



Kale Black, Sr. Drinking Water Officer  
Office of Drinking Water, Manitoba Conservation and Climate  
309 – 25 Tupper Street North  
Portage La Prairie, MB R1N 3K1

January 6, 2023

**RE: DECEMBER 2022 WATER QUALITY COMPLIANCE SUBMISSION FOR THE CITY OF WINNIPEG WATER SUPPLY SYSTEM**

Please find attached on-line and grab turbidity summary reports, on-line and grab chlorine summary reports and the UV summary report for the Water Treatment Plant for December 2022.

The December on-line and grab sampling turbidity reports include results obtained for the Water Treatment Plant raw water and the eight filters. The maximum turbidity was greater than 0.30 NTU for Filter 3 on December 17 and Filter 6 on December 20; the elevated turbidities occurred for less than 12 consecutive hours. The turbidity results for the filter effluent met the licence requirements.

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

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

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

Yours sincerely,

N. Crawford  
Acting Manager of Environmental Standards

Enclosures

cc: Dr. L. Richards, Winnipeg Regional Health Authority (email)  
Dr. H. Chang, Winnipeg Regional Health Authority (email)  
Dr. T. Hilderman, Manitoba Health and Seniors Care (email)  
T. Shanks, M. Eng., P. Eng. (e-mail)  
M.Szmon, P. Eng. (e-mail)  
C. Diduck (email)



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

Water System Code: 252.00  
 Licence Number: PWS-09-412-02

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

December 2022 Turbidity (NTU)

