



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

August 4, 2023

RE: JULY 2023 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 July 2023.

The July on-line and grab sampling turbidity reports include results obtained for the Water Treatment Plant raw water and the eight filters. There was no analyser reading on the grab sampling turbidity report for the raw water on July 7 due to an instrument malfunction at the time of sampling. The maximum turbidity was greater than 0.30 NTU for Filter 4 on July 6 and Filter 8 on July 29; the elevated turbidities occurred for less than 12 consecutive hours. The turbidity results for the filter effluent met the licence requirements.

The July 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 July 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.

Yours sincerely,

R. Grosselle
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. (email)
M. Szmon, P. Eng. (email)
L. McCusker, P. Eng. (email)
C. Diduck (email)



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

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

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

July 2023 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
1/07/2023	2.14	0.09	0.17	0.12	0.16	0.13	0.22	0.12	0.20	0.05	0.09	0.07	0.14	0.08	0.15	0.11	0.17
2/07/2023	2.19	0.09	0.18	0.12	0.20	0.12	0.23	0.14	0.17	0.05	0.11	0.08	0.15	0.09	0.16	0.14	0.22
3/07/2023	2.27	0.09	0.19	0.11	0.25	0.13	0.23	0.14	0.23	0.07	0.11	0.09	0.12	0.09	0.16	0.10	0.24
4/07/2023	2.46	0.14	0.17	0.14	0.23	0.14	0.25	0.16	0.23	0.10	0.16	0.10	0.16	0.10	0.13	0.09	0.18
5/07/2023	2.58	0.13	0.24	0.15	0.24	0.16	0.21	0.16	0.25	0.12	0.18	0.10	0.17	0.10	0.19	0.09	0.17
6/07/2023	2.63	0.15	0.29	0.18	0.30	0.16	0.28	0.16	0.35	0.12	0.25	0.09	0.27	0.09	0.23	0.08	0.19
7/07/2023	2.82	0.12	0.18	0.12	0.25	0.12	0.22	0.14	0.22	0.10	0.18	0.07	0.13	0.07	0.13	0.06	0.20
8/07/2023	2.84	0.10	0.21	0.11	0.19	0.11	0.18	0.13	0.18	0.09	0.14	0.05	0.08	0.05	0.09	0.04	0.10
9/07/2023	2.77	0.12	0.17	0.12	0.21	0.11	0.18	0.11	0.25	0.09	0.15	0.07	0.12	0.06	0.08	0.05	0.10
10/07/2023	2.98	0.12	0.21	0.13	0.17	0.13	0.16	0.13	0.21	0.10	0.16	0.07	0.13	0.07	0.12	0.05	0.12
11/07/2023	3.06	0.11	0.20	0.13	0.22	0.10	0.23	0.12	0.20	0.10	0.16	0.07	0.12	0.06	0.14	0.06	0.09
12/07/2023	3.07	0.08	0.15	0.10	0.18	0.09	0.21	0.10	0.16	0.09	0.13	0.06	0.08	0.06	0.12	0.05	0.11
13/07/2023	3.03	0.09	0.13	0.09	0.17	0.08	0.17	0.09	0.20	0.08	0.16	0.08	0.14	0.05	0.08	0.06	0.12
14/07/2023	3.03	0.08	0.15	0.08	0.12	0.08	0.12	0.09	0.15	0.09	0.15	0.07	0.15	0.08	0.18	0.05	0.13
15/07/2023	3.08	0.08	0.15	0.10	0.16	0.08	0.22	0.08	0.18	0.10	0.15	0.08	0.16	0.08	0.15	0.06	0.12
16/07/2023	3.22	0.08	0.17	0.09	0.16	0.08	0.16	0.10	0.13	0.09	0.13	0.08	0.15	0.07	0.15	0.07	0.15
17/07/2023	3.04	0.08	0.12	0.09	0.17	0.08	0.19	0.09	0.17	0.11	0.17	0.09	0.13	0.08	0.16	0.07	0.17
18/07/2023	2.84	0.13	0.17	0.10	0.17	0.08	0.14	0.10	0.20	0.10	0.19	0.09	0.17	0.09	0.13	0.07	0.14
19/07/2023	2.94	0.13	0.21	0.11	0.14	0.11	0.18	0.10	0.18	0.10	0.17	0.09	0.17	0.09	0.16	0.07	0.14
20/07/2023	2.91	0.09	0.25	0.09	0.18	0.08	0.19	0.10	0.18	0.08	0.18	0.07	0.17	0.07	0.29	0.05	0.13
21/07/2023	3.16	0.11	0.17	0.08	0.15	0.08	0.14	0.09	0.18	0.09	0.16	0.08	0.12	0.07	0.13	0.02	0.09
22/07/2023	3.11	0.12	0.16	0.08	0.14	0.07	0.15	0.09	0.15	0.08	0.15	0.07	0.13	0.06	0.11	0.02	0.07
23/07/2023	2.91	0.11	0.17	0.07	0.14	0.07	0.11	0.09	0.15	0.09	0.15	0.07	0.13	0.08	0.13	0.02	0.08
24/07/2023	2.77	0.11	0.18	0.09	0.12	0.08	0.15	0.08	0.15	0.08	0.12	0.07	0.14	0.07	0.14	0.01	0.04
25/07/2023	2.89	0.09	0.18	0.08	0.20	0.07	0.15	0.09	0.18	0.07	0.17	0.06	0.17	0.07	0.16	0.05	0.16
26/07/2023	2.76	0.09	0.13	0.07	0.14	0.07	0.14	0.09	0.29	0.07	0.13	0.06	0.10	0.05	0.12	0.04	0.25
27/07/2023	2.72	0.11	0.17	0.07	0.13	0.08	0.15	0.09	0.17	0.06	0.16	0.06	0.12	0.06	0.10	0.04	0.12
28/07/2023	2.78	0.11	0.17	0.07	0.16	0.09	0.16	0.09	0.18	0.07	0.13	0.05	0.13	0.05	0.10	0.03	0.08
29/07/2023	2.57	0.14	0.25	0.12	0.16	0.13	0.19	0.12	0.22	0.09	0.16	0.07	0.27	0.07	0.25	0.05	0.82
30/07/2023	2.61	0.13	0.21	0.11	0.20	0.11	0.26	0.13	0.19	0.07	0.17	0.06	0.14	0.06	0.14	0.05	0.16
31/07/2023	2.69	0.12	0.19	0.09	0.16	0.10	0.23	0.12	0.20	0.06	0.13	0.04	0.30	0.04	0.10	0.03	0.08

