38
22-Jan-2018	1.08	1.21	1.32	1.12	1.13	1.37
23-Jan-2018	1.14	1.21	1.37	1.15	1.17	1.38
24-Jan-2018	1.12	1.20	1.35	1.15	1.18	1.43
25-Jan-2018	1.08	1.19	1.35	1.12	1.15	1.40
26-Jan-2018	NA	NA	NA	NA	NA	NA
27-Jan-2018	NA	NA	NA	NA	NA	NA
28-Jan-2018	0.96	1.05	1.25	1.05	1.07	1.25
29-Jan-2018	1.11	1.22	1.37	1.22	1.27	1.40
30-Jan-2018	1.16	1.20	1.42	1.27	1.30	1.43
31-Jan-2018	1.26	1.35	1.52	1.28	1.41	1.55
<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



City Of Winnipeg

Water and Waste Department

Water Services

WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT  
Deacon Booster Pumping StationWater System Code: **252.00**Licence Number: **PWS-09-412-01**

Report Created: 01 February 2018

Report Period: January 2018

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/01/2018	1.06	0.96	1.12	1.08
02/01/2018	1.07	0.92	1.12	1.00
03/01/2018	0.96	0.96	1.09	1.04
04/01/2018	0.95	0.86	1.05	0.94
05/01/2018	1.01	0.88	1.05	0.98
06/01/2018	1.05	0.99	1.05	0.96
07/01/2018	1.00	0.95	0.98	0.95
08/01/2018	1.04	0.98	1.11	0.96
09/01/2018	1.18	1.02	1.21	1.14
10/01/2018	1.17	1.03	1.23	1.09
11/01/2018	1.15	1.08	1.25	1.15
12/01/2018	1.11	1.02	1.21	1.12
13/01/2018	1.16	1.00	1.17	1.06
14/01/2018	1.23	1.14	1.27	1.13
15/01/2018	1.14	0.99	1.24	1.02
16/01/2018	1.16	1.05	1.15	1.02
17/01/2018	1.20	1.08	1.19	1.14
18/01/2018	1.14	1.07	1.14	1.07
19/01/2018	1.11	0.99	1.15	1.11
20/01/2018	1.05	0.92	1.14	1.08
21/01/2018	1.06	0.98	1.15	1.08
22/01/2018	1.08	1.01	1.14	1.08
23/01/2018	1.11	1.03	1.13	1.09
24/01/2018	1.12	1.06	1.14	1.08
25/01/2018	1.08	0.98	1.13	1.09
26/01/2018	1.03	0.94	1.10	0.79
27/01/2018	0.93	0.86	0.95	0.89
28/01/2018	1.01	0.90	1.10	0.92
29/01/2018	1.12	1.04	1.23	1.16
30/01/2018	1.18	1.04	1.25	1.18
31/01/2018	1.21	0.98	1.24	1.15

Total Number of Measurements, A: 21575 21590

Minimum Free Chlorine Standard: 0.5 0.5

Number of Measurements Meeting Standard, B: 21575 21590

COMPLIANCE, C = B/A X 100%: 100.00 100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2018\01-January

Submitted By (Print): M. SzmonSignature: Original signed by M.Szmon



CITY OF WINNIPEG  
WATER AND WASTE DEPARTMENT  
ENVIRONMENTAL STANDARDS DIVISION

**WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT**

Water System Code: 252.00 Licence No. PWS-09-412-01	Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
	Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	
		Analyser	Grab	Grab	Analyser	Grab
01-Feb-2018		1.14	1.28	1.46	1.21	1.29
02-Feb-2018		NA	NA	NA	NA	NA
03-Feb-2018		NA	NA	NA	NA	NA
04-Feb-2018		1.06	1.11	1.27	1.09	1.16
05-Feb-2018		1.12	1.16	1.31	1.12	1.19
06-Feb-2018		1.19	1.21	1.35	1.17	1.18
07-Feb-2018		1.19	1.27	1.47	1.25	1.33
08-Feb-2018		1.20	1.29	1.47	1.22	1.27
09-Feb-2018		NA	NA	NA	NA	NA
10-Feb-2018		NA	NA	NA	NA	NA
11-Feb-2018		1.11	1.20	1.37	1.15	1.22
12-Feb-2018		1.06	1.17	1.32	1.15	1.18
13-Feb-2018		1.10	1.15	1.35	1.17	1.20
14-Feb-2018		1.11	1.20	1.37	1.20	1.23
15-Feb-2018		1.13	1.23	1.43	1.18	1.22
16-Feb-2018		NA	NA	NA	NA	NA
17-Feb-2018		NA	NA	NA	NA	NA
18-Feb-2018		1.06	1.12	1.35	1.12	1.23
19-Feb-2018		NA	NA	NA	NA	NA
20-Feb-2018		1.10	1.21	1.39	1.20	1.26
21-Feb-2018		OL	OL	OL	0.96	1.01
22-Feb-2018		OL	OL	OL	1.00	1.04
23-Feb-2018		OL	OL	OL	NA	NA
24-Feb-2018		OL	OL	OL	NA	NA
25-Feb-2018		OL	OL	OL	1.11	1.20
26-Feb-2018		OL	OL	OL	1.13	1.17
27-Feb-2018		OL	OL	OL	1.12	1.16
28-Feb-2018		OL	OL	OL	1.10	1.16
<b>Total number of measurements taken, A:</b>		13			19	
<b>Chlorine Standard for Monitoring Location (mg/L):</b>		0.50			0.50	
<b>Number of measurements meeting standard, B:</b>		13			19	
<b>Compliance with Chlorine Standard, C= B/A X 100%:</b>		100%			100%	

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

**Comments:**

Branch I offline February 21 to 28 to facilitate maintenance work at the Water Treatment Plant and Tache Booster Station

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck



**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: 01 March 2018

Report Period: February 2018

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/02/2018	1.15	1.03	1.20	1.15
02/02/2018	1.20	0.83	1.17	0.99
03/02/2018	1.12	1.03	1.13	1.09
04/02/2018	1.10	1.00	1.13	1.09
05/02/2018	1.11	1.03	1.10	1.05
06/02/2018	1.15	1.01	1.15	1.05
07/02/2018	1.19	1.11	1.22	1.11
08/02/2018	1.18	1.12	1.20	1.10
09/02/2018	1.10	1.05	1.10	1.05
10/02/2018	1.09	1.03	1.13	1.09
11/02/2018	1.11	1.05	1.14	1.09
12/02/2018	1.09	1.02	1.14	1.10
13/02/2018	1.08	0.99	1.14	1.05
14/02/2018	1.11	0.78	1.18	0.90
15/02/2018	1.12	0.93	1.17	0.98
16/02/2018	1.18	1.10	1.23	1.15
17/02/2018	1.10	1.01	1.14	1.09
18/02/2018	1.07	1.02	1.13	1.10
19/02/2018	1.10	1.03	1.18	1.11
20/02/2018	1.12	1.05	1.21	1.17
21/02/2018	1.03	0.93	0.92	0.73
22/02/2018	OL	OL	0.99	0.72
23/02/2018	OL	OL	1.11	1.05
24/02/2018	OL	OL	1.10	1.06
25/02/2018	OL	OL	1.12	1.09
26/02/2018	OL	OL	1.12	1.09
27/02/2018	OL	OL	1.12	1.09
28/02/2018	OL	OL	1.11	1.08

Total Number of Measurements, A: 13945 19440

Minimum Free Chlorine Standard: 0.5 0.5

Number of Measurements Meeting Standard, B: 13945 19440

COMPLIANCE, C = B/A X 100%: 100.00 100.00

Off-line OL

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2018\02-February

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 Licence No. PWS-09-412-01	Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
	Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Mar-2018	OL	OL	OL	1.11	1.17	1.32
02-Mar-2018	NA	NA	NA	NA	NA	NA
03-Mar-2018	NA	NA	NA	NA	NA	NA
04-Mar-2018	OL	OL	OL	1.07	1.09	1.27
05-Mar-2018	OL	OL	OL	1.13	1.15	1.33
06-Mar-2018	OL	OL	OL	1.05	1.17	1.30
07-Mar-2018	OL	OL	OL	1.29	1.15	1.35
08-Mar-2018	OL	OL	OL	1.21	1.23	1.42
09-Mar-2018	0.97	1.14	1.28	NA	NA	NA
10-Mar-2018	0.96	0.97	1.25	NA	NA	NA
11-Mar-2018	1.02	1.05	1.24	0.95	1.05	1.24
12-Mar-2018	1.04	1.10	1.27	1.08	1.10	1.30
13-Mar-2018	1.04	1.08	1.27	1.09	1.15	1.39
14-Mar-2018	1.03	1.07	1.23	1.14	1.17	1.31
15-Mar-2018	1.16	1.20	1.39	1.16	1.16	1.31
16-Mar-2018	NA	NA	NA	NA	NA	NA
17-Mar-2018	NA	NA	NA	NA	NA	NA
18-Mar-2018	1.15	1.18	1.40	1.12	1.16	1.32
19-Mar-2018	1.22	1.22	1.41	1.11	1.14	1.27
20-Mar-2018	1.05	1.01	1.21	1.13	1.05	1.23
21-Mar-2018	1.05	1.04	1.23	1.10	1.05	1.21
22-Mar-2018	1.04	1.06	1.18	1.09	1.14	1.29
23-Mar-2018	NA	NA	NA	NA	NA	NA
24-Mar-2018	NA	NA	NA	NA	NA	NA
25-Mar-2018	0.92	0.99	1.11	1.02	1.03	1.25
26-Mar-2018	1.04	1.10	1.27	1.18	1.17	1.34
27-Mar-2018	1.01	1.11	1.30	1.07	1.18	1.32
28-Mar-2018	1.06	1.03	1.22	0.99	1.11	1.28
29-Mar-2018	0.98	1.00	1.17	1.04	1.07	1.26
30-Mar-2018	NA	NA	NA	NA	NA	NA
31-Mar-2018	NA	NA	NA	NA	NA	NA
<b>Total number of measurements taken, A:</b>		17			21	
<b>Chlorine Standard for Monitoring Location (mg/L):</b>		0.50			0.50	
<b>Number of measurements meeting standard, B:</b>		17			21	
<b>Compliance with Chlorine Standard, C= B/A X 100%:</b>		100%			100%	

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

Comments:

Branch 1 offline March 1 to 9 to facilitate maintenance work.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck



**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: 01 April 2018

Report Period: March 2018

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/03/2018	OL	OL	1.09	1.06
02/03/2018	OL	OL	1.09	1.06
03/03/2018	OL	OL	1.06	0.96
04/03/2018	OL	OL	1.07	1.05
05/03/2018	OL	OL	1.12	1.07
06/03/2018	OL	OL	1.08	0.85
07/03/2018	OL	OL	1.22	1.10
08/03/2018	OL	OL	1.15	1.09
09/03/2018	1.00	0.92	1.09	0.97
10/03/2018	1.02	0.95	0.97	0.94
11/03/2018	1.03	0.99	0.99	0.93
12/03/2018	1.04	0.99	1.08	1.06
13/03/2018	1.04	0.98	1.13	1.07
14/03/2018	1.02	0.98	1.13	1.11
15/03/2018	1.16	0.98	1.19	1.13
16/03/2018	1.24	1.18	1.22	1.17
17/03/2018	1.24	1.14	1.20	1.17
18/03/2018	1.16	1.11	1.14	1.10
19/03/2018	1.14	0.88	1.11	1.02
20/03/2018	0.99	0.81	1.08	1.03
21/03/2018	1.04	0.92	1.09	1.05
22/03/2018	1.02	0.91	1.10	1.06
23/03/2018	0.93	0.83	1.06	0.91
24/03/2018	0.89	0.81	0.99	0.89
25/03/2018	0.92	0.85	1.03	0.93
26/03/2018	1.02	0.89	1.15	1.01
27/03/2018	1.01	0.87	1.10	0.97
28/03/2018	1.01	0.92	0.99	0.93
29/03/2018	1.00	0.92	1.01	0.91
30/03/2018	0.93	0.84	1.02	0.92
31/03/2018	0.99	0.92	1.06	0.99

Total Number of Measurements, A: 15591 21565

Minimum Free Chlorine Standard: 0.5 0.5

Number of Measurements Meeting Standard, B: 15591 21565

COMPLIANCE, C = B/A X 100%: 100.00 100.00  
Off-line OL

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2018\03-March

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 Licence No. PWS-09-412-01	Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
	Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	
		Analyser	Grab	Grab	Analyser	Grab
01-Apr-2018		1.06	1.04	1.22	1.08	1.15
02-Apr-2018		1.08	1.14	1.26	1.14	1.22
03-Apr-2018		1.06	1.05	1.23	1.16	1.15
04-Apr-2018		1.01	1.03	1.20	1.04	1.06
05-Apr-2018		0.95	1.05	1.20	1.01	1.06
06-Apr-2018		NA	NA	NA	NA	NA
07-Apr-2018		NA	NA	NA	NA	NA
08-Apr-2018		1.23	1.18	1.34	1.03	1.12
09-Apr-2018		0.92	1.01	1.12	1.03	1.10
10-Apr-2018		0.87	0.95	1.07	0.92	0.98
11-Apr-2018		0.97	1.02	1.21	0.97	1.03
12-Apr-2018		0.93	1.02	1.20	0.94	1.12
13-Apr-2018		NA	NA	NA	NA	NA
14-Apr-2018		NA	NA	NA	NA	NA
15-Apr-2018		1.15	1.13	1.29	0.97	1.06
16-Apr-2018		1.06	1.11	1.29	1.04	1.08
17-Apr-2018		1.05	1.11	1.26	1.08	1.06
18-Apr-2018		1.21	1.21	1.41	1.17	1.17
19-Apr-2018		1.11	1.14	1.34	1.24	1.28
20-Apr-2018		NA	NA	NA	NA	NA
21-Apr-2018		NA	NA	NA	NA	NA
22-Apr-2018		1.16	1.23	1.42	1.15	1.21
23-Apr-2018		1.14	1.23	1.37	1.02	1.09
24-Apr-2018		1.04	1.10	1.29	0.96	1.03
25-Apr-2018		1.05	1.06	1.27	0.99	1.01
26-Apr-2018		1.09	1.17	1.35	1.04	1.07
27-Apr-2018		NA	NA	NA	NA	NA
28-Apr-2018		NA	NA	NA	NA	NA
29-Apr-2018		NA	NA	NA	NA	NA
30-Apr-2018		1.08	1.15	1.31	0.99	1.10
<b>Total number of measurements taken, A:</b>		21			21	
<b>Chlorine Standard for Monitoring Location (mg/L):</b>		0.50			0.50	
<b>Number of measurements meeting standard, B:</b>		21			21	
<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



**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: 01 May 2018

Report Period: April 2018

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/04/2018	1.03	0.96	1.07	0.98
02/04/2018	1.09	1.07	1.14	1.08
03/04/2018	1.08	1.08	1.09	0.75
04/04/2018	1.04	0.94	1.04	0.93
05/04/2018	1.04	0.90	1.08	0.96
06/04/2018	1.21	1.10	1.14	1.04
07/04/2018	1.22	1.14	1.05	0.98
08/04/2018	1.17	1.08	1.07	0.99
09/04/2018	0.98	0.84	1.03	0.91
10/04/2018	0.89	0.82	0.93	0.87
11/04/2018	0.95	0.86	0.95	0.84
12/04/2018	0.91	0.68	0.89	0.83
13/04/2018	1.15	1.00	1.17	0.97
14/04/2018	1.17	1.06	1.07	0.93
15/04/2018	1.12	1.04	0.97	0.93
16/04/2018	1.07	0.98	1.02	0.93
17/04/2018	1.03	0.95	1.03	0.91
18/04/2018	1.06	0.94	1.07	0.89
19/04/2018	1.07	0.95	1.21	1.08
20/04/2018	0.99	0.90	1.10	0.97
21/04/2018	1.15	1.07	1.19	1.13
22/04/2018	1.17	1.08	1.17	1.12
23/04/2018	1.13	1.06	1.06	0.98
24/04/2018	1.06	0.97	0.98	0.92
25/04/2018	1.09	0.97	0.99	0.94
26/04/2018	1.09	0.71	1.01	0.82
27/04/2018	1.05	0.95	1.01	0.96
28/04/2018	1.09	1.00	1.02	0.95
29/04/2018	1.09	0.95	1.01	0.93
30/04/2018	1.07	0.99	1.00	0.87

Total Number of Measurements, A: **20897**      20897

Minimum Free Chlorine Standard: **0.5**      0.5

Number of Measurements Meeting Standard, B: **20897**      20897

COMPLIANCE, C = B/A X 100%: **100.00**      100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2018\04-April

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		
Date		Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-May-2018	1.63	1.81	2.00	1.58	1.75	1.90
02-May-2018	1.13	1.21	1.33	1.10	1.16	1.32
03-May-2018	1.18	1.26	1.42	1.16	1.20	1.36
04-May-2018	1.14	1.23	1.38	1.15	1.24	1.36
05-May-2018	NA	NA	NA	NA	NA	NA
06-May-2018	NA	NA	NA	NA	NA	NA
07-May-2018	1.10	1.13	1.33	1.14	1.24	1.38
08-May-2018	1.22	1.27	1.46	1.32	1.35	1.52
09-May-2018	1.02	1.07	1.24	1.21	1.24	1.44
10-May-2018	1.02	1.14	1.25	1.04	1.09	1.25
11-May-2018	1.04	1.14	1.32	1.05	1.11	1.29
12-May-2018	NA	NA	NA	NA	NA	NA
13-May-2018	NA	NA	NA	NA	NA	NA
14-May-2018	1.07	1.13	1.29	1.01	1.11	1.30
15-May-2018	1.00	1.08	1.23	1.00	1.03	1.20
16-May-2018	1.08	1.12	1.32	1.05	1.11	1.24
17-May-2018	1.08	1.16	1.34	1.02	1.09	1.27
18-May-2018	1.13	1.18	1.35	1.07	1.09	1.24
19-May-2018	NA	NA	NA	NA	NA	NA
20-May-2018	NA	NA	NA	NA	NA	NA
21-May-2018	NA	NA	NA	NA	NA	NA
22-May-2018	1.16	1.37	1.48	1.18	1.18	1.37
23-May-2018	1.05	1.18	1.32	1.04	1.09	1.30
24-May-2018	1.01	1.11	1.29	0.93	1.02	1.18
25-May-2018	1.13	1.22	1.34	1.20	1.15	1.35
26-May-2018	NA	NA	NA	NA	NA	NA
27-May-2018	NA	NA	NA	NA	NA	NA
28-May-2018	0.92	0.85	1.10	1.07	1.06	1.26
29-May-2018	0.97	1.00	1.15	1.13	1.15	1.34
30-May-2018	1.07	1.06	1.26	1.04	1.04	1.25
31-May-2018	0.76	0.87	1.02	0.80	0.81	1.02
<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



**City Of Winnipeg**

Water and Waste Department

Water Services

**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: 01 June 2018

Report Period: May 2018

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/05/2018	1.35	1.01	1.33	0.94
02/05/2018	1.26	1.09	1.23	1.07
03/05/2018	1.15	0.98	1.17	1.10
04/05/2018	1.09	0.95	1.11	1.03
05/05/2018	1.00	0.88	1.03	0.94
06/05/2018	1.07	1.00	1.07	0.99
07/05/2018	1.13	0.88	1.09	0.91
08/05/2018	1.19	1.04	1.26	1.01
09/05/2018	1.02	0.81	1.17	0.93
10/05/2018	1.05	0.89	1.03	0.90
11/05/2018	1.04	0.92	1.06	0.99
12/05/2018	1.04	0.94	1.09	1.03
13/05/2018	1.13	0.98	1.14	1.06
14/05/2018	1.05	0.94	1.00	0.91
15/05/2018	1.02	0.94	0.99	0.89
16/05/2018	1.08	1.00	1.03	0.97
17/05/2018	1.02	0.76	0.99	0.63
18/05/2018	1.09	0.88	1.08	0.95
19/05/2018	1.20	1.00	1.20	1.09
20/05/2018	1.13	1.03	1.09	0.99
21/05/2018	1.14	1.05	1.11	1.05
22/05/2018	1.11	1.04	1.12	1.04
23/05/2018	1.03	0.98	1.01	0.93
24/05/2018	1.01	0.84	1.00	0.90
25/05/2018	1.13	1.05	1.18	1.11
26/05/2018	1.02	0.80	1.10	0.99
27/05/2018	0.93	0.82	1.07	0.96
28/05/2018	0.92	0.82	1.14	1.01
29/05/2018	1.07	0.89	1.09	0.96
30/05/2018	1.02	0.92	1.01	0.91
31/05/2018	0.89	0.67	0.88	0.75

Total Number of Measurements, A: 21299 21296

Minimum Free Chlorine Standard: 0.5 0.5

Number of Measurements Meeting Standard, B: 21299 21296

COMPLIANCE, C = B/A X 100%: 100.00 100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2018\05-May

Submitted By (Print): D. Minor

Signature: Original signed by D.Minor



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						
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Jun-2018	1.12	1.15	1.34	1.10	1.12	1.32
02-Jun-2018	NA	NA	NA	NA	NA	NA
03-Jun-2018	NA	NA	NA	NA	NA	NA
04-Jun-2018	0.94	0.95	1.23	0.89	1.01	1.15
05-Jun-2018	1.07	1.14	1.30	1.04	1.11	1.31
06-Jun-2018	0.82	1.12	1.43	0.90	1.12	1.34
07-Jun-2018	1.15	1.31	1.56	1.16	1.21	1.43
08-Jun-2018	1.11	1.16	1.33	1.06	1.13	1.29
09-Jun-2018	NA	NA	NA	NA	NA	NA
10-Jun-2018	NA	NA	NA	NA	NA	NA
11-Jun-2018	1.23	1.23	1.42	1.11	1.13	1.31
12-Jun-2018	0.99	1.12	1.32	1.04	1.08	1.26
13-Jun-2018	0.87	1.11	1.30	0.97	1.15	1.28
14-Jun-2018	1.15	1.19	1.36	1.03	1.17	1.39
15-Jun-2018	1.18	1.29	1.49	1.12	1.24	1.46
16-Jun-2018	NA	NA	NA	NA	NA	NA
17-Jun-2018	NA	NA	NA	NA	NA	NA
18-Jun-2018	1.21	1.21	1.42	1.14	1.18	1.42
19-Jun-2018	1.06	1.14	1.30	1.16	1.22	1.39
20-Jun-2018	0.95	1.10	1.25	1.10	1.17	1.36
21-Jun-2018	1.02	1.25	1.35	1.16	1.26	1.50
22-Jun-2018	1.29	1.29	1.48	1.33	1.33	1.51
23-Jun-2018	NA	NA	NA	NA	NA	NA
24-Jun-2018	NA	NA	NA	NA	NA	NA
25-Jun-2018	1.17	1.18	1.36	1.14	1.13	1.33
26-Jun-2018	1.20	1.20	1.33	1.17	1.14	1.32
27-Jun-2018	1.08	1.19	1.39	1.10	1.19	1.33
28-Jun-2018	1.25	1.23	1.45	1.23	1.27	1.45
29-Jun-2018	1.16	1.09	1.31	1.09	1.11	1.28
30-Jun-2018	NA	NA	NA	NA	NA	NA
<b>Total number of measurements taken, A:</b>		21			21	
<b>Chlorine Standard for Monitoring Location (mg/L):</b>		0.50			0.50	
<b>Number of measurements meeting standard, B:</b>		21			21	
<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



**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: 01 July 2018

Report Period: June 2018

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/06/2018	1.18	0.98	1.12	0.93
02/06/2018	1.05	0.92	1.00	0.83
03/06/2018	0.96	0.79	0.90	0.77
04/06/2018	1.01	0.82	0.98	0.88
05/06/2018	1.05	0.79	1.00	0.74
06/06/2018	1.28	0.82	1.07	0.73
07/06/2018	1.16	1.02	1.13	1.03
08/06/2018	1.09	0.87	1.00	0.80
09/06/2018	1.15	0.86	1.14	0.79
10/06/2018	1.20	1.08	1.15	1.02
11/06/2018	1.09	0.97	1.01	0.90
12/06/2018	0.99	0.64	1.00	0.74
13/06/2018	0.97	0.67	0.98	0.86
14/06/2018	1.13	1.05	1.05	0.95
15/06/2018	1.24	1.11	1.20	1.03
16/06/2018	1.09	0.97	1.09	1.03
17/06/2018	1.09	0.93	1.14	1.02
18/06/2018	1.12	1.02	1.14	1.09
19/06/2018	1.10	0.99	1.16	1.07
20/06/2018	1.03	0.63	1.17	0.70
21/06/2018	1.22	0.97	1.36	1.13
22/06/2018	1.25	1.02	1.30	1.10
23/06/2018	1.35	1.10	1.28	1.09
24/06/2018	1.27	1.13	1.22	1.08
25/06/2018	1.20	1.05	1.14	1.06
26/06/2018	1.18	1.06	1.14	1.04
27/06/2018	1.19	1.07	1.16	1.07
28/06/2018	1.17	1.05	1.15	1.07
29/06/2018	1.09	0.93	1.03	0.89
30/06/2018	1.08	0.97	1.03	0.93

Total Number of Measurements, A: 20879 20880

Minimum Free Chlorine Standard: 0.5 0.5

Number of Measurements Meeting Standard, B: 20879 20880

COMPLIANCE, C = B/A X 100%: 100.00 100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2018\06-June

Submitted By (Print): M.Szmon

Signature: Original signed by M.Szmon



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-Jul-2018	NA	NA	NA	NA	NA	NA
02-Jul-2018	NA	NA	NA	NA	NA	NA
03-Jul-2018	1.04	1.15	1.33	1.02	1.13	1.36
04-Jul-2018	1.01	1.12	1.32	0.98	1.10	1.29
05-Jul-2018	0.87	1.04	1.25	0.89	1.03	1.22
06-Jul-2018	1.00	1.09	1.30	0.92	1.11	1.27
07-Jul-2018	NA	NA	NA	NA	NA	NA
08-Jul-2018	NA	NA	NA	NA	NA	NA
09-Jul-2018	1.16	1.15	1.38	1.13	1.22	1.39
10-Jul-2018	1.24	1.30	1.49	1.22	1.29	1.52
11-Jul-2018	1.01	1.14	1.33	1.05	1.21	1.35
12-Jul-2018	0.99	1.17	1.36	1.03	1.16	1.34
13-Jul-2018	1.10	1.12	1.33	1.17	1.09	1.33
14-Jul-2018	NA	NA	NA	NA	NA	NA
15-Jul-2018	NA	NA	NA	NA	NA	NA
16-Jul-2018	1.22	1.24	1.47	1.22	1.32	1.49
17-Jul-2018	1.28	1.30	1.48	1.24	1.32	1.54
18-Jul-2018	1.51	1.28	1.49	1.55	1.33	1.57
19-Jul-2018	1.45	1.39	1.59	1.42	1.46	1.62
20-Jul-2018	0.90	1.30	1.47	0.84	1.26	1.47
21-Jul-2018	NA	NA	NA	NA	NA	NA
22-Jul-2018	NA	NA	NA	NA	NA	NA
23-Jul-2018	1.14	1.05	1.34	1.24	1.15	1.37
24-Jul-2018	1.15	1.13	1.34	1.13	1.14	1.37
25-Jul-2018	1.18	1.19	1.45	1.20	1.32	1.51
26-Jul-2018	1.06	1.16	1.34	1.17	1.17	1.40
27-Jul-2018	1.22	1.29	1.50	1.25	1.18	1.44
28-Jul-2018	NA	NA	NA	NA	NA	NA
29-Jul-2018	NA	NA	NA	NA	NA	NA
30-Jul-2018	1.31	1.32	1.58	1.27	1.31	1.48
31-Jul-2018	1.16	1.39	1.53	1.27	1.29	1.52
<b>Total number of measurements taken, A:</b>		21			21	
<b>Chlorine Standard for Monitoring Location (mg/L):</b>		0.50			0.50	
<b>Number of measurements meeting standard, B:</b>		21			21	
<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



**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: 01 August 2018

Report Period: July 2018

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/07/2018	0.93	0.86	0.97	0.90
02/07/2018	1.01	0.93	1.03	0.96
03/07/2018	1.07	0.95	1.04	0.95
04/07/2018	0.99	0.85	0.98	0.87
05/07/2018	0.95	0.86	0.93	0.86
06/07/2018	1.04	0.91	1.04	0.91
07/07/2018	1.08	0.96	1.22	1.10
08/07/2018	1.05	0.92	1.21	0.97
09/07/2018	1.15	1.03	1.13	1.04
10/07/2018	1.23	0.97	1.24	1.04
11/07/2018	1.01	0.92	1.07	0.97
12/07/2018	1.12	0.87	1.15	0.96
13/07/2018	1.06	0.90	1.11	0.99
14/07/2018	1.05	0.85	1.16	0.93
15/07/2018	1.25	1.04	1.30	0.99
16/07/2018	1.21	1.02	1.20	1.01
17/07/2018	1.32	1.03	1.33	1.03
18/07/2018	1.34	1.11	1.35	1.09
19/07/2018	1.31	1.14	1.30	1.13
20/07/2018	1.21	0.74	1.19	0.70
21/07/2018	1.37	1.15	1.42	1.13
22/07/2018	1.14	0.82	1.17	0.85
23/07/2018	1.20	1.07	1.27	1.16
24/07/2018	1.15	0.93	1.17	1.03
25/07/2018	1.15	0.99	1.20	1.10
26/07/2018	1.11	0.94	1.21	1.06
27/07/2018	1.23	1.09	1.25	1.17
28/07/2018	1.20	0.99	1.22	1.00
29/07/2018	1.32	1.15	1.31	1.25
30/07/2018	1.22	0.87	1.17	0.96
31/07/2018	1.21	1.02	1.25	1.05

Total Number of Measurements, A: 21593 21596

Minimum Free Chlorine Standard: 0.5 0.5

Number of Measurements Meeting Standard, B: 21593 21596

COMPLIANCE, C = B/A X 100%: 100.00 100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2018\07-July

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	Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	
		Analyser	Grab	Grab	Analyser	Grab
	01-Aug-2018	1.22	1.41	1.59	1.32	1.34
	02-Aug-2018	1.52	1.43	1.61	1.38	1.30
	03-Aug-2018	1.37	1.36	1.61	1.36	1.26
	04-Aug-2018	NA	NA	NA	NA	NA
	05-Aug-2018	NA	NA	NA	NA	NA
	06-Aug-2018	NA	NA	NA	NA	NA
	07-Aug-2018	1.46	1.43	1.53	1.30	1.30
	08-Aug-2018	1.34	1.40	1.55	1.31	1.33
	09-Aug-2018	1.33	1.32	1.49	1.28	1.26
	10-Aug-2018	1.38	1.41	1.67	1.30	1.32
	11-Aug-2018	NA	NA	NA	NA	NA
	12-Aug-2018	NA	NA	NA	NA	NA
	13-Aug-2018	1.23	1.30	1.53	1.24	1.34
	14-Aug-2018	1.30	1.37	1.61	1.23	1.29
	15-Aug-2018	1.26	1.41	1.61	1.29	1.38
	16-Aug-2018	1.29	1.50	1.73	1.33	1.48
	17-Aug-2018	1.43	1.50	1.71	1.39	1.42
	18-Aug-2018	NA	NA	NA	NA	NA
	19-Aug-2018	NA	NA	NA	NA	NA
	20-Aug-2018	1.36	1.41	1.67	1.28	1.31
	21-Aug-2018	1.36	1.39	1.59	1.26	1.33
	22-Aug-2018	1.19	1.26	1.42	1.20	1.28
	23-Aug-2018	1.44	1.47	1.60	1.33	1.41
	24-Aug-2018	1.52	1.54	1.75	1.41	1.41
	25-Aug-2018	NA	NA	NA	NA	NA
	26-Aug-2018	NA	NA	NA	NA	NA
	27-Aug-2018	1.49	1.58	1.75	1.41	1.36
	28-Aug-2018	1.19	1.36	1.57	1.34	1.49
	29-Aug-2018	1.43	1.57	1.81	1.40	1.54
	30-Aug-2018	1.44	1.61	1.82	1.44	1.65
	31-Aug-2018	1.35	1.46	1.69	1.42	1.46
<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