Date	Raw	Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/12/2022	0.72	0.10	0.12	0.04	0.08	0.03	0.07	0.05	0.10	0.04	0.06	OL	OL	0.06	0.08	0.04	0.08
2/12/2022	0.69	0.09	0.12	0.04	0.12	0.03	0.05	0.05	0.08	0.04	0.07	OL	OL	0.07	0.10	0.05	0.07
3/12/2022	0.68	0.09	0.12	0.05	0.12	0.03	0.06	0.05	0.09	0.04	0.08	OL	OL	0.06	0.10	0.05	0.09
4/12/2022	0.66	0.09	0.12	0.05	0.08	0.03	0.06	0.05	0.08	0.04	0.06	OL	OL	0.06	0.09	0.05	0.08
5/12/2022	0.64	0.08	0.11	0.04	0.07	0.02	0.05	0.05	0.10	0.04	0.05	OL	OL	0.07	0.10	0.05	0.08
6/12/2022	0.62	0.06	0.09	0.04	0.08	0.02	0.06	0.05	0.08	0.05	0.08	OL	OL	0.07	0.10	0.05	0.08
7/12/2022	0.61	0.07	0.09	0.04	0.08	0.02	0.05	0.06	0.08	0.05	0.08	OL	OL	0.07	0.10	0.05	0.08
8/12/2022	0.60	0.07	0.08	0.04	0.07	0.02	0.05	0.05	0.09	0.03	0.06	OL	OL	0.07	0.10	0.05	0.10
9/12/2022	0.58	0.06	0.08	0.04	0.08	0.02	0.05	0.05	0.08	0.04	0.06	OL	OL	0.08	0.10	0.06	0.09
10/12/2022	0.56	0.06	0.08	0.04	0.11	0.03	0.06	0.06	0.09	0.04	0.06	OL	OL	0.08	0.11	0.06	0.10
11/12/2022	0.55	0.06	0.09	0.05	0.11	0.03	0.05	0.06	0.09	0.04	0.07	OL	OL	0.08	0.11	0.06	0.08
12/12/2022	0.53	0.06	0.08	0.05	0.07	0.03	0.06	0.06	0.10	0.04	0.06	OL	OL	0.08	0.11	0.07	0.09
13/12/2022	0.54	0.06	0.09	0.04	0.09	0.02	0.08	0.06	0.10	0.04	0.06	OL	OL	0.09	0.12	0.07	0.11
14/12/2022	0.55	0.07	0.14	0.02	0.07	0.02	0.06	0.04	0.10	0.03	0.09	OL	OL	0.04	0.11	0.04	0.13
15/12/2022	0.51	0.06	0.13	0.01	0.06	0.03	0.05	0.04	0.06	0.04	0.06	OL	OL	0.01	0.02	0.02	0.04
16/12/2022	0.48	0.04	0.06	0.01	0.03	0.03	0.05	0.04	0.07	0.03	0.05	OL	OL	0.01	0.02	0.02	0.05
17/12/2022	0.46	0.04	0.06	0.01	0.05	0.03	0.45	0.04	0.15	0.03	0.06	OL	OL	0.01	0.02	0.02	0.04
18/12/2022	0.45	0.04	0.06	0.01	0.03	0.02	0.07	0.03	0.11	0.04	0.06	OL	OL	0.01	0.01	0.02	0.04
19/12/2022	0.43	0.03	0.06	0.01	0.03	0.02	0.04	0.03	0.05	0.04	0.06	0.02	0.28	0.00	0.01	0.02	0.04
20/12/2022	0.42	0.04	0.06	0.01	0.07	0.02	0.04	0.03	0.06	0.04	0.06	0.03	0.43	0.00	0.01	0.02	0.04
21/12/2022	0.58	0.00	0.00	0.00	0.02	0.01	0.03	0.00	0.04	0.01	0.07	0.01	0.06	0.00	0.01	0.01	0.03
22/12/2022	0.52	0.05	0.07	0.01	0.04	0.02	0.05	0.04	0.06	0.03	0.07	0.02	0.06	0.01	0.02	0.02	0.10
23/12/2022	0.40	0.04	0.07	0.01	0.02	0.02	0.03	0.03	0.05	0.04	0.07	0.03	0.05	0.00	0.01	0.02	0.04
24/12/2022	0.41	0.04	0.07	0.01	0.02	0.02	0.04	0.03	0.06	0.04	0.06	0.03	0.07	0.00	0.01	0.02	0.03
25/12/2022	0.41	0.05	0.08	0.01	0.03	0.03	0.05	0.03	0.07	0.05	0.06	0.03	0.05	0.01	0.02	0.03	0.04
26/12/2022	0.43	0.05	0.07	0.01	0.04	0.03	0.05	0.04	0.06	0.04	0.06	0.03	0.06	0.01	0.03	0.03	0.05
27/12/2022	0.39	0.05	0.08	0.01	0.04	0.03	0.06	0.04	0.07	0.04	0.06	0.04	0.05	0.01	0.02	0.03	0.05
28/12/2022	0.37	0.05	0.08	0.01	0.03	0.03	0.05	0.04	0.07	0.04	0.06	0.03	0.06	0.01	0.02	0.02	0.03
29/12/2022	0.37	0.04	0.06	0.01	0.04	0.03	0.05	0.04	0.05	0.04	0.05	0.03	0.06	0.01	0.03	0.03	0.06
30/12/2022	0.36	0.05	0.08	0.01	0.03	0.02	0.03	0.04	0.06	0.04	0.06	0.04	0.05	0.01	0.01	0.02	0.05
31/12/2022	0.36	0.04	0.08	0.01	0.02	0.03	0.05	0.04	0.07	0.03	0.06	0.03	0.06	0.01	0.03	0.02	0.03

Total Number of Measurements Taken, A:	12606	13592	13211	13974	14851	5732	14135	16044
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:	12606	13592	13209	13974	14851	5731	14135	16044
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	99.985%	100.000%	100.000%	99.983%	100.000%	100.000%