Total Number of Measurements Taken, A:	14573	15819	15518	16424	16760	16351	16139	16952
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:	14573	15819	15518	16421	16760	16351	16139	16951
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	100.000%	99.982%	100.000%	100.000%	100.000%	99.994%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2023\07-July

Submitted By (Print): D. Merredew

Signature: Original signed by D. Merredew



WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT

Water System Code: 252.00 Licence No. PWS-09-412-02 A	Turbidity (NTU)																			
	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8			
Date	Grab	Analysed	Grab	Analysed	Grab	Analysed	Grab	Analysed	Grab	Analysed	Grab	Analysed	Grab	Analysed	Grab	Analysed	Grab	Analysed		
01-Jul-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
02-Jul-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
03-Jul-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
04-Jul-2023	1.30	2.20	0.22	0.14	0.21	0.19	0.22	0.16	0.24	0.19	0.17	0.09	0.18	0.11	0.18	0.10	0.16	0.07	0.10	
05-Jul-2023	1.43	2.65	0.25	0.19	0.21	0.17	0.23	0.17	0.18	0.17	0.14	0.13	0.22	0.16	0.17	0.10	0.17	0.10	0.10	
06-Jul-2023	1.62	2.65	0.27	0.23	0.25	0.19	0.29	0.19	0.24	0.19	0.18	0.14	0.18	0.10	0.19	0.11	0.19	0.10	0.10	
07-Jul-2023	1.54	na	0.19	0.15	0.24	0.18	0.29	0.22	0.20	0.16	0.15	0.12	0.15	0.09	0.14	0.05	0.16	0.08	0.08	
08-Jul-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
09-Jul-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
10-Jul-2023	1.89	2.87	0.23	0.17	0.20	0.14	0.22	0.14	0.20	0.15	0.13	0.12	0.18	0.11	0.17	0.07	0.15	0.06	0.06	
11-Jul-2023	1.78	2.98	0.17	0.14	0.19	0.15	0.23	0.16	0.16	0.13	0.13	0.12	0.14	0.08	0.16	0.07	0.14	0.06	0.06	
12-Jul-2023	1.87	3.02	0.17	0.10	0.25	0.18	0.24	0.14	0.18	0.12	0.14	0.10	0.15	0.08	0.15	0.06	0.19	0.07	0.07	
13-Jul-2023	1.87	3.19	0.18	0.11	0.17	0.10	0.18	0.10	0.22	0.13	0.16	0.12	0.16	0.08	0.16	0.06	0.15	0.04	0.04	
14-Jul-2023	1.79	2.99	0.19	0.12	0.16	0.10	0.17	0.09	0.15	0.09	0.22	0.14	0.23	0.14	0.17	0.08	0.15	0.06	0.06	
15-Jul-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
16-Jul-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
17-Jul-2023	1.86	2.97	0.16	0.11	0.24	0.15	0.16	0.08	0.19	0.12	0.18	0.13	0.18	0.10	0.17	0.07	0.22	0.12	0.12	
18-Jul-2023	2.08	2.96	0.18	0.12	0.17	0.11	0.18	0.10	0.15	0.09	0.20	0.13	0.22	0.14	0.20	0.08	0.18	0.07	0.07	
19-Jul-2023	1.97	2.89	0.24	0.20	0.18	0.12	0.20	0.12	0.16	0.11	0.16	0.11	0.16	0.10	0.22	0.11	0.19	0.07	0.07	