Authorized in Sample Manager By: \_\_\_\_\_ C.Diduck



**City Of Winnipeg**

Water and Waste Department

Water Services

**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: 01 September 2018

Report Period: August 2018

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/08/2018	1.31	1.12	1.35	1.27
02/08/2018	1.34	1.17	1.31	1.21
03/08/2018	1.34	1.15	1.33	1.23
04/08/2018	1.19	0.93	1.29	1.20
05/08/2018	1.42	1.03	1.29	1.05
06/08/2018	1.55	1.24	1.31	1.24
07/08/2018	1.47	1.11	1.29	1.22
08/08/2018	1.31	1.08	1.30	1.19
09/08/2018	1.30	1.00	1.27	1.13
10/08/2018	1.38	1.28	1.28	1.20
11/08/2018	1.28	1.18	1.26	1.17
12/08/2018	1.34	1.22	1.31	1.23
13/08/2018	1.31	1.15	1.27	1.18
14/08/2018	1.26	1.11	1.22	1.11
15/08/2018	1.29	1.19	1.30	1.20
16/08/2018	1.30	1.09	1.31	1.25
17/08/2018	1.38	1.26	1.29	1.21
18/08/2018	1.35	1.20	1.28	1.13
19/08/2018	1.37	1.22	1.27	1.14
20/08/2018	1.37	1.25	1.28	1.19
21/08/2018	1.32	1.22	1.29	1.19
22/08/2018	1.30	1.12	1.26	1.09
23/08/2018	1.50	1.34	1.38	1.28
24/08/2018	1.47	1.34	1.39	1.28
25/08/2018	1.46	1.35	1.39	1.29
26/08/2018	1.44	1.33	1.37	1.28
27/08/2018	1.42	1.23	1.38	1.21
28/08/2018	1.33	1.17	1.35	1.23
29/08/2018	1.39	1.29	1.32	1.26
30/08/2018	1.45	1.34	1.40	1.27
31/08/2018	1.31	1.19	1.34	1.23

Total Number of Measurements, A: 21601 21601

Minimum Free Chlorine Standard: 0.5 0.5

Number of Measurements Meeting Standard, B: 21601 21601

COMPLIANCE, C = B/A X 100%: 100.00 100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2018\08-August

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	Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	
		Analyser	Grab	Grab	Analyser	
	01-Sep-2018	NA	NA	NA	NA	NA
	02-Sep-2018	NA	NA	NA	NA	NA
	03-Sep-2018	NA	NA	NA	NA	NA
	04-Sep-2018	1.28	1.38	1.60	1.27	1.40
	05-Sep-2018	1.40	1.51	1.69	1.37	1.41
	06-Sep-2018	1.26	1.32	1.52	1.23	1.31
	07-Sep-2018	1.30	1.34	1.54	1.39	1.41
	08-Sep-2018	NA	NA	NA	NA	NA
	09-Sep-2018	NA	NA	NA	NA	NA
	10-Sep-2018	1.35	1.34	1.55	1.39	1.34
	11-Sep-2018	1.29	1.39	1.57	1.33	1.36
	12-Sep-2018	1.80	1.73	1.96	1.76	1.72
	13-Sep-2018	1.50	1.55	1.75	1.46	1.52
	14-Sep-2018	1.51	1.47	1.70	1.38	1.47
	15-Sep-2018	NA	NA	NA	NA	NA
	16-Sep-2018	NA	NA	NA	NA	NA
	17-Sep-2018	1.40	1.41	1.63	1.30	1.40
	18-Sep-2018	1.37	1.36	1.57	1.35	1.35
	19-Sep-2018	1.60	1.56	1.82	1.47	1.41
	20-Sep-2018	1.40	1.39	1.59	1.47	1.50
	21-Sep-2018	1.28	1.42	1.53	1.50	1.49
	22-Sep-2018	NA	NA	NA	NA	NA
	23-Sep-2018	NA	NA	NA	NA	NA
	24-Sep-2018	1.22	1.30	1.50	1.09	1.19
	25-Sep-2018	1.24	1.30	1.53	1.22	1.28
	26-Sep-2018	1.16	1.17	1.39	1.20	1.19
	27-Sep-2018	1.37	1.35	1.54	1.39	1.32
	28-Sep-2018	1.25	1.27	1.45	1.22	1.27
	29-Sep-2018	NA	NA	NA	NA	NA
	30-Sep-2018	NA	NA	NA	NA	NA
<b>Total number of measurements taken, A:</b>		19			19	
<b>Chlorine Standard for Monitoring Location (mg/L):</b>		0.50			0.50	
<b>Number of measurements meeting standard, B:</b>		19			19	
<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

Authorized in Sample Manager By: C.Diduck



City Of Winnipeg

Water and Waste Department

Water Services

WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT  
Deacon Booster Pumping StationWater System Code: **252.00**Licence Number: **PWS-09-412-01**

Report Created: 01 October 2018

Report Period: September 2018

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/09/2018	1.30	1.20	1.33	1.23
02/09/2018	1.30	1.22	1.30	1.20
03/09/2018	1.28	1.18	1.30	1.21
04/09/2018	1.40	1.20	1.31	1.20
05/09/2018	1.40	1.22	1.38	1.30
06/09/2018	1.32	1.15	1.32	1.20
07/09/2018	1.41	0.75	1.43	0.82
08/09/2018	1.37	1.22	1.42	1.28
09/09/2018	1.43	1.30	1.37	1.31
10/09/2018	1.35	1.19	1.35	1.26
11/09/2018	1.34	1.22	1.37	1.30
12/09/2018	1.80	0.85	1.83	1.15
13/09/2018	1.26	0.88	1.41	1.20
14/09/2018	1.33	1.20	1.39	1.27
15/09/2018	1.36	1.16	1.37	1.24
16/09/2018	1.48	1.41	1.50	1.44
17/09/2018	1.47	1.24	1.43	1.27
18/09/2018	1.43	1.28	1.33	1.22
19/09/2018	1.53	1.40	1.41	1.30
20/09/2018	1.34	1.28	1.40	1.21
21/09/2018	1.31	1.19	1.44	1.29
22/09/2018	1.31	1.06	1.32	1.11
23/09/2018	1.44	1.33	1.30	1.23
24/09/2018	1.33	1.02	1.23	1.00
25/09/2018	1.29	1.06	1.25	1.10
26/09/2018	1.20	1.08	1.17	1.04
27/09/2018	1.23	0.98	1.27	1.00
28/09/2018	1.23	1.03	1.26	1.05
29/09/2018	1.10	1.02	1.09	1.01
30/09/2018	1.29	1.11	1.20	1.10

Total Number of Measurements, A: 20869 20869

Minimum Free Chlorine Standard: 0.5 0.5

Number of Measurements Meeting Standard, B: 20869 20869

COMPLIANCE, C = B/A X 100%: 100.00 100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2018\09-September

Submitted By (Print): D. MerredewSignature: 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		
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Oct-2018	1.40	1.38	1.62	1.30	1.31	1.51
02-Oct-2018	1.23	1.23	1.46	1.29	1.36	1.50
03-Oct-2018	1.39	1.32	1.52	1.23	1.25	1.39
04-Oct-2018	1.25	1.22	1.45	1.13	1.13	1.29
05-Oct-2018	1.38	1.23	1.43	1.21	1.16	1.30
06-Oct-2018	NA	NA	NA	NA	NA	NA
07-Oct-2018	NA	NA	NA	NA	NA	NA
08-Oct-2018	NA	NA	NA	NA	NA	NA
09-Oct-2018	1.37	1.39	1.55	1.25	1.31	1.44
10-Oct-2018	1.11	1.11	1.31	1.17	1.26	1.39
11-Oct-2018	1.30	1.35	1.54	1.27	1.36	1.51
12-Oct-2018	1.24	1.27	1.45	1.26	1.31	1.50
13-Oct-2018	NA	NA	NA	NA	NA	NA
14-Oct-2018	NA	NA	NA	NA	NA	NA
15-Oct-2018	1.19	1.23	1.41	1.24	1.34	1.45
16-Oct-2018	1.20	1.26	1.40	1.25	1.31	1.46
17-Oct-2018	1.21	1.23	1.39	1.08	1.16	1.35
18-Oct-2018	1.18	1.23	1.43	1.15	1.17	1.33
19-Oct-2018	1.03	1.09	1.28	1.20	1.16	1.31
20-Oct-2018	NA	NA	NA	NA	NA	NA
21-Oct-2018	NA	NA	NA	NA	NA	NA
22-Oct-2018	1.22	1.30	1.47	1.19	1.27	1.47
23-Oct-2018	1.21	1.24	1.43	1.21	1.26	1.42
24-Oct-2018	1.23	1.24	1.43	1.23	1.27	1.46
25-Oct-2018	1.11	1.18	1.38	1.12	1.19	1.37
26-Oct-2018	1.37	1.38	1.63	1.23	1.32	1.52
27-Oct-2018	NA	NA	NA	NA	NA	NA
28-Oct-2018	NA	NA	NA	NA	NA	NA
29-Oct-2018	1.00	1.18	1.41	1.12	1.20	1.30
30-Oct-2018	1.15	1.15	1.35	1.13	1.19	1.34
31-Oct-2018	1.25	1.25	1.47	1.26	1.26	1.44
<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

Authorized By: C.Diduck



**City Of Winnipeg**

Water and Waste Department

Water Services

**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: 01 November 2018

Report Period: October 2018

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/10/2018	1.37	1.22	1.25	1.14
02/10/2018	1.32	1.07	1.28	1.19
03/10/2018	1.29	1.07	1.20	1.11
04/10/2018	1.21	0.97	1.15	1.02
05/10/2018	1.31	1.14	1.21	1.11
06/10/2018	1.17	1.06	1.22	1.14
07/10/2018	1.13	1.08	1.18	1.11
08/10/2018	1.12	1.08	1.20	1.13
09/10/2018	1.20	1.08	1.26	1.15
10/10/2018	1.15	1.06	1.26	1.14
11/10/2018	1.30	1.19	1.27	1.12
12/10/2018	1.27	1.16	1.24	1.13
13/10/2018	1.31	1.14	1.26	1.15
14/10/2018	1.38	1.28	1.39	1.16
15/10/2018	1.26	1.18	1.30	1.16
16/10/2018	1.26	1.15	1.28	1.17
17/10/2018	1.24	1.18	1.10	1.04
18/10/2018	1.16	1.09	1.11	1.02
19/10/2018	1.08	1.01	1.18	1.11
20/10/2018	1.11	1.05	1.17	1.13
21/10/2018	1.23	1.17	1.25	1.21
22/10/2018	1.17	1.08	1.18	1.07
23/10/2018	1.18	1.10	1.18	1.12
24/10/2018	1.21	1.10	1.21	1.14
25/10/2018	1.17	1.07	1.19	1.10
26/10/2018	1.24	1.12	1.21	1.13
27/10/2018	1.20	1.13	1.23	1.11
28/10/2018	1.24	1.10	1.29	1.17
29/10/2018	1.20	0.68	1.19	0.90
30/10/2018	1.16	1.08	1.13	1.08
31/10/2018	1.20	1.11	1.20	1.15

Total Number of Measurements, A: 21587 21586

Minimum Free Chlorine Standard: 0.5 0.5

Number of Measurements Meeting Standard, B: 21587 21586

COMPLIANCE, C = B/A X 100%: 100.00 100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2018\10-October

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-Nov-2018		1.19	1.28	1.49	1.21	1.28	1.46
02-Nov-2018		1.13	1.33	1.50	1.13	1.29	1.40
03-Nov-2018		NA	NA	NA	NA	NA	NA
04-Nov-2018		NA	NA	NA	NA	NA	NA
05-Nov-2018		1.16	1.22	1.41	1.21	1.23	1.37
06-Nov-2018		1.11	1.22	1.38	1.17	1.24	1.41
07-Nov-2018		1.29	1.18	1.34	1.22	1.17	1.31
08-Nov-2018		1.04	1.14	1.34	1.10	1.15	1.32
09-Nov-2018		1.13	1.22	1.36	1.04	1.09	1.29
10-Nov-2018		NA	NA	NA	NA	NA	NA
11-Nov-2018		NA	NA	NA	NA	NA	NA
12-Nov-2018		NA	NA	NA	NA	NA	NA
13-Nov-2018		1.15	1.23	1.40	1.08	1.07	1.30
14-Nov-2018		1.19	1.23	1.44	1.16	1.23	1.36
15-Nov-2018		1.16	1.18	1.42	1.11	1.14	1.30
16-Nov-2018		1.06	1.20	1.39	0.97	1.10	1.28
17-Nov-2018		NA	NA	NA	NA	NA	NA
18-Nov-2018		1.27	1.36	1.54	1.15	1.32	1.44
19-Nov-2018		1.21	1.35	1.60	1.22	1.37	1.51
20-Nov-2018		1.17	1.22	1.38	1.23	1.16	1.32
21-Nov-2018		1.06	1.15	1.31	1.08	1.17	1.31
22-Nov-2018		1.04	1.16	1.37	1.00	1.12	1.28
23-Nov-2018		1.20	1.31	1.47	1.12	1.25	1.37
24-Nov-2018		NA	NA	NA	NA	NA	NA
25-Nov-2018		NA	NA	NA	NA	NA	NA
26-Nov-2018		1.11	1.14	1.32	1.01	1.04	1.22
27-Nov-2018		1.01	1.00	1.19	0.89	0.98	1.10
28-Nov-2018		1.02	1.10	1.22	1.15	1.18	1.35
29-Nov-2018		0.92	1.05	1.24	1.01	1.14	1.28
30-Nov-2018		1.00	1.06	1.24	1.11	1.21	1.36
<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

Authorized By: \_\_\_\_\_ C.Diduck

Date Authorized: \_\_\_\_\_ 7-Dec-18



**City Of Winnipeg**

Water and Waste Department

Water Services

**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: 01 December 2018

Report Period: November 2018

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/11/2018	1.18	1.12	1.18	1.12
02/11/2018	1.13	1.06	1.11	1.05
03/11/2018	1.06	0.96	1.06	0.97
04/11/2018	1.03	0.96	1.08	1.03
05/11/2018	1.16	1.08	1.19	1.10
06/11/2018	1.07	1.01	1.12	1.03
07/11/2018	1.18	1.03	1.17	1.10
08/11/2018	1.14	1.03	1.10	1.02
09/11/2018	1.10	1.00	1.04	1.00
10/11/2018	1.16	1.05	1.06	1.03
11/11/2018	1.13	1.02	1.04	1.03
12/11/2018	1.16	1.00	1.08	1.05
13/11/2018	1.21	1.09	1.14	1.06
14/11/2018	1.21	1.11	1.19	1.10
15/11/2018	1.13	1.02	1.08	1.01
16/11/2018	1.09	0.98	1.00	0.95
17/11/2018	1.13	0.97	1.07	0.90
18/11/2018	1.22	1.11	1.12	1.04
19/11/2018	1.19	1.09	1.20	1.08
20/11/2018	1.17	1.09	1.19	1.11
21/11/2018	1.06	0.94	1.05	0.88
22/11/2018	1.11	0.96	1.06	0.92
23/11/2018	1.17	1.07	1.11	1.01
24/11/2018	1.11	1.05	1.04	0.99
25/11/2018	1.08	1.02	1.00	0.96
26/11/2018	1.09	1.02	0.97	0.89
27/11/2018	1.02	0.96	0.93	0.85
28/11/2018	1.04	0.98	1.11	0.98
29/11/2018	0.94	0.87	1.05	0.97
30/11/2018	1.03	0.94	1.14	1.04

Total Number of Measurements, A: 20910 20910

Minimum Free Chlorine Standard: 0.5 0.5

Number of Measurements Meeting Standard, B: 20910 20910

COMPLIANCE, C = B/A X 100%: 100.00 100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2018\11-November

Submitted By (Print): D. Minor

Original Signed by D. Minor



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-Dec-2018		NA	NA	NA	NA	NA	NA
02-Dec-2018		NA	NA	NA	NA	NA	NA
03-Dec-2018		1.22	1.16	1.38	1.13	1.16	1.28
04-Dec-2018		1.15	1.08	1.28	1.01	1.06	1.20
05-Dec-2018		1.20	1.22	1.37	1.18	1.14	1.31
06-Dec-2018		1.15	1.13	1.33	1.07	1.13	1.22
07-Dec-2018		1.17	1.21	1.39	1.09	1.14	1.31
08-Dec-2018		NA	NA	NA	NA	NA	NA
09-Dec-2018		NA	NA	NA	NA	NA	NA
10-Dec-2018		1.27	1.29	1.51	1.12	1.23	1.42
11-Dec-2018		1.09	1.13	1.32	0.95	1.04	1.19
12-Dec-2018		1.12	1.18	1.38	1.16	1.20	1.37
13-Dec-2018		1.14	1.22	1.38	1.07	1.21	1.36
14-Dec-2018		1.16	1.21	1.42	1.13	1.21	1.40
15-Dec-2018		NA	NA	NA	NA	NA	NA
16-Dec-2018		NA	NA	NA	NA	NA	NA
17-Dec-2018		1.15	1.13	1.31	1.12	1.13	1.35
18-Dec-2018		1.05	1.04	1.26	1.03	1.05	1.21
19-Dec-2018		1.13	1.15	1.31	1.21	1.23	1.41
20-Dec-2018		1.09	1.11	1.33	1.16	1.24	1.42
21-Dec-2018		1.14	1.21	1.40	1.12	1.20	1.40
22-Dec-2018		NA	NA	NA	NA	NA	NA
23-Dec-2018		NA	NA	NA	NA	NA	NA
24-Dec-2018		1.10	1.17	1.34	1.11	1.15	1.38
25-Dec-2018		NA	NA	NA	NA	NA	NA
26-Dec-2018		NA	NA	NA	NA	NA	NA
27-Dec-2018		1.10	1.16	1.34	1.09	1.12	1.33
28-Dec-2018		1.04	1.13	1.31	1.01	1.07	1.30
29-Dec-2018		NA	NA	NA	NA	NA	NA
30-Dec-2018		NA	NA	NA	NA	NA	NA
31-Dec-2018		1.00	1.07	1.27	0.92	1.05	1.17
<b>Total number of measurements taken, A:</b>		19			19		
<b>Chlorine Standard for Monitoring Location (mg/L):</b>		0.50			0.50		
<b>Number of measurements meeting standard, B:</b>		19			19		
<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

Authorized By: \_\_\_\_\_ C.Diduck

Date Authorized: \_\_\_\_\_ 7-Jan-19

**City Of Winnipeg**

Water and Waste Department

Water Services

**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**  
Deacon Booster Pumping StationWater System Code: **252.00**Licence Number: **PWS-09-412-01**

Report Created: 01 January 2019

Report Period: December 2018

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/12/2018	1.13	1.09	1.26	1.21
02/12/2018	1.08	1.04	1.18	1.12
03/12/2018	1.14	1.02	1.11	1.02
04/12/2018	1.16	1.07	1.03	0.98
05/12/2018	1.17	1.12	1.11	1.02
06/12/2018	1.15	1.07	1.08	1.02
07/12/2018	1.18	1.09	1.08	1.03
08/12/2018	1.16	1.06	1.06	0.98
09/12/2018	1.14	1.06	1.01	0.96
10/12/2018	1.22	1.13	1.07	0.99
11/12/2018	1.13	1.06	1.06	0.94
12/12/2018	1.12	1.05	1.19	1.10
13/12/2018	1.11	1.05	1.12	0.98
14/12/2018	1.15	1.03	1.14	1.05
15/12/2018	1.16	1.11	1.17	1.10
16/12/2018	1.11	1.05	1.09	1.00
17/12/2018	1.11	0.99	1.11	0.99
18/12/2018	1.09	0.99	1.16	0.93
19/12/2018	1.10	0.99	1.19	1.09
20/12/2018	1.12	1.02	1.12	1.00
21/12/2018	1.13	1.01	1.10	1.01
22/12/2018	1.12	1.02	1.11	1.02
23/12/2018	1.14	1.04	1.13	1.03
24/12/2018	1.10	0.98	1.10	1.03
25/12/2018	1.10	1.00	1.12	1.05
26/12/2018	1.13	1.02	1.13	1.04
27/12/2018	1.08	0.94	1.06	0.97
28/12/2018	1.05	0.92	1.02	0.94
29/12/2018	1.07	0.97	1.04	0.97
30/12/2018	1.00	0.90	0.94	0.88
31/12/2018	0.99	0.90	0.95	0.89

Total Number of Measurements, A: 21605 21604

Minimum Free Chlorine Standard: 0.5 0.5

Number of Measurements Meeting Standard, B: 21605 21604

100.00 100.00

COMPLIANCE, C = B/A X 100%:

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2018\12-December

Submitted By (Print): D.MerredewSignature: Original signed by D. Merredew

## **2018 Monthly Turbidity Reports**



CITY OF WINNIPEG  
WATER AND WASTE DEPARTMENT  
ENVIRONMENTAL STANDARDS DIVISION

**WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT**

Water System Code: 252.00	Turbidity (NTU)																			
	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-Jan-2018		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
02-Jan-2018		0.64	0.75	0.12	0.10	OL	OL	0.11	0.02	0.13	0.07	0.13	0.07	0.18	0.17	OL	OL	0.14	0.06	
03-Jan-2018		0.62	0.72	0.07	0.06	0.08	0.06	0.09	<0.02	OL	OL	0.12	0.08	OL	OL	0.12	0.13	0.12	0.06	
04-Jan-2018		0.62	0.74	0.07	0.05	0.07	0.06	OL	OL	0.07	0.04	0.09	0.04	0.08	0.10	0.08	0.10	OL	OL	
05-Jan-2018		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	0.11	NA	NA	NA	NA	
06-Jan-2018		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
07-Jan-2018		0.58	0.73	0.07	0.06	0.07	0.06	OL	OL	0.06	0.04	0.06	0.03	0.08	0.09	0.08	0.10	OL	OL	
08-Jan-2018		0.56	0.70	0.08	0.06	OL	OL	0.07	<0.02	0.07	0.05	0.07	0.04	0.08	0.10	0.06	0.09	0.06	0.02	
09-Jan-2018		0.60	0.71	0.07	0.06	0.06	0.05	0.08	<0.02	OL	OL	0.08	0.05	OL	OL	0.07	0.09	0.08	0.02	
10-Jan-2018		0.58	0.70	0.07	0.06	0.07	0.06	OL	OL	0.08	0.04	0.07	0.03	0.07	0.10	0.09	0.09	OL	OL	
11-Jan-2018		0.59	0.67	0.08	0.06	OL	OL	0.07	<0.02	0.08	0.04	0.07	0.05	0.08	0.11	OL	OL	0.07	0.02	
12-Jan-2018		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
13-Jan-2018		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
14-Jan-2018		0.54	0.67	0.08	0.07	0.09	0.07	OL	OL	0.08	0.06	0.08	0.05	0.08	0.11	OL	OL	0.09	0.03	
15-Jan-2018		0.64	0.63	OL	OL	0.07	0.06	0.08	<0.02	0.11	0.07	0.10	0.06	OL	OL	0.09	0.11	0.08	0.04	
16-Jan-2018		0.65	0.62	0.09	0.06	0.09	0.07	0.10	0.02	0.10	0.05	OL	OL	0.11	0.11	0.11	0.11	OL	OL	
17-Jan-2018		0.54	0.63	0.09	0.07	OL	OL	0.07	<0.02	0.08	0.06	0.08	0.05	0.10	0.12	OL	OL	0.08	0.03	
18-Jan-2018		0.51	0.62	0.07	0.07	0.07	0.07	0.08	0.03	OL	OL	0.09	0.06	OL	OL	0.08	0.11	0.09	0.04	
19-Jan-2018		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
20-Jan-2018		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
21-Jan-2018		0.49	0.63	0.08	0.06	0.08	0.07	0.08	0.03	OL	OL	OL	OL	0.08	0.09	0.06	0.09	0.07	0.03	
22-Jan-2018		0.52	0.59	0.09	0.09	0.10	0.10	OL	OL	0.09	0.08	0.09	0.07	0.08	0.11	0.09	0.12	OL	OL	
23-Jan-2018		0.47	0.61	OL	OL	OL	OL	0.10	0.05	0.11	0.09	0.09	0.07	0.13	0.16	0.09	0.11	0.08	0.04	
24-Jan-2018		0.51	0.60	0.12	0.10	0.12	0.11	0.14	0.08	OL	OL	OL	OL	0.12	0.13	0.12	0.13	0.13	0.08	
25-Jan-2018		0.48	0.60	0.12	0.10	0.13	0.12	OL	OL	0.11	0.09	0.11	0.07	0.12	0.13	OL	OL	0.11	0.05	
26-Jan-2018		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
27-Jan-2018		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
28-Jan-2018		0.47	0.58	0.10	0.08	OL	OL	0.09	0.03	0.10	0.06	0.08	0.05	0.09	0.12	OL	OL	0.07	0.03	
29-Jan-2018		0.47	0.59	OL	OL	0.06	0.06	0.08	0.02	0.09	0.07	0.08	0.05	OL	OL	0.07	0.09	0.08	0.03	
30-Jan-2018		0.60	0.58	0.08	0.06	0.09	0.06	0.10	0.03	0.08	0.04	OL	OL	0.10	0.09	0.12	0.09	OL	OL	
31-Jan-2018		0.45	0.59	0.07	0.06	0.09	0.08	OL	OL	0.07	0.04	0.06	0.05	0.07	0.09	OL	OL	0.06	0.02	
Total number of measurements taken, A:					19			16		15		17		18		18		15		
Turbidity Standard for Monitoring Location (NTU):					0.30			0.30		0.30		0.30		0.30		0.30		0.30		
Number of measurements meeting standard, B:					19			16		15		17		18		18		15		
Compliance with Turbidity Standard, C= B/A X 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



**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**

January 2018 Turbidity (NTU)

Date	Raw		Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/01/2018	0.79	0.02	0.04	0.12	0.18	0.02	0.10	0.04	0.16	0.06	0.16	0.08	0.11	0.09	0.17	0.03	0.12	
2/01/2018	0.77	0.06	0.15	0.06	0.16	0.01	0.03	0.07	0.12	0.09	0.13	0.12	0.23	0.07	0.24	0.03	0.05	
3/01/2018	0.76	0.05	0.09	0.05	0.08	0.01	0.10	0.03	0.13	0.05	0.11	0.08	0.22	0.13	0.18	0.03	0.14	
4/01/2018	0.77	0.06	0.11	0.04	0.11	0.00	0.04	0.03	0.06	0.03	0.06	0.10	0.13	0.07	0.17	0.00	0.05	
5/01/2018	0.76	0.04	0.09	0.03	0.08	0.00	0.00	0.03	0.08	0.05	0.07	0.07	0.15	0.07	0.13	0.01	0.01	
6/01/2018	0.75	0.05	0.07	0.05	0.06	0.00	0.03	0.02	0.07	0.03	0.07	0.06	0.14	0.11	0.12	0.01	0.05	
7/01/2018	0.74	0.06	0.08	0.04	0.08	0.00	0.04	0.03	0.07	0.03	0.06	0.09	0.12	0.07	0.13	0.00	0.04	
8/01/2018	0.73	0.05	0.08	0.03	0.08	0.00	0.01	0.03	0.08	0.04	0.07	0.06	0.14	0.06	0.13	0.01	0.01	
9/01/2018	0.73	0.05	0.08	0.04	0.06	0.01	0.03	0.02	0.07	0.03	0.06	0.06	0.13	0.10	0.12	0.00	0.04	
10/01/2018	0.72	0.06	0.08	0.04	0.08	0.00	0.03	0.03	0.05	0.03	0.06	0.09	0.11	0.07	0.12	0.00	0.03	
11/01/2018	0.70	0.04	0.08	0.03	0.07	0.00	0.00	0.03	0.07	0.05	0.06	0.07	0.13	0.07	0.13	0.01	0.01	
12/01/2018	0.70	0.05	0.08	0.03	0.06	0.00	0.03	0.02	0.09	0.03	0.07	0.07	0.13	0.09	0.11	0.01	0.03	
13/01/2018	0.69	0.07	0.08	0.06	0.07	0.01	0.04	0.03	0.10	0.04	0.08	0.08	0.14	0.09	0.13	0.01	0.06	
14/01/2018	0.68	0.05	0.09	0.04	0.09	0.01	0.06	0.05	0.09	0.05	0.07	0.10	0.17	0.07	0.15	0.01	0.01	
15/01/2018	0.66	0.05	0.10	0.04	0.07	0.01	0.03	0.03	0.11	0.05	0.10	0.06	0.16	0.10	0.12	0.01	0.06	
16/01/2018	0.64	0.08	0.09	0.06	0.10	0.01	0.06	0.03	0.09	0.04	0.10	0.10	0.13	0.08	0.15	0.01	0.06	
17/01/2018	0.65	0.05	0.10	0.04	0.10	0.01	0.03	0.05	0.11	0.06	0.11	0.08	0.17	0.08	0.16	0.01	0.02	
18/01/2018	0.64	0.05	0.11	0.05	0.07	0.03	0.08	0.04	0.12	0.04	0.09	0.07	0.17	0.12	0.13	0.02	0.07	
19/01/2018	0.64	0.08	0.11	0.06	0.11	0.02	0.08	0.04	0.11	0.04	0.09	0.10	0.14	0.08	0.16	0.01	0.07	
20/01/2018	0.63	0.05	0.10	0.04	0.10	0.01	0.04	0.05	0.11	0.06	0.08	0.07	0.16	0.08	0.15	0.01	0.02	
21/01/2018	0.63	0.05	0.11	0.05	0.07	0.03	0.07	0.04	0.09	0.03	0.08	0.07	0.15	0.10	0.14	0.01	0.08	
22/01/2018	0.63	0.10	0.12	0.07	0.11	0.04	0.12	0.06	0.09	0.04	0.12	0.11	0.16	0.08	0.15	0.01	0.07	
23/01/2018	0.64	0.07	0.14	0.05	0.15	0.04	0.07	0.07	0.15	0.08	0.13	0.08	0.19	0.08	0.17	0.02	0.04	
24/01/2018	0.63	0.08	0.15	0.09	0.12	0.07	0.12	0.06	0.19	0.06	0.14	0.08	0.23	0.14	0.15	0.03	0.09	
25/01/2018	0.62	0.10	0.16	0.07	0.17	0.05	0.14	0.07	0.12	0.05	0.11	0.12	0.17	0.09	0.19	0.02	0.11	
26/01/2018	0.62	0.06	0.14	0.05	0.15	0.04	0.07	0.06	0.15	0.07	0.12	0.08	0.18	0.08	0.12	0.02	0.03	
27/01/2018	0.62	0.07	0.11	0.08	0.19	0.05	0.19	0.05	0.26	0.05	0.22	0.07	0.14	0.12	0.23	0.02	0.14	
28/01/2018	0.61	0.07	0.14	0.05	0.15	0.03	0.11	0.06	0.12	0.06	0.10	0.11	0.19	0.08	0.16	0.01	0.05	
29/01/2018	0.62	0.05	0.09	0.04	0.10	0.02	0.04	0.03	0.33	0.04	0.09	0.06	0.15	0.08	0.12	0.01	0.07	
30/01/2018	0.62	0.06	0.08	0.06	0.08	0.02	0.06	0.03	0.09	0.03	0.10	0.06	0.13	0.09	0.13	0.00	0.04	
31/01/2018	0.62	0.05	0.09	0.04	0.09	0.01	0.05	0.04	0.05	0.04	0.06	0.09	0.13	0.07	0.13	0.00	0.03	

Total Number of Measurements Taken, A: 14473      11461      12887      12449      14868      14201      13486      14214  
Turbidity Standard for Monitoring Location (NTU): 0.3      0.3      0.3      0.3      0.3      0.3      0.3      0.3  
Number of Measurements Meeting Standard, B: 14473      11461      12887      12448      14868      14201      13486      14214  
Compliance with Turbidity Standard, C = B/A X 100%: 100.000%      100.000%      100.000%      99.992%      100.000%      100.000%      100.000%      100.000%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2018\01-January