OL = Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2022\12-December

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew

**WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT**

Water System Code: 252.00		Turbidity (NTU)																	
Licence No. PWS-09-412-02																			
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-Dec-2022	0.70	0.69	0.07	0.10	0.08	0.05	0.07	0.03	0.07	0.06	0.09	0.06	o/l	o/l	0.07	0.06	0.09	0.05	
02-Dec-2022	0.65	0.66	0.08	0.11	0.08	0.06	0.08	0.04	0.08	0.07	0.07	0.04	o/l	o/l	0.07	0.07	0.07	0.04	
03-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
04-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
05-Dec-2022	0.59	0.62	0.07	0.10	0.08	0.06	0.08	0.04	0.07	0.07	0.06	0.05	o/l	o/l	0.07	0.07	0.07	0.05	
06-Dec-2022	0.55	0.61	0.07	0.08	0.08	0.05	0.09	0.03	0.07	0.06	0.08	0.06	o/l	o/l	0.08	0.07	0.08	0.06	
07-Dec-2022	0.52	0.61	0.07	0.08	0.09	0.08	0.07	0.02	0.07	0.05	0.07	0.08	o/l	o/l	0.07	0.07	0.08	0.07	
08-Dec-2022	0.58	0.58	0.07	0.08	0.07	0.05	0.07	0.03	0.07	0.07	0.08	0.06	o/l	o/l	0.07	0.07	0.07	0.05	
09-Dec-2022	0.53	0.56	0.08	0.08	0.07	0.06	0.08	0.03	0.08	0.06	0.07	0.06	o/l	o/l	0.08	0.08	0.07	0.06	
10-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
11-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
12-Dec-2022	0.55	0.50	0.07	0.07	0.09	0.05	0.09	0.04	0.07	0.07	0.08	0.05	o/l	o/l	0.09	0.09	0.08	0.07	
13-Dec-2022	0.56	0.49	0.07	0.07	0.09	0.07	0.08	0.03	0.07	0.07	0.08	0.05	o/l	o/l	0.08	0.08	0.09	0.08	
14-Dec-2022	0.54	0.51	0.09	0.07	0.08	0.06	0.08	0.03	0.08	0.08	0.09	0.07	o/l	o/l	0.08	0.09	0.07	0.03	
15-Dec-2022	0.52	0.52	0.09	0.06	0.08	<0.02	0.10	0.03	0.10	0.05	0.07	0.05	o/l	o/l	0.08	<0.02	0.07	0.02	
16-Dec-2022	0.51	0.46	0.08	0.06	0.08	0.02	0.09	0.03	0.07	0.04	0.06	0.05	o/l	o/l	0.08	<0.02	0.07	0.02	
17-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
18-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
19-Dec-2022	0.43	0.42	0.07	0.05	0.09	0.02	0.08	0.03	0.07	0.05	0.07	0.05	0.07	0.04	0.07	<0.02	0.08	0.02	
20-Dec-2022	0.46	0.41	0.08	0.05	0.07	0.02	0.07	0.03	0.07	0.04	0.07	0.06	0.07	0.04	0.08	<0.02	0.08	0.02	
21-Dec-2022	0.42	0.40	ns	ns	0.08	0.02	0.07	0.03	ns	ns	0.08	0.07	0.07	0.05	0.08	<0.02	0.07	0.02	
22-Dec-2022	0.49	0.45	0.07	0.06	0.08	0.02	0.07	0.03	0.08	0.04	0.08	0.06	0.06	0.04	0.07	<0.02	0.09	0.03	
23-Dec-2022	0.45	0.38	0.08	0.06	0.08	<0.02	0.08	0.03	0.09	0.05	0.06	0.06	0.07	0.04	0.08	<0.02	0.07	0.02	
24-Dec-2022	ns	ns	0.09	0.07	ns	ns	ns	ns	0.09	0.05	ns	ns	ns	ns	ns	ns	ns	ns	
25-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
26-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
27-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
28-Dec-2022	0.41	0.36	0.10	0.06	0.08	<0.02	0.09	0.04	0.08	0.05	0.07	0.05	0.08	0.05	0.10	<0.02	0.08	0.02	
29-Dec-2022	0.42	0.36	0.07	0.05	0.09	0.02	0.09	0.04	0.08	0.05	0.07	0.05	0.06	0.04	0.07	<0.02	0.08	0.02	
30-Dec-2022	0.41	0.34	0.08	0.06	0.07	<0.02	0.07	0.03	0.08	0.05	0.07	0.05	0.07	0.05	0.07	<0.02	0.07	0.02	
31-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
<b>Total number of measurements taken, A:</b>			20		20		20		20		20		8		20		20		
<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>			20		20		20		20		20		8		20		20		
<b>Compliance with Turbidity Standard, C= B/A X 100%:</b>			100%		100%		100%		100%		100%		100%		100%		100%		

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

**Comments:**

Filter 6 was offline for scheduled maintenance from September 28 to December 18, 2022.