20-Jul-2023	2.03	2.96	0.15	0.14	0.19	0.13	0.21	0.13	0.16	0.12	0.16	0.12	0.17	0.10	0.21	0.12	0.19	0.07	0.07	
21-Jul-2023	2.17	3.19	0.15	0.14	0.15	0.10	0.16	0.09	0.18	0.13	0.17	0.12	0.18	0.11	0.17	0.07	0.19	0.03	0.03	
22-Jul-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
23-Jul-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
24-Jul-2023	2.09	2.65	0.16	0.14	0.15	0.10	0.16	0.10	0.13	0.09	0.14	0.10	0.15	0.09	0.19	0.09	0.16	0.02	0.02	
25-Jul-2023	2.25	2.69	0.13	0.13	0.17	0.13	0.22	0.13	0.14	0.12	0.17	0.14	0.18	0.13	0.18	0.10	0.23	0.09	0.09	
26-Jul-2023	2.56	2.63	0.13	0.11	0.12	0.07	0.13	0.07	0.16	0.11	0.15	0.08	0.16	0.08	0.15	0.06	0.19	0.04	0.04	
27-Jul-2023	2.13	2.59	0.14	0.13	0.13	0.08	0.14	0.08	0.14	0.08	0.19	0.12	0.19	0.11	0.17	0.07	0.16	0.04	0.04	
28-Jul-2023	2.11	2.54	0.16	0.14	0.14	0.08	0.17	0.09	0.12	0.09	0.14	0.08	0.21	0.12	0.17	0.07	0.16	0.04	0.04	
29-Jul-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
30-Jul-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
31-Jul-2023	1.82	2.87	0.15	0.14	0.19	0.12	0.15	0.11	0.16	0.13	0.13	0.08	0.13	0.06	0.13	0.04	0.16	0.04	0.04	
Total number of measurements taken, A:			20		20		20		20		20		20		20		20		20	
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
Number of measurements meeting standard, B:			20		20		20		20		20		20		20		20		20	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%		100%	

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

Comments:

Report Date: 3-Aug-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 A**
Report Created: 01 August 2023

Report Period: July 2023

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/07/2023	1.14	1.02	1.32	1.01
02/07/2023	1.09	1.02	1.09	1.00
03/07/2023	1.08	0.89	1.06	0.79
04/07/2023	1.14	0.99	1.19	0.99
05/07/2023	1.20	1.10	1.22	1.08
06/07/2023	1.35	0.76	1.44	0.62
07/07/2023	1.16	0.99	1.14	0.92
08/07/2023	1.27	1.09	1.17	1.02
09/07/2023	1.26	1.14	1.20	0.96
10/07/2023	1.33	1.20	1.24	0.98
11/07/2023	1.31	1.16	1.23	1.12
12/07/2023	1.25	1.13	1.12	1.04
13/07/2023	1.19	1.06	1.10	0.99
14/07/2023	1.20	1.04	1.13	0.99
15/07/2023	1.18	1.05	1.15	0.97
16/07/2023	1.26	1.06	1.28	1.08
17/07/2023	1.36	1.23	1.34	1.24
18/07/2023	1.34	1.15	1.29	1.08
19/07/2023	1.39	1.22	1.33	1.14
20/07/2023	1.58	1.13	1.68	1.18
21/07/2023	1.30	1.14	1.31	1.20
22/07/2023	1.26	1.03	1.24	1.04
23/07/2023	1.30	1.09	1.22	1.05
24/07/2023	1.43	1.25	1.28	1.09
25/07/2023	1.48	1.06	1.54	0.91
26/07/2023	1.33	1.19	1.47	1.30
27/07/2023	1.28	1.17	1.37	1.24
28/07/2023	1.34	1.19	1.43	1.27
29/07/2023	1.46	1.34	1.55	1.33
30/07/2023	1.50	1.07	1.44	0.99
31/07/2023	1.42	1.29	1.44	1.19