Submitted By (Print): M. Szmon

Signature: Original signed by M.Szmon



CITY OF WINNIPEG  
WATER AND WASTE DEPARTMENT  
ENVIRONMENTAL STANDARDS DIVISION

**WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT**

Water System Code: 252.00	Turbidity (NTU)																		
	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8		
Date	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	
01-Feb-2018	0.51	0.59	OL	OL	0.06	0.06	0.07	<0.02	0.08	0.06	0.07	0.05	OL	OL	0.07	0.09	0.07	0.02	
02-Feb-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
03-Feb-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
04-Feb-2018	0.49	0.59	0.06	0.05	0.06	0.06	0.08	0.03	OL	OL	0.07	0.05	0.06	0.10	0.07	0.09	0.07	0.03	
05-Feb-2018	0.49	0.60	0.06	0.06	0.06	0.02	0.08	0.04	0.06	0.04	OL	OL	0.06	0.10	0.06	0.10	OL	OL	
06-Feb-2018	0.48	0.62	OL	OL	OL	OL	0.08	0.03	0.08	0.06	0.08	0.05	0.08	0.11	0.07	0.10	0.07	0.03	
07-Feb-2018	0.49	0.59	0.08	0.06	0.07	0.06	0.08	0.04	OL	OL	0.08	0.06	0.07	0.10	0.08	0.11	0.08	0.03	
08-Feb-2018	0.52	0.62	0.09	0.07	0.09	0.08	OL	OL	0.08	0.05	0.07	0.05	0.08	0.11	0.07	0.10	OL	OL	
09-Feb-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
10-Feb-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
11-Feb-2018	0.56	0.62	0.07	0.06	0.10	0.13	0.09	0.08	0.08	0.06	0.07	0.04	0.08	0.07	0.06	0.05	OL	OL	
12-Feb-2018	0.59	0.62	OL	OL	0.06	0.09	0.10	0.08	0.08	0.06	0.06	0.04	OL	OL	0.07	0.05	0.07	<0.02	
13-Feb-2018	0.52	0.64	0.06	0.05	0.06	0.09	0.07	0.06	OL	OL	0.07	0.05	0.06	0.07	0.05	OL	OL	0.08	0.02
14-Feb-2018	0.58	0.75	0.07	0.06	OL	OL	0.08	0.09	0.07	0.06	0.06	0.03	0.07	0.07	0.04	OL	OL		
15-Feb-2018	0.50	0.70	0.08	0.06	OL	OL	0.09	0.09	OL	OL	0.06	0.04	0.09	0.08	0.08	0.05	0.07	<0.02	
16-Feb-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
17-Feb-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
18-Feb-2018	0.48	0.68	0.07	<0.02	OL	OL	0.09	0.04	OL	OL	0.07	<0.02	0.09	0.06	0.07	0.03	0.07	<0.02	
19-Feb-2018	NA	NA	NA	NA	NA	NA	NA	NA	OL	OL	NA								
20-Feb-2018	0.52	0.67	0.06	<0.02	0.06	0.06	0.07	0.02	OL	OL	0.07	<0.02	OL	OL	0.09	0.04	0.09	<0.02	
21-Feb-2018	0.56	0.72	0.07	<0.02	0.10	0.07	0.09	0.03	OL	OL	0.12	0.04	0.09	0.04	OL	OL	0.09	<0.02	
22-Feb-2018	0.49	0.64	0.07	<0.02	0.09	0.08	0.09	0.03	OL	OL	0.08	<0.02	0.10	0.05	0.09	0.03	OL	OL	
23-Feb-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
24-Feb-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
25-Feb-2018	0.53	0.66	0.07	<0.02	OL	OL	0.10	0.05	0.09	0.04	0.07	<0.02	0.09	0.04	0.08	0.02	OL	OL	
26-Feb-2018	0.50	0.73	OL	OL	0.08	0.06	0.08	0.03	OL	OL	0.08	<0.02	0.12	0.08	0.10	0.04	0.08	<0.02	
27-Feb-2018	0.55	0.66	0.09	<0.02	0.10	0.07	0.10	0.03	0.11	0.03	OL	OL	0.09	0.04	OL	OL	0.12	<0.02	
28-Feb-2018	0.47	0.59	0.08	<0.02	OL	OL	0.11	0.04	0.09	0.03	0.09	<0.02	0.10	0.04	0.09	0.03	OL	OL	
<b>Total number of measurements taken, A:</b>			15		13		18		12		17		16		16		12		
<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>			15		13		18		12		17		16		16		12		
<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:**

Filter 4 was offline for maintenance February 18 to 22.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck



**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**

February 2018 Turbidity (NTU)

Date	Raw		Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/02/2018	0.62	0.04	0.09		0.03	0.09	0.02	0.03	0.03	0.08	0.04	0.08	0.06	0.13	0.08	0.11	0.01	0.02
2/02/2018	0.62	0.06	0.08		0.06	0.08	0.01	0.05	0.03	0.07	0.03	0.07	0.06	0.11	0.08	0.12	0.00	0.03
3/02/2018	0.62	0.05	0.08		0.03	0.08	0.01	0.15	0.04	0.07	0.05	0.08	0.08	0.13	0.06	0.12	0.00	0.01
4/02/2018	0.61	0.04	0.09		0.04	0.06	0.03	0.05	0.03	0.09	0.03	0.08	0.06	0.13	0.09	0.12	0.01	0.03
5/02/2018	0.61	0.07	0.08		0.05	0.09	0.02	0.07	0.03	0.05	0.03	0.08	0.08	0.12	0.08	0.13	0.01	0.03
6/02/2018	0.62	0.05	0.09		0.04	0.11	0.03	0.10	0.05	0.08	0.06	0.08	0.08	0.15	0.06	0.13	0.01	0.01
7/02/2018	0.63	0.05	0.09		0.06	0.07	0.04	0.06	0.03	0.10	0.04	0.09	0.06	0.15	0.08	0.15	0.01	0.08
8/02/2018	0.63	0.07	0.10		0.05	0.11	0.04	0.10	0.05	0.07	0.04	0.07	0.10	0.16	0.06	0.15	0.01	0.06
9/02/2018	0.64	0.05	0.10		0.03	0.08	0.04	0.11	0.05	0.12	0.06	0.09	0.07	0.16	0.09	0.14	0.01	0.02
10/02/2018	0.66	0.07	0.09		0.09	0.13	0.06	0.08	0.05	0.13	0.04	0.09	0.06	0.13	0.05	0.11	0.01	0.06
11/02/2018	0.66	0.05	0.08		0.06	0.12	0.04	0.09	0.06	0.10	0.04	0.07	0.07	0.12	0.04	0.08	0.00	0.03
12/02/2018	0.66	0.05	0.09		0.06	0.11	0.04	0.09	0.04	0.10	0.04	0.07	0.05	0.10	0.06	0.07	0.01	0.01
13/02/2018	0.84	0.05	0.07		0.09	0.11	0.06	0.08	0.03	0.09	0.04	0.07	0.04	0.09	0.03	0.07	0.01	0.03
14/02/2018	0.79	0.06	0.08		0.06	0.11	0.06	0.11	0.05	0.08	0.03	0.07	0.06	0.08	0.04	0.06	0.01	0.03
15/02/2018	0.73	0.06	0.17		0.05	0.20	0.07	0.19	0.02	0.08	0.04	0.07	0.05	0.10	0.05	0.08	0.00	0.02
16/02/2018	0.73	0.03	0.07		0.07	0.10	0.04	0.09	0.04	0.07	0.02	0.07	0.04	0.09	0.03	0.06	0.01	0.05
17/02/2018	0.71	0.02	0.03		0.04	0.09	0.03	0.07	0.01	0.07	0.02	0.04	0.03	0.09	0.03	0.07	0.01	0.01
18/02/2018	0.71	0.02	0.05		0.05	0.09	0.03	0.07	OL	OL	0.02	0.05	0.05	0.09	0.04	0.05	0.01	0.01
19/02/2018	0.70	0.02	0.05		0.05	0.10	0.02	0.06	OL	OL	0.02	0.05	0.04	0.09	0.04	0.09	0.01	0.01
20/02/2018	0.70	0.02	0.06		0.06	0.07	0.02	0.04	OL	OL	0.02	0.06	0.04	0.08	0.04	0.07	0.01	0.02
21/02/2018	0.68	0.03	0.05		0.06	0.13	0.04	0.10	OL	OL	0.03	0.06	0.04	0.13	0.05	0.10	0.01	0.05
22/02/2018	0.67	0.03	0.09		0.05	0.12	0.03	0.11	OL	OL	0.02	0.05	0.05	0.09	0.04	0.07	0.01	0.03
23/02/2018	0.68	0.02	0.05		0.04	0.06	0.01	0.07	0.01	0.07	0.02	0.03	0.03	0.09	0.03	0.07	0.01	0.01
24/02/2018	0.67	0.01	0.03		0.05	0.10	0.03	0.04	0.02	0.03	0.01	0.06	0.02	0.08	0.02	0.07	0.00	0.02
25/02/2018	0.66	0.02	0.05		0.04	0.10	0.02	0.08	0.02	0.08	0.01	0.02	0.04	0.05	0.03	0.05	0.00	0.02
26/02/2018	0.66	0.01	0.05		0.05	0.06	0.02	0.04	0.01	0.08	0.02	0.05	0.03	0.09	0.03	0.08	0.01	0.01
27/02/2018	0.66	0.02	0.03		0.04	0.11	0.03	0.08	0.03	0.05	0.01	0.05	0.03	0.10	0.03	0.08	0.00	0.03
28/02/2018	0.64	0.02	0.05		0.04	0.11	0.02	0.08	0.02	0.08	0.01	0.03	0.04	0.09	0.03	0.05	0.00	0.03

Total Number of Measurements Taken, A: 13414      10382      13774      8559      13984      13032      12177      13385  
Turbidity Standard for Monitoring Location (NTU): 0.3      0.3      0.3      0.3      0.3      0.3      0.3      0.3  
Number of Measurements Meeting Standard, B: 13414      10382      13774      8559      13984      13032      12177      13385  
Compliance with Turbidity Standard, C = B/A X 100%: 100.0000%      100.0000%      100.0000%      100.0000%      100.0000%      100.0000%      100.0000%      100.0000%

OL Off-line

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2018\02-February

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)																	
	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
Date	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Mar-2018	0.43	0.62	0.12	0.05	0.08	0.07	OL	OL	OL	OL	0.09	0.02	0.12	0.08	0.12	0.05	0.10	<0.02
02-Mar-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
03-Mar-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
04-Mar-2018	0.48	0.61	0.12	0.03	OL	OL	OL	OL	0.14	0.05	0.10	<0.02	0.11	0.05	0.10	0.03	0.09	<0.02
05-Mar-2018	0.53	0.61	OL	OL	0.09	0.06	0.16	0.10	OL	OL	0.12	0.02	0.13	0.07	0.10	0.03	0.10	<0.02
06-Mar-2018	0.47	0.59	0.07	0.02	0.09	0.07	0.09	0.04	0.08	0.03	OL	OL	0.08	0.05	OL	OL	0.09	0.03
07-Mar-2018	0.47	0.55	0.08	<0.02	0.13	0.11	0.10	0.05	0.10	0.04	0.08	<0.02	0.09	0.06	0.08	0.03	OL	OL
08-Mar-2018	0.45	0.53	0.10	0.04	OL	OL	OL	OL	0.15	0.09	0.09	0.02	0.12	0.07	0.11	0.04	0.09	0.03
09-Mar-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10-Mar-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11-Mar-2018	0.45	0.50	0.08	0.02	0.13	0.11	0.13	0.07	0.11	0.05	OL	OL	0.10	0.06	0.10	0.03	OL	OL
12-Mar-2018	0.40	0.50	0.10	0.05	0.07	0.07	OL	OL	OL	OL	0.08	0.02	0.10	0.06	0.09	0.04	0.08	0.04
13-Mar-2018	0.41	0.48	0.07	0.02	0.08	0.07	0.08	0.05	0.08	0.03	0.11	0.04	OL	OL	OL	OL	0.10	0.06
14-Mar-2018	0.42	0.45	0.09	0.03	OL	OL	0.12	0.08	0.12	0.06	0.07	<0.02	0.09	0.05	0.08	0.03	OL	OL
15-Mar-2018	0.38	0.44	OL	OL	0.08	0.07	0.08	0.05	OL	OL	0.09	0.03	0.12	0.07	0.10	0.04	0.09	0.05
16-Mar-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17-Mar-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18-Mar-2018	0.44	0.47	0.13	0.07	0.11	0.08	OL	OL	OL	OL	0.11	0.03	0.11	0.07	0.09	0.04	0.08	0.07
19-Mar-2018	0.45	0.46	0.10	0.03	0.13	0.08	0.09	0.06	0.08	0.04	0.10	0.02	OL	OL	OL	OL	0.09	0.07
20-Mar-2018	0.39	0.44	0.10	0.04	0.17	0.13	0.12	0.07	0.11	0.06	0.08	<0.02	0.10	0.05	0.09	0.03	OL	OL
21-Mar-2018	0.40	0.49	0.14	0.08	0.09	0.07	OL	OL	OL	OL	0.10	0.02	0.11	0.07	0.10	0.04	0.10	0.08
22-Mar-2018	0.43	0.45	0.08	0.04	0.09	0.08	0.10	0.06	0.09	0.04	0.12	0.03	OL	OL	OL	OL	0.11	0.09
23-Mar-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
24-Mar-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
25-Mar-2018	0.47	0.50	OL	OL	0.09	0.07	0.09	0.06	0.09	0.04	0.10	0.03	OL	OL	0.13	0.07	0.11	0.11
26-Mar-2018	0.44	0.54	0.09	0.04	0.09	0.08	0.10	0.06	0.10	0.04	OL	OL	0.10	0.06	OL	OL	0.11	0.13
27-Mar-2018	0.44	0.51	0.08	0.04	OL	OL	0.12	0.09	0.10	0.05	0.09	<0.02	0.10	0.07	0.09	0.03	OL	OL
28-Mar-2018	0.45	0.55	OL	OL	0.08	0.08	0.09	0.07	OL	OL	0.10	0.03	0.15	0.12	0.11	0.06	0.09	0.11
29-Mar-2018	0.45	0.57	0.10	0.05	0.10	0.09	0.11	0.07	0.10	0.05	OL	OL	0.10	0.08	OL	OL	0.12	0.13
30-Mar-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31-Mar-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Total number of measurements taken, A:</b>			17		17		15		14		17		17		15		16	
<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>			17		17		15		14		17		17		15		16	
<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 \_\_\_\_\_



**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**

March 2018 Turbidity (NTU)

	Raw	Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
Date	Avg	Avg	Max														
1/03/2018	0.63	0.03	0.08	0.05	0.08	0.03	0.12	0.03	0.11	0.03	0.05	0.04	0.10	0.05	0.09	0.01	0.01
2/03/2018	0.63	0.02	0.07	0.07	0.14	0.04	0.06	0.02	0.05	0.02	0.07	0.04	0.12	0.04	0.10	0.01	0.06
3/03/2018	0.62	0.03	0.05	0.05	0.12	0.03	0.10	0.03	0.11	0.02	0.07	0.03	0.05	0.03	0.10	0.01	0.06
4/03/2018	0.63	0.03	0.06	0.05	0.13	0.04	0.15	0.03	0.10	0.01	0.03	0.04	0.13	0.04	0.07	0.01	0.06
5/03/2018	0.61	0.03	0.13	0.05	0.08	0.05	0.23	0.03	0.10	0.02	0.05	0.03	0.10	0.03	0.08	0.01	0.03
6/03/2018	0.60	0.02	0.06	0.05	0.11	0.04	0.20	0.03	0.05	0.01	0.06	0.02	0.10	0.02	0.07	0.01	0.05
7/03/2018	0.58	0.03	0.07	0.05	0.12	0.04	0.18	0.03	0.09	0.02	0.07	0.05	0.08	0.03	0.06	0.01	0.07
8/03/2018	0.56	0.03	0.16	0.05	0.14	0.06	0.32	0.03	0.11	0.03	0.06	0.05	0.13	0.05	0.09	0.01	0.03
9/03/2018	0.55	0.02	0.06	0.05	0.09	0.03	0.09	0.02	0.08	0.02	0.05	0.03	0.10	0.03	0.09	0.01	0.08
10/03/2018	0.53	0.04	0.11	0.08	0.14	0.08	0.11	0.04	0.07	0.03	0.10	0.05	0.15	0.05	0.13	0.03	0.10
11/03/2018	0.52	0.04	0.07	0.05	0.14	0.05	0.13	0.04	0.12	0.02	0.07	0.05	0.07	0.03	0.05	0.02	0.09
12/03/2018	0.50	0.03	0.08	0.05	0.08	0.04	0.12	0.03	0.10	0.03	0.05	0.04	0.13	0.05	0.10	0.02	0.03
13/03/2018	0.49	0.02	0.04	0.06	0.14	0.05	0.07	0.03	0.05	0.02	0.07	0.03	0.12	0.03	0.10	0.03	0.09
14/03/2018	0.46	0.04	0.07	0.05	0.14	0.05	0.12	0.03	0.11	0.01	0.04	0.05	0.07	0.03	0.05	0.02	0.10
15/03/2018	0.46	0.03	0.09	0.05	0.08	0.04	0.13	0.03	0.11	0.03	0.06	0.04	0.10	0.04	0.09	0.03	0.05
16/03/2018	0.46	0.03	0.05	0.07	0.14	0.07	0.10	0.03	0.06	0.02	0.06	0.03	0.11	0.03	0.09	0.03	0.09
17/03/2018	0.46	0.05	0.09	0.05	0.14	0.05	0.13	0.04	0.11	0.02	0.07	0.05	0.11	0.03	0.05	0.03	0.10
18/03/2018	0.46	0.04	0.10	0.05	0.08	0.05	0.14	0.03	0.13	0.03	0.06	0.04	0.11	0.04	0.10	0.04	0.06
19/03/2018	0.47	0.03	0.06	0.08	0.15	0.06	0.10	0.03	0.06	0.02	0.07	0.03	0.11	0.03	0.10	0.05	0.11
20/03/2018	0.46	0.06	0.10	0.05	0.14	0.05	0.13	0.04	0.11	0.02	0.07	0.05	0.07	0.03	0.05	0.04	0.11
21/03/2018	0.47	0.04	0.10	0.06	0.08	0.04	0.14	0.03	0.12	0.03	0.06	0.04	0.12	0.04	0.10	0.05	0.07
22/03/2018	0.47	0.04	0.06	0.07	0.14	0.07	0.10	0.04	0.07	0.02	0.07	0.03	0.11	0.03	0.09	0.05	0.11
23/03/2018	0.52	0.05	0.11	0.05	0.14	0.04	0.14	0.03	0.11	0.02	0.07	0.06	0.08	0.03	0.05	0.05	0.12
24/03/2018	0.53	0.04	0.09	0.05	0.13	0.04	0.12	0.03	0.08	0.03	0.06	0.05	0.13	0.05	0.10	0.06	0.09
25/03/2018	0.53	0.04	0.10	0.07	0.10	0.05	0.07	0.03	0.10	0.02	0.08	0.05	0.14	0.04	0.11	0.07	0.13
26/03/2018	0.53	0.05	0.07	0.05	0.13	0.06	0.14	0.04	0.09	0.02	0.07	0.05	0.13	0.04	0.11	0.06	0.14
27/03/2018	0.55	0.05	0.10	0.05	0.11	0.05	0.12	0.03	0.09	0.01	0.03	0.07	0.13	0.05	0.07	0.05	0.13
28/03/2018	0.57	0.05	0.11	0.07	0.09	0.05	0.08	0.03	0.12	0.03	0.08	0.06	0.15	0.05	0.12	0.10	0.13
29/03/2018	0.60	0.06	0.08	0.06	0.15	0.07	0.15	0.05	0.07	0.03	0.11	0.05	0.16	0.04	0.12	0.07	0.16
30/03/2018	0.61	0.07	0.13	0.05	0.15	0.05	0.15	0.04	0.11	0.03	0.04	0.09	0.14	0.06	0.08	0.06	0.16
31/03/2018	0.62	0.04	0.13	0.07	0.08	0.05	0.07	0.02	0.11	0.03	0.09	0.05	0.16	0.04	0.11	0.10	0.16

Total Number of Measurements Taken, A: 14036      11213      14305      11545      14771      13168      13120      14556  
Turbidity Standard for Monitoring Location (NTU): 0.3      0.3      0.3      0.3      0.3      0.3      0.3      0.3  
Number of Measurements Meeting Standard, B: 14036      11213      14302      11545      14771      13168      13120      14556  
Compliance with Turbidity Standard, C = B/A X 100%: 100.000%      100.000%      99.979%      100.000%      100.000%      100.000%      100.000%      100.000%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2018\03-March

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)																	
	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
Date	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Apr-2018	0.42	0.62	0.09	0.06	0.12	0.09	0.12	0.07	0.11	0.05	OL	OL	0.11	0.08	OL	OL	0.13	0.16
02-Apr-2018	0.50	0.65	0.12	0.07	0.09	0.07	OL	OL	0.12	0.07	0.09	0.02	0.11	0.09	0.12	0.04	0.10	0.12
03-Apr-2018	0.50	0.67	OL	OL	OL	OL	0.09	0.06	0.09	0.05	0.09	0.03	0.13	0.11	0.11	0.05	0.11	0.13
04-Apr-2018	0.49	0.71	0.09	0.07	OL	OL	0.10	0.07	0.09	0.05	0.10	0.03	OL	OL	0.15	0.09	0.10	0.14
05-Apr-2018	0.52	0.74	0.10	0.07	OL	OL	0.11	0.08	0.10	0.06	0.09	<0.02	0.10	0.09	0.09	0.04	OL	OL
06-Apr-2018	NA	NA	NA	NA	OL	OL	NA											
07-Apr-2018	NA	NA	NA	NA	OL	OL	NA											
08-Apr-2018	0.53	0.78	0.08	0.08	OL	OL	0.11	0.07	0.09	0.06	0.08	<0.02	0.10	0.09	0.09	0.04	OL	OL
09-Apr-2018	0.58	0.76	0.10	0.10	OL	OL	OL	OL	0.12	0.09	0.08	0.02	0.10	0.10	0.08	0.05	0.08	0.13
10-Apr-2018	0.60	0.77	0.08	0.08	0.12	0.10	0.09	0.07	0.08	0.06	0.08	<0.02	0.13	0.14	0.10	0.06	0.09	0.13
11-Apr-2018	0.59	0.77	0.08	0.10	0.08	0.07	0.10	0.07	0.09	0.06	OL	OL	0.08	0.09	OL	OL	0.10	0.14
12-Apr-2018	0.64	0.81	0.08	0.10	0.08	0.06	OL	OL	OL	OL	0.06	<0.02	0.08	0.10	0.07	0.04	0.07	0.12
13-Apr-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-Apr-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15-Apr-2018	0.58	0.81	0.08	0.04	OL	OL	0.09	0.05	0.09	0.03	0.09	0.03	0.12	0.13	0.11	0.07	0.09	<0.02
16-Apr-2018	0.68	0.78	0.09	0.04	0.09	0.07	0.11	0.07	0.10	0.04	OL	OL	0.09	0.11	0.08	0.06	0.09	<0.02
17-Apr-2018	0.71	0.80	0.11	0.06	0.11	0.08	OL	OL	OL	OL	0.09	0.02	0.10	0.14	0.09	0.07	0.09	<0.02
18-Apr-2018	0.68	0.79	OL	OL	0.09	0.07	0.07	0.04	0.07	<0.02	0.06	<0.02	0.08	0.14	0.07	0.06	0.06	<0.02
19-Apr-2018	0.60	0.77	0.07	<0.02	0.06	0.04	0.09	0.05	0.08	<0.02	0.08	<0.02	OL	OL	OL	OL	0.07	<0.02
20-Apr-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
21-Apr-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
22-Apr-2018	0.57	0.75	0.07	<0.02	OL	OL	0.07	0.05	0.08	<0.02	0.07	<0.02	0.12	0.12	0.08	0.03	0.06	<0.02
23-Apr-2018	0.74	0.75	0.08	<0.02	0.09	0.04	0.11	0.06	0.13	<0.02	OL	OL	0.11	0.07	OL	OL	0.11	<0.02
24-Apr-2018	0.60	0.72	0.07	<0.02	0.07	0.05	OL	OL	OL	OL	0.07	<0.02	0.08	0.08	0.02	0.08	0.02	<0.02
25-Apr-2018	0.55	0.80	OL	OL	OL	OL	0.08	0.05	0.09	<0.02	0.08	<0.02	0.10	0.10	0.09	0.02	0.08	<0.02
26-Apr-2018	0.68	0.73	0.07	<0.02	0.08	0.04	0.09	0.04	0.07	<0.02	0.09	0.02	OL	OL	OL	OL	0.08	<0.02
27-Apr-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
28-Apr-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
29-Apr-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30-Apr-2018	0.61	0.83	OL	OL	0.06	0.03	0.07	0.04	0.07	<0.02	OL	OL	0.07	0.06	0.07	<0.02	0.07	<0.02
Total number of measurements taken, A:			17		13		16		18		16		18		16		19	
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:			17		13		16		18		16		18		16		19	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

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

Comments:  
Filter 2 was offline from April 3-9, 2018 for scheduled maintenance.

Report Compiled By: \_\_\_\_\_ H.Demchenko \_\_\_\_\_

Approved in LIMS By: \_\_\_\_\_ C.Diduck \_\_\_\_\_



**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**

April 2018 Turbidity (NTU)

Date	Raw		Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Avg	Avg	Max	Avg	Max												
1/04/2018	0.64	0.07	0.09	0.05	0.14	0.06	0.15	0.05	0.09	0.02	0.09	0.05	0.09	0.03	0.11	0.07	0.16	
2/04/2018	0.68	0.06	0.16	0.03	0.07	0.05	0.16	0.04	0.11	0.02	0.04	0.08	0.15	0.05	0.08	0.09	0.18	
3/04/2018	0.70	0.07	0.16	OL	OL	0.05	0.15	0.04	0.11	0.03	0.08	0.08	0.17	0.05	0.12	0.11	0.12	
4/04/2018	0.73	0.07	0.17	OL	OL	0.07	0.12	0.05	0.07	0.03	0.08	0.07	0.16	0.05	0.13	0.10	0.18	
5/04/2018	0.77	0.09	0.13	OL	OL	0.06	0.14	0.05	0.11	0.02	0.08	0.08	0.11	0.04	0.07	0.09	0.18	
6/04/2018	0.76	0.07	0.16	OL	OL	0.05	0.14	0.04	0.12	0.02	0.05	0.07	0.14	0.06	0.11	0.09	0.12	
7/04/2018	0.79	0.07	0.15	OL	OL	0.06	0.08	0.04	0.06	0.02	0.08	0.08	0.16	0.05	0.12	0.11	0.18	
8/04/2018	0.82	0.09	0.11	OL	OL	0.06	0.13	0.05	0.11	0.02	0.08	0.08	0.11	0.05	0.14	0.10	0.17	
9/04/2018	0.80	0.09	0.16	OL	OL	0.06	0.16	0.05	0.11	0.02	0.04	0.09	0.21	0.06	0.08	0.09	0.18	
10/04/2018	0.79	0.07	0.22	0.03	0.15	0.06	0.08	0.04	0.13	0.03	0.08	0.07	0.15	0.05	0.12	0.11	0.13	
11/04/2018	0.80	0.09	0.12	0.05	0.12	0.06	0.16	0.05	0.09	0.02	0.07	0.06	0.15	0.04	0.12	0.08	0.17	
12/04/2018	0.92	0.02	0.19	0.04	0.10	0.01	0.15	0.00	0.09	0.01	0.06	0.05	0.12	0.03	0.09	0.05	0.11	
13/04/2018	0.86	0.04	0.08	0.05	0.10	0.04	0.08	0.02	0.05	0.02	0.05	0.05	0.11	0.05	0.11	0.01	0.01	
14/04/2018	0.83	0.05	0.07	0.06	0.08	0.04	0.10	0.02	0.05	0.02	0.06	0.08	0.08	0.05	0.07	0.01	0.02	
15/04/2018	0.82	0.05	0.11	0.06	0.12	0.05	0.13	0.03	0.08	0.03	0.04	0.09	0.15	0.08	0.12	0.01	0.01	
16/04/2018	0.81	0.05	0.07	0.06	0.13	0.07	0.12	0.03	0.05	0.02	0.07	0.10	0.19	0.07	0.13	0.01	0.03	
17/04/2018	0.80	0.06	0.12	0.07	0.10	0.04	0.15	0.02	0.10	0.02	0.09	0.13	0.15	0.06	0.09	0.00	0.04	
18/04/2018	0.80	0.02	0.06	0.03	0.08	0.03	0.09	0.01	0.04	0.01	0.03	0.07	0.17	0.05	0.12	0.01	0.01	
19/04/2018	0.80	0.02	0.05	0.03	0.07	0.04	0.06	0.00	0.01	0.01	0.04	0.05	0.11	0.02	0.06	0.01	0.01	
20/04/2018	0.79	0.02	0.03	0.03	0.05	0.04	0.09	0.01	0.04	0.01	0.04	0.05	0.11	0.02	0.06	0.00	0.01	
21/04/2018	0.78	0.02	0.05	0.04	0.06	0.03	0.10	0.01	0.04	0.01	0.02	0.07	0.09	0.02	0.03	0.00	0.01	
22/04/2018	0.76	0.01	0.05	0.02	0.07	0.04	0.05	0.00	0.03	0.01	0.05	0.05	0.11	0.02	0.06	0.01	0.01	
23/04/2018	0.75	0.02	0.03	0.02	0.04	0.04	0.09	0.01	0.02	0.01	0.05	0.05	0.11	0.02	0.07	0.00	0.01	
24/04/2018	0.75	0.02	0.04	0.03	0.06	0.03	0.09	0.00	0.03	0.01	0.04	0.07	0.09	0.02	0.03	0.00	0.01	
25/04/2018	0.79	0.01	0.05	0.02	0.06	0.03	0.05	0.00	0.04	0.01	0.03	0.06	0.12	0.03	0.07	0.01	0.01	
26/04/2018	0.76	0.02	0.04	0.02	0.04	0.05	0.09	0.00	0.01	0.01	0.04	0.04	0.12	0.02	0.06	0.01	0.03	
27/04/2018	0.75	0.02	0.05	0.04	0.06	0.03	0.08	0.00	0.03	0.01	0.04	0.06	0.10	0.02	0.04	0.00	0.01	
28/04/2018	0.77	0.01	0.03	0.02	0.05	0.03	0.07	0.00	0.02	0.01	0.02	0.06	0.11	0.03	0.06	0.01	0.01	
29/04/2018	0.81	0.01	0.02	0.02	0.05	0.04	0.05	0.00	0.00	0.01	0.03	0.05	0.10	0.01	0.05	0.01	0.01	
30/04/2018	0.84	OL	OL	0.03	0.04	0.04	0.06	0.00	0.01	0.00	0.01	0.05	0.07	0.01	0.03	0.01	0.01	

Total Number of Measurements Taken, A: 13632      8062      14113      10313      14910      13414      13479      14612  
Turbidity Standard for Monitoring Location (NTU): 0.3      0.3      0.3      0.3      0.3      0.3      0.3      0.3  
Number of Measurements Meeting Standard, B: 13632      8062      14113      10313      14910      13414      13479      14612  
Compliance with Turbidity Standard, C = B/A X 100%: 100.000%      100.000%      100.000%      100.000%      100.000%      100.000%      100.000%      100.000%

OL Off-line      File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2018\04-April

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)																	
	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
Date	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-May-2018	0.58	0.79	OL	OL	0.07	0.04	0.06	0.04	0.07	<0.02	0.06	<0.02	0.07	0.07	0.07	<0.02	0.07	<0.02
02-May-2018	0.58	0.84	OL	OL	0.06	0.03	0.07	0.04	0.06	<0.02	0.08	<0.02	0.07	0.07	OL	OL	0.07	<0.02
03-May-2018	0.65	0.92	OL	OL	0.06	0.03	0.06	0.05	0.06	0.04	0.07	<0.02	0.06	0.07	OL	OL	0.06	<0.02
04-May-2018	0.62	0.84	OL	OL	0.06	0.03	0.07	0.05	0.06	<0.02	0.09	<0.02	0.07	0.07	0.10	<0.02	0.07	<0.02
05-May-2018	NA	NA	OL	OL	NA													
06-May-2018	NA	NA	OL	OL	NA													
07-May-2018	0.60	0.79	OL	OL	0.07	0.03	0.08	0.07	0.07	<0.02	OL	OL	0.07	0.07	0.07	<0.02	0.07	<0.02
08-May-2018	0.57	0.91	0.08	0.03	0.09	0.05	0.08	0.08	OL	OL	0.07	<0.02	0.08	0.07	0.08	0.02	0.07	<0.02
09-May-2018	0.70	0.96	0.12	0.05	0.10	0.06	0.10	0.10	0.10	0.03	0.10	<0.02	OL	OL	0.12	0.04	0.10	<0.02
10-May-2018	0.68	1.03	OL	OL	0.10	0.06	0.11	0.10	0.11	0.04	0.09	0.02	0.09	0.08	0.09	0.02	0.11	0.02
11-May-2018	0.70	1.06	0.09	0.03	0.10	0.07	OL	OL	0.11	0.05	OL	OL	0.09	0.08	0.08	0.02	0.08	<0.02
12-May-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13-May-2018	NA	NA	NA	NA	NA	NA	0.07	0.08	NA									
14-May-2018	0.75	1.12	0.15	0.04	0.12	0.05	OL	OL	0.12	0.03	0.09	<0.02	0.11	0.07	OL	OL	0.09	<0.02
15-May-2018	1.07	0.97	OL	OL	0.08	0.05	OL	OL	0.10	0.03	0.09	<0.02	0.09	0.07	0.14	<0.02	0.11	<0.02
16-May-2018	1.70	2.61	0.10	0.02	0.08	0.05	OL	OL	0.08	0.03	0.09	<0.02	0.08	0.07	0.10	<0.02	OL	OL
17-May-2018	0.75	1.21	0.09	0.03	0.09	0.06	OL	OL	0.12	0.06	OL	OL	0.11	0.09	0.10	0.03	0.09	<0.02
18-May-2018	0.77	1.16	0.09	0.04	0.14	0.08	OL	OL	OL	OL	0.09	<0.02	0.12	0.09	0.10	0.03	0.09	<0.02
19-May-2018	NA	NA	NA	NA	NA	NA	OL	OL	NA									
20-May-2018	NA	NA	NA	NA	NA	NA	OL	OL	NA									
21-May-2018	NA	NA	NA	NA	NA	NA	OL	OL	NA									
22-May-2018	0.95	1.22	OL	OL	0.10	0.04	OL	OL	0.12	0.03	0.09	<0.02	0.09	0.06	0.09	<0.02	0.09	<0.02
23-May-2018	0.95	1.31	0.07	0.02	0.08	0.04	OL	OL	0.09	0.03	0.08	<0.02	0.08	0.06	0.08	<0.02	OL	OL
24-May-2018	0.90	2.89	0.08	0.03	0.08	0.04	OL	OL	0.10	0.04	OL	OL	0.09	0.06	0.09	<0.02	0.09	<0.02
25-May-2018	0.86	2.30	0.07	0.03	0.07	0.04	0.10	0.11	OL	OL	0.08	<0.02	0.08	0.02	0.08	<0.02	0.06	<0.02
26-May-2018	NA	NA	NA	NA	NA	NA	0.07	0.10	NA									
27-May-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
28-May-2018	0.99	1.21	0.08	0.04	0.07	0.04	0.07	0.09	0.09	0.05	0.08	<0.02	0.10	0.03	0.07	<0.02	OL	OL
29-May-2018	0.89	1.17	0.08	0.06	0.08	0.04	0.08	0.09	0.10	0.07	OL	OL	0.08	0.04	0.08	<0.02	0.07	<0.02
30-May-2018	0.83	1.22	0.09	0.07	0.09	0.04	0.11	0.11	0.11	0.05	0.09	<0.02	OL	OL	0.08	<0.02	0.07	<0.02
31-May-2018	0.93	1.08	0.09	0.08	0.09	0.04	OL	OL	0.09	0.05	0.09	<0.02	0.09	0.03	0.10	0.02	0.10	<0.02
<b>Total number of measurements taken, A:</b>			14		22		14		19		17		20		19		19	
<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>			14		22		14		19		17		20		19		19	
<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:**

Filter 1 was offline for scheduled maintenance May 1-6, 2018.