**Report Date:** 5-Jan-2023



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

Water System Code: **252.00**  
Licence Number: **PWS-09-412-02**  
Report Created: **01 January 2023**

Report Period: December 2022

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/12/2022	1.49	1.49	1.48	1.29
02/12/2022	1.49	1.36	1.27	1.21
03/12/2022	1.52	1.21	1.41	1.16
04/12/2022	1.42	1.29	1.37	1.26
05/12/2022	1.54	1.32	1.44	1.35
06/12/2022	1.38	1.23	1.39	1.26
07/12/2022	1.34	1.19	1.33	1.29
08/12/2022	1.37	1.25	1.32	1.28
09/12/2022	1.35	1.26	1.31	1.26
10/12/2022	1.28	1.17	1.26	1.22
11/12/2022	1.21	1.07	1.22	1.11
12/12/2022	1.24	1.04	1.28	1.10
13/12/2022	1.29	1.20	1.32	1.27
14/12/2022	1.51	1.27	1.46	1.24
15/12/2022	1.61	1.17	1.58	1.31
16/12/2022	1.36	1.20	1.33	1.23
17/12/2022	1.32	1.15	1.28	1.18
18/12/2022	1.36	1.17	1.33	1.18
19/12/2022	1.28	1.24	1.29	1.11
20/12/2022	1.39	1.34	1.42	1.31
21/12/2022	1.87	1.51	1.89	1.52
22/12/2022	1.49	0.91	1.43	0.95
23/12/2022	1.34	1.27	1.42	1.35
24/12/2022	1.30	1.17	1.40	1.29
25/12/2022	1.34	1.28	1.50	1.42
26/12/2022	1.41	1.32	1.45	1.35
27/12/2022	1.41	1.30	1.41	1.33
28/12/2022	1.40	1.29	1.40	1.32
29/12/2022	1.32	1.25	1.34	1.25
30/12/2022	1.29	1.11	1.34	1.20
31/12/2022	1.19	1.12	1.27	1.21

Total Number of Measurements, A:	21595	21592
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21595	21592
COMPLIANCE, C = B/A X 100%:	100.00	100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2022\12-December

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



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-09-412-02						
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Dec-2022	1.34	1.32	1.56	1.55	1.64	1.81
02-Dec-2022	1.16	1.17	1.31	1.24	1.34	1.52
03-Dec-2022	ns	ns	ns	ns	ns	ns
04-Dec-2022	ns	ns	ns	ns	ns	ns
05-Dec-2022	1.52	1.48	1.68	1.44	1.51	1.64
06-Dec-2022	1.43	1.50	1.71	1.44	1.48	1.69
07-Dec-2022	1.37	1.46	1.60	1.34	1.40	1.52
08-Dec-2022	1.38	1.37	1.54	1.31	1.30	1.50
09-Dec-2022	1.36	1.33	1.52	1.30	1.33	1.53
10-Dec-2022	ns	ns	ns	ns	ns	ns
11-Dec-2022	ns	ns	ns	ns	ns	ns
12-Dec-2022	1.23	1.31	1.50	1.27	1.29	1.50
13-Dec-2022	1.27	1.30	1.53	1.35	1.36	1.62
14-Dec-2022	1.59	1.66	1.86	1.58	1.67	1.93
15-Dec-2022	1.79	1.80	1.98	1.74	1.82	2.00
16-Dec-2022	1.43	1.40	1.63	1.37	1.41	1.66
17-Dec-2022	ns	ns	ns	ns	ns	ns
18-Dec-2022	ns	ns	ns	ns	ns	ns
19-Dec-2022	1.26	1.32	1.49	1.14	1.16	1.40
20-Dec-2022	1.39	1.37	1.52	1.44	1.38	1.60
21-Dec-2022	1.82	1.86	2.09	1.91	1.97	2.30
22-Dec-2022	1.52	1.46	1.65	1.34	1.43	1.64
23-Dec-2022	1.27	1.34	1.54	1.35	1.42	1.59
24-Dec-2022	ns	ns	ns	ns	ns	ns
25-Dec-2022	ns	ns	ns	ns	ns	ns
26-Dec-2022	ns	ns	ns	ns	ns	ns
27-Dec-2022	ns	ns	ns	ns	ns	ns
28-Dec-2022	1.41	1.41	1.57	1.38	1.44	1.63
29-Dec-2022	1.33	1.34	1.50	1.35	1.31	1.54
30-Dec-2022	1.35	1.44	1.59	1.35	1.44	1.64
31-Dec-2022	ns	ns	ns	ns	ns	ns
<b>Total number of measurements taken, A:</b>			20			20
<b>Chlorine Standard for Monitoring Location (mg/L):</b>			0.50			0.50
<b>Number of measurements meeting standard, B:</b>			20			20
<b>Compliance with Chlorine Standard, C= B/A X 100%:</b>			100%			100%