Filter 3 was offline for scheduled maintenance May 14-23, 2019.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck



**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**

May 2018 Turbidity (NTU)

Date	Raw		Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/05/2018	0.91	OL	OL	0.01	0.06	0.02	0.07	0.00	0.11	0.00	0.02	0.04	0.08	0.01	0.03	0.00	0.01	
2/05/2018	0.87	OL	OL	0.02	0.04	0.04	0.06	0.00	0.02	0.00	0.02	0.06	0.08	0.01	0.03	0.01	0.01	
3/05/2018	0.91	OL	OL	0.02	0.06	0.04	0.06	0.00	0.01	0.00	0.01	0.06	0.09	0.01	0.03	0.01	0.01	
4/05/2018	0.90	OL	OI	0.02	0.04	0.04	0.08	0.00	0.01	0.00	0.02	0.06	0.08	0.01	0.03	0.01	0.01	
5/05/2018	0.86	OL	OL	0.03	0.06	0.05	0.07	0.01	0.03	0.01	0.03	0.06	0.09	0.02	0.04	0.01	0.01	
6/05/2018	0.84	OL	OL	0.03	0.08	0.05	0.09	0.01	0.04	0.01	0.02	0.06	0.08	0.02	0.04	0.01	0.01	
7/05/2018	1.34	0.01	0.24	0.03	0.05	0.06	0.10	0.01	0.03	0.00	0.02	0.06	0.08	0.02	0.04	0.01	0.01	
8/05/2018	1.02	0.04	0.05	0.04	0.07	0.07	0.12	0.02	0.05	0.01	0.05	0.07	0.09	0.03	0.04	0.01	0.01	
9/05/2018	1.03	0.05	0.08	0.05	0.11	0.08	0.11	0.03	0.07	0.01	0.03	0.07	0.12	0.03	0.06	0.01	0.01	
10/05/2018	1.07	0.04	0.10	0.05	0.08	0.10	0.16	0.03	0.06	0.01	0.05	0.06	0.12	0.03	0.07	0.01	0.02	
11/05/2018	1.04	0.03	0.06	0.05	0.11	0.07	0.17	0.03	0.08	0.01	0.09	0.07	0.09	0.02	0.04	0.00	0.02	
12/05/2018	1.04	0.04	0.19	0.04	0.13	0.07	0.20	0.02	0.08	0.01	0.06	0.05	0.12	0.02	0.08	0.01	0.01	
13/05/2018	1.08	0.03	0.06	0.03	0.09	0.06	0.09	0.01	0.07	0.01	0.02	0.05	0.13	0.02	0.09	0.01	0.01	
14/05/2018	1.12	0.04	0.08	0.04	0.09	OL	OL	0.02	0.05	0.01	0.04	0.06	0.10	0.02	0.06	0.01	0.01	
15/05/2018	1.13	0.03	0.08	0.04	0.07	OL	OL	0.02	0.05	0.01	0.04	0.06	0.11	0.02	0.06	0.01	0.01	
16/05/2018	1.35	0.04	0.11	0.05	0.10	OL	OL	0.03	0.07	0.02	0.06	0.06	0.13	0.03	0.08	0.01	0.03	
17/05/2018	1.20	0.04	0.13	0.05	0.10	OL	OL	0.04	0.10	0.02	0.11	0.08	0.17	0.03	0.06	0.01	0.10	
18/05/2018	1.34	0.04	0.10	0.04	0.10	OL	OL	0.03	0.07	0.01	0.06	0.07	0.13	0.03	0.08	0.01	0.01	
19/05/2018	1.59	0.04	0.07	0.03	0.06	OL	OL	0.02	0.05	0.01	0.03	0.05	0.09	0.02	0.05	0.01	0.01	
20/05/2018	0.96	0.04	0.07	0.04	0.08	OL	OL	0.02	0.07	0.01	0.03	0.05	0.09	0.02	0.05	0.01	0.01	
21/05/2018	1.23	0.03	0.07	0.03	0.07	OL	OL	0.02	0.06	0.01	0.02	0.05	0.09	0.02	0.04	0.01	0.01	
22/05/2018	1.27	0.03	0.07	0.03	0.06	OL	OL	0.03	0.05	0.01	0.02	0.05	0.08	0.02	0.04	0.01	0.01	
23/05/2018	2.80	0.04	0.07	0.04	0.06	OL	OL	0.03	0.06	0.01	0.03	0.05	0.09	0.01	0.05	0.01	0.01	
24/05/2018	3.23	0.04	0.08	0.03	0.08	0.00	0.24	0.03	0.06	0.00	0.06	0.03	0.07	0.01	0.03	0.01	0.01	
25/05/2018	2.96	0.05	0.06	0.03	0.06	0.08	0.15	0.03	0.07	0.00	0.02	0.01	0.04	0.01	0.04	0.01	0.01	
26/05/2018	4.98	0.05	0.09	0.04	0.06	0.09	0.14	0.03	0.07	0.00	0.02	0.01	0.05	0.02	0.05	0.01	0.01	
27/05/2018	4.46	0.03	0.09	0.03	0.06	0.09	0.14	0.03	0.05	0.00	0.01	0.01	0.04	0.01	0.06	0.01	0.01	
28/05/2018	1.25	0.06	0.10	0.03	0.06	0.08	0.24	0.04	0.08	0.00	0.03	0.02	0.03	0.01	0.05	0.01	0.01	
29/05/2018	1.21	0.06	0.11	0.03	0.08	0.09	0.12	0.04	0.07	0.00	0.03	0.02	0.05	0.01	0.03	0.01	0.01	
30/05/2018	1.17	0.08	0.10	0.03	0.05	0.08	0.14	0.04	0.08	0.01	0.02	0.03	0.06	0.02	0.05	0.01	0.01	
31/05/2018	1.13	0.07	0.11	0.04	0.06	0.08	0.15	0.05	0.07	0.00	0.01	0.03	0.06	0.01	0.04	0.01	0.01	

Total Number of Measurements Taken, A: 12422      13853      10129      13277      16376      15252      15134      16120  
Turbidity Standard for Monitoring Location (NTU): 0.3      0.3      0.3      0.3      0.3      0.3      0.3      0.3  
Number of Measurements Meeting Standard, B: 12422      13853      10129      13277      16376      15252      15134      16120  
Compliance with Turbidity Standard, C = B/A X 100%: 100.000%      100.000%      100.000%      100.000%      100.000%      100.000%      100.000%      100.000%

OL Off-line

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2018\05-May

Submitted By (Print): D.Minor

Signature: Original signed by D.Minor



CITY OF WINNIPEG  
WATER AND WASTE DEPARTMENT  
ENVIRONMENTAL STANDARDS DIVISION

**WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT**

Water System Code: 252.00	Turbidity (NTU)																	
	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
Date	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Jun-2018	0.81	1.03	OL	OL	0.09	0.05	0.09	0.10	0.09	0.06	0.08	<0.02	0.09	0.04	0.09	<0.02	0.08	<0.02
02-Jun-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
03-Jun-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
04-Jun-2018	0.71	0.32	OL	OL	0.09	0.05	0.07	0.10	0.07	0.08	0.07	<0.02	0.07	0.06	0.06	<0.02	0.07	<0.02
05-Jun-2018	0.70	0.64	0.07	0.09	0.08	0.03	0.10	0.10	OL	OL	OL	OL	0.10	0.08	0.07	<0.02	0.07	<0.02
06-Jun-2018	0.65	0.79	OL	OL	0.07	0.03	0.07	0.08	0.07	0.09	0.12	0.05	0.13	0.15	OL	OL	0.14	0.06
07-Jun-2018	0.58	0.87	0.09	0.03	OL	OL	0.07	0.03	0.09	0.03	0.07	0.03	0.08	0.07	0.07	<0.02	0.08	<0.02
08-Jun-2018	0.64	0.73	0.07	0.02	0.07	<0.02	0.08	0.04	0.08	0.04	OL	OL	0.08	0.08	0.07	0.02	OL	OL
09-Jun-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10-Jun-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11-Jun-2018	0.76	0.94	OL	OL	0.09	0.03	0.07	0.05	0.08	0.05	0.08	0.03	0.08	0.07	0.07	<0.02	0.08	<0.02
12-Jun-2018	0.72	0.80	0.08	0.02	0.08	0.02	0.08	0.05	0.07	0.06	0.08	0.03	0.08	0.08	0.08	<0.02	OL	OL
13-Jun-2018	0.71	0.88	0.07	0.02	0.07	0.02	0.08	0.05	OL	OL	0.07	0.02	0.09	0.10	0.07	<0.02	0.06	<0.02
14-Jun-2018	0.75	1.33	0.10	0.04	0.10	0.02	OL	OL	0.07	0.06	0.08	0.02	0.07	0.09	0.09	0.02	0.09	<0.02
15-Jun-2018	0.79	0.98	OL	OL	0.08	0.04	0.08	0.06	0.08	0.09	0.07	0.03	0.07	0.11	0.07	<0.02	0.07	<0.02
16-Jun-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17-Jun-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18-Jun-2018	0.92	1.14	OL	OL	0.09	0.03	0.08	0.05	0.08	0.12	0.08	0.03	0.07	0.15	0.09	<0.02	0.08	<0.02
19-Jun-2018	0.95	1.09	0.08	0.05	0.08	0.02	0.08	0.05	0.09	0.16	OL	OL	0.08	0.18	0.08	<0.02	0.07	<0.02
20-Jun-2018	1.08	1.23	0.07	0.08	0.08	0.04	0.08	0.06	0.08	0.03	0.07	0.03	0.09	0.05	0.08	0.03	0.10	0.02
21-Jun-2018	1.02	1.22	0.07	0.08	OL	OL	0.07	0.06	0.08	0.03	0.08	0.04	0.09	0.06	0.08	0.02	0.08	0.02
22-Jun-2018	1.03	1.20	0.07	0.08	0.07	0.02	0.07	0.05	0.09	0.03	0.15	0.09	0.14	0.10	0.14	0.05	OL	OL
23-Jun-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
24-Jun-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
25-Jun-2018	1.08	1.11	0.10	0.16	0.09	0.05	0.09	0.08	0.07	0.02	0.06	0.04	0.07	0.05	OL	OL	0.07	<0.02
26-Jun-2018	0.95	1.12	0.09	0.15	OL	OL	0.11	0.08	0.11	0.03	0.10	0.06	0.10	0.06	0.09	0.02	0.12	0.03
27-Jun-2018	1.17	1.34	0.08	0.04	0.08	0.03	0.13	0.11	0.10	0.04	OL	OL	0.09	0.06	0.08	0.03	0.07	<0.02
28-Jun-2018	0.92	1.26	0.08	<0.02	0.08	0.03	0.07	0.07	OL	OL	0.08	0.05	0.09	0.05	0.10	0.02	0.10	<0.02
29-Jun-2018	1.04	1.24	0.10	0.03	0.08	0.04	0.07	0.08	0.09	0.04	0.07	0.06	OL	OL	0.08	0.04	0.07	<0.02
30-Jun-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total number of measurements taken, A:			15		18		20		18		17		20		19		18	
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:			15		18		20		18		17		20		19		18	
Compliance with Turbidity Standard, C= B/A X 100%:			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 \_\_\_\_\_



**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 2018 Turbidity (NTU)

Date	Raw		Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/06/2018	1.02	0.08	0.13	0.03	0.06	0.09	0.15	0.06	0.06	0.01	0.01	0.03	0.04	0.01	0.04	0.01	0.01	
2/06/2018	0.95	0.07	0.10	0.03	0.07	0.10	0.12	0.05	0.12	0.00	0.03	0.05	0.08	0.01	0.02	0.01	0.01	
3/06/2018	0.65	0.10	0.14	0.03	0.05	0.08	0.16	0.05	0.10	0.00	0.03	0.04	0.09	0.01	0.04	0.01	0.01	
4/06/2018	0.68	0.08	0.14	0.03	0.07	0.08	0.11	0.07	0.08	0.01	0.02	0.06	0.07	0.01	0.04	0.01	0.01	
5/06/2018	0.79	0.05	0.16	0.02	0.11	0.05	0.18	0.03	0.33	0.00	0.01	0.03	0.22	0.02	0.14	0.01	0.08	
6/06/2018	1.02	0.07	0.12	0.02	0.04	0.07	0.12	0.07	0.30	0.04	0.26	0.10	0.21	0.04	0.20	0.03	0.11	
7/06/2018	0.84	0.05	0.11	0.01	0.05	0.05	0.10	0.06	0.20	0.02	0.05	0.06	0.08	0.01	0.06	0.01	0.03	
8/06/2018	0.79	0.02	0.07	0.01	0.06	0.04	0.06	0.03	0.06	0.02	0.06	0.05	0.10	0.02	0.03	0.01	0.03	
9/06/2018	0.83	0.03	0.05	0.01	0.04	0.04	0.08	0.03	0.05	0.02	0.04	0.05	0.08	0.02	0.05	0.01	0.01	
10/06/2018	0.93	0.03	0.05	0.01	0.03	0.04	0.07	0.03	0.09	0.02	0.03	0.05	0.08	0.02	0.04	0.01	0.01	
11/06/2018	0.92	0.03	0.05	0.01	0.03	0.04	0.08	0.04	0.05	0.03	0.05	0.06	0.09	0.02	0.04	0.01	0.01	
12/06/2018	0.89	0.03	0.06	0.01	0.05	0.05	0.06	0.04	0.07	0.02	0.04	0.07	0.09	0.02	0.03	0.01	0.01	
13/06/2018	0.91	0.04	0.05	0.01	0.04	0.04	0.09	0.05	0.08	0.03	0.05	0.07	0.11	0.02	0.04	0.01	0.01	
14/06/2018	1.07	0.04	0.07	0.02	0.04	0.04	0.09	0.05	0.09	0.02	0.04	0.07	0.12	0.02	0.05	0.01	0.01	
15/06/2018	1.09	0.04	0.09	0.02	0.06	0.05	0.08	0.08	0.10	0.03	0.05	0.09	0.11	0.02	0.04	0.01	0.02	
16/06/2018	1.02	0.04	0.05	0.01	0.05	0.05	0.06	0.08	0.11	0.03	0.08	0.11	0.13	0.02	0.02	0.01	0.01	
17/06/2018	1.02	0.06	0.07	0.02	0.03	0.04	0.07	0.08	0.14	0.03	0.04	0.11	0.16	0.02	0.04	0.01	0.01	
18/06/2018	1.13	0.05	0.09	0.01	0.04	0.04	0.06	0.12	0.15	0.04	0.05	0.15	0.16	0.02	0.04	0.01	0.02	
19/06/2018	1.16	0.06	0.07	0.01	0.04	0.06	0.10	0.05	0.16	0.03	0.05	0.07	0.19	0.02	0.03	0.01	0.02	
20/06/2018	1.25	0.07	0.14	0.02	0.07	0.04	0.10	0.02	0.06	0.04	0.08	0.03	0.38	0.02	0.08	0.01	0.04	
21/06/2018	1.24	0.07	0.10	0.01	0.05	0.05	0.08	0.01	0.04	0.03	0.06	0.04	0.06	0.02	0.04	0.01	0.01	
22/06/2018	1.26	0.08	0.12	0.01	0.05	0.05	0.07	0.01	0.03	0.03	0.10	0.04	0.09	0.02	0.06	0.01	0.01	
23/06/2018	1.32	0.11	0.12	0.01	0.06	0.05	0.08	0.01	0.03	0.04	0.07	0.03	0.06	0.02	0.03	0.01	0.01	
24/06/2018	1.35	0.12	0.15	0.03	0.05	0.06	0.11	0.02	0.05	0.04	0.07	0.04	0.08	0.03	0.05	0.01	0.01	
25/06/2018	1.25	0.13	0.18	0.03	0.06	0.07	0.08	0.02	0.05	0.05	0.07	0.04	0.08	0.03	0.05	0.01	0.02	
26/06/2018	1.21	0.11	0.17	0.03	0.08	0.08	0.11	0.03	0.04	0.05	0.09	0.04	0.08	0.03	0.06	0.01	0.01	
27/06/2018	1.32	0.04	0.08	0.03	0.06	0.07	0.13	0.03	0.07	0.06	0.09	0.05	0.08	0.03	0.05	0.01	0.03	
28/06/2018	1.87	0.04	0.07	0.03	0.06	0.07	0.12	0.02	0.10	0.05	0.09	0.04	0.08	0.03	0.07	0.01	0.01	
29/06/2018	2.21	0.04	0.07	0.03	0.06	0.07	0.13	0.02	0.06	0.07	0.08	0.04	0.07	0.03	0.06	0.01	0.01	
30/06/2018	1.83	0.04	0.08	0.04	0.08	0.10	0.12	0.03	0.05	0.08	0.11	0.04	0.07	0.04	0.06	0.01	0.02	

Total Number of Measurements Taken, A: 15207      13491      15325      13810      16016      14589      14628      15359  
Turbidity Standard for Monitoring Location (NTU): 0.3      0.3      0.3      0.3      0.3      0.3      0.3      0.3  
Number of Measurements Meeting Standard, B: 15207      13491      15325      13795      16016      14588      14628      15359  
Compliance with Turbidity Standard, C = B/A X 100%: 100.000%      100.000%      100.000%      99.891%      100.000%      99.993%      100.000%      100.000%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2018\06-June

Submitted By (Print): M.Szmon

Signature: Original signed by M. Szmon



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-Jul-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
02-Jul-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
03-Jul-2018	1.55	NR	OL	OL	0.11	0.07	0.10	0.08	0.10	0.04	0.08	0.04	0.07	0.05	0.08	0.04	0.08	0.02
04-Jul-2018	1.03	1.25	0.09	0.03	0.08	0.04	OL	OL	0.10	0.05	0.09	0.04	0.08	0.05	0.08	0.05	0.08	<0.02
05-Jul-2018	1.14	1.47	0.11	0.04	0.10	0.06	0.10	0.08	0.09	0.04	0.07	0.03	OL	OL	0.09	0.04	0.07	0.02
06-Jul-2018	1.04	NR	0.09	0.03	OL	OL	0.12	0.09	0.12	0.05	0.08	0.04	0.08	0.05	0.07	0.02	0.08	0.03
07-Jul-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
08-Jul-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
09-Jul-2018	1.12	1.30	0.13	0.05	0.11	0.09	0.11	0.11	0.12	0.05	0.10	0.04	0.11	0.07	OL	OL	0.13	0.05
10-Jul-2018	1.16	1.17	0.12	0.05	OL	OL	0.16	0.15	0.14	0.07	0.13	0.07	0.14	0.09	0.14	0.08	0.16	0.10
11-Jul-2018	1.16	NR	0.12	0.05	0.11	0.10	OL	OL	0.13	0.07	0.13	0.07	0.13	0.09	0.12	0.08	0.12	0.06
12-Jul-2018	1.44	2.17	0.12	0.05	0.12	0.10	0.12	0.10	OL	OL	0.10	0.04	0.13	0.10	0.13	0.08	0.11	0.06
13-Jul-2018	1.27	1.48	0.14	0.06	0.12	0.11	0.13	0.10	0.11	0.06	0.11	0.04	OL	OL	0.14	0.11	0.11	0.07
14-Jul-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15-Jul-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16-Jul-2018	1.51	1.98	0.10	0.04	0.10	0.12	OL	OL	0.11	0.07	0.11	0.06	0.12	0.10	0.11	0.09	0.10	0.07
17-Jul-2018	1.70	1.70	0.12	0.04	0.11	0.13	0.10	0.09	OL	OL	0.10	0.05	0.15	0.14	0.13	0.11	0.11	0.08
18-Jul-2018	1.79	0.95	0.18	0.08	0.13	0.16	0.13	0.10	0.12	0.06	0.12	0.06	0.15	0.12	0.15	0.10	0.14	0.10
19-Jul-2018	1.65	1.58	0.11	0.04	OL	OL	0.14	0.11	0.12	0.08	0.12	0.06	0.13	0.13	0.11	0.10	0.15	0.12
20-Jul-2018	1.40	1.94	0.14	0.07	0.14	0.18	OL	OL	0.16	0.11	0.15	0.09	0.13	0.15	0.12	0.12	0.11	0.09
21-Jul-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
22-Jul-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
23-Jul-2018	2.10	1.03	0.11	0.07	OL	OL	0.14	0.12	0.11	0.09	0.10	0.05	0.11	0.16	0.11	0.11	0.13	0.12
24-Jul-2018	1.94	2.29	0.14	0.06	0.13	0.12	0.13	0.10	0.15	0.09	0.13	0.05	0.12	0.06	0.11	0.04	0.11	<0.02
25-Jul-2018	2.04	1.95	0.13	0.06	0.11	0.11	0.11	0.09	0.11	0.05	0.08	0.02	OL	OL	0.10	0.04	0.08	<0.02
26-Jul-2018	2.24	2.17	0.09	0.04	0.11	0.11	0.12	0.09	0.13	0.06	0.10	0.02	0.09	0.03	0.07	0.02	0.09	<0.02
27-Jul-2018	1.92	2.68	0.11	0.05	0.11	0.11	0.12	0.09	0.12	0.07	OL	OL	0.09	0.04	0.08	0.02	0.08	<0.02
28-Jul-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
29-Jul-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30-Jul-2018	1.99	2.40	0.10	0.04	0.10	0.09	0.12	0.08	0.12	0.06	OL	OL	0.09	0.04	0.08	0.02	0.09	<0.02
31-Jul-2018	1.85	2.23	0.10	0.05	0.10	0.10	0.10	0.09	0.09	0.05	0.07	0.02	OL	OL	0.09	0.04	0.07	<0.02
<b>Total number of measurements taken, A:</b>			20			17			17			19			19			17
<b>Turbidity Standard for Monitoring Location (NTU):</b>			0.30			0.30			0.30			0.30			0.30			21
<b>Number of measurements meeting standard, B:</b>			20			17			17			19			19			20
<b>Compliance with Turbidity Standard, C= B/A X 100%:</b>			100%			100%			100%			100%			100%			100%

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

Comments:  
NR: Not representative at time of sample.

Report Compiled By: \_\_\_\_\_ H.Demchenko

Approved in LIMS By: \_\_\_\_\_ C.Diduck



**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**

July 2018 Turbidity (NTU)

Date	Raw		Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/07/2018	2.03	0.04	0.05		0.03	0.08	0.09	0.14	0.03	0.06	0.07	0.13	0.04	0.06	0.04	0.05	0.01	0.03
2/07/2018	2.70	0.05	0.09		0.05	0.06	0.07	0.17	0.03	0.07	0.08	0.13	0.04	0.08	0.04	0.09	0.01	0.01
3/07/2018	4.29	0.04	0.09		0.04	0.07	0.10	0.16	0.04	0.16	0.07	0.12	0.04	0.08	0.05	0.09	0.01	0.04
4/07/2018	3.53	0.04	0.05		0.04	0.10	0.07	0.13	0.04	0.11	0.03	0.06	0.05	0.06	0.06	0.06	0.01	0.04
5/07/2018	3.97	0.05	0.13		0.06	0.14	0.08	0.16	0.03	0.08	0.03	0.06	0.04	0.08	0.04	0.11	0.01	0.01
6/07/2018	3.85	0.05	0.10		0.06	0.11	0.09	0.14	0.05	0.09	0.04	0.07	0.04	0.06	0.04	0.10	0.01	0.03
7/07/2018	3.18	0.05	0.08		0.07	0.12	0.09	0.23	0.05	0.14	0.04	0.08	0.06	0.11	0.05	0.06	0.01	0.05
8/07/2018	3.43	0.06	0.10		0.08	0.10	0.10	0.16	0.05	0.09	0.05	0.09	0.06	0.10	0.06	0.09	0.02	0.07
9/07/2018	2.75	0.05	0.09		0.08	0.11	0.11	0.13	0.05	0.11	0.05	0.12	0.07	0.12	0.06	0.18	0.04	0.06
10/07/2018	3.32	0.07	0.10		0.09	0.16	0.11	0.19	0.06	0.12	0.07	0.11	0.08	0.13	0.08	0.14	0.05	0.12
11/07/2018	4.14	0.05	0.11		0.08	0.14	0.09	0.60	0.06	0.11	0.05	0.10	0.08	0.11	0.08	0.10	0.04	0.09
12/07/2018	2.19	0.06	0.09		0.10	0.11	0.09	0.17	0.06	0.11	0.05	0.10	0.06	0.17	0.09	0.14	0.04	0.10
13/07/2018	3.20	0.05	0.11		0.10	0.15	0.10	0.13	0.06	0.11	0.05	0.10	0.07	0.12	0.08	0.14	0.05	0.07
14/07/2018	2.46	0.06	0.11		0.11	0.16	0.11	0.17	0.07	0.12	0.06	0.08	0.07	0.15	0.09	0.15	0.05	0.11
15/07/2018	1.80	0.05	0.10		0.11	0.18	0.10	0.17	0.07	0.17	0.05	0.10	0.09	0.14	0.08	0.15	0.05	0.11
16/07/2018	1.66	0.05	0.08		0.11	0.19	0.10	0.16	0.06	0.26	0.06	0.09	0.09	0.16	0.10	0.13	0.05	0.11
17/07/2018	1.95	0.06	0.10		0.14	0.16	0.08	0.16	0.06	0.10	0.06	0.10	0.10	0.16	0.10	0.16	0.06	0.08
18/07/2018	1.60	0.05	0.10		0.13	0.18	0.10	0.12	0.06	0.11	0.06	0.11	0.11	0.17	0.10	0.15	0.07	0.12
19/07/2018	1.86	0.05	0.10		0.13	0.19	0.09	0.16	0.07	0.10	0.07	0.11	0.11	0.18	0.10	0.16	0.07	0.13
20/07/2018	1.78	0.05	0.12		0.11	0.23	0.08	0.20	0.06	0.16	0.04	0.16	0.11	0.22	0.10	0.21	0.05	0.16
21/07/2018	1.87	0.06	0.10		0.17	0.20	0.09	0.12	0.06	0.16	0.04	0.13	0.12	0.18	0.10	0.15	0.07	0.10
22/07/2018	1.50	0.06	0.12		0.17	0.23	0.12	0.16	0.08	0.16	0.05	0.08	0.13	0.21	0.10	0.17	0.07	0.11
23/07/2018	1.80	0.07	0.13		0.18	0.25	0.10	0.18	0.09	0.16	0.05	0.12	0.11	0.20	0.10	0.17	0.05	0.11
24/07/2018	1.74	0.07	0.10		0.14	0.24	0.10	0.19	0.07	0.12	0.04	0.07	0.05	0.10	0.05	0.10	0.01	0.04
25/07/2018	1.83	0.06	0.12		0.11	0.14	0.08	0.15	0.05	0.09	0.02	0.05	0.03	0.08	0.03	0.09	0.01	0.01
26/07/2018	2.05	0.05	0.10		0.08	0.14	0.09	0.13	0.05	0.06	0.02	0.04	0.02	0.04	0.02	0.08	0.01	0.01
27/07/2018	2.09	0.06	0.07		0.09	0.11	0.08	0.15	0.05	0.10	0.02	0.05	0.03	0.06	0.03	0.04	0.01	0.01
28/07/2018	2.49	0.06	0.13		0.10	0.17	0.10	0.11	0.05	0.11	0.02	0.04	0.03	0.06	0.03	0.07	0.01	0.01
29/07/2018	2.47	0.05	0.10		0.08	0.13	0.08	0.14	0.05	0.08	0.02	0.05	0.03	0.04	0.02	0.03	0.01	0.01
30/07/2018	2.94	0.06	0.08		0.08	0.11	0.08	0.13	0.04	0.08	0.02	0.04	0.03	0.06	0.03	0.06	0.01	0.01
31/07/2018	2.82	0.05	0.11		0.10	0.14	0.08	0.10	0.04	0.09	0.02	0.05	0.04	0.10	0.03	0.08	0.01	0.01

Total Number of Measurements Taken, A: 16453      14979      16262      15345      17136      15914      15674      16744  
Turbidity Standard for Monitoring Location (NTU): 0.3      0.3      0.3      0.3      0.3      0.3      0.3      0.3  
Number of Measurements Meeting Standard, B: 16453      14979      16259      15345      17136      15914      15674      16744  
Compliance with Turbidity Standard, C = B/A X 100%: 100.000%      100.000%      99.982%      100.000%      100.000%      100.000%      100.000%      100.000%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2018\07-July

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)																	
	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
Date	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Aug-2018	1.84	2.38	OL	OL	0.12	0.12	0.12	0.09	0.11	0.05	0.08	0.02	0.08	0.06	0.09	0.02	0.09	<0.02
02-Aug-2018	2.44	2.59	0.10	0.04	0.10	0.10	0.14	0.11	0.11	0.05	0.07	0.02	0.07	0.05	0.08	0.02	OL	OL
03-Aug-2018	2.20	2.97	0.10	0.04	0.10	0.09	0.10	0.07	0.13	0.06	OL	OL	0.11	0.05	0.11	0.02	0.11	<0.02
04-Aug-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
05-Aug-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
06-Aug-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
07-Aug-2018	2.26	2.51	0.10	0.04	0.10	0.09	0.10	0.07	0.11	0.06	OL	OL	0.11	0.08	0.09	0.03	0.10	0.03
08-Aug-2018	1.94	2.07	0.10	0.05	0.10	0.10	0.10	0.08	0.09	0.04	0.09	0.02	OL	OL	0.12	0.05	0.11	<0.02
09-Aug-2018	2.38	1.73	0.12	0.07	0.19	0.13	0.14	0.10	0.17	0.07	0.16	0.04	0.20	0.10	0.22	0.05	0.19	0.03
10-Aug-2018	2.51	2.17	0.10	0.04	0.09	0.09	0.13	0.11	0.12	0.04	0.13	0.03	0.14	0.10	0.13	0.04	OL	OL
11-Aug-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12-Aug-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13-Aug-2018	2.48	2.53	OL	OL	0.16	0.15	0.15	0.12	0.14	0.07	0.14	0.06	0.14	0.13	0.13	0.07	0.12	0.05
14-Aug-2018	2.42	2.59	0.12	0.06	0.12	0.11	0.18	0.12	0.14	0.06	0.12	0.05	0.13	0.14	0.14	0.06	OL	OL
15-Aug-2018	2.72	1.39	0.09	0.06	0.09	0.11	0.10	0.08	0.12	0.05	OL	OL	0.11	0.13	0.10	0.04	0.09	<0.02
16-Aug-2018	2.82	2.80	0.09	0.06	0.09	0.11	0.09	0.07	0.08	0.03	0.08	0.02	0.14	0.16	0.10	0.04	0.09	<0.02
17-Aug-2018	2.72	2.65	0.09	0.06	0.08	0.11	0.10	0.07	0.09	0.02	0.08	<0.02	0.09	0.12	0.14	0.06	0.10	<0.02
18-Aug-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19-Aug-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-Aug-2018	2.60	2.29	0.09	0.05	0.11	0.06	0.10	0.07	0.13	0.04	OL	OL	0.12	0.07	0.11	0.04	0.12	<0.02
21-Aug-2018	2.37	2.22	0.10	0.06	0.09	0.05	0.09	0.07	0.09	0.02	0.08	0.02	0.09	0.07	OL	OL	0.10	<0.02
22-Aug-2018	2.36	1.97	0.08	0.05	OL	OL	0.10	0.08	0.09	0.02	0.08	0.02	0.09	0.08	0.09	0.04	0.11	<0.02
23-Aug-2018	2.48	2.32	0.08	0.05	0.09	0.06	OL	OL	0.09	0.02	0.09	0.03	0.09	0.08	0.10	0.04	0.10	<0.02
24-Aug-2018	2.26	2.33	0.09	0.05	0.08	0.06	0.09	0.07	0.11	0.04	OL	OL	0.09	0.10	0.10	0.05	0.09	<0.02
25-Aug-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26-Aug-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
27-Aug-2018	2.39	1.36	OL	OL	0.11	0.08	0.10	0.09	0.10	0.04	0.07	0.02	0.08	0.12	0.07	0.04	0.07	<0.02
28-Aug-2018	1.97	1.88	0.08	0.07	0.09	0.06	OL	OL	0.10	0.04	0.07	0.02	0.09	0.14	0.08	0.04	0.07	<0.02
29-Aug-2018	2.20	2.59	0.09	0.07	0.09	0.06	0.11	0.09	OL	OL	0.08	<0.02	OL	OL	0.09	<0.02	0.09	<0.02
30-Aug-2018	2.19	2.52	OL	OL	0.10	0.07	0.09	0.09	0.08	0.03	0.08	0.02	0.07	0.05	0.07	0.05	0.07	<0.02
31-Aug-2018	2.11	2.76	0.09	0.07	0.09	0.06	0.13	0.13	0.09	0.04	0.08	0.03	0.08	0.05	0.08	0.06	OL	OL
Total number of measurements taken, A:				18		21		20		21		17		20		21		18
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:				18		21		20		21		17		20		21		18
Compliance with Turbidity Standard, C= B/A X 100%:				100%		100%		100%		100%		100%		100%		100%		100%

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

Comments:

Report Compiled By: H.Demchenko

Authorized in Sample Manager By: C.Diduck

Date Authorized: 6-Sep-18



**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**

August 2018 Turbidity (NTU)

Date	Raw		Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Avg	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/08/2018	2.52	0.06	0.10		0.09	0.14	0.09	0.14	0.04	0.09	0.03	0.04	0.03	0.07	0.03	0.06	0.01	0.01
2/08/2018	2.62	0.05	0.11		0.09	0.14	0.08	0.14	0.05	0.07	0.03	0.05	0.04	0.06	0.03	0.06	0.01	0.01
3/08/2018	2.63	0.06	0.09		0.08	0.13	0.08	0.47	0.05	0.09	0.02	0.05	0.04	0.07	0.03	0.05	0.01	0.01
4/08/2018	3.91	0.06	0.11		0.10	0.14	0.08	0.11	0.04	0.09	0.02	0.05	0.04	0.10	0.02	0.05	0.01	0.01
5/08/2018	2.28	0.05	0.09		0.09	0.15	0.09	0.14	0.04	0.07	0.03	0.05	0.04	0.09	0.02	0.05	0.01	0.01
6/08/2018	2.29	0.05	0.10		0.08	0.15	0.08	0.14	0.05	0.11	0.03	0.06	0.06	0.07	0.03	0.05	0.01	0.01
7/08/2018	2.32	0.06	0.09		0.09	0.13	0.08	0.12	0.04	0.09	0.03	0.06	0.06	0.08	0.03	0.05	0.01	0.02
8/08/2018	2.07	0.05	0.10		0.09	0.13	0.07	0.10	0.04	0.09	0.03	0.08	0.07	0.12	0.04	0.08	0.01	0.01
9/08/2018	1.88	0.06	0.11		0.10	0.16	0.10	0.15	0.05	0.08	0.05	0.08	0.09	0.16	0.06	0.12	0.01	0.06
10/08/2018	2.23	0.05	0.09		0.08	0.15	0.08	0.13	0.04	0.07	0.03	0.07	0.09	0.10	0.04	0.08	0.01	0.04
11/08/2018	2.16	0.07	0.10		0.09	0.15	0.09	0.16	0.04	0.09	0.04	0.08	0.10	0.19	0.07	0.11	0.01	0.05
12/08/2018	2.11	0.06	0.11		0.11	0.14	0.08	0.14	0.04	0.09	0.04	0.09	0.10	0.18	0.06	0.11	0.01	0.02
13/08/2018	2.16	0.06	0.13		0.10	0.17	0.11	0.15	0.04	0.11	0.05	0.07	0.10	0.19	0.06	0.12	0.01	0.05
14/08/2018	2.31	0.07	0.14		0.10	0.17	0.09	0.15	0.05	0.17	0.04	0.09	0.12	0.17	0.06	0.10	0.01	0.07
15/08/2018	2.90	0.06	0.08		0.09	0.14	0.07	0.13	0.03	0.08	0.03	0.06	0.11	0.16	0.05	0.07	0.01	0.02
16/08/2018	2.69	0.07	0.11		0.10	0.12	0.07	0.11	0.03	0.11	0.03	0.07	0.11	0.17	0.04	0.08	0.01	0.01
17/08/2018	2.51	0.06	0.10		0.11	0.14	0.06	0.10	0.02	0.05	0.02	0.04	0.11	0.16	0.03	0.07	0.01	0.01
18/08/2018	2.27	0.05	0.08		0.12	0.18	0.08	0.09	0.02	0.05	0.02	0.04	0.12	0.18	0.03	0.09	0.01	0.01
19/08/2018	2.44	0.05	0.09		0.13	0.18	0.07	0.11	0.02	0.06	0.02	0.05	0.15	0.15	0.04	0.05	0.01	0.02
20/08/2018	2.34	0.06	0.07		0.09	0.17	0.06	0.11	0.02	0.05	0.02	0.05	0.08	0.19	0.04	0.08	0.01	0.02
21/08/2018	2.19	0.05	0.09		0.05	0.08	0.07	0.08	0.02	0.10	0.02	0.04	0.05	0.11	0.04	0.09	0.01	0.01
22/08/2018	2.15	0.05	0.09		0.05	0.09	0.07	0.11	0.02	0.04	0.03	0.05	0.06	0.08	0.04	0.09	0.01	0.01
23/08/2018	2.15	0.05	0.09		0.05	0.08	0.07	0.39	0.02	0.05	0.03	0.05	0.08	0.10	0.04	0.06	0.01	0.01
24/08/2018	2.12	0.07	0.09		0.05	0.10	0.07	0.12	0.03	0.07	0.03	0.06	0.08	0.11	0.05	0.07	0.01	0.01
25/08/2018	2.15	0.08	0.11		0.07	0.09	0.08	0.13	0.03	0.15	0.03	0.08	0.09	0.14	0.05	0.09	0.01	0.01
26/08/2018	2.19	0.08	0.13		0.07	0.10	0.09	0.14	0.03	0.06	0.03	0.05	0.09	0.13	0.04	0.08	0.01	0.01
27/08/2018	1.70	0.08	0.12		0.06	0.11	0.09	0.14	0.03	0.06	0.03	0.05	0.09	0.16	0.04	0.08	0.01	0.01
28/08/2018	2.31	0.07	0.10		0.05	0.10	0.08	0.13	0.03	0.07	0.02	0.05	0.13	0.14	0.05	0.06	0.01	0.01
29/08/2018	2.54	0.09	0.11		0.06	0.08	0.08	0.13	0.03	0.08	0.02	0.05	0.12	0.18	0.05	0.08	0.01	0.01
30/08/2018	2.71	0.07	0.11		0.05	0.09	0.09	0.12	0.02	0.07	0.03	0.04	0.08	0.16	0.05	0.08	0.01	0.01
31/08/2018	2.67	0.07	0.11		0.05	0.09	0.08	0.14	0.03	0.12	0.03	0.06	0.04	0.05	0.06	0.07	0.01	0.01

Total Number of Measurements Taken, A: 16454      14536      16593      15197      17350      15923      15843      16412  
Turbidity Standard for Monitoring Location (NTU): 0.3      0.3      0.3      0.3      0.3      0.3      0.3      0.3  
Number of Measurements Meeting Standard, B: 16454      14536      16587      15197      17350      15923      15843      16412  
Compliance with Turbidity Standard, C = B/A X 100%: 100.000%      100.000%      99.964%      100.000%      100.000%      100.000%      100.000%      100.000%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2018\08-August

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)																	
	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
Date	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
02-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
03-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
04-Sep-2018	2.22	2.69	0.09	0.08	0.12	0.07	OL	OL	0.10	0.06	0.11	0.06	0.10	0.05	0.08	0.07	0.08	<0.02
05-Sep-2018	2.25	2.55	0.10	0.04	0.10	0.09	0.10	0.06	0.09	0.03	0.09	0.06	OL	OL	0.10	0.08	0.08	<0.02
06-Sep-2018	2.01	2.47	0.12	0.05	0.10	0.10	0.09	0.06	0.10	0.04	0.09	0.06	0.10	0.06	OL	OL	0.10	<0.02
07-Sep-2018	1.76	2.40	0.10	0.05	0.09	0.09	0.11	0.07	0.11	0.04	0.12	0.05	0.12	0.07	0.11	0.08	OL	OL
08-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
09-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10-Sep-2018	1.76	2.18	0.11	0.04	0.10	0.10	0.10	0.06	0.11	0.03	0.09	0.03	0.08	0.07	0.10	0.09	OL	OL
11-Sep-2018	2.06	2.14	0.14	0.05	0.12	0.09	0.08	0.05	0.11	0.02	OL	OL	0.08	0.07	0.08	0.08	0.09	<0.02
12-Sep-2018	2.15	2.08	0.12	0.05	0.09	0.10	0.10	0.06	0.11	0.03	0.11	0.03	0.08	0.07	OL	OL	0.11	<0.02
13-Sep-2018	1.96	2.06	0.11	0.06	0.09	0.10	OL	OL	0.10	0.04	0.07	0.03	0.09	0.08	0.08	0.09	0.08	<0.02
14-Sep-2018	2.02	1.99	0.10	0.03	0.11	0.06	0.11	0.04	0.08	0.02	OL	OL	0.08	0.08	0.10	0.05	0.08	<0.02
15-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17-Sep-2018	1.68	1.71	0.14	0.02	0.14	0.04	OL	OL	0.14	0.03	0.12	0.03	0.09	0.09	0.11	0.04	0.10	<0.02
18-Sep-2018	1.71	1.62	0.13	0.02	0.13	0.04	0.12	0.04	0.11	0.02	0.07	0.03	OL	OL	0.08	0.04	0.07	<0.02
19-Sep-2018	1.60	1.58	0.09	0.02	0.09	0.04	0.09	0.03	0.10	0.02	0.10	0.02	0.09	0.09	OL	OL	0.07	<0.02
20-Sep-2018	1.59	1.47	0.11	0.02	0.11	0.04	0.10	0.03	0.12	0.02	0.07	0.03	0.09	0.10	0.10	0.04	OL	OL
21-Sep-2018	1.47	1.41	0.06	<0.02	0.06	0.03	0.06	0.02	0.06	<0.02	0.07	0.03	OL	OL	0.07	0.04	0.06	<0.02
22-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
23-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
24-Sep-2018	1.41	1.32	0.08	<0.02	0.09	0.03	0.09	<0.02	0.08	<0.02	0.08	0.04	OL	OL	0.09	0.04	0.07	<0.02
25-Sep-2018	1.38	1.21	OL	OL	0.10	0.05	0.09	0.02	0.16	<0.02	0.11	0.04	0.12	0.12	0.20	0.04	0.11	<0.02
26-Sep-2018	1.34	1.20	0.13	0.02	0.09	0.04	OL	OL	0.10	0.03	0.11	0.05	0.11	0.14	0.10	0.05	0.12	<0.02
27-Sep-2018	1.29	1.15	0.07	<0.02	0.08	0.03	0.07	<0.02	0.07	<0.02	OL	OL	0.06	0.13	0.08	0.05	0.08	<0.02
28-Sep-2018	1.28	1.26	0.07	<0.02	OL	OL	0.08	<0.02	0.07	<0.02	0.08	0.05	0.07	0.05	0.07	0.04	0.09	0.02
29-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total number of measurements taken, A:			18		18		15		19		16		15		16		16	
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:			18		18		15		19		16		15		16		16	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

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

Comments:

Report Compiled By: \_\_\_\_\_ H.Demchenko \_\_\_\_\_

Authorized in Sample Manager By: \_\_\_\_\_ C.Diduck \_\_\_\_\_

Date Authorized: \_\_\_\_\_ 5-Oct-18 \_\_\_\_\_



**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**

September 2018 Turbidity (NTU)

Date	Raw		Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/09/2018	2.72	0.08	0.09	0.06	0.07	0.08	0.14	0.02	0.06	0.03	0.07	0.04	0.09	0.07	0.09	0.01	0.01	
2/09/2018	2.70	0.07	0.11	0.06	0.10	0.10	0.11	0.05	0.08	0.04	0.07	0.04	0.08	0.06	0.10	0.01	0.01	
3/09/2018	2.67	0.08	0.13	0.06	0.10	0.10	0.13	0.05	0.09	0.05	0.07	0.05	0.07	0.07	0.11	0.01	0.01	
4/09/2018	2.69	0.07	0.10	0.06	0.12	0.08	0.11	0.04	0.09	0.05	0.08	0.05	0.09	0.08	0.09	0.01	0.34	
5/09/2018	2.62	0.04	0.07	0.08	0.10	0.05	0.07	0.03	0.07	0.05	0.08	0.04	0.07	0.07	0.10	0.01	0.01	
6/09/2018	2.53	0.05	0.08	0.08	0.11	0.07	0.09	0.03	0.05	0.07	0.08	0.04	0.09	0.07	0.12	0.01	0.01	
7/09/2018	2.45	0.06	0.18	0.07	0.19	0.05	0.12	0.03	0.12	0.04	0.10	0.05	0.11	0.08	0.15	0.00	0.02	
8/09/2018	2.45	0.05	0.08	0.09	0.10	0.05	0.07	0.02	0.05	0.03	0.05	0.05	0.08	0.07	0.11	0.01	0.01	
9/09/2018	2.37	0.05	0.07	0.07	0.10	0.06	0.10	0.02	0.05	0.03	0.05	0.05	0.08	0.07	0.11	0.01	0.01	
10/09/2018	2.49	0.05	0.06	0.07	0.11	0.05	0.07	0.02	0.05	0.03	0.05	0.06	0.08	0.08	0.10	0.01	0.01	
11/09/2018	2.42	0.06	0.07	0.08	0.16	0.05	0.07	0.02	0.06	0.03	0.05	0.06	0.08	0.09	0.10	0.01	0.01	
12/09/2018	2.24	0.03	0.11	0.05	0.18	0.04	0.14	0.01	0.13	0.02	0.10	0.03	0.13	0.05	0.15	0.00	0.04	
13/09/2018	2.13	0.06	0.07	0.08	0.11	0.05	0.09	0.02	0.05	0.03	0.05	0.07	0.09	0.08	0.11	0.01	0.01	
14/09/2018	1.95	0.04	0.07	0.06	0.11	0.04	0.08	0.02	0.04	0.03	0.05	0.06	0.08	0.04	0.07	0.01	0.01	
15/09/2018	1.93	0.03	0.04	0.03	0.06	0.04	0.05	0.02	0.07	0.03	0.05	0.06	0.09	0.04	0.06	0.01	0.01	
16/09/2018	1.96	0.03	0.04	0.03	0.06	0.03	0.06	0.02	0.12	0.03	0.05	0.08	0.09	0.04	0.06	0.01	0.01	
17/09/2018	2.00	0.03	0.04	0.03	0.09	0.03	0.05	0.02	0.04	0.04	0.11	0.07	0.09	0.05	0.06	0.01	0.01	
18/09/2018	1.84	0.03	0.04	0.04	0.05	0.03	0.05	0.01	0.04	0.03	0.06	0.06	0.10	0.04	0.06	0.01	0.01	
19/09/2018	1.59	0.02	0.04	0.03	0.05	0.03	0.04	0.01	0.04	0.03	0.07	0.07	0.10	0.04	0.06	0.01	0.01	
20/09/2018	1.76	0.02	0.04	0.03	0.05	0.02	0.08	0.01	0.03	0.04	0.05	0.09	0.10	0.04	0.06	0.01	0.01	
21/09/2018	1.45	0.02	0.04	0.03	0.05	0.02	0.05	0.01	0.04	0.03	0.05	0.08	0.10	0.04	0.06	0.01	0.01	
22/09/2018	1.51	0.02	0.03	0.02	0.05	0.02	0.03	0.01	0.05	0.03	0.06	0.08	0.10	0.04	0.07	0.01	0.01	
23/09/2018	1.39	0.02	0.03	0.03	0.05	0.01	0.05	0.01	0.11	0.04	0.05	0.10	0.12	0.05	0.05	0.01	0.01	
24/09/2018	1.31	0.02	0.03	0.03	0.04	0.01	0.02	0.01	0.05	0.03	0.05	0.08	0.13	0.04	0.07	0.01	0.01	
25/09/2018	1.23	0.02	0.04	0.03	0.06	0.01	0.04	0.01	0.16	0.03	0.05	0.12	0.12	0.04	0.07	0.01	0.01	
26/09/2018	1.22	0.02	0.03	0.03	0.05	0.01	0.05	0.01	0.06	0.05	0.08	0.11	0.15	0.05	0.06	0.01	0.01	
27/09/2018	1.23	0.02	0.05	0.03	0.06	0.01	0.03	0.01	0.28	0.04	0.06	0.10	0.15	0.04	0.07	0.01	0.01	
28/09/2018	1.26	0.02	0.04	0.03	0.06	0.01	0.03	0.01	0.17	0.05	0.06	0.08	0.14	0.05	0.06	0.01	0.01	
29/09/2018	1.21	0.02	0.03	0.03	0.04	0.00	0.04	0.01	0.03	0.05	0.09	0.04	0.09	0.05	0.08	0.01	0.01	
30/09/2018	1.17	0.02	0.04	0.03	0.06	0.01	0.01	0.01	0.03	0.05	0.08	0.04	0.06	0.04	0.08	0.01	0.02	

Total Number of Measurements Taken, A: 15873      13826      15867      14763      16428      15174      15124      15675  
Turbidity Standard for Monitoring Location (NTU): 0.3      0.3      0.3      0.3      0.3      0.3      0.3      0.3  
Number of Measurements Meeting Standard, B: 15873      13826      15867      14763      16428      15174      15124      15674  
Compliance with Turbidity Standard, C = B/A X 100%: 100.000%      100.000%      100.000%      100.000%      100.000%      100.000%      100.000%      99.994%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2018\09-September

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-Oct-2018	1.06	1.13	0.08	<0.02	0.09	0.04	0.10	0.02	0.10	0.02	0.07	0.06	0.08	0.06	0.08	0.04	OL	OL
02-Oct-2018	1.04	1.07	0.12	0.02	0.12	0.04	0.13	<0.02	0.12	0.02	0.13	0.06	OL	OL	0.14	0.05	0.14	0.03
03-Oct-2018	1.20	1.20	0.11	0.03	0.09	0.05	0.08	<0.02	0.08	0.02	0.07	0.06	0.09	0.06	OL	OL	0.10	0.04
04-Oct-2018	1.22	1.17	0.08	<0.02	OL	OL	0.10	<0.02	0.11	0.02	0.11	0.08	0.09	0.07	0.09	0.06	OL	OL
05-Oct-2018	1.12	1.07	0.09	0.02	0.09	0.04	OL	OL	OL	OL	0.11	0.10	0.10	0.08	0.09	0.06	0.09	0.05
06-Oct-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
07-Oct-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
08-Oct-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
09-Oct-2018	1.00	0.95	0.08	0.03	0.09	0.05	0.09	0.02	OL	OL	0.11	0.16	OL	OL	0.10	0.06	0.07	0.08
10-Oct-2018	1.01	0.92	OL	OL	0.12	0.06	0.12	0.04	0.11	0.02	0.10	0.04	0.09	0.06	OL	OL	0.10	0.10
11-Oct-2018	1.02	0.98	0.10	0.04	OL	OL	0.14	0.08	0.13	0.04	0.10	0.06	0.11	0.08	0.11	0.06	OL	OL
12-Oct-2018	0.84	0.81	0.16	0.05	0.11	0.08	OL	OL	0.13	0.05	0.12	0.09	0.16	0.11	0.12	0.08	0.12	0.13
13-Oct-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-Oct-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15-Oct-2018	0.74	0.63	0.19	0.04	0.20	0.06	OL	OL	0.22	0.03	0.11	0.06	0.15	0.08	0.11	0.06	OL	OL
16-Oct-2018	0.70	0.58	0.14	0.04	0.10	0.06	0.11	0.08	0.11	0.02	OL	OL	OL	OL	0.12	0.07	0.11	0.11
17-Oct-2018	1.04	1.01	OL	OL	OL	OL	0.11	0.11	0.11	0.04	0.12	0.07	0.13	0.08	0.11	0.07	0.13	0.14
18-Oct-2018	0.96	0.99	0.09	0.04	0.10	0.06	OL	OL	0.12	0.05	0.10	0.08	0.15	0.09	0.17	0.07	OL	OL
19-Oct-2018	0.88	1.04	0.12	0.05	0.12	0.07	0.12	0.15	OL	OL	0.11	0.09	0.15	0.11	0.12	0.08	0.10	0.13
20-Oct-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
21-Oct-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
22-Oct-2018	0.92	1.03	0.12	0.03	OL	OL	0.14	0.04	OL	OL	0.14	0.07	0.12	0.12	0.10	0.08	0.14	0.16
23-Oct-2018	0.95	0.98	0.11	0.04	0.10	0.11	OL	OL	OL	OL	0.11	0.07	0.14	0.11	0.12	0.07	0.10	0.04
24-Oct-2018	0.94	0.94	0.12	0.04	0.12	0.11	0.14	0.02	OL	OL	0.12	0.08	OL	OL	0.14	0.08	0.11	0.05
25-Oct-2018	0.96	0.98	0.14	0.05	0.14	0.12	0.14	0.03	0.20	0.07	OL	OL	0.12	0.09	0.17	0.09	0.13	0.04
26-Oct-2018	0.88	0.93	0.17	0.09	0.13	0.14	0.13	0.04	0.12	0.05	0.10	0.06	0.11	0.09	OL	OL	0.11	0.05
27-Oct-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.12	0.03	NA						
28-Oct-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
29-Oct-2018	0.86	0.89	0.12	0.05	0.12	0.11	0.12	0.04	OL	OL	OL	OL	0.10	0.09	0.15	0.09	0.11	0.05
30-Oct-2018	0.90	0.88	OL	OL	OL	OL	0.15	0.05	0.13	0.04	0.11	0.07	0.12	0.09	0.13	0.06	0.14	0.08
31-Oct-2018	0.97	0.97	0.11	0.04	0.12	0.10	OL	OL	0.14	0.04	0.11	0.08	0.15	0.11	0.16	0.07	0.14	0.05
Total number of measurements taken, A:	19		17		16		16		19		18		19		17			
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:	19		17		16		16		19		18		19		17			
Compliance with Turbidity Standard, C= B/A X 100%:	100%		100%		100%		100%		100%		100%		100%		100%			

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

Comments:

Report Compiled By: H.Demchenko

Authorized in Sample Manager By: C.Diduck



**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**

October 2018 Turbidity (NTU)

Date	Raw		Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/10/2018	1.15	0.02	0.05	0.03	0.06	0.01	0.04	0.01	0.03	0.06	0.07	0.05	0.07	0.05	0.06	0.01	0.02	
2/10/2018	1.33	0.03	0.05	0.04	0.05	0.01	0.05	0.01	0.04	0.06	0.09	0.04	0.08	0.05	0.08	0.01	0.02	
3/10/2018	1.24	0.02	0.05	0.03	0.07	0.01	0.04	0.01	0.03	0.05	0.11	0.04	0.08	0.04	0.10	0.02	0.06	
4/10/2018	1.14	0.02	0.05	0.03	0.07	0.01	0.05	0.01	0.04	0.08	0.10	0.06	0.08	0.05	0.07	0.02	0.08	
5/10/2018	1.07	0.03	0.05	0.03	0.05	0.01	0.08	0.01	0.06	0.08	0.13	0.04	0.10	0.07	0.10	0.03	0.10	
6/10/2018	1.06	0.03	0.06	0.04	0.09	0.01	0.03	0.01	0.06	0.07	0.14	0.04	0.10	0.05	0.11	0.05	0.06	
7/10/2018	1.05	0.03	0.07	0.04	0.08	0.02	0.07	0.02	0.04	0.08	0.12	0.06	0.07	0.05	0.10	0.05	0.10	
8/10/2018	0.98	0.03	0.05	0.03	0.08	0.02	0.08	0.01	0.14	0.13	0.17	0.05	0.10	0.06	0.08	0.04	0.10	
9/10/2018	0.96	0.03	0.06	0.05	0.06	0.02	0.08	0.01	0.05	0.06	0.17	0.04	0.09	0.05	0.09	0.05	0.07	
10/10/2018	0.91	0.03	0.06	0.04	0.08	0.04	0.06	0.01	0.03	0.04	0.08	0.04	0.07	0.04	0.09	0.07	0.11	
11/10/2018	1.44	0.03	0.09	0.04	0.10	0.04	0.10	0.03	0.06	0.06	0.07	0.07	0.09	0.05	0.08	0.06	0.13	
12/10/2018	0.76	0.06	0.08	0.06	0.08	0.05	0.16	0.02	0.09	0.06	0.10	0.05	0.13	0.08	0.11	0.07	0.14	
13/10/2018	0.91	0.04	0.09	0.06	0.11	0.06	0.08	0.02	0.11	0.05	0.14	0.05	0.15	0.05	0.11	0.10	0.11	
14/10/2018	0.60	0.04	0.11	0.04	0.10	0.07	0.13	0.02	0.05	0.05	0.08	0.06	0.10	0.05	0.15	0.06	0.15	
15/10/2018	0.64	0.04	0.06	0.03	0.09	0.05	0.12	0.02	0.06	0.06	0.14	0.05	0.11	0.07	0.08	0.06	0.12	
16/10/2018	0.83	0.05	0.08	0.06	0.08	0.06	0.10	0.01	0.05	0.05	0.12	0.05	0.10	0.05	0.09	0.08	0.11	
17/10/2018	1.02	0.04	0.09	0.05	0.09	0.11	0.14	0.02	0.04	0.06	0.12	0.06	0.09	0.06	0.11	0.09	0.14	
18/10/2018	1.01	0.05	0.09	0.04	0.10	0.09	0.17	0.03	0.07	0.07	0.10	0.08	0.12	0.06	0.09	0.08	0.16	
19/10/2018	1.04	0.06	0.08	0.04	0.07	0.09	0.19	0.02	0.07	0.07	0.12	0.06	0.13	0.09	0.12	0.08	0.16	
20/10/2018	1.12	0.06	0.10	0.07	0.10	0.11	0.15	0.02	0.08	0.07	0.14	0.06	0.13	0.06	0.13	0.11	0.15	
21/10/2018	1.13	0.05	0.11	0.05	0.10	0.16	0.21	0.04	0.05	0.07	0.14	0.07	0.11	0.07	0.13	0.10	0.17	
22/10/2018	1.08	0.06	0.08	0.08	0.14	0.08	0.23	OL	OL	0.09	0.12	0.09	0.14	0.07	0.12	0.06	0.17	
23/10/2018	1.02	0.05	0.09	0.09	0.15	0.03	0.09	OL	OL	0.07	0.16	0.08	0.13	0.08	0.11	0.02	0.07	
24/10/2018	1.01	0.06	0.08	0.10	0.15	0.03	0.10	OL	OL	0.07	0.12	0.08	0.14	0.07	0.12	0.02	0.07	
25/10/2018	1.00	0.06	0.10	0.11	0.14	0.03	0.11	0.03	0.08	0.06	0.12	0.07	0.14	0.07	0.12	0.02	0.04	
26/10/2018	0.98	0.05	0.11	0.09	0.16	0.04	0.07	0.03	0.09	0.05	0.11	0.07	0.10	0.06	0.12	0.03	0.07	
27/10/2018	0.94	0.04	0.09	0.07	0.15	0.03	0.09	0.02	0.04	0.07	0.09	0.09	0.13	0.05	0.12	0.02	0.08	
28/10/2018	0.93	0.05	0.07	0.08	0.12	0.03	0.09	0.03	0.08	0.05	0.11	0.05	0.13	0.08	0.11	0.02	0.16	
29/10/2018	0.92	0.05	0.09	0.10	0.14	0.03	0.05	0.02	0.07	0.04	0.11	0.05	0.09	0.05	0.11	0.03	0.05	
30/10/2018	0.93	0.04	0.10	0.08	0.15	0.04	0.10	0.03	0.04	0.07	0.08	0.09	0.13	0.05	0.11	0.03	0.08	
31/10/2018	0.97	0.05	0.09	0.09	0.14	0.04	0.10	0.03	0.08	0.05	0.12	0.07	0.13	0.08	0.09	0.04	0.08	

Total Number of Measurements Taken, A: 14552      11697      14607      11017      15119      13653      13478      15077  
Turbidity Standard for Monitoring Location (NTU): 0.3      0.3      0.3      0.3      0.3      0.3      0.3      0.3  
Number of Measurements Meeting Standard, B: 14552      11697      14607      11017      15119      13653      13478      15077  
Compliance with Turbidity Standard, C = B/A X 100%: 100.000%      100.000%      100.000%      100.000%      100.000%      100.000%      100.000%      100.000%

OL Off-line

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2018\10-October

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)																	
	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
Date	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Nov-2018	0.94	0.90	0.12	0.04	0.10	0.11	0.14	0.04	0.14	0.05	OL	OL	0.09	0.08	0.10	0.07	0.10	0.06
02-Nov-2018	0.92	0.94	OL	OL	0.13	0.12	0.12	0.06	0.11	0.03	0.11	0.07	0.10	0.09	0.11	0.06	0.13	0.08
03-Nov-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
04-Nov-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
05-Nov-2018	0.88	0.91	0.14	0.06	0.12	0.12	0.11	0.08	OL	OL	0.08	0.07	0.08	0.08	OL	OL	0.08	0.09
06-Nov-2018	0.88	1.05	0.11	0.04	0.10	0.11	OL	OL	0.12	0.05	0.09	0.07	0.10	0.09	0.09	0.06	OL	OL
07-Nov-2018	0.95	0.99	0.14	0.06	0.14	0.12	0.13	<0.02	OL	OL	0.12	0.08	0.13	0.09	0.14	0.09	0.11	0.11
08-Nov-2018	0.94	0.93	0.10	0.04	OL	OL	0.14	<0.02	0.12	0.04	0.11	0.08	0.11	0.09	0.12	0.06	0.13	0.15
09-Nov-2018	0.87	0.98	0.12	0.05	0.12	0.12	0.12	<0.02	0.09	0.05	OL	OL	0.14	0.09	0.10	0.07	0.08	0.11
10-Nov-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11-Nov-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12-Nov-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13-Nov-2018	0.89	0.95	0.13	0.06	OL	OL	0.16	<0.02	0.14	0.07	0.13	0.11	0.14	0.11	0.14	0.07	0.16	0.19
14-Nov-2018	0.91	0.99	0.14	0.07	0.13	0.13	0.14	<0.02	0.16	0.08	0.15	0.09	OL	OL	0.14	0.08	0.14	0.05
15-Nov-2018	0.85	0.95	0.19	0.07	0.15	0.15	0.15	0.09	OL	OL	0.14	0.08	0.14	0.11	OL	OL	0.15	0.07
16-Nov-2018	0.89	1.19	OL	OL	0.17	0.16	0.16	0.09	0.14	0.09	0.13	0.10	0.13	0.08	0.12	0.05	0.15	0.06
17-Nov-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18-Nov-2018	0.82	0.91	0.15	0.06	0.16	0.14	0.13	0.08	OL	OL	OL	OL	0.13	0.07	0.16	0.08	0.11	0.08
19-Nov-2018	0.84	0.92	OL	OL	0.13	0.14	0.12	0.07	0.11	0.07	0.11	0.09	0.11	0.07	OL	OL	0.11	0.06
20-Nov-2018	0.81	0.94	0.16	0.06	0.15	0.14	0.16	0.09	0.17	0.10	0.16	0.12	0.17	0.11	0.14	0.06	0.15	0.10
21-Nov-2018	0.81	0.91	0.18	0.05	0.14	0.13	OL	OL	0.17	0.11	0.17	0.14	OL	OL	0.14	0.06	0.12	0.09
22-Nov-2018	0.80	0.93	0.15	0.06	0.13	0.14	0.14	0.09	OL	OL	OL	OL	0.12	0.07	0.15	0.08	0.13	0.11
23-Nov-2018	0.81	0.85	OL	OL	OL	OL	0.16	0.11	0.14	0.09	0.13	0.14	0.16	0.08	OL	OL	0.19	0.15
24-Nov-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
25-Nov-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26-Nov-2018	0.82	0.87	OL	OL	0.18	0.17	0.17	0.11	0.16	0.10	0.15	0.04	0.13	0.08	OL	OL	0.14	0.04
27-Nov-2018	0.78	0.76	0.15	0.07	OL	OL	0.25	0.19	0.17	0.12	0.15	0.06	0.15	0.11	0.13	0.05	OL	OL
28-Nov-2018	0.69	0.73	0.14	0.04	0.14	0.08	0.15	0.08	0.18	0.07	OL	OL	OL	OL	0.14	0.05	0.14	0.02
29-Nov-2018	0.63	0.74	OL	OL	0.13	0.09	0.12	0.07	0.12	0.03	0.10	0.03	0.11	0.05	OL	OL	0.11	<0.02
30-Nov-2018	0.69	0.69	0.12	0.03	OL	OL	0.19	0.11	0.14	0.05	0.12	0.05	0.14	0.07	0.12	0.03	OL	OL
Total number of measurements taken, A:			16			17		20		17		17		19		16		19
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:			16			17		20		17		17		19		16		19
Compliance with Turbidity Standard, C= B/A X 100%:			100%			100%		100%		100%		100%		100%		100%		100%