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 3-Jan-2023



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

Water System Code: **252.00**  
 Licence Number: **PWS-09-412-02**

**WATER TREATMENT PLANT UV REPORT**

Report Period: **December 2022**

Report Created: **Sunday, January 01, 2023**

Date	UVR-D100A Water Volume [ML]				UVR-D200A Water Volume [ML]				UVR-D300A Water Volume [ML]				UVR-D400A Water Volume [ML]				UVR-D500A Water Volume [ML]				UVR-D600A Water Volume [ML]				Total Water Volume [ML]				% Volume Treated To Dose
	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	
01/12/2022	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	78.57	78.57	0.00	0.06	36.97	37.02	0.00	0.31	62.29	62.60	0.00	0.36	177.82	178.19	99.80
02/12/2022	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	77.84	77.84	0.00	0.00	35.77	35.77	0.00	0.26	61.17	61.43	0.00	0.26	174.78	175.04	99.85
03/12/2022	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	80.02	80.02	0.00	0.03	36.74	36.77	0.00	0.45	61.48	61.93	0.00	0.48	178.25	178.72	99.73
04/12/2022	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	79.98	79.98	0.00	0.03	41.91	41.94	0.00	1.00	71.63	72.64	0.00	1.03	193.52	194.56	99.47
05/12/2022	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	79.99	79.99	0.00	0.06	39.40	39.46	0.00	0.93	66.47	67.40	0.00	0.99	185.86	186.85	99.47
06/12/2022	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	80.03	80.03	0.00	0.08	38.19	38.27	0.00	0.68	64.11	64.79	0.00	0.76	182.33	183.09	99.58
07/12/2022	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	79.90	79.90	0.00	0.02	33.68	33.70	0.00	0.57	58.14	58.72	0.00	0.60	171.72	172.32	99.65
08/12/2022	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	79.69	79.69	0.00	0.02	34.31	34.33	0.00	0.46	57.10	57.57	0.00	0.49	171.10	171.59	99.72
09/12/2022	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	79.98	79.98	0.00	0.00	36.72	36.72	0.00	0.68	64.62	65.30	0.00	0.68	181.31	181.99	99.63
10/12/2022	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	80.01	80.01	0.00	0.08	36.58	36.66	0.00	0.77	64.56	65.33	0.00	0.85	181.15	182.00	99.53
11/12/2022	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	77.71	77.71	0.00	0.03	38.30	38.33	0.00	0.87	65.03	65.90	0.00	0.90	181.05	181.95	99.50
12/12/2022	0.00	0.00	33.83	33.83	0.00	0.00	13.41	13.41	0.00	0.11	32.14	32.24	0.00	0.97	26.08	27.05	0.00	0.03	39.83	39.86	0.00	0.53	38.30	38.83	0.00	1.64	183.58	185.22	99.11
13/12/2022	0.00	0.00	72.57	72.57	0.00	0.00	3.74	3.74	0.00	0.11	52.71	52.82	0.00	0.00	0.00	0.00	0.00	0.00	64.49	64.49	0.00	0.00	0.00	0.00	0.00	0.11	193.51	193.62	99.94
14/12/2022	0.00	0.00	47.99	47.99	0.00	0.00	0.00	0.00	0.00	0.04	31.67	31.71	0.00	0.00	0.00	0.00	0.00	0.00	43.68	43.68	0.00	0.00	0.00	0.00	0.00	0.04	123.35	123.39	99.97