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

Comments:

Report Compiled By: H.Demchenko

Authorized in Sample Manager By: C.Diduck

Date Authorized: 7-Dec-18



**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**

November 2018 Turbidity (NTU)

Date	Raw		Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/11/2018	0.94	0.06	0.09	0.10	0.12	0.04	0.11	0.03	0.08	0.07	0.12	0.07	0.12	0.06	0.11	0.03	0.05	
2/11/2018	0.93	0.05	0.09	0.10	0.14	0.06	0.08	0.03	0.08	0.06	0.09	0.08	0.10	0.06	0.11	0.05	0.09	
3/11/2018	0.93	0.03	0.06	0.07	0.14	0.05	0.11	0.03	0.09	0.08	0.12	0.07	0.12	0.06	0.08	0.04	0.10	
4/11/2018	0.94	0.06	0.10	0.10	0.13	0.05	0.14	0.03	0.07	0.05	0.12	0.06	0.13	0.06	0.10	0.04	0.07	
5/11/2018	0.95	0.04	0.10	0.08	0.15	0.08	0.11	0.02	0.07	0.05	0.10	0.07	0.09	0.04	0.11	0.07	0.11	
6/11/2018	1.02	0.04	0.14	0.06	0.18	0.02	0.22	0.02	0.09	0.05	0.11	0.04	0.13	0.04	0.14	0.03	0.16	
7/11/2018	0.99	0.06	0.11	0.11	0.15	0.04	0.12	0.04	0.08	0.07	0.12	0.07	0.12	0.08	5.00	0.09	0.31	
8/11/2018	1.01	0.05	0.10	0.10	0.16	0.01	0.06	0.04	0.05	0.09	0.11	0.09	0.12	0.06	0.11	0.08	0.14	
9/11/2018	0.98	0.06	0.08	0.11	0.13	0.00	0.05	0.04	0.09	0.08	0.13	0.07	0.12	0.08	0.10	0.08	0.11	
10/11/2018	0.98	0.06	0.10	0.10	0.15	0.00	0.02	0.04	0.10	0.08	0.11	0.08	0.09	0.07	0.11	0.11	0.15	
11/11/2018	0.97	0.06	0.08	0.10	0.16	0.01	0.06	0.05	0.07	0.11	0.14	0.08	0.14	0.08	0.09	0.10	0.18	
12/11/2018	0.97	0.07	0.11	0.13	0.14	0.01	0.02	0.05	0.13	0.09	0.16	0.08	0.15	0.07	0.12	0.14	0.15	
13/11/2018	1.01	0.06	0.12	0.11	0.17	0.02	0.08	0.06	0.08	0.10	0.16	0.10	0.12	0.07	0.13	0.08	0.20	
14/11/2018	0.99	0.08	0.09	0.10	0.14	0.01	0.09	0.07	0.13	0.08	0.13	0.08	0.15	0.09	0.11	0.02	0.08	
15/11/2018	1.04	0.09	5.00	0.12	0.18	0.04	0.11	0.06	0.14	0.07	0.15	0.06	0.12	0.05	0.15	0.03	0.07	
16/11/2018	0.99	0.05	0.11	0.09	0.19	0.09	0.16	0.06	0.10	0.09	0.11	0.07	0.09	0.04	0.11	0.02	0.06	
17/11/2018	0.97	0.05	0.13	0.08	0.20	0.08	0.15	0.10	0.19	0.10	0.22	0.08	0.17	0.07	0.12	0.03	0.09	
18/11/2018	0.95	0.06	0.15	0.13	0.21	0.06	0.14	0.06	0.13	0.08	0.14	0.05	0.14	0.05	0.14	0.03	0.08	
19/11/2018	0.96	0.04	0.10	0.09	0.17	0.08	0.14	0.06	0.14	0.07	0.17	0.05	0.09	0.05	0.10	0.04	0.07	
20/11/2018	0.96	0.05	0.11	0.10	0.19	0.07	0.16	0.07	0.12	0.12	0.16	0.07	0.14	0.05	0.13	0.05	0.13	
21/11/2018	0.94	0.05	0.08	0.09	0.14	0.06	0.16	0.08	0.15	0.09	0.18	0.05	0.14	0.07	0.10	0.05	0.15	
22/11/2018	0.92	0.06	0.12	0.13	0.19	0.07	0.10	0.06	0.15	0.09	0.20	0.05	0.14	0.05	0.13	0.09	0.11	
23/11/2018	0.91	0.05	0.12	0.10	0.19	0.10	0.17	0.06	0.16	0.09	0.16	0.08	0.10	0.05	0.13	0.05	0.17	
24/11/2018	0.90	0.05	0.07	0.09	0.19	0.07	0.17	0.09	0.21	0.05	0.12	0.06	0.14	0.06	0.08	0.01	0.07	
25/11/2018	0.88	0.07	0.13	0.13	0.16	0.06	0.11	0.07	0.15	0.04	0.11	0.06	0.14	0.05	0.13	0.01	0.02	
26/11/2018	0.88	0.05	0.13	0.09	0.19	0.11	0.18	0.06	0.16	0.04	0.07	0.07	0.10	0.05	0.13	0.01	0.06	
27/11/2018	0.81	0.05	0.14	0.09	0.20	0.09	0.19	0.11	0.14	0.05	0.12	0.07	0.15	0.05	0.08	0.01	0.07	
28/11/2018	0.75	0.07	0.14	0.09	0.15	0.07	0.15	0.04	0.17	0.04	0.11	0.05	0.12	0.05	0.13	0.01	0.02	
29/11/2018	0.76	0.03	0.37	0.06	0.25	0.08	0.20	0.03	0.15	0.03	0.09	0.04	0.10	0.02	0.08	0.01	0.05	
30/11/2018	0.72	0.03	0.11	0.05	0.14	0.06	0.12	0.04	0.06	0.05	0.07	0.05	0.08	0.03	0.05	0.01	0.03	

Total Number of Measurements Taken, A: 14199              11378              13492              12160              15131              13784              13131              14671  
Turbidity Standard for Monitoring Location (NTU): 0.3              0.3              0.3              0.3              0.3              0.3              0.3              0.3  
Number of Measurements Meeting Standard, B: 14197              11378              13492              12160              15131              13784              13129              14670  
Compliance with Turbidity Standard, C = B/A X 100%: 99.986%              100.000%              100.000%              100.000%              100.000%              99.985%              99.993%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2018\11-November

Submitted By (Print): D. Minor

Signature: Original Signed by D. Minor



CITY OF WINNIPEG  
WATER AND WASTE DEPARTMENT  
ENVIRONMENTAL STANDARDS DIVISION

**WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT**

Water System Code: 252.00	Turbidity (NTU)																	
	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
Date	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Dec-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
02-Dec-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
03-Dec-2018	0.63	0.66	OL	OL	OL	OL	0.16	0.09	0.14	0.05	0.13	0.05	0.15	0.07	0.14	0.03	0.15	0.04
04-Dec-2018	0.64	0.65	0.12	0.04	0.12	0.08	OL	OL	0.14	0.05	0.13	0.05	OL	OL	0.13	0.04	0.11	0.02
05-Dec-2018	0.68	0.65	0.13	0.05	0.12	0.08	0.12	0.07	OL	OL	0.11	0.03	0.12	0.06	OL	OL	0.11	0.02
06-Dec-2018	0.60	0.58	OL	OL	0.19	0.13	0.16	0.09	0.15	0.05	0.13	0.06	0.13	0.07	OL	OL	0.14	0.03
07-Dec-2018	0.62	0.59	0.13	0.03	0.12	0.07	0.19	0.11	0.15	0.05	0.13	0.05	0.15	0.08	0.15	0.06	OL	OL
08-Dec-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
09-Dec-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10-Dec-2018	0.57	0.58	OL	OL	0.19	0.12	0.16	0.09	0.15	0.06	OL	OL	0.15	0.07	0.14	0.04	0.14	0.03
11-Dec-2018	0.54	0.55	0.13	0.05	OL	OL	0.18	0.10	0.16	0.07	OL	OL	0.16	0.07	0.16	0.06	0.19	0.07
12-Dec-2018	0.54	0.53	0.15	0.05	0.14	0.09	0.19	0.12	0.16	0.07	OL	OL	0.17	0.10	OL	OL	0.14	0.02
13-Dec-2018	0.52	0.51	0.15	0.05	0.14	0.10	OL	OL	0.17	0.08	OL	OL	0.19	0.11	0.14	0.04	0.13	0.03
14-Dec-2018	0.53	0.51	OL	OL	0.15	0.10	0.14	0.08	OL	OL	OL	OL	0.15	0.07	0.14	0.04	0.13	0.03
15-Dec-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16-Dec-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17-Dec-2018	0.54	0.51	0.20	0.09	0.16	0.11	OL	OL	0.18	0.09	0.13	0.06	OL	OL	0.13	0.04	0.13	0.03
18-Dec-2018	0.51	0.51	OL	OL	0.17	0.12	0.18	0.10	OL	OL	0.19	0.11	0.15	0.08	0.15	0.05	0.15	0.04
19-Dec-2018	0.51	0.51	0.17	0.06	OL	OL	0.18	0.11	0.16	0.07	OL	OL	0.16	0.09	0.18	0.07	0.21	0.10
20-Dec-2018	0.51	0.49	0.17	0.07	0.16	0.10	OL	OL	0.17	0.08	0.14	0.07	0.21	0.12	OL	OL	0.15	0.03
21-Dec-2018	0.52	0.50	OL	OL	0.17	0.12	0.17	0.10	OL	OL	0.19	0.10	0.16	0.09	0.16	0.06	0.17	0.05
22-Dec-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
23-Dec-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
24-Dec-2018	0.50	0.48	OL	OL	0.19	0.13	0.18	0.11	OL	OL	0.20	0.12	0.18	0.10	0.18	0.07	0.18	0.06
25-Dec-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26-Dec-2018	NA	NA	0.21	0.09	NA	NA	NA	NA	0.19	0.14	NA							
27-Dec-2018	0.48	0.46	0.16	0.05	0.20	0.12	0.18	0.10	0.23	0.18	0.18	0.10	0.17	0.09	0.17	0.07	0.17	0.06
28-Dec-2018	0.46	0.46	0.16	0.07	0.14	0.13	0.20	0.12	0.17	0.14	0.14	0.08	0.18	0.11	0.24	0.13	0.23	0.10
29-Dec-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30-Dec-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31-Dec-2018	0.48	0.45	0.15	0.06	OL	OL	0.18	0.12	0.16	0.09	0.14	0.09	0.16	0.11	0.20	0.11	OL	OL

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

**Comments:**

Filter 5 was offline for scheduled maintenance from December 9 to 14, 2018.

Report Compiled By: H.Demchenko

Authorized in Sample Manager By: C.Diduck

Date Authorized: 7-Jan-19



**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**

**December 2018 Turbidity (NTU)**

Date	Raw		Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/12/2018	0.71	0.05	0.07	0.06	0.10	0.06	0.14	0.04	0.10	0.04	0.10	0.05	0.13	0.05	0.11	0.01	0.06	
2/12/2018	0.70	0.04	0.10	0.07	0.13	0.06	0.11	0.03	0.10	0.04	0.11	0.04	0.13	0.04	0.11	0.01	0.03	
3/12/2018	0.68	0.04	0.10	0.06	0.14	0.07	0.15	0.03	0.06	0.05	0.07	0.06	0.12	0.03	0.12	0.01	0.05	
4/12/2018	0.67	0.04	0.06	0.05	0.08	0.06	0.16	0.05	0.10	0.04	0.11	0.04	0.12	0.04	0.07	0.01	0.06	
5/12/2018	0.65	0.05	0.10	0.08	0.13	0.06	0.09	0.03	0.10	0.04	0.12	0.04	0.13	0.04	0.11	0.01	0.02	
6/12/2018	0.62	0.04	0.11	0.06	0.13	0.08	0.16	0.04	0.12	0.04	0.07	0.06	0.09	0.02	0.06	0.01	0.06	
7/12/2018	0.59	0.03	0.06	0.06	0.15	0.07	0.15	0.04	0.07	0.06	0.12	0.06	0.12	0.04	0.10	0.01	0.06	
8/12/2018	0.59	0.06	0.11	0.08	0.12	0.06	0.17	0.06	0.13	0.04	0.12	0.05	0.13	0.03	0.10	0.00	0.01	
9/12/2018	0.60	0.04	0.10	0.07	0.14	0.07	0.15	0.04	0.12	0.02	0.08	0.05	0.12	0.04	0.07	0.01	0.06	
10/12/2018	0.58	0.06	0.13	0.08	0.15	0.08	0.11	0.05	0.13	OL	OL	0.06	0.14	0.05	0.10	0.01	0.06	
11/12/2018	0.56	0.06	0.13	0.09	0.17	0.10	0.21	0.06	0.14	OL	OL	0.07	0.10	0.05	0.15	0.01	0.08	
12/12/2018	0.55	0.06	0.13	0.08	0.16	0.09	0.19	0.07	0.11	OL	OL	0.07	0.15	0.05	0.13	0.01	0.08	
13/12/2018	0.54	0.07	0.11	0.08	0.11	0.09	0.19	0.07	0.16	OL	OL	0.07	0.16	0.05	0.13	0.01	0.09	
14/12/2018	0.53	0.04	0.10	0.08	0.16	0.06	0.17	0.05	0.13	0.05	0.15	0.05	0.12	0.03	0.07	0.01	0.03	
15/12/2018	0.50	0.03	0.14	0.07	0.16	0.10	0.13	0.06	0.16	0.05	0.15	0.06	0.09	0.06	0.12	0.01	0.09	
16/12/2018	0.49	0.08	0.11	0.07	0.17	0.08	0.20	0.06	0.10	0.04	0.08	0.07	0.16	0.04	0.12	0.01	0.09	
17/12/2018	0.58	0.06	0.14	0.09	0.13	0.08	0.21	0.07	0.15	0.08	0.14	0.06	0.16	0.04	0.13	0.01	0.02	
18/12/2018	0.53	0.05	0.14	0.09	0.17	0.08	0.12	0.06	0.15	0.06	0.16	0.06	0.17	0.06	0.10	0.02	0.09	
19/12/2018	0.52	0.05	0.09	0.07	0.18	0.10	0.21	0.05	0.16	0.06	0.15	0.08	0.11	0.06	0.14	0.02	0.09	
20/12/2018	0.52	0.07	0.13	0.06	0.17	0.08	0.19	0.08	0.12	0.07	0.10	0.07	0.17	0.05	0.14	0.02	0.11	
21/12/2018	0.52	0.04	0.15	0.11	0.17	0.06	0.19	0.06	0.17	0.08	0.16	0.06	0.18	0.06	0.08	0.03	0.04	
22/12/2018	0.51	0.05	0.08	0.07	0.17	0.11	0.17	0.06	0.19	0.07	0.17	0.10	0.14	0.08	0.16	0.03	0.13	
23/12/2018	0.50	0.07	0.14	0.07	0.11	0.07	0.21	0.11	0.14	0.09	0.22	0.09	0.24	0.07	0.19	0.04	0.15	
24/12/2018	0.49	0.05	0.16	0.11	0.17	0.07	0.12	0.09	0.20	0.08	0.17	0.07	0.19	0.07	0.12	0.04	0.08	
25/12/2018	0.48	0.06	0.09	0.08	0.18	0.12	0.21	0.07	0.13	0.06	0.17	0.10	0.13	0.07	0.15	0.03	0.12	
26/12/2018	0.48	0.07	0.16	0.09	0.12	0.08	0.21	0.14	0.21	0.09	0.11	0.07	0.18	0.05	0.14	0.01	0.11	
27/12/2018	0.48	0.05	0.14	0.09	0.18	0.08	0.14	0.10	0.22	0.06	0.16	0.06	0.18	0.07	0.09	0.03	0.11	
28/12/2018	0.47	0.06	0.10	0.07	0.19	0.09	0.20	0.09	0.16	0.06	0.18	0.10	0.15	0.05	0.15	0.02	0.12	
29/12/2018	0.48	0.05	0.12	0.11	0.13	0.07	0.21	0.09	0.15	0.10	0.13	0.07	0.17	0.05	0.14	0.01	0.03	
30/12/2018	0.47	0.03	0.07	0.11	0.18	0.09	0.12	0.06	0.16	0.07	0.17	0.09	0.19	0.07	0.11	0.03	0.11	
31/12/2018	0.47	0.06	0.14	0.07	0.19	0.08	0.19	0.06	0.11	0.06	0.16	0.09	0.13	0.05	0.15	0.01	0.11	

Total Number of Measurements Taken, A: 14367      11474      14668      12211      12535      13810      13348      14887  
Turbidity Standard for Monitoring Location (NTU): 0.3      0.3      0.3      0.3      0.3      0.3      0.3      0.3  
Number of Measurements Meeting Standard, B: 14367      11474      14668      12211      12535      13810      13348      14887  
Compliance with Turbidity Standard, C = B/A X 100%: 100.000%      100.000%      100.000%      100.000%      100.000%      100.000%      100.000%      100.000%

OL - Off Line

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2018\12-December

Submitted By (Print): D.Merredew

Signature: Original Signed by D.Merredew

# **2018 Monthly UV Monitoring Reports**



**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: **January 2018**

Report Created: **Thursday, February 01, 2018**

Date	Transmittance %	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total Water Volume [ML]				% 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				
01/01/2018	94.74	0.00	0.00	50.12	50.12	0.00	0.00	62.73	62.73	0.00	0.00	71.15	71.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	183.99	183.99	100.00			
02/01/2018	94.62	0.00	0.00	47.52	47.52	0.00	0.00	59.04	59.04	0.00	0.00	44.76	44.76	0.00	0.04	0.29	0.33	0.00	0.00	0.00	0.00	0.04	0.04	21.45	21.52	0.04	0.08	173.05	173.17	99.93			
03/01/2018	95.37	0.00	0.00	49.37	49.37	0.00	0.00	56.34	56.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64.51	64.51	0.00	0.00	170.21	170.21	100.00			
04/01/2018	95.28	0.00	0.00	52.18	52.18	0.00	0.00	64.25	64.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	63.83	63.83	0.00	0.00	180.25	180.25	100.00			
05/01/2018	94.49	0.00	0.00	56.21	56.21	0.00	0.00	74.33	74.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	63.47	63.47	0.00	0.00	194.01	194.01	100.00			
06/01/2018	94.33	0.00	0.00	53.90	53.90	0.00	0.00	71.29	71.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.97	58.59	0.00	0.62	193.35	193.97	99.68			
07/01/2018	94.33	0.00	0.00	47.33	47.33	0.00	0.00	60.82	60.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.11	44.11	0.00	0.00	0.00	0.00	0.00	0.00	41.71	41.74	0.00	0.03	193.96	193.99	99.98	
08/01/2018	94.33	0.00	0.00	52.78	52.78	0.00	0.00	65.99	65.99	0.00	0.00	0.00	0.00	0.00	0.00	0.26	11.96	12.22	0.00	0.00	48.97	48.97	0.00	0.13	13.87	14.00	0.00	0.39	193.57	193.96	99.80		
09/01/2018	94.19	0.00	0.00	68.75	68.75	0.00	0.00	17.08	17.08	0.00	0.00	40.19	40.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	193.98	193.98	100.00			
10/01/2018	94.32	0.00	0.00	70.80	70.80	0.00	0.00	0.00	0.00	0.00	0.00	51.55	51.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	185.77	185.77	100.00			
11/01/2018	94.29	0.00	0.00	67.30	67.30	0.00	0.00	0.00	0.00	0.00	0.00	46.76	46.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	178.99	178.99	100.00			
12/01/2018	94.43	0.00	0.00	66.55	66.55	0.00	0.00	0.00	0.00	0.00	0.00	44.64	44.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	177.09	177.09	100.00			
13/01/2018	94.02	0.00	0.00	66.77	66.77	0.00	0.00	0.00	0.00	0.00	0.00	44.61	44.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	177.02	177.02	100.00			
14/01/2018	93.90	0.00	0.00	65.73	65.73	0.00	0.00	0.00	0.00	0.00	0.00	44.05	44.05	0.00	0.00	0.00	0.00	0.05	64.72	64.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	174.49	174.54	99.97			
15/01/2018	93.86	0.00	0.00	64.20	64.20	0.00	0.00	0.00	0.00	0.00	0.00	40.07	40.07	0.00	0.02	1.18	1.21	0.00	0.00	61.55	61.55	0.00	0.14	0.34	0.48	0.00	0.17	167.34	167.51	99.90			
16/01/2018	93.78	0.00	0.00	74.61	74.61	0.00	0.00	0.00	0.00	0.00	0.00	20.21	20.21	0.00	0.00	0.00	0.00	0.00	48.39	48.39	0.00	0.00	33.13	33.13	0.00	0.00	176.34	176.35	100.00				
17/01/2018	93.67	0.00	0.00	74.39	74.39	0.00	0.00	0.00	0.00	0.00	0.00	26.96	26.96	0.00	0.00	4.16	4.16	0.00	0.00	11.91	11.91	0.00	0.00	69.74	69.74	0.00	0.00	187.16	187.16	100.00			
18/01/2018	93.60	0.00	0.00	68.38	68.38	0.00	0.00	0.00	0.00	0.00	0.00	45.02	45.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	182.35	182.35	100.00			
19/01/2018	93.64	0.00	0.00	66.73	66.73	0.00	0.00	0.00	0.00	0.00	0.00	43.66	43.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	176.47	176.47	100.00			
20/01/2018	93.80	0.00	0.00	66.89	66.89	0.00	0.00	0.00	0.00	0.00	0.00	43.48	43.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	175.99	175.99	100.00			
21/01/2018	93.82	0.00	0.00	66.93	66.93	0.00	0.00	0.00	0.00	0.00	0.00	43.48	43.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	176.39	176.39	100.00			
22/01/2018	93.13	0.00	0.00	67.97	67.97	0.00	0.00	0.00	0.00	0.00	0.00	44.59	44.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	180.15	180.15	100.00			
23/01/2018	93.02	0.00	0.00	69.44	69.44	0.00	0.00	0.00	0.00	0.00	0.00	45.89	45.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	185.30	185.30	100.00			
24/01/2018	92.58	0.00	0.00	74.21	74.21	0.00	0.00	0.00	0.00	0.00	0.00	0.12	24.38	24.50	0.00	0.00	24.18	24.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.01	75.01	0.00	0.12	197.79	197.91	99.94
25/01/2018	92.75	0.00	0.00	45.72	45.72	0.00	0.00	29.54	29.54	0.00	0.00	47.58	47.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	198.00	198.00	100.00			
26/01/2018	93.35	0.00	0.00	0.00	0.00	0.00	0.00	80.47	80.47	0.02	0.02	21.25	21.29	0.00	0.00	0.00	0.02	0.04	18.71	18.78	0.00	0.00	64.82	64.82	0.04	0.06	185.26	185.36	99.95				
27/01/2018	93.23	0.00	0.00	0.00	0.00	0.02	0.02	75.17	75.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.11	33.11	0.01	0.01	55.53	55.55	0.04	0.04	163.81	163.88	99.95					
28/01/2018	93.29	0.00	0.00	0.00	0.00	0.00	0.00	68.16	68.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.61	43.61	0.00	0.00	73.35	73.35	0.00	0.00	185.11	185.11	100.00					
29/01/2018	94.03	0.00	0.00	0.00	0.00	0.00	0.00	67.18	67.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.80	54.80	0.00	0.00	67.99	67.99	0.00	0.00	189.97	189.97	100.00					
30/01/2018	94.27	0.00	0.00	0.00	0.00	0.00	0.00	69.43	69.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.28	52.28	0.00	0.00	70.39	70.39	0.00	0.00	192.11	192.11	100.00					
31/01/2018	94.35	0.00	0.04	0.50	0.54	0.00	0.00	64.98	64.98	0.00	0.00	42.80	42.80	0.00	0.00	0.00	0.00	0.00	14.13	14.13	0.00	0.00	69.51	69.51	0.00	0.04	191.91	191.95	99.98				
<b>Total [ML]:</b>		0.00	0.04	1555.27	1555.31	0.02	0.02	986.79	986.83	0.02	0.14	877.07	877.23	0.00	0.33	96.08	96.41	0.02	0.09	780.02	780.14	0.05	0.97	1385.95	1386.97	0.							



**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: **February 2018**

Report Created: **Thursday, March 01, 2018**

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														
01/02/2018	94.35	0.00	0.00	0.08	0.08	0.00	0.00	59.91	59.91	0.00	0.00	63.67	63.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.51	62.51	0.00	0.00	186.17	186.17	100.00			
02/02/2018	94.36	0.00	0.00	0.00	0.00	0.00	0.00	59.14	59.14	0.00	0.00	63.44	63.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.15	60.15	0.00	0.00	182.72	182.72	100.00			
03/02/2018	94.51	0.00	0.00	38.34	38.34	0.00	0.00	55.43	55.43	0.25	0.25	7.66	8.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.21	69.21	0.25	0.25	170.65	171.15	99.71			
04/02/2018	94.25	0.00	0.00	44.21	44.21	0.00	0.00	55.21	55.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	71.25	71.25	0.00	0.00	170.66	170.66	100.00			
05/02/2018	94.18	0.00	0.00	45.48	45.48	0.00	0.00	60.46	60.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.01	67.01	0.00	0.00	172.96	172.96	100.00			
06/02/2018	93.81	0.00	0.00	45.62	45.62	0.00	0.00	60.64	60.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.75	43.75	0.00	0.00	173.00	173.00	100.00			
07/02/2018	93.62	0.00	0.00	45.69	45.69	0.00	0.00	60.47	60.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.84	66.84	0.00	0.00	173.00	173.00	100.00			
08/02/2018	93.47	0.00	0.00	45.83	45.83	0.00	0.00	60.63	60.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.52	66.52	0.00	0.00	172.98	172.98	100.00			
09/02/2018	93.56	0.11	0.11	39.99	40.22	0.00	0.00	62.91	62.91	0.00	0.00	0.00	0.00	0.00	0.00	9.37	9.37	0.00	0.00	0.00	0.00	64.89	64.89	0.11	0.11	177.16	177.39	99.87			
10/02/2018	93.58	0.00	0.00	0.00	0.00	0.00	0.00	67.46	67.46	0.00	0.00	0.00	0.00	0.00	0.00	63.88	63.88	0.00	0.00	0.00	0.00	64.64	64.64	0.00	0.00	195.98	195.98	100.00			
11/02/2018	94.31	0.00	0.00	0.00	0.00	0.00	0.00	67.50	67.50	0.00	0.00	0.00	0.00	0.00	0.00	63.79	63.79	0.00	0.00	0.00	0.00	64.73	64.73	0.00	0.00	196.03	196.03	100.00			
12/02/2018	94.30	0.00	0.00	0.00	0.00	0.00	0.00	67.16	67.16	0.00	0.00	0.00	0.00	0.00	0.00	63.91	63.91	0.00	0.00	0.00	0.00	64.94	64.94	0.00	0.00	196.01	196.01	100.00			
13/02/2018	94.33	0.00	0.00	0.00	0.00	0.00	0.00	62.06	62.06	0.00	0.00	0.00	0.00	0.00	0.00	59.73	59.73	0.00	0.00	0.00	0.00	58.05	58.10	0.00	0.04	179.84	179.88	99.98			
14/02/2018	94.24	0.00	0.00	0.00	0.00	0.03	0.03	61.88	61.95	0.00	0.00	0.00	0.00	0.01	0.01	58.86	58.89	0.00	0.00	0.00	0.00	57.34	57.37	0.05	0.06	178.09	178.20	99.94			
15/02/2018	94.15	0.00	0.00	0.00	0.00	0.00	0.00	65.48	65.48	0.00	0.00	0.00	0.00	0.00	0.00	52.12	52.12	0.00	0.00	0.00	0.00	52.78	52.78	0.00	0.00	170.39	170.39	100.00			
16/02/2018	94.11	0.00	0.00	0.00	0.00	0.00	0.00	75.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	50.98	50.98	0.00	0.00	0.00	0.00	59.04	59.04	0.00	0.00	185.02	185.02	100.00			
17/02/2018	93.79	0.00	0.00	0.00	0.00	0.00	0.00	75.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	51.43	51.43	0.00	0.00	0.00	0.00	58.59	58.59	0.00	0.00	185.02	185.02	100.00			
18/02/2018	93.68	0.00	0.00	0.00	0.00	0.00	0.00	75.01	75.01	0.00	0.00	0.00	0.00	0.00	0.00	51.18	51.18	0.00	0.00	0.00	0.00	58.84	58.84	0.00	0.00	185.02	185.02	100.00			
19/02/2018	93.60	0.00	0.00	0.00	0.00	0.00	0.00	75.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	50.69	50.69	0.00	0.00	0.00	0.00	58.56	58.56	0.00	0.00	184.25	184.25	100.00			
20/02/2018	93.91	0.00	0.00	0.00	0.00	0.00	0.00	75.01	75.01	0.00	0.00	0.00	0.00	0.00	0.00	49.81	49.81	0.00	0.00	0.00	0.00	57.20	57.20	0.00	0.00	182.01	182.01	100.00			
21/02/2018	95.25	0.00	0.00	0.00	0.00	0.00	0.00	74.22	74.22	0.00	0.00	0.00	0.00	0.00	0.00	49.59	49.59	0.00	0.00	0.00	0.00	57.78	57.78	0.00	0.00	181.58	181.58	100.00			
22/02/2018	95.55	0.00	0.00	0.00	0.00	0.00	0.00	60.49	60.49	0.00	0.00	0.00	0.00	0.00	0.00	46.53	46.53	0.00	0.00	0.00	0.00	67.81	67.81	0.00	0.00	174.83	174.83	100.00			
23/02/2018	96.07	0.00	0.00	0.00	0.00	0.00	0.00	60.48	60.48	0.00	0.00	0.00	0.00	0.00	0.00	46.53	46.53	0.00	0.00	0.00	0.00	67.99	67.99	0.00	0.00	175.00	175.00	100.00			
24/02/2018	95.97	0.00	0.00	0.00	0.00	0.00	0.00	60.46	60.46	0.00	0.00	0.00	0.00	0.00	0.00	46.48	46.48	0.00	0.00	0.00	0.00	68.07	68.07	0.00	0.00	175.01	175.01	100.00			
25/02/2018	95.82	0.00	0.00	0.00	0.00	0.00	0.00	60.50	60.50	0.00	0.00	0.00	0.00	0.00	0.00	46.48	46.48	0.00	0.00	0.00	0.00	68.03	68.03	0.00	0.00	175.00	175.00	100.00			
26/02/2018	95.71	0.00	0.00	0.00	0.00	0.00	0.00	67.27	67.27	0.00	0.00	0.00	0.00	0.00	0.00	51.02	51.02	0.00	0.00	0.00	0.00	74.71	74.71	0.00	0.00	193.01	193.01	100.00			
27/02/2018	95.59	0.00	0.00	0.00	0.00	0.00	0.00	70.24	70.24	0.00	0.00	0.00	0.00	0.00	0.00	52.84	52.84	0.00	0.00	0.00	0.00	76.92	76.92	0.00	0.00	200.00	200.00	100.00			
28/02/2018	95.50	0.00	0.00	0.00	0.00	0.00	0.00	70.42	70.42	0.00	0.00	0.00	0.00	0.00	0.00	52.84	52.84	0.00	0.00	0.00	0.00	76.76	76.76	0.00	0.00	200.02	200.02	100.00			

Water Volume [%]:

Untreated: **0.01 %**  
Below Dose **0.01 %**  
To Dose **99.98 %**

Submitted By: D.Merredew

Signature: Original Signed by D.Merredew



**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: **March 2018**

Report Created: **Sunday, April 01, 2018**

Date	Transmittance %	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total Water Volume [ML]				% 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																		
01/03/2018	95.16	0.00	0.00	0.00	0.00	0.00	0.00	70.50	70.50	0.00	0.00	0.00	0.00	0.00	0.00	52.83	52.83	0.00	0.00	0.00	0.00	0.00	0.00	76.68	76.68	0.00	0.00	200.01	200.01	100.00	
02/03/2018	95.23	0.00	0.00	0.00	0.00	0.00	0.00	70.61	70.61	0.00	0.00	0.00	0.00	0.00	0.00	52.58	52.58	0.00	0.00	0.00	0.00	0.00	0.00	76.80	76.80	0.00	0.00	199.99	199.99	100.00	
03/03/2018	95.28	0.00	0.00	0.00	0.00	0.00	0.00	70.67	70.67	0.00	0.00	0.00	0.00	0.00	0.00	52.55	52.55	0.00	0.00	0.00	0.00	0.00	0.00	76.77	76.77	0.00	0.00	199.99	199.99	100.00	
04/03/2018	95.11	0.00	0.00	0.00	0.00	0.00	0.00	70.66	70.66	0.00	0.00	0.00	0.00	0.00	0.00	52.57	52.57	0.00	0.00	0.00	0.00	0.00	0.00	76.78	76.78	0.00	0.00	200.01	200.01	100.00	
05/03/2018	95.25	0.00	0.00	0.00	0.00	0.00	0.00	70.65	70.65	0.00	0.00	0.00	0.00	0.00	0.00	52.56	52.56	0.00	0.00	0.00	0.00	0.00	0.00	76.79	76.79	0.00	0.00	200.00	200.00	100.00	
06/03/2018	95.34	0.00	0.00	0.00	0.00	0.00	0.00	64.34	64.34	0.00	0.00	0.00	0.00	0.00	0.00	51.67	51.67	0.00	0.00	0.00	0.00	0.00	0.00	68.26	68.26	0.00	0.00	184.28	184.28	100.00	
07/03/2018	95.01	0.00	0.00	0.00	0.00	0.00	0.00	70.66	70.66	0.00	0.00	0.00	0.00	0.00	0.00	52.42	52.42	0.00	0.00	0.00	0.00	0.00	0.00	76.89	76.89	0.00	0.00	199.96	199.96	100.00	
08/03/2018	94.76	0.00	0.00	0.00	0.00	0.00	0.00	72.01	72.01	0.00	0.00	0.00	0.00	0.00	0.00	52.87	52.87	0.00	0.00	0.00	0.00	0.00	0.00	74.86	74.86	0.00	0.00	199.73	199.73	100.00	
09/03/2018	94.78	0.00	0.00	0.00	0.00	0.00	0.00	73.89	73.89	0.00	0.00	0.00	0.00	0.12	0.12	28.40	28.64	0.00	0.00	20.16	20.16	0.00	0.00	75.67	75.67	0.12	0.12	198.11	198.35	99.88	
10/03/2018	93.93	0.00	0.00	0.00	0.00	0.00	0.00	75.01	75.01	0.00	0.00	0.00	0.00	0.00	0.00	39.99	39.99	0.00	0.00	72.38	72.38	0.00	0.00	187.38	187.38	100.00					
11/03/2018	94.52	0.00	0.00	0.00	0.00	0.00	0.00	72.89	72.89	0.00	0.00	0.00	0.00	0.00	0.00	35.67	35.67	0.00	0.00	64.42	64.42	0.00	0.00	172.98	172.98	100.00					
12/03/2018	94.57	0.00	0.00	0.00	0.00	0.00	0.00	65.01	65.01	0.00	0.00	0.00	0.00	0.00	0.00	0.75	37.74	38.49	0.00	0.00	69.53	69.53	0.00	0.00	172.28	173.03	99.56				
13/03/2018	94.63	0.00	0.00	0.00	0.00	0.00	0.00	56.15	56.15	0.00	0.00	0.00	0.00	0.00	0.00	35.25	35.25	0.00	0.00	11.41	15.02	0.00	0.00	66.53	66.53	0.00	0.00	169.34	172.95	97.91	
14/03/2018	94.46	0.00	0.00	0.00	0.00	0.00	0.00	53.70	53.70	0.00	0.00	0.00	0.00	0.00	0.00	56.25	56.25	0.00	0.00	0.00	0.00	0.00	0.00	63.03	63.03	0.00	0.00	172.98	172.98	100.00	
15/03/2018	94.19	0.00	0.00	0.00	0.00	0.00	0.00	16.60	16.60	0.00	0.00	30.10	30.10	0.00	0.00	52.58	52.58	0.00	0.00	0.00	0.00	0.00	0.00	73.68	73.68	0.00	0.00	172.97	172.97	100.00	
16/03/2018	93.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.23	45.23	0.00	0.00	50.10	50.10	0.00	0.00	0.00	0.00	78.63	78.63	0.00	0.00	173.96	173.96	100.00
17/03/2018	93.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.81	46.81	0.00	0.00	51.11	51.11	0.00	0.00	0.00	0.00	0.00	0.00	80.09	80.09	0.00	0.00	178.01	178.01	100.00		
18/03/2018	93.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.10	47.10	0.00	0.00	51.00	51.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.92	79.92	0.00	0.00	178.02	178.02	100.00		
19/03/2018	93.66	0.00	0.19	3.50	3.69	0.00	0.04	15.06	15.10	0.36	0.36	55.47	56.18	0.00	0.00	17.16	17.16	0.00	0.46	14.04	14.50	0.00	0.00	71.28	71.28	0.36	1.05	176.51	177.91	99.21	
20/03/2018	93.57	0.04	0.04	22.62	22.69	0.00	0.00	56.54	56.54	0.00	0.00	21.88	21.88	0.00	0.00	0.00	0.00	0.00	0.00	20.62	20.62	0.00	0.00	59.37	59.37	0.04	0.04	181.03	181.10	99.96	
21/03/2018	93.98	0.00	0.00	23.20	23.20	0.00	0.00	76.58	76.58	0.00	0.00	0.00	0.00	0.24	0.24	0.00	0.48	0.00	0.00	20.63	20.63	0.00	0.00	69.27	69.27	0.24	0.24	189.68	190.16	99.75	
22/03/2018	94.92	0.00	0.00	52.07	52.07	0.00	0.00	65.98	65.98	0.00	0.00	0.00	0.00	0.03	0.24	0.59	0.85	0.00	0.00	0.00	0.00	0.00	0.00	71.12	71.12	0.03	0.24	189.76	190.02	99.86	
23/03/2018	95.04	0.00	0.00	19.37	19.37	0.00	0.00	74.92	74.92	0.00	0.00	0.00	0.00	0.00	0.09	33.21	33.30	0.00	0.00	0.00	0.00	0.00	0.00	62.45	62.45	0.00	0.09	189.95	190.03	99.95	
24/03/2018	95.10	0.00	0.00	0.07	0.07	0.00	0.00	80.57	80.57	0.00	0.00	0.00	0.00	0.00	0.00	51.19	51.19	0.00	0.00	0.00	0.00	0.00	0.00	58.17	58.17	0.00	0.00	190.00	190.00	100.00	
25/03/2018	95.00	0.00	0.00	0.00	0.00	0.00	0.00	80.57	80.57	0.00	0.00	0.00	0.00	0.00	0.00	51.17	51.17	0.00	0.00	0.00	0.00	0.00	0.00	58.28	58.28	0.00	0.00	190.02	190.02	100.00	
26/03/2018	95.02	0.00	0.00	0.00	0.00	0.00	0.00	80.28	80.28	0.00	0.00	0.00	0.00	0.00	0.00	50.84	50.84	0.00	0.00	0.00	0.00	0.00	0.00	58.00	58.00	0.00	0.00	189.12	189.12	100.00	
27/03/2018	95.12	0.00	0.00	0.00	0.00	0.00	0.00	80.16	80.16	0.00	0.00	0.00	0.00	0.00	0.00	50.68	50.68	0.00	0.00	0.00	0.00	0.00	0.00	57.66	57.66	0.00	0.00	188.50	188.50	100.00	
28/03/2018	94.75	0.00	0.00	0.00	0.00	0.00	0.00	79.96	79.96	0.00	0.00	0.00	0.00	0.00	0.00	50.58	50.58	0.00	0.00	0.00	0.00	0.00	0.00	57.44	57.44	0.00	0.00	187.98	187.98	100.00	
29/03/2018	94.77	0.00	0.00	0.00	0.00	0.00	0.00	80.07	80.07	0.00	0.00	0.00	0.00	0.00	0.00	50.55	50.55	0.00	0.00	0.00	0.00	0.00	0.00	57.35	57.35	0.00	0.00	187.96	187.96	100.00	
30/03/2018	94.79	0.00	0.00	0.00	0.00	0.00	0.00	75.18	75.18	0.00	0.00	0.00	0.00	0.00	0.00	48.15	48.15	0.00	0.00	0.00	0.00	0.00	0.00	53.05	53.05	0.00	0.00	176.39	176.39	100.00	
31/03/2018	95.05	0.00	0.00	0.00	0.00	0.00	0.00	73.39	73.39	0.00	0.00	0.00	0.00	0.00	0.00	47.37	47.37	0.00	0.00	0.00	0.00	0.00	0.00	51.92	51.92	0.00	0.00	172.68	172.68	100.00	

Water Volume [%]:

Untreated: 0.01 %

Below Dose 0.11 %

To Dose 99.88 %

Submitted By: D.Merredew

Signature: Original Signed by D.Merredew



















## **2018 Corrective Action Reports**



Water and Waste Department • Service des eaux et des déchets

Wednesday, April 4, 2018

**Our Incident/Report No: 01-2018**

LIMS Reference No: 52231

Incident Date: **March 13, 2018**

Mr. Derek Clarke  
Drinking Water Officer  
Manitoba Sustainable Development, Office of Drinking Water  
Box 6000  
Gimli, MB R0C 1B0

**RE: CORRECTIVE ACTION REPORT**

---

<b>WATER SYSTEM, CODE</b>	Winnipeg Public Water System, 252.00
<b>LOCATION OF NON-COMPLIANT INCIDENT</b>	<b>Winnipeg 3-Dist WC04</b>
<b>INCIDENT REPORTED BY</b>	Courtney Diduck, Analytical Services Branch Head
<b>TYPE OF NON-COMPLIANT INCIDENT</b>	Low positive Total Coliform (<10 per100mL), 3 MR 41/2007
<b>DESCRIPTION OF CORRECTIVE ACTIONS</b>	<u>Environmental Standards:</u> AS SOON AS POSSIBLE: Re-sampled original location until two consecutive negative results were reported. Also tested for turbidity, free/total chlorine, temperature and contacted the ODW.
<b>TEST RESULTS</b>	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

**EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING**

N:\Environmental Standards\Analytical Services\Government Agencies\Office of Drinking Water\Corrective Action Reports



Water and Waste Department • Service des eaux et des déchets

Sample Name	Sample Number	Date Sampled	bacColiEsch-QT (MPNU/100mL)	bacColiTotal-QT (MPNU/100mL)	bacHPC (cfu/mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
WC04	542102	13-Mar-18	<1	1	<1	0.70	1.00	0.12	5.4	10:49
WC04_Resample	542718	14-Mar-18	<1	<1	<1	0.85	1.04	0.14	5.7	15:03
WC04_Resample Duplicate	542719	14-Mar-18	<1	<1	NA	NA	NA	NA	NA	NA
WC04_Resample 2	542900	16-Mar-18	<1	<1	1	0.81	0.96	0.12	5.7	10:36
WC04_Resample Duplicate 2	542901	16-Mar-18	<1	<1	<1	NA	NA	NA	NA	NA

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.



Water and Waste Department • Service des eaux et des déchets

Friday, August 3, 2018

**Our Incident/Report No: 02-2018**

LIMS Reference No: 9940

Incident Date: **July 17, 2018**

Mr. Derek Clarke  
Drinking Water Officer  
Manitoba Sustainable Development, Office of Drinking Water  
Box 6000  
Gimli, MB R0C 1B0

## RE: CORRECTIVE ACTION REPORT

---

<b>WATER SYSTEM, CODE</b>	Winnipeg Public Water System, 252.00
<b>LOCATION OF NON-COMPLIANT INCIDENT</b>	<b>Winnipeg 3-Dist WC05</b>
<b>INCIDENT REPORTED BY</b>	Renée Grosselle, Manager of Environmental Standards
<b>TYPE OF NON-COMPLIANT INCIDENT</b>	Low positive Total Coliform (<10 per100mL), 3 MR 41/2007
<b>DESCRIPTION OF CORRECTIVE ACTIONS</b>	<u>Environmental Standards:</u> AS SOON AS POSSIBLE: Re-sampled original location until two consecutive negative results were reported. Also tested for turbidity, free/total chlorine, temperature and contacted the ODW.
<b>TEST RESULTS</b>	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

**EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING**

N:\Environmental Standards\Analytical Services\Government Agencies\Office of Drinking Water\Corrective Action Reports



Water and Waste Department • Service des eaux et des déchets

Sample Name	Sample Number	Date Sampled	bacColiEsch-QT (MPNU/100mL)	bacColiTotal-QT (MPNU/100mL)	bacHPC (cfu/mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
WC05	9940	17-Jul-18	<1	2	<1	0.72	0.96	0.38	15.2	10:30
WC05_Resample	11912	18-Jul-18	<1	<1	2	0.62	0.79	0.18	13.4	15:45
WC05_Resample 2	11913	19-Jul-18	<1	<1	<1	0.66	0.91	0.21	15.7	15:55

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.



Water and Waste Department • Service des eaux et des déchets

Friday, August 3, 2018

**Our Incident/Report No: 03-2018**

LIMS Reference No: 12128

Incident Date: **July 25, 2018**

Mr. Derek Clarke  
Drinking Water Officer  
Manitoba Sustainable Development, Office of Drinking Water  
Box 6000  
Gimli, MB R0C 1B0

## RE: CORRECTIVE ACTION REPORT

<b>WATER SYSTEM, CODE</b>	Winnipeg Public Water System, 252.00
<b>LOCATION OF NON-COMPLIANT INCIDENT</b>	<b>Winnipeg 3-Dist SW11</b>
<b>INCIDENT REPORTED BY</b>	Courtney Diduck, Analytical Services Branch Head
<b>TYPE OF NON-COMPLIANT INCIDENT</b>	Low positive Total Coliform (<10 per100mL), 3 MR 41/2007
<b>DESCRIPTION OF CORRECTIVE ACTIONS</b>	<u>Environmental Standards:</u> AS SOON AS POSSIBLE: Re-sampled original location until two consecutive negative results were reported. Also tested for turbidity, free/total chlorine, temperature and contacted the ODW.
<b>TEST RESULTS</b>	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

**EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING**

N:\Environmental Standards\Analytical Services\Government Agencies\Office of Drinking Water\Corrective Action Reports



Water and Waste Department • Service des eaux et des déchets

Sample Name	Sample Number	Date Sampled	bacColiEsch-QT (MPNU/100mL)	bacColiTotal-QT (MPNU/100mL)	bacHPC (cfu/mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
SW11	12128	25-Jul-18	<1	1	<1	1.05	1.20	0.27	21.2	11:33
SW11_Resample	14424	26-Jul-18	<1	<1	<1	0.93	1.16	0.20	20.4	15:15
SW11_Resample Duplicate	14425	26-Jul-18	<1	<1	<1	NA	NA	NA	NA	15:15
SW11_Resample 2	14426	27-Jul-18	<1	<1	<1	0.92	1.15	0.19	21.8	15:21
SW11_Resample Duplicate 2	14427	27-Jul-18	<1	<1	<1	NA	NA	NA	NA	15:22

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.



Water and Waste Department • Service des eaux et des déchets

Friday, September 7, 2018

**Our Incident/Report No: 04-2018**

LIMS Reference No: 7587 – 7589

Incident Date: July 9, 2018

Mr. Derek Clarke  
Drinking Water Officer  
Manitoba Sustainable Development, Office of Drinking Water  
Box 6000  
Gimli, MB R0C 1B0

**RE: CORRECTIVE ACTION REPORT**

<b>WATER SYSTEM, CODE</b>	Winnipeg Public Water System, 252.00
<b>LOCATION OF NON-COMPLIANT INCIDENT</b>	<b>Winnipeg 3-Dist WMCP</b>
<b>INCIDENT REPORTED BY</b>	Anita Vanderstel, Laboratory Supervisor
<b>TYPE OF NON-COMPLIANT INCIDENT</b>	1. High positive Total Coliform (>10 per100mL), 3 MR 41/2007 2. Low positive Total Coliform (<10 per100mL), 3 MR 41/2007
<b>DESCRIPTION OF CORRECTIVE ACTIONS</b>	<p><u>Environmental Standards:</u> IMMEDIATELY: Contacted the ODW and Water Services. Re-sampled original locations and tested additional samples upstream/downstream and area around the original locations for bacteria, turbidity, free/total chlorine, and temperature. Backflow inspector surveyed the area for issues.</p> <p><u>Water Services:</u> IMMEDIATELY: Re-flushed sequences. The area was hydraulically isolated and a hydrant was set up to run to waste. Shock chlorination was performed on a number of hydrants.</p> <p>Monitoring and flushing terminated after two consecutive sets of re-samples taken 24 hours apart tested negative for bacteria.</p> <p>A complete summary of follow-up activities will be provided in a separate submission.</p>
<b>TEST RESULTS</b>	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

**EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING**

N:\Environmental Standards\Analytical Services\Government Agencies\Office of Drinking Water\Corrective Action Reports



Water and Waste Department • Service des eaux et des déchets

Sample Name	Sample Number	Date Sampled	E Coli (MPNU/100mL)	Total Coliform (MPNU/100mL)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
Hydrant Post Flush 1 (Sequence 465)	7587	9-Jul-18	<1	50	0.60	0.72	2.04	17.9	10:34
7587 Resample 1	9528	10-Jul-18	<1	8	0.60	0.73	1.42	18.0	14:00
7587 Resample 1 Duplicate	9529	10-Jul-18	<1	3	N/A	N/A	N/A	N/A	14:00
7587 Resample 1 Upstream	9530	10-Jul-18	<1	5	0.63	0.87	1.60	18.2	13:38
7587 Resample 1 Upstream Duplicate	9531	10-Jul-18	<1	10	N/A	N/A	N/A	N/A	13:38
7587 Resample 1 Downstream	9532	10-Jul-18	<1	1	0.86	1.08	1.38	17.7	14:34
7587 Resample 1 Downstream Duplicate	9533	10-Jul-18	<1	2	N/A	N/A	N/A	N/A	14:34
7587 Resample 2	9540	11-Jul-18	<1	<1	0.65	0.90	0.33	17.4	13:48
7587 Resample 2 Duplicate	9541	11-Jul-18	<1	<1	N/A	N/A	N/A	N/A	13:48
7587 Resample 2 Upstream	9542	11-Jul-18	<1	<1	0.69	0.93	0.30	17.5	14:00
7587 Resample 2 Upstream Duplicate	9543	11-Jul-18	<1	<1	N/A	N/A	N/A	N/A	14:00
7587 Resample 2 Downstream	9544	11-Jul-18	<1	<1	0.71	0.92	1.19	18.2	14:18
7587 Resample 2 Downstream Duplicate	9545	12-Jul-18	<1	<1	N/A	N/A	N/A	N/A	14:18
7587 Resample 3	9552	12-Jul-18	<1	<1	0.70	0.86	0.35	17.7	13:25
7587 Resample 3 Duplicate	9553	12-Jul-18	<1	<1	N/A	N/A	N/A	N/A	13:25
7587 Resample 3 Upstream	9554	12-Jul-18	<1	<1	0.81	0.96	0.30	18.5	13:48
7587 Resample 3 Upstream Duplicate	9555	12-Jul-18	<1	<1	N/A	N/A	N/A	N/A	13:48
7587 Resample 3 Downstream	9556	12-Jul-18	<1	<1	0.74	0.97	0.39	18.5	14:00
7587 Resample 3 Downstream Duplicate	9557	12-Jul-18	<1	<1	N/A	N/A	N/A	N/A	14:00

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.



Water and Waste Department • Service des eaux et des déchets

Sample Name	Sample Number	Date Sampled	E Coli (MPNU/100mL)	Total Coliform (MPNU/100mL)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
Hydrant Post Flush 2 (Sequence 467)	7588	9-Jul-18	<1	36	0.27	0.50	4.95	18.3	11:40
Hydrant Post Flush 3 (Sequence 468)	7589	9-Jul-18	<1	10	0.59	0.78	3.62	17.9	12:21
7588/7589 Resample 1	9534	10-Jul-18	<1	6	0.56	0.74	0.86	18.6	15:30
7588/7589 Resample 1 Duplicate	9535	10-Jul-18	<1	3	N/A	N/A	N/A	N/A	15:30
7588/7589 Resample 1 Upstream	9536	10-Jul-18	<1	2	0.60	0.74	0.58	18.7	15:55
7588/7589 Resample 1 Upstream Duplicate	9537	10-Jul-18	<1	1	N/A	N/A	N/A	N/A	15:55
7588/7589 Resample 1 Downstream	9538	10-Jul-18	<1	11	0.45	0.73	2.22	18.6	16:16
7588/7589 Resample 1 Downstream Duplicate	9539	10-Jul-18	<1	6	N/A	N/A	N/A	N/A	16:16
7588/7589 Resample 2	9546	11-Jul-18	<1	<1	0.65	0.83	0.46	19.0	14:52
7588/7589 Resample 2 Duplicate	9547	11-Jul-18	<1	<1	N/A	N/A	N/A	N/A	14:52
7588/7589 Resample 2 Upstream	9548	11-Jul-18	<1	<1	0.66	0.85	0.47	18.1	15:20
7588/7589 Resample 2 Upstream Duplicate	9549	11-Jul-18	<1	<1	N/A	N/A	N/A	N/A	15:20
7588/7589 Resample 2 Downstream	9550	11-Jul-18	<1	<1	0.62	0.75	0.36	18.1	15:36
7588/7589 Resample 2 Downstream Duplicate	9551	11-Jul-18	<1	<1	N/A	N/A	N/A	N/A	15:36
7588/7589 Resample 3	9558	12-Jul-18	<1	<1	1.49	1.65	0.57	19.1	14:30
7588/7589 Resample 3 Duplicate	9559	12-Jul-18	<1	<1	N/A	N/A	N/A	N/A	14:30
7588/7589 Resample 3 Upstream	9560	12-Jul-18	<1	<1	0.66	0.82	0.52	18.2	14:49
7588/7589 Resample 3 Upstream Duplicate	9561	12-Jul-18	<1	<1	N/A	N/A	N/A	N/A	14:49
7588/7589 Resample 3 Downstream	9562	12-Jul-18	<1	<1	0.74	0.94	0.38	18.5	15:05
7588/7589 Resample 3 Downstream Duplicate	9563	12-Jul-18	<1	<1	N/A	N/A	N/A	N/A	15:05

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.



Water and Waste Department • Service des eaux et des déchets

Monday, September 10, 2018

**Our Incident/Report No: 05-2018**

LIMS Reference No: **Job\_55**

Incident Date: **August 5, 2018**

Mr. Derek Clarke  
Drinking Water Officer  
Manitoba Sustainable Development, Office of Drinking Water  
Box 6000  
Gimli, MB R0C 1B0

**RE: CORRECTIVE ACTION REPORT**

<b>WATER SYSTEM, CODE</b>	Winnipeg Public Water System, 252.00
<b>LOCATION OF NON-COMPLIANT INCIDENT</b>	<b>Winnipeg 3-Dist WS_REPAIR</b>
<b>INCIDENT REPORTED BY</b>	Louis Rivard, Superintendent of Water Distribution Operations
<b>TYPE OF NON-COMPLIANT INCIDENT</b>	1. Treated (or distribution system) water sample contains E. coliform >0 per100mL, 3 MR 41/2007 2. High positive Total Coliform (>10 per100mL), 3 MR 41/2007
<b>DESCRIPTION OF CORRECTIVE ACTIONS</b>	<p><u>Water Services:</u> IMMEDIATELY: Contacted the ODW and Environmental Standards, flushed the isolated area.</p> <p><u>Environmental Standards:</u> IMMEDIATELY: Re-sampled original locations and tested additional samples upstream of original locations for; bacteria, turbidity, free/total chlorine, and temperature.</p> <p>A localized notice to residents in the impacted area to boil water was issued on August 7, 2018, by the City of Winnipeg. The boil water advisory was subsequently rescinded on August 9, 2018, after two consecutive sets of re-samples taken 24 hours apart tested negative for bacteria.</p> <p>A complete summary of follow-up activities will be provided in a separate submission.</p>
<b>TEST RESULTS</b>	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

**EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING**

N:\Environmental Standards\Analytical Services\Government Agencies\Office of Drinking Water\Corrective Action Reports



Water and Waste Department • Service des eaux et des déchets

Sample Name	Sample Number	Date Sampled	E Coli (MPNU/100mL)	Total Coliform (MPNU/100mL)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
Hydrant	NA	5-Aug-18	15	36	0.88	NA	1.66	NA	14:45
Hydrant (Resample 1)	18238	7-Aug-18	<1	<1	0.67	0.91	0.57	17.80	14:00
Upstream 1	18240	7-Aug-18	<1	<1	0.99	1.06	0.27	16.00	14:30
WC11	18242	7-Aug-18	<1	<1	0.56	0.70	0.20	16.80	14:49
Upstream 2	18241	7-Aug-18	<1	<1	0.68	0.93	0.23	16.90	14:57
Upstream 3	18239	7-Aug-18	<1	<1	0.89	1.05	0.21	15.30	15:30
WC11 (Resample 1)	18606	8-Aug-18	<1	<1	0.30	0.46	2.84	20.00	14:05
Hydrant (Resample 2)	18243	8-Aug-18	<1	<1	0.72	0.86	0.64	18.10	14:08
Hydrant (Resample 2 Duplicate)	18546	8-Aug-18	<1	<1	NA	NA	NA	NA	14:08
Upstream 2 (Resample 1)	18245	8-Aug-18	<1	<1	0.72	0.86	0.59	17.30	14:38
Upstream 2 (Resample 1 Duplicate)	18548	8-Aug-18	<1	<1	NA	NA	NA	NA	14:38
Upstream 1 (Resample 1)	18246	8-Aug-18	<1	<1	0.64	0.83	0.18	14.20	14:50
Upstream 1(Resample 1 Duplicate)	18549	8-Aug-18	<1	<1	NA	NA	NA	NA	14:50
Upstream 3 (Resample 1)	18244	8-Aug-18	<1	<1	0.63	0.79	0.45	17.70	15:05
Upstream 3 (Resample 1 Duplicate)	18547	8-Aug-18	<1	<1	NA	NA	NA	NA	15:05
WC11 (Resample 2)	44953	9-Aug-18	NA	NA	NA	NA	0.27	18.50	14:05

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.



Water and Waste Department • Service des eaux et des déchets

Friday, October 5, 2018

**Our Incident/Report No: 06-2018**  
LIMS Reference No: Sample # **141656**  
Incident Date: **September 13, 2018**

Mr. Derek Clarke  
Drinking Water Officer  
Manitoba Sustainable Development, Office of Drinking Water  
Box 6000  
Gimli, MB R0C 1B0

**RE: CORRECTIVE ACTION REPORT**

<b>WATER SYSTEM, CODE</b>	Winnipeg Public Water System, 252.00
<b>LOCATION OF NON-COMPLIANT INCIDENT</b>	<b>Winnipeg 3-Dist Investigation</b>
<b>INCIDENT REPORTED BY</b>	Courtney Diduck, Analytical Services Branch Head
<b>TYPE OF NON-COMPLIANT INCIDENT</b>	1. Low disinfection residual in the distribution system, 22(1) MR 40/2007
<b>DESCRIPTION OF CORRECTIVE ACTIONS</b>	<p><u>Environmental Standards:</u> IMMEDIATELY: Sampled the location for bacteria, free/total chlorine, turbidity and temperature and contacted the ODW.</p> <p>Tested additional samples in the area for free/total chlorine, turbidity and temperature as part of the investigation of the infrastructure and system in the area.</p> <p><u>Water Services:</u> Checked for closed valves and spot flushed. Spot flushing resolved the issue and free chlorine residuals were re-established to acceptable levels.</p>
<b>TEST RESULTS</b>	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

**EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING**

N:\Environmental Standards\Analytical Services\Government Agencies\Office of Drinking Water\Corrective Action Reports



Water and Waste Department • Service des eaux et des déchets

Sample Name	Sample Number	Date Sampled	E Coli (MPNU/100mL)	Total Coliform (MPNU/100mL)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
Resident	141656	13-Sep-18	<1	<1	0.07	0.28	0.30	15.4	17:42
Resident_Adjacent	141696	14-Sep-18	NA	NA	0.38	0.53	0.26	17.6	13:37
Resident_Adjacent 2	141697	14-Sep-18	NA	NA	0.33	0.51	0.22	17.5	13:49
Resident_Resample	142198	17-Sep-18	<1	<1	0.19	0.32	0.31	16.9	10:21
Resident_Adjacent Resample	142199	17-Sep-18	<1	<1	0.66	0.85	0.23	17.8	10:37

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.



Water and Waste Department • Service des eaux et des déchets

Thursday, October 11, 2018

**Our Incident/Report No: 07-2018**

LIMS Reference No: NA

Incident Date: **September 2, 2018**

Mr. Derek Clarke  
Drinking Water Officer  
Manitoba Sustainable Development, Office of Drinking Water  
Box 6000  
Gimli, MB R0C 1B0

**RE: CORRECTIVE ACTION REPORT**

<b>WATER SYSTEM, CODE</b>	Winnipeg Public Water System, 252.00
<b>LOCATION OF NON-COMPLIANT INCIDENT</b>	<b>Winnipeg 3-Dist NW02_Analyzer</b>
<b>INCIDENT REPORTED BY</b>	Zeljko Bodiroga, Water Distribution Engineer
<b>TYPE OF NON-COMPLIANT INCIDENT</b>	1. Low disinfection residual in the distribution system, 22(1) MR 40/2007
<b>DESCRIPTION OF CORRECTIVE ACTIONS</b>	<p><u>Water Services:</u> Contacted the ODW and Environmental Standards, flushed the isolated area and collected water samples at the nearby hydrants to confirm chlorine level readings in the area. Instrumentation technicians calibrated the chlorine instrument to make sure the instrument was recording properly.</p> <p><u>Environmental Standards:</u> Re-sampled original location and tested for; bacteria, turbidity, free/total chlorine, and temperature.</p> <p>We will continue to investigate and monitor this location and will assess if a long term solution is required to raise chlorine levels in the area during seasonal periods of low water demand.</p>
<b>TEST RESULTS</b>	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

**EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING**

N:\Environmental Standards\Analytical Services\Government Agencies\Office of Drinking Water\Corrective Action Reports



Water and Waste Department • Service des eaux et des déchets

Sample Name	Sample Number	Date Sampled	E Coli (MPNU/100mL)	Total Coliform (MPNU/100mL)	Online Analyzer Free Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
NW02_Analyzer	N/A	2-Sep-18	N/A	N/A	0.09	N/A	N/A	N/A	N/A	10:15
NW02_Analyzer	N/A	2-Sep-18	N/A	N/A	0.09	N/A	N/A	N/A	N/A	10:20
NW02_Analyzer	N/A	2-Sep-18	N/A	N/A	0.09	N/A	N/A	N/A	N/A	10:25
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.09	N/A	N/A	N/A	N/A	9:35
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.08	N/A	N/A	N/A	N/A	9:40
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.07	N/A	N/A	N/A	N/A	9:45
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.07	N/A	N/A	N/A	N/A	9:50
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.07	N/A	N/A	N/A	N/A	9:55
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.06	N/A	N/A	N/A	N/A	10:00
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.07	N/A	N/A	N/A	N/A	10:05
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.07	N/A	N/A	N/A	N/A	10:10
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.08	N/A	N/A	N/A	N/A	10:15
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.09	N/A	N/A	N/A	N/A	10:20
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.09	N/A	N/A	N/A	N/A	10:25
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.09	N/A	N/A	N/A	N/A	10:30
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.08	N/A	N/A	N/A	N/A	10:35
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.08	N/A	N/A	N/A	N/A	10:40
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.07	N/A	N/A	N/A	N/A	10:45
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.07	N/A	N/A	N/A	N/A	10:50
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.07	N/A	N/A	N/A	N/A	10:55
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.07	N/A	N/A	N/A	N/A	11:00
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.07	N/A	N/A	N/A	N/A	11:05
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.07	N/A	N/A	N/A	N/A	11:10
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.07	N/A	N/A	N/A	N/A	11:15
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.06	N/A	N/A	N/A	N/A	11:20
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.06	N/A	N/A	N/A	N/A	11:25
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.06	N/A	N/A	N/A	N/A	11:30
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.07	N/A	N/A	N/A	N/A	11:35
NW02_Analyzer	N/A	3-Sep-18	N/A	N/A	0.09	N/A	N/A	N/A	N/A	11:40
NW02_Analyzer	N/A	5-Sep-18	N/A	N/A	0.09	N/A	N/A	N/A	N/A	8:55
NW02_Resample	136749	6-Sep-18	<1	<1	0.48	0.50	0.71	0.98	15.2	9:54
NW02_Post Flush Hydrant (70060847)	N/A	6-Sep-18	N/A	N/A	N/A	0.33	N/A	0.76	N/A	Around 10:00
NW02_Post Flush Hydrant (1361)	N/A	6-Sep-18	N/A	N/A	N/A	0.56	N/A	3.63	N/A	Around 10:00
NW02_Post Flush Hydrant (10288)	N/A	6-Sep-18	N/A	N/A	N/A	0.34	N/A	1.73	N/A	Around 10:00

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.