15/12/2022	0.00	0.00	71.95	71.95	0.00	0.00	0.00	0.00	0.00	0.00	47.88	47.88	0.00	0.00	0.00	0.00	0.00	0.00	73.19	73.19	0.00	0.00	0.00	0.00	0.00	0.00	193.02	193.02	100.00
16/12/2022	0.00	0.00	72.07	72.07	0.00	0.00	0.00	0.00	0.00	0.00	47.98	47.98	0.00	0.00	0.00	0.00	0.00	0.00	72.93	72.93	0.00	0.00	0.00	0.00	0.00	0.00	192.98	192.98	100.00
17/12/2022	0.00	0.00	72.45	72.45	0.00	0.00	0.00	0.00	0.00	0.00	47.89	47.89	0.00	0.00	0.00	0.00	0.00	0.00	72.68	72.68	0.00	0.00	0.00	0.00	0.00	0.00	193.01	193.01	100.00
18/12/2022	0.00	0.00	73.10	73.10	0.00	0.00	0.00	0.00	0.00	0.00	47.95	47.95	0.00	0.00	0.00	0.00	0.00	0.00	72.88	72.88	0.00	0.00	0.00	0.00	0.00	0.00	193.93	193.93	100.00
19/12/2022	0.00	0.00	72.59	72.59	0.00	0.00	0.00	0.00	0.00	0.00	48.44	48.44	0.00	0.00	0.00	0.00	0.22	0.22	60.49	60.92	0.00	0.15	13.04	13.19	0.22	0.37	194.56	195.15	99.70
20/12/2022	0.00	0.00	72.60	72.60	0.00	0.00	0.00	0.00	0.00	0.00	48.33	48.33	0.00	0.00	0.00	0.00	0.00	0.00	74.04	74.04	0.00	0.00	0.00	0.00	0.00	0.00	194.97	194.97	100.00
21/12/2022	0.00	0.00	19.15	19.15	0.00	0.00	0.00	0.00	0.00	0.00	12.40	12.40	0.00	0.00	0.00	0.00	0.00	0.00	18.79	18.79	0.00	0.00	0.00	0.00	0.00	0.00	50.33	50.33	100.00
22/12/2022	0.00	0.21	50.80	51.01	0.00	0.07	29.54	29.61	0.00	0.17	0.03	0.19	0.00	0.00	0.00	0.00	0.00	0.00	42.42	42.42	0.00	1.01	72.15	73.16	0.00	1.45	194.95	196.40	99.26
23/12/2022	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	0.00	0.00	0.00	0.00	45.10	45.10	0.00	1.10	77.87	78.96	0.00	1.10	202.93	204.02	99.46
24/12/2022	0.00	0.00	0.00	0.00	0.00	0.00	77.58	77.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.30	48.30	0.00	0.91	77.22	78.14	0.00	0.91	203.10	204.01	99.55
25/12/2022	0.00	0.00	0.00	0.00	0.00	0.00	75.02	75.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.99	53.99	0.00	0.83	74.20	75.03	0.00	0.83	203.21	204.04	99.59
26/12/2022	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	0.00	0.00	0.00	0.00	49.78	49.78	0.00	1.00	73.92	74.92	0.00	1.00	198.69	199.69	99.50
27/12/2022	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	0.00	0.00	0.00	0.00	42.03	42.03	0.00	1.12	72.66	73.79	0.00	1.12	189.71	190.83	99.41
28/12/2022	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	0.00	0.00	0.00	0.00	39.04	39.04	0.00	1.11	67.65	68.77	0.00	1.11	181.70	182.81	99.39
29/12/2022	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	0.00	0.00	0.00	0.00	37.49	37.49	0.00	0.78	65.08	65.86	0.00	0.78	177.59	178.36	99.56
30/12/2022	0.00	0.00	0.00	0.00	0.00	0.00	74.99	74.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35.79	35.79	0.00	0.74	62.02	62.76	0.00	0.74	172.80	173.54	99.57
31/12/2022	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	0.00	0.00	0.00	0.00	34.29	34.29	0.00	1.00	58.85	59.85	0.00	1.00	168.15	169.15	99.41
<b>Total [ML]:</b>	0.00	0.21	659.11	659.32	0.00	0.07	729.25	729.32	0.00	0.42	417.42	417.84	0.00	0.97	899.79	900.77	0.22	0.66	1429.80	1430.68	0.00	17.29	1449.58	1466.86	0.22	19.61	5584.95	5604.78	

**Water Volume [%]:**

Untreated: 0.00 %  
 Below Dose 0.35 %  
 To Dose 99.65 %

**Notes:** 1. UV Comparative Dose: 18.1 mJ/cm<sup>2</sup>

Submitted By (Print):  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-09-412-02

**WATER TREATMENT PLANT UV REPORT**

Report Period: December 2022

Report Created: Sunday, January 01, 2023

Date	Transmittance (%)				UVR_D100A			UVR_D200A			UVR_D300A			UVR_D400A			UVR_D500A			UVR_D600A			
	Branch 1		Branch 2		UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			
	Avg.	Min.	Avg.	Min.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	
01/12/2022	94.0	2.4	95.8	94.7	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.8	21.6	21.1	17.4	33.6	21.6	16.8	24.3	21.3
02/12/2022	93.9	1.5	95.5	95.0	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.7	22.7	21.1	17.6	33.2	21.6	16.8	23.7	21.3
03/12/2022	93.7	93.1	95.3	94.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.6	22.6	21.1	17.5	30.4	21.5	16.9	23.9	21.2
04/12/2022	93.5	93.0	95.2	94.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.6	21.7	21.1	17.1	29.9	21.5	16.9	22.3	21.1
05/12/2022	93.7	93.1	95.3	94.8	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.6	22.7	21.1	17.0	30.4	21.5	16.7	23.5	21.2
06/12/2022	93.8	18.4	95.1	94.7	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.7	22.4	21.1	17.2	30.5	21.5	16.6	23.8	21.2
07/12/2022	93.9	93.4	95.0	94.5	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.6	21.7	21.1	17.7	32.9	21.6	16.6	23.0	21.2
08/12/2022	94.1	93.7	95.3	94.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.7	21.8	21.1	17.2	31.8	21.6	16.9	24.1	21.3
09/12/2022	93.7	93.3	95.2	94.6	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.6	22.6	21.1	17.3	30.2	21.6	16.9	23.7	21.2
10/12/2022	93.5	93.3	95.3	94.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.6	21.7	21.1	17.5	30.3	21.6	16.6	22.2	21.2
11/12/2022	93.5	93.0	95.3	94.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.6	38.6	21.1	17.3	27.9	21.5	16.9	34.4	21.2
12/12/2022	93.5	93.2	95.4	94.9	20.3	97.3	25.8	0.0	84.6	21.5	16.7	85.6	21.5	0.0	33.5	21.0	0.0	95.7	22.2	0.0	29.4	21.2	