Water and Waste Department • Service des eaux et des déchets

Wednesday, November 7, 2018

Our Incident/Report No: **08-2018**  
LIMS Reference No: **145197 & 145222**  
Incident Date: **October 1, 2018**

Mr. Derek Clarke  
Drinking Water Officer  
Manitoba Sustainable Development, Office of Drinking Water  
Box 6000  
Gimli, MB R0C 1B0

## RE: CORRECTIVE ACTION REPORT

---

<b>WATER SYSTEM, CODE</b>	Winnipeg Public Water System, 252.00
<b>LOCATION OF NON-COMPLIANT INCIDENT</b>	<b>Winnipeg 3-Dist NW06; SW07</b>
<b>INCIDENT REPORTED BY</b>	Courtney Diduck, Analytical Services Branch Head
<b>TYPE OF NON-COMPLIANT INCIDENT</b>	Low positive Total Coliform (<10 per100mL), 3 MR 41/2007
<b>DESCRIPTION OF CORRECTIVE ACTIONS</b>	<u>Environmental Standards:</u> AS SOON AS POSSIBLE: Re-sampled original location until two consecutive negative results were reported. Also tested for turbidity, free/total chlorine, temperature and contacted the ODW.
<b>TEST RESULTS</b>	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

**EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING**

N:\Environmental Standards\Analytical Services\Government Agencies\Office of Drinking Water\Corrective Action Reports



Water and Waste Department • Service des eaux et des déchets

Sample Name	Sample Number	Date Sampled	E Coli (MPNU/100mL)	Total Coliform (MPNU/100mL)	HPC (cfu/mL)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
NW06	145197	1-Oct-18	<1	1	<1	0.59	0.88	0.14	15.8	9:30
SW07	145222	1-Oct-18	<1	1	<1	0.87	1.03	0.13	15.6	15:05
NW06 Resample	146175	2-Oct-18	<1	<1	<1	0.77	1.02	0.21	15.6	13:41
SW07 Resample	146176	2-Oct-18	<1	<1	<1	0.90	1.13	0.12	15.5	15:45
NW06 Resample 2	146188	4-Oct-18	<1	<1	<1	0.74	1.01	0.14	14.7	11:55
NW06 Resample 2 Duplicate	153932	4-Oct-18	<1	<1	<1	NA	NA	NA	NA	11:55
SW07 Resample 2	145189	4-Oct-18	<1	<1	<1	0.92	1.15	0.25	14.6	13:09
SW07 Resample 2 Duplicate	153933	4-Oct-18	<1	<1	<1	NA	NA	NA	NA	13:09

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.



Water and Waste Department • Service des eaux et des déchets

Wednesday, November 7, 2018

Our Incident/Report No: **09-2018**

LIMS Reference No: 145950

Incident Date: **October 2, 2018**

Mr. Derek Clarke  
Drinking Water Officer  
Manitoba Sustainable Development, Office of Drinking Water  
Box 6000  
Gimli, MB R0C 1B0

## RE: CORRECTIVE ACTION REPORT

---

<b>WATER SYSTEM, CODE</b>	Winnipeg Public Water System, 252.00
<b>LOCATION OF NON-COMPLIANT INCIDENT</b>	<b>Winnipeg 3-Dist NW02</b>
<b>INCIDENT REPORTED BY</b>	Courtney Diduck, Analytical Services Branch Head
<b>TYPE OF NON-COMPLIANT INCIDENT</b>	Low positive Total Coliform (<10 per100mL), 3 MR 41/2007
<b>DESCRIPTION OF CORRECTIVE ACTIONS</b>	<u>Environmental Standards:</u> AS SOON AS POSSIBLE: Re-sampled original location until two consecutive negative results were reported. Also tested for turbidity, free/total chlorine, temperature and contacted the ODW.
<b>TEST RESULTS</b>	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

**EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING**

N:\Environmental Standards\Analytical Services\Government Agencies\Office of Drinking Water\Corrective Action Reports



Water and Waste Department • Service des eaux et des déchets

Sample Name	Sample Number	Date Sampled	E Coli (MPNU/100mL)	Total Coliform (MPNU/100mL)	Online Analyzer Free Chlorine (mg/L)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
NW02	145950	2-Oct-18	<1	1	NA	0.30	0.47	0.20	15.3	9:18
NW02 Resample	145192	3-Oct-18	<1	<1	0.18	0.21	0.38	0.18	14.5	14:20
NW02 Resample 2	146499	4-Oct-18	<1	<1	0.17	0.19	0.35	0.20	14.5	14:50
NW02 Resample 2 Duplicate	146499	4-Oct-18	<1	<1	NA	NA	NA	NA	NA	14:50

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.



Water and Waste Department • Service des eaux et des déchets

Monday, January 7, 2019

**Our Incident/Report No: 10-2018**

LIMS Reference No: Job\_103

Incident Date: **December 10, 2018**

Mr. Derek Clarke  
Drinking Water Officer  
Manitoba Sustainable Development, Office of Drinking Water  
Box 6000  
Gimli, MB R0C 1B0

**RE: CORRECTIVE ACTION REPORT**

<b>WATER SYSTEM, CODE</b>	Winnipeg Public Water System, 252.00
<b>LOCATION OF NON-COMPLIANT INCIDENT</b>	<b>Winnipeg 3-Dist WS_REPAIR</b>
<b>INCIDENT REPORTED BY</b>	Louis Rivard, Superintendent of Water Distribution Operations
<b>TYPE OF NON-COMPLIANT INCIDENT</b>	1. High positive Total Coliform (>10 per100mL), 3 MR 41/2007
<b>DESCRIPTION OF CORRECTIVE ACTIONS</b>	<p><u>Water Services:</u> IMMEDIATELY: Contacted the ODW and Environmental Standards, flushed the isolated area.</p> <p><u>Environmental Standards:</u> IMMEDIATELY: Re-sampled original location and tested additional samples upstream and downstream of original location for; bacteria, turbidity, free/total chlorine, and temperature.</p> <p>The City of Winnipeg issued a localized boil water advisory to residents in the impacted area on December 12, 2018. The boil water advisory was rescinded on December 14, 2018, after two consecutive sets of re-samples taken a day apart tested negative for bacteria.</p>
<b>TEST RESULTS</b>	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

**EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING**

N:\Environmental Standards\Analytical Services\Government Agencies\Office of Drinking Water\Corrective Action Reports



Water and Waste Department • Service des eaux et des déchets

Sample Name	Sample Number	Date Sampled	E Coli (MPNU/100mL)	Total Coliform (MPNU/100mL)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
Hydrant (Work Order # 1816188)	NA	10-Dec-18	<1	>200	0.26	NA	4.14	NA	14:35
Hydrant (Resample 1)	165653	12-Dec-18	<1	<1	0.60	0.74	4.71	4.0	19:29
Hydrant (Resample 1 Duplicate)	165654	12-Dec-18	<1	<1	NA	NA	NA	NA	19:29
Upstream 1	165656	12-Dec-18	<1	<1	0.26	0.48	4.65	7.7	16:55
Downstream 1	165655	12-Dec-18	<1	<1	0.40	0.62	4.44	4.6	18:25
Hydrant (Resample 2)	165830	13-Dec-18	<1	<1	0.49	0.74	2.44	5.6	17:10
Hydrant (Resample 2 Duplicate)	165831	13-Dec-18	<1	<1	NA	NA	NA	NA	17:10
Upstream 2	165833	13-Dec-18	<1	<1	0.53	0.70	2.74	7.5	18:04
Downstream 2	165832	13-Dec-18	<1	<1	0.35	0.57	3.45	5.3	17:41

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.



Water and Waste Department • Service des eaux et des déchets

Friday, March 29, 2019

**Our Incident/Report No: 11-2018**

LIMS Reference No: Job\_20

Incident Date: **July 11, 2018**

Mr. Derek Clarke  
Drinking Water Officer  
Manitoba Sustainable Development, Office of Drinking Water  
Box 6000  
Gimli, MB R0C 1B0

**RE: CORRECTIVE ACTION REPORT**

<b>WATER SYSTEM, CODE</b>	Winnipeg Public Water System, 252.00
<b>LOCATION OF NON-COMPLIANT INCIDENT</b>	<b>Winnipeg 3-Dist WS_REPAIR</b>
<b>INCIDENT REPORTED BY</b>	Louis Rivard, Superintendent of Water Distribution Operations
<b>TYPE OF NON-COMPLIANT INCIDENT</b>	1. High positive Total Coliform (>10 per100mL), 3 MR 41/2007
<b>DESCRIPTION OF CORRECTIVE ACTIONS</b>	<p><u>Water Services:</u> IMMEDIATELY: Contacted the ODW and Environmental Standards, flushed the isolated area.</p> <p><u>Environmental Standards:</u> IMMEDIATELY: Re-sampled original location and tested additional samples, in the isolated, upstream and downstream of original location for; bacteria, turbidity, free/total chlorine, and temperature.</p>
<b>TEST RESULTS</b>	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

**EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING**



Water and Waste Department • Service des eaux et des déchets

Sample Name	Sample Number	Date Sampled	E Coli (MPNU/100mL)	Total Coliform (MPNU/100mL)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
Hydrant 50001493 (Work Order # 1809027)	NA	11-Jul-18	<1	11	0.38	NA	3.26	NA	15:55
Hydrant 50001493_Resample	10183	13-Jul-18	<1	<1	0.82	1.06	0.37	21.6	15:12
Hydrant 5001518_Upstream	10184	13-Jul-18	<1	<1	0.96	1.10	0.51	22.1	15:41
Hydrant 700058707_Downstream	10195	13-Jul-18	<1	<1	0.95	1.12	0.30	22.0	15:30
Resident	10182	13-Jul-18	<1	<1	0.95	1.23	0.36	22.4	15:58
Hydrant 50001493_Resample 2	10196	14-Jul-18	<1	<1	1.24	1.34	0.71	21.8	16:10
Hydrant 50001518_Upstream Resample	10198	14-Jul-18	<1	<1	1.07	1.36	0.54	22.2	16:38
Hydrant 70058707_Downstream Resample	10197	14-Jul-18	<1	<1	1.18	1.32	0.88	22.0	16:22
Resident_Resample	10199	14-Jul-18	<1	<1	1.03	1.34	0.82	22.7	15:42

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.

## CORRECTIVE ACTION REPORT



WATER SYSTEM City of Winnipeg

WATER SYSTEM CODE: 252.00

LOCATION OF NON-COMPLIANCE INCIDENT (ex. Water Plant): Deacon Water Treatment Plant

OPERATOR: JOHANNE MALLARD

Signature: John Mallard

### TYPE OF NON-COMPLIANCE INCIDENT:

- Low disinfectant residual entering the distribution system, 21(1) MR 40/2007
- Low disinfectant residual in the distribution system, 22 MR 40/2007
- Filtered water turbidity exceeding the turbidity standard, 6(1) MR 41/2007
- Low positive total coliform (<10 CFU/100mL), 3 MR 41/2007
- Other

### DESCRIPTION OF CORRECTIVE ACTIONS TAKEN (attach additional sheets if required):

NA DATE

Filter #7 , Operators flushed Turbidity analyzer causing high reading of 5.00 NTU from ~14.20 to 14.31 November 07/18

### TEST RESULTS AFTER CORRECTIVE ACTIONS:

NA

DATE: No - 7/18

(attach laboratory results if applicable)

Approved By Operator-In-Charge: Don Mallard Original signed by: John Mallard

EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING.

### DISTRIBUTION:

FORWARD THE ORIGINAL TO YOUR DRINKING WATER OFFICER WITH YOUR MONTHLY DISINFECTION OR TURBIDITY MONITORING REPORT

RETAIN A COPY FOR YOUR RECORDS

Contact your Drinking Water Officer with any comments, questions or concerns.

## CORRECTIVE ACTION REPORT



WATER SYSTEM City of Winnipeg

WATER SYSTEM CODE: 252.00

LOCATION OF NON-COMPLIANCE INCIDENT (ex. Water Plant): \_\_\_\_\_

OPERATOR: Johanna Melloeo

Signature: Johanna Melloeo

TYPE OF NON-COMPLIANCE INCIDENT:

<input type="checkbox"/>
<input type="checkbox"/>
<input checked="" type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
Other

Low disinfectant residual entering the distribution system, 21(1) MR 40/2007

Low disinfectant residual in the distribution system, 22 MR 40/2007

Filtered water turbidity exceeding the turbidity standard, 6(1) MR 41/2007

Low positive total coliform (<10 CFU/100mL), 3 MR 41/2007

Other

DESCRIPTION OF CORRECTIVE ACTIONS  
TAKEN (attach additional sheets if required):

0.22 NTU

DATE Nov 15/2016

Instrumentation was cleaning the filter Analyzer #1. They took a grab sample before and after. Filter #1 spiked at 5.0 NTU, between 08:05 and 08:38.

TEST RESULTS AFTER CORRECTIVE ACTIONS:

0.23

DATE: Nov 15/2016

(attach laboratory results if applicable)

Approved By Operator-In-Charge: Dan Mervin Original signed by: JMM

EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING.

### DISTRIBUTION:

FORWARD THE ORIGINAL TO YOUR DRINKING WATER OFFICER WITH YOUR MONTHLY DISINFECTION OR TURBIDITY MONITORING REPORT

Contact your Drinking Water Officer with any comments, questions or concerns.

RETAIN A COPY FOR YOUR RECORDS

# **2018 Quarterly Fluoride Monitoring Reports**



**Water and Waste Department • Service des eaux et des déchets**

*Environmental Standards Division • Division des Normes Environnementales*

---

April 16, 2018

Our File: 040-18-18-14-00

Dr. Khalida Hai-Santiago c/o Helen Browne  
300 Carlton Street (Room 4068)  
Winnipeg, Manitoba  
R3B 3M9

Dear Dr. Hai-Santiago:

**RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA**

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<b>LOCATION</b>	<b>SAMPLE NUMBER</b>	<b>DATE</b>	<b>RESULT (mg/L F)</b>
Distribution System (Composite – 39 Locations)	535069	02-Jan-18	0.73
	535619	08-Jan-18	0.69
	536368	15-Jan-18	0.72
	537094	22-Jan-18	0.74
	537773	29-Jan-18	0.71
	538548	05-Feb-18	0.74
	539240	12-Feb-18	0.67
	539923	20-Feb-18	0.74
	540553	26-Feb-18	0.69
	541299	06-Mar-18	0.69
	542046	12-Mar-18	0.68
	542798	19-Mar-18	0.69
	543711	26-Mar-18	0.71

If you have any questions on the foregoing, please call Ms. Nancy Crawford, Compliance Reporting Branch Head, at 204-986-4807.

Yours truly,

*Original signed by:*

Renée Grosselle  
Manager of Environmental Standards

NC/HD

cc: Tim Shanks, P.Eng. Manager of Water Services (e-mail)



**Water and Waste Department • Service des eaux et des déchets**

*Environmental Standards Division • Division des Normes Environnementales*

---

September 12, 2018

Our File: 040-18-18-14-00

Dr. Khalida Hai-Santiago c/o Helen Browne  
300 Carlton Street (Room 4068)  
Winnipeg, Manitoba  
R3B 3M9

Dear Dr. Hai-Santiago:

**RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA**

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<b>LOCATION</b>	<b>SAMPLE NUMBER</b>	<b>DATE</b>	<b>RESULT (mg/L F)</b>
Distribution System (Composite – 39 Locations)	544400	03-Apr-18	0.67
	545279	09-Apr-18	0.69
	546009	16-Apr-18	0.67
	546746	23-Apr-18	0.72
	547503	30-Apr-18	0.71
	548352	07-May-18	0.73
	549025	14-May-18	0.72
	549820	24-May-18	0.71
	550523	28-May-18	0.72
	551475	04-Jun-18	0.69
	552418	11-Jun-18	0.71
	1433	18-Jun-18	0.70
	3171	25-Jun-18	0.67

If you have any questions on the foregoing, please call Ms. Nancy Crawford, Compliance Reporting Branch Head, at 204-986-4807.

Yours truly,

*Original signed by:*

Renée Grosselle  
Manager of Environmental Standards

NC/HD

cc: Tim Shanks, P.Eng. Manager of Water Services (e-mail)



**Water and Waste Department • Service des eaux et des déchets**

*Environmental Standards Division • Division des Normes Environnementales*

---

October 4, 2018

Our File: 040-18-18-14-00

Dr. Khalida Hai-Santiago c/o Helen Browne  
300 Carlton Street (Room 4068)  
Winnipeg, Manitoba  
R3B 3M9

Dear Dr. Hai-Santiago:

**RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA**

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

LOCATION	SAMPLE NUMBER	DATE	RESULT (mg/L F)
Distribution System (Composite – 39 Locations)	6752	3-Jul-18	0.68
	7613	9-Jul-18	0.68
	10438	16-Jul-18	0.69
	12721	23-Jul-18	0.70
	15306	30-Jul-18	0.69
	17791	6-Aug-18	0.68
	72220	13-Aug-18	0.69
	129696	20-Aug-18	0.69
	135206	27-Aug-18	0.69
	137353	3-Sep-18	0.67
	140049	10-Sep-18	0.68
	142037	17-Sep-18	0.53
	143775	24-Sep-18	0.66

The decreased fluoride concentration on September 17 was due to an interruption in fluoride dosing from September 12-14.

If you have any questions on the foregoing, please call Ms. Nancy Crawford, Compliance Reporting Branch Head, at 204-986-4807.

Yours truly,

*Original signed by:*

Renée Grosselle  
Manager of Environmental Standards

NC/HD

cc: Tim Shanks, P.Eng. Manager of Water Services (e-mail)



**Water and Waste Department • Service des eaux et des déchets**

*Environmental Standards Division • Division des Normes Environnementales*

---

January 22, 2019

Our File: 040-18-18-14-00

Dr. Khalida Hai-Santiago c/o Helen Browne  
300 Carlton Street (Room 4068)  
Winnipeg, Manitoba  
R3B 3M9

Dear Dr. Hai-Santiago:

**RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA**

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

LOCATION	SAMPLE NUMBER	DATE	RESULT (mg/L F)
Distribution System (Composite – 39 Locations)	145169	1-Oct-18	0.66
	147553	8-Oct-18	0.69
	149249	15-Oct-18	0.71
	151325	22-Oct-18	0.67
	153341	29-Oct-18	0.69
	155328	5-Nov-18	0.68
	156843	12-Nov-18	0.68
	158887	19-Nov-18	0.65
	160983	26-Nov-18	0.67
	163002	3-Dec-18	0.66
	164774	10-Dec-18	0.64
	166524	17-Dec-18	0.63
	168311	24-Dec-18	0.69
	169545	31-Dec-18	0.67

If you have any questions on the foregoing, please call Ms. Nancy Crawford, Compliance Reporting Branch Head, at 204-986-4807.

Yours truly,

*Original signed by:*

Renée Grosselle  
Manager of Environmental Standards

NC/HD

cc: Tim Shanks, P.Eng. Manager of Water Services (e-mail)

**2018 Quarterly Total Trihalomethane  
And Total Haloacetic Acid Summary Reports**

**CITY OF WINNIPEG**  
**WATER AND WASTE DEPARTMENT**  
**ENVIRONMENTAL STANDARDS DIVISION**

**Total Trihalomethane Summary Report**

**Reporting Period: Quarter 1 2018**

**License: PWS-09-412-01**

<b>SAMPLE DATE</b>	<b>DISTRIBUTION SYSTEM THM RESULTS (ug/L)</b>					
	<b>WC-12</b>	<b>WC-06</b>	<b>NW-05</b>	<b>NE-09</b>	<b>SE-07</b>	<b>SW-08</b>
Monday, May 8, 2017	27	27	29	29	30	29
Monday, August 8, 2017	47	49	47	48	51	45
Monday, November 6, 2017	25	19	25	27	20	21
Monday, February 5, 2018	35	33	44	40	34	37
<b>RUNNING AVERAGE THM</b>	<b>34</b>	<b>32</b>	<b>36</b>	<b>36</b>	<b>34</b>	<b>33</b>

**COMMENTS:**

NS - NO SAMPLE  
NR - NO RESULT

Methodology

Analysis of Volatile Organic Compounds is by Headspace GC-MS, EPA Methods 5021A and 8260C.

Report Compiled by: \_\_\_\_\_ H.Demchenko

Approved in LIMS by: \_\_\_\_\_ C.Diduck

File: WQR4

N:\Environmental Standards\Analytical Services\WQ Data\Routine Water Quality\2018\[Quarterly THM 2018.xlsx]THM Q1

Date Approved: \_\_\_\_\_ March 13, 2018

**CITY OF WINNIPEG**  
**WATER AND WASTE DEPARTMENT**  
**ENVIRONMENTAL STANDARDS DIVISION**

**Total Trihalomethane Summary Report**

**Reporting Period: Quarter 2 2018**

**License: PWS-09-412-01**

<b>SAMPLE DATE</b>	<b>DISTRIBUTION SYSTEM THM RESULTS (ug/L)</b>					
	<b>WC-12</b>	<b>WC-06</b>	<b>NW-05</b>	<b>NE-09</b>	<b>SE-07</b>	<b>SW-08</b>
Monday, August 8, 2017	47	49	47	48	51	45
Monday, November 6, 2017	25	19	25	27	20	21
Monday, February 5, 2018	35	33	44	40	34	37
Monday, May 7, 2018	30	30	31	33	32	31
<b>RUNNING AVERAGE THM</b>	<b>34</b>	<b>33</b>	<b>37</b>	<b>37</b>	<b>34</b>	<b>34</b>

**COMMENTS:**

NS - NO SAMPLE  
NR - NO RESULT

**Methodology**

Analysis of Volatile Organic Compounds is by Headspace GC-MS, EPA Methods 5021A and 8260C.

Report Compiled by: \_\_\_\_\_ H.Demchenko \_\_\_\_\_

Approved in LIMS by: \_\_\_\_\_ C.Diduck \_\_\_\_\_

File: WQR4

N:\Environmental Standards\Analytical Services\WQ Data\Routine Water Quality\2018\[Quarterly THM 2018.xlsx]THM Q2

Date Approved: \_\_\_\_\_ June 5, 2018 \_\_\_\_\_

**CITY OF WINNIPEG**  
**WATER AND WASTE DEPARTMENT**  
**ENVIRONMENTAL STANDARDS DIVISION**

**Total Trihalomethane Summary Report**

**Reporting Period: Quarter 3 2018**

**License: PWS-09-412-01**

<b>SAMPLE DATE</b>	<b>DISTRIBUTION SYSTEM THM RESULTS (ug/L)</b>					
	<b>WC-12</b>	<b>WC-06</b>	<b>NW-05</b>	<b>NE-09</b>	<b>SE-07</b>	<b>SW-08</b>
Monday, November 6, 2017	25	19	25	27	20	21
Monday, February 5, 2018	35	33	44	40	34	37
Monday, May 7, 2018	30	30	31	33	32	31
Tuesday, August 7, 2018	54	54	57	58	53	56
<b>RUNNING AVERAGE THM</b>	<b>36</b>	<b>34</b>	<b>39</b>	<b>40</b>	<b>35</b>	<b>36</b>

**COMMENTS:**

NS - NO SAMPLE  
NR - NO RESULT

**Methodology**

Modified from EPA Method 5021A, "Volatile Organic Compounds in Various Sample Matrices Using Equilibrium Headspace Analysis", Revision 2, July 2014 and EPA Method 8260B, "Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)", Revision 3, August 2006.

Report Compiled by: \_\_\_\_\_ H.Demchenko

Approved in Sample Manager by: \_\_\_\_\_ C.Diduck

File: WQR4

N:\Environmental Standards\Analytical Services\WQ Data\Routine Water Quality\2018\[Quarterly THM 2018.xlsx]THM Q3

Date Approved: \_\_\_\_\_ October 4, 2018

**CITY OF WINNIPEG**  
**WATER AND WASTE DEPARTMENT**  
**ENVIRONMENTAL STANDARDS DIVISION**

**Total Trihalomethane Summary Report**

**Reporting Period: Quarter 4 2018**

**License: PWS-09-412-01**

<b>SAMPLE DATE</b>	<b>DISTRIBUTION SYSTEM THM RESULTS (ug/L)</b>					
	<b>WC-12</b>	<b>WC-06</b>	<b>NW-05</b>	<b>NE-09</b>	<b>SE-07</b>	<b>SW-08</b>
Monday, February 5, 2018	35	33	44	40	34	37
Monday, May 7, 2018	30	30	31	33	32	31
Monday, August 13, 2018	54	54	57	58	53	56
Monday, November 5, 2018	21	22	19	24	24	23
<b>RUNNING AVERAGE THM</b>	<b>35</b>	<b>35</b>	<b>38</b>	<b>39</b>	<b>36</b>	<b>37</b>

**COMMENTS:** The sample date for August was initially reported as August 7, 2018

NR - NO RESULT

NS - NO SAMPLE

**Methodology**

Modified from EPA Method 5021A, "Volatile Organic Compounds in Various Sample Matrices Using Equilibrium Headspace Analysis", Revision 2, July 2014 and EPA Method 8260B, "Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)", Revision 3, August 2006.

Report Compiled by: \_\_\_\_\_ H.Demchenko

Approved in Sample Manager by: \_\_\_\_\_ C.Diduck

File: WQR4

N:\Environmental Standards\Analytical Services\WQ Data\Routine Water Quality\DBPS THM Quarterly\[Quarterly THM 2018.xlsx]THM Q4

Date Approved: \_\_\_\_\_ January 28, 2019

**CITY OF WINNIPEG**  
**WATER AND WASTE DEPARTMENT**  
**ENVIRONMENTAL STANDARDS DIVISION**

**Haloacetic Acids Summary Report**

**Reporting Period: Quarter 1 2018**

**License: PWS-09-412-01**

<b>SAMPLE DATE</b>	<b>DISTRIBUTION SYSTEM HAA RESULTS (ug/L)</b>					
	<b>WC-12</b>	<b>WC-06</b>	<b>NW-05</b>	<b>NE-09</b>	<b>SE-07</b>	<b>SW-08</b>
Monday, May 8, 2017	27	28	27	27	27	27
Monday, August 8, 2017	33	39	33	34	39	38
Monday, November 6, 2017	19	17	19	19	17	18
Monday, February 5, 2018	35	32	42	37	32	34
<b>RUNNING AVERAGE HAA</b>	<b>29</b>	<b>29</b>	<b>30</b>	<b>29</b>	<b>29</b>	<b>29</b>

**COMMENTS:**

NS - NO SAMPLE  
NR - NO RESULT

**Methodology**

Haloacetic Acids analyzed by GC-ECD, Standard Methods for the Examination of Water and Waste Water, 21'st Edition, Method 6232

Report Compiled by: \_\_\_\_\_

H.Demchenko

Approved in LIMS by: \_\_\_\_\_

C.Diduck

File: WQR4

N:\Environmental Standards\Analytical Services\WQ Data\Routine Water Quality\2018\[Quarterly HAA 2018.xlsx]HAA Q1

Date Approved: \_\_\_\_\_

March 13, 2018

**CITY OF WINNIPEG**  
**WATER AND WASTE DEPARTMENT**  
**ENVIRONMENTAL STANDARDS DIVISION**

**Haloacetic Acids Summary Report**

**Reporting Period: Quarter 2 2018**

**License: PWS-09-412-01**

<b>SAMPLE DATE</b>	<b>DISTRIBUTION SYSTEM HAA RESULTS (ug/L)</b>					
	<b>WC-12</b>	<b>WC-06</b>	<b>NW-05</b>	<b>NE-09</b>	<b>SE-07</b>	<b>SW-08</b>
Monday, August 8, 2017	33	39	33	34	39	38
Monday, November 6, 2017	19	17	19	19	17	18
Monday, February 5, 2018	35	32	42	37	32	34
Monday, May 7, 2018	24	26	23	25	25	25
<b>RUNNING AVERAGE HAA</b>	<b>28</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>28</b>	<b>29</b>

**COMMENTS:**

NS - NO SAMPLE  
NR - NO RESULT

**Methodology**

Haloacetic Acids analyzed by GC-ECD, Standard Methods for the Examination of Water and Waste Water, 21'st Edition, Method 6232

Report Compiled by: \_\_\_\_\_

H.Demchenko

Approved in LIMS by: \_\_\_\_\_

C.Diduck

File: WQR4

Date Approved: \_\_\_\_\_

June 5, 2018

N:\Environmental Standards\Analytical Services\WQ Data\Routine Water Quality\2018\[Quarterly HAA 2018.xlsx]HAA Q2

**CITY OF WINNIPEG**  
**WATER AND WASTE DEPARTMENT**  
**ENVIRONMENTAL STANDARDS DIVISION**

**Haloacetic Acids Summary Report**

**Reporting Period: Quarter 3 2018**

**License: PWS-09-412-01**

<b>SAMPLE DATE</b>	<b>DISTRIBUTION SYSTEM HAA RESULTS (ug/L)</b>					
	<b>WC-12</b>	<b>WC-06</b>	<b>NW-05</b>	<b>NE-09</b>	<b>SE-07</b>	<b>SW-08</b>
Monday, November 6, 2017	19	17	19	19	17	18
Monday, February 5, 2018	35	32	42	37	32	34
Monday, May 7, 2018	24	26	23	25	25	25
Tuesday, August 7, 2018	17	30	17	22	30	30
<b>RUNNING AVERAGE HAA</b>	<b>24</b>	<b>26</b>	<b>25</b>	<b>26</b>	<b>26</b>	<b>27</b>

**COMMENTS:**

NS - NO SAMPLE  
 NR - NO RESULT

**Methodology**

Modified from EPA Method 552.3, "Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-Liquid Micro extraction, Derivatization, and Gas Chromatography with Electron Capture Detection".

Report Compiled by: \_\_\_\_\_

H.Demchenko

Approved in Sample Manager by: \_\_\_\_\_

C.Diduck

File: WQR4

N:\Environmental Standards\Analytical Services\WQ Data\Routine Water Quality\2018\[Quarterly HAA 2018.xlsx]HAA Q3

Date Approved: \_\_\_\_\_

October 4, 2018

**CITY OF WINNIPEG**  
**WATER AND WASTE DEPARTMENT**  
**ENVIRONMENTAL STANDARDS DIVISION**

**Haloacetic Acids Summary Report**

**Reporting Period: Quarter 4 2018**

**License: PWS-09-412-01**

<b>SAMPLE DATE</b>	<b>DISTRIBUTION SYSTEM HAA RESULTS (ug/L)</b>					
	<b>WC-12</b>	<b>WC-06</b>	<b>NW-05</b>	<b>NE-09</b>	<b>SE-07</b>	<b>SW-08</b>
Monday, February 5, 2018	35	32	42	37	32	34
Monday, May 7, 2018	24	26	23	25	25	25
Monday, August 13, 2018	17	30	17	22	30	30
Monday, November 5, 2018	20	27	19	18	21	27
<b>RUNNING AVERAGE HAA</b>	<b>24</b>	<b>29</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>29</b>

**COMMENTS:** The sample date for August was initially reported as August 7, 2018

NR - NO RESULT

NS - NO SAMPLE

**Methodology**

Modified from EPA Method 552.3, "Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-Liquid Micro extraction, Derivatization, and Gas Chromatography with Electron Capture Detection".

Report Compiled by: \_\_\_\_\_

H.Demchenko

Approved in Sample Manager by: \_\_\_\_\_

C.Diduck

File: WQR4

Date Approved: \_\_\_\_\_ January 28, 2019

N:\Environmental Standards\Analytical Services\WQ Data\Routine Water Quality\DBPS HAA Quarterly\[Quarterly HAA 2018.xlsx]HAA Q4

# **2018 Lead Loop Monitoring Report**



**CITY OF WINNIPEG  
WATER AND WASTE DEPARTMENT  
ENVIRONMENTAL STANDARDS DIVISION**

Water System Code: 252.00

Licence Number: PWS-09-412-01

**2018 Lead Loop System Summary Report**

SAMPLE DATE	Five minute flushed Lead Concentration (mg/L)				
	Lead Loop Cu	Lead Loop Pb	Lead Loop Pb1	Lead Loop Pb2	Lead Loop Pb3
January 19, 2018	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
February 16, 2018	<0.000065	<0.000065	<0.000065	<0.000065	<0.000065
March 9, 2018	<0.000065	<0.000065	<0.000065	<0.000065	<0.000065
April 13, 2018	<0.000065	<0.000065	<0.000065	<0.000065	<0.000065
May 18, 2018	<0.000065	<0.000065	<0.000065	<0.000065	<0.000065
June 8, 2018	<0.000065	<0.000065	<0.000065	<0.000065	<0.000065
July 20, 2018	<0.000065	<0.000065	<0.000065	<0.000065	<0.000065
August 17, 2018	<0.000065	<0.000065	<0.000065	<0.000065	<0.000065
September 28, 2018	<0.000065	<0.000065	<0.000065	<0.000065	<0.000065
October 19, 2018	<0.000065	0.00463	<0.000065	<0.000065	<0.000065
November 23, 2018	<0.000065	<0.000065	<0.000065	<0.000065	<0.000065
December 7, 2018	<0.000065	<0.000065	<0.000065	<0.000065	<0.000065
<b>2018 AVERAGE LEAD CONCENTRATION</b>	<b>&lt;0.000065</b>	<b>0.000438</b>	<b>&lt;0.000065</b>	<b>&lt;0.000065</b>	<b>&lt;0.000065</b>

**COMMENTS:**

Effective February 15, 2018 the detection limit changed from 0.0006 mg/L to 0.000065 mg/L

Report Compiled By: H.Demchenko

Approved By: C.Diduck

Date Approved: 26-Feb-19

Methodology

Lead was analyzed by ICP-MS according to Standard Methods for the Examination of Water and Wastewater, 21<sup>st</sup> Edition, Method 3125

File Location: N:\Compliance Reporting\Lead Loop Annual Report\2018 Lead Loop Annual Report\Lead Loop 2018.xls