13/12/2022	93.5	93.2	95.3	94.8	0.0	92.5	24.3	0.0	87.3	21.8	17.6	29.0	21.4	OL	OL	OL	17.9	23.7	21.3	OL	OL	OL	
14/12/2022	91.1	0.0	92.4	0.0	0.0	98.7	25.4	OL	OL	OL	0.0	88.2	22.6	OL	OL	OL	0.0	95.7	21.6	OL	OL	OL	
15/12/2022	93.4	93.0	95.3	93.5	18.9	34.3	23.5	OL	OL	OL	18.3	27.0	22.7	OL	OL	OL	18.1	23.2	21.2	OL	OL	OL	
16/12/2022	93.4	92.9	95.1	93.7	18.6	34.9	23.7	OL	OL	OL	18.9	27.3	23.3	OL	OL	OL	17.8	23.5	21.2	OL	OL	OL	
17/12/2022	93.5	93.1	94.9	93.8	18.8	33.5	23.9	OL	OL	OL	19.1	27.2	23.8	OL	OL	OL	18.1	23.9	21.2	OL	OL	OL	
18/12/2022	93.4	93.0	94.9	93.9	18.6	33.8	23.8	OL	OL	OL	19.7	27.2	24.1	OL	OL	OL	18.1	23.9	21.2	OL	OL	OL	
19/12/2022	93.6	92.9	95.1	94.3	19.6	34.1	24.3	OL	OL	OL	19.7	29.6	24.6	OL	OL	OL	0.0	95.7	21.6	0.0	80.9	21.8	
20/12/2022	93.8	93.1	95.2	94.5	19.6	33.6	24.4	OL	OL	OL	19.8	26.8	24.8	OL	OL	OL	18.1	21.8	21.1	OL	OL	OL	
21/12/2022	93.8	93.4	94.9	94.4	0.0	50.8	25.3	OL	OL	OL	0.0	39.9	24.6	OL	OL	OL	0.0	38.0	21.2	OL	OL	OL	
22/12/2022	93.4	75.8	94.7	80.5	0.0	88.8	21.6	17.3	85.8	21.4	0.0	52.1	16.3	0.0	0.0	0.0	15.1	95.7	26.1	15.9	84.6	21.4	
23/12/2022	93.7	93.3	94.6	94.0	OL	OL	OL	18.3	21.9	21.3	OL	OL	OL	OL	OL	OL	19.7	27.9	24.3	16.1	23.0	21.1	
24/12/2022	93.6	93.2	94.5	93.9	OL	OL	OL	18.3	22.1	21.3	OL	OL	OL	OL	OL	OL	18.5	25.9	23.1	16.7	21.8	21.1	
25/12/2022	93.5	92.9	94.6	93.7	OL	OL	OL	18.3	22.0	21.4	OL	OL	OL	OL	OL	OL	18.0	23.5	21.4	16.8	22.9	21.1	
26/12/2022	93.4	93.1	94.8	93.5	OL	OL	OL	18.3	22.0	21.4	OL	OL	OL	OL	OL	OL	18.4	27.0	22.0	16.8	21.8	21.1	
27/12/2022	93.4	93.1	95.1	94.6	OL	OL	OL	18.2	22.0	21.4	OL	OL	OL	OL	OL	OL	18.8	28.7	23.5	16.8	21.7	21.1	
28/12/2022	93.3	93.0	95.2	94.7	OL	OL	OL	18.1	22.0	21.4	OL	OL	OL	OL	OL	OL	19.8	30.1	25.2	16.7	23.7	21.1	
29/12/2022	93.4	93.1	95.3	94.8	OL	OL	OL	18.3	22.0	21.4	OL	OL	OL	OL	OL	OL	21.6	30.8	26.6	16.8	24.1	21.2	
30/12/2022	93.4	93.1	95.4	94.5	OL	OL	OL	18.3	22.0	21.4	OL	OL	OL	OL	OL	OL	22.3	32.4	27.6	16.6	21.9	21.2	
31/12/2022	93.4	93.1	95.5	95.2	OL	OL	OL	18.4	22.0	21.4	OL	OL	OL	OL	OL	OL	23.8	33.2	28.5	15.9	23.9	21.2	

- Notes: 1. UV Comparative Dose: 18.1 mJ/cm²  
 2. OL - Off Line

Submitted By (Print): \_D.Merredew\_\_\_\_\_

Signature: \_Original signed by D.Merredew\_\_\_\_\_