Total Number of Measurements, A:	21592	21574
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21592	21574
COMPLIANCE, C = B/A X 100%:	100.00	100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2023\07-July

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 A						
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Jul-2023	ns	ns	ns	ns	ns	ns
02-Jul-2023	ns	ns	ns	ns	ns	ns
03-Jul-2023	ns	ns	ns	ns	ns	ns
04-Jul-2023	1.11	1.18	1.41	1.14	1.20	1.49
05-Jul-2023	1.21	1.23	1.51	1.22	1.25	1.52
06-Jul-2023	1.19	1.24	1.50	1.20	1.23	1.52
07-Jul-2023	1.06	1.15	1.41	0.98	1.08	1.37
08-Jul-2023	ns	ns	ns	ns	ns	ns
09-Jul-2023	ns	ns	ns	ns	ns	ns
10-Jul-2023	1.26	1.33	1.62	1.22	1.31	1.59
11-Jul-2023	1.31	1.33	1.60	1.22	1.24	1.48
12-Jul-2023	1.23	1.24	1.47	1.11	1.11	1.31
13-Jul-2023	1.15	1.18	1.43	1.04	1.11	1.27
14-Jul-2023	1.14	1.24	1.45	1.08	1.10	1.33
15-Jul-2023	ns	ns	ns	ns	ns	ns
16-Jul-2023	ns	ns	ns	ns	ns	ns
17-Jul-2023	1.40	1.40	1.62	1.33	1.30	1.54
18-Jul-2023	1.33	1.40	1.67	1.31	1.36	1.61
19-Jul-2023	1.42	1.49	1.76	1.37	1.46	1.66
20-Jul-2023	1.16	1.33	1.61	1.29	1.38	1.64
21-Jul-2023	1.32	1.41	1.70	1.30	1.40	1.69
22-Jul-2023	ns	ns	ns	ns	ns	ns
23-Jul-2023	ns	ns	ns	ns	ns	ns
24-Jul-2023	1.46	1.49	1.73	1.36	1.43	1.67
25-Jul-2023	1.93	1.38	1.65	2.07	1.49	1.79
26-Jul-2023	1.39	1.49	1.73	1.54	1.63	1.91
27-Jul-2023	1.27	1.31	1.56	1.33	1.39	1.73
28-Jul-2023	1.29	1.34	1.58	1.34	1.39	1.61
29-Jul-2023	ns	ns	ns	ns	ns	ns
30-Jul-2023	ns	ns	ns	ns	ns	ns
31-Jul-2023	1.41	1.41	1.72	1.50	1.58	1.86
Total number of measurements taken, A:		20		20		
Chlorine Standard for Monitoring Location (mg/L):		0.50		0.50		
Number of measurements meeting standard, B:		20		20		
Compliance with Chlorine Standard, C= B/A X 100%:		100%		100%		

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

Comments:

Report Date: 1-Aug-2023



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

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

WATER TREATMENT PLANT UV REPORT

Report Period: July 2023

Report Created: Tuesday, August 01, 2023

Date	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% Volume Treated To Dose			
	Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]							
	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total
01/07/2023	0.00	0.58	54.41	54.99	0.00	0.00	0.00	0.00	0.00	0.38	52.38	52.76	0.00	0.00	0.00	0.00	0.00	0.00	35.65	35.65	0.00	0.80	66.38	67.17	0.00	1.76	208.82	210.58				99.16
02/07/2023	0.00	0.58	54.43	55.01	0.00	0.00	0.00	0.00	0.00	1.07	55.05	56.12	0.00	0.00	0.00	0.00	0.00	0.00	38.02	38.02	0.00	0.84	69.98	70.82	0.00	2.49	217.49	219.97				98.87
03/07/2023	0.00	0.27	54.74	55.01	0.00	0.00	0.00	0.00	0.00	0.97	54.14	55.12	0.00	0.00	0.00	0.00	0.00	0.05	37.93	37.98	0.00	0.73	69.38	70.11	0.00	2.03	216.18	218.22				99.07
04/07/2023	0.00	0.81	54.57	55.38	0.00	0.00	0.00	0.00	0.01	0.65	26.32	26.97	0.00	0.05	27.55	27.60	0.00	0.03	38.61	38.64	0.00	0.99	70.11	71.10	0.01	2.52	217.16	219.69				98.85
05/07/2023	0.00	0.84	54.24	55.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	54.87	54.90	0.00	0.03	38.55	38.58	0.00	0.80	70.60	71.40	0.00	1.71	218.26	219.96				99.22
06/07/2023	0.00	0.53	26.21	26.73	0.00	0.20	31.81	32.00	0.00	0.00	0.00	0.00	0.00	0.00	49.50	49.50	0.00	0.80	34.10	34.90	0.00	0.87	64.49	65.36	0.00	2.39	206.11	208.50				98.85
07/07/2023	0.00	0.00	0.12	0.12	0.00	0.09	68.49	68.58	0.00	0.00	0.07	0.07	0.00	0.04	49.56	49.60	0.00	0.35	38.30	38.65	0.00	0.78	65.49	66.27	0.00	1.26	222.03	223.30				99.44
08/07/2023	0.00	0.00	0.00	0.00	0.00	0.00	69.99	69.99	0.00	0.00	0.00	0.00	0.00	0.00	45.27	45.27	0.00	0.00	34.88	34.88	0.00	0.39	62.68	63.07	0.00	0.39	212.82	213.20				99.82
09/07/2023	0.00	0.00	0.00	0.00	0.00	0.15	69.86	70.01	0.00	0.00	0.00	0.00	0.00	0.06	43.97	44.03	0.00	0.02	33.98	34.00	0.00	0.86	61.06	61.92	0.00	1.09	208.87	209.96				99.48
10/07/2023	0.00	0.00	2.01	2.01	0.00	0.00	69.99	69.99	0.00	0.00	0.00	0.00	0.11	0.11	42.01	42.24	0.00	0.02	34.00	34.03	0.00	0.86	60.98	61.84	0.11	1.00	209.00	210.11				99.47
11/07/2023	0.00	0.00	47.80	47.80	0.00	0.00	71.14	71.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	32.61	32.63	0.00	0.73	57.75	58.49	0.00	0.76	209.30	210.05				99.64
12/07/2023	0.00	0.00	47.33	47.33	0.00	0.05	71.81	71.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.60	32.60	0.00	0.97	57.25	58.22	0.00	1.02	208.98	210.01				99.51
13/07/2023	0.00	0.00	49.62	49.62	0.00	0.00	75.17	75.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.53	34.53	0.00	1.04	61.19	62.22	0.00	1.04	220.50	221.54				99.53
14/07/2023	0.00	0.00	51.35	51.35	0.00	0.00	77.80	77.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	35.97	35.99	0.00	0.81	64.07	64.88	0.00	0.84	229.20	230.03				99.64
15/07/2023	0.00	0.00	51.19	51.19	0.00	0.05	77.69	77.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.76	36.76	0.00	0.85	63.44	64.29	0.00	0.90	229.08	229.98				99.61
16/07/2023	0.00	0.00	48.52	48.52	0.00	0.00	74.45	74.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	34.02	34.07	0.00	0.64	60.45	61.09	0.00	0.69	217.45	218.14				99.69
17/07/2023	0.00	0.00	47.08	47.08	0.00	0.10	72.11	72.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.83	32.83	0.00	0.82	58.17	58.99	0.00	0.93	210.20	211.12				99.56
18/07/2023	0.00	0.00	47.52	47.52	0.00	0.00	72.93	72.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.22	33.22	0.00	0.91	59.04	59.96	0.00	0.91	212.71	213.62				99.57
19/07/2023	0.00	0.00	46.29	46.29	0.00	0.00	70.75	70.75	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09	0.00	0.00	32.30	32.30	0.00	0.90	57.29	58.19	0.00	0.90	206.72	207.62				99.57
20/07/2023	0.00	0.22	37.75	37.97	0.00	0.00	56.98	56.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	41.99	42.46	0.00	0.70	19.86	20.56	0.00	1.40	156.58	157.97				99.12
21/07/2023	0.00	1.14	66.57	67.71	0.00	0.11	81.69	81.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	73.26	73.94	0.00	0.00	0.00	0.00	0.00	1.93	221.52	223.45				99.14
22/07/2023	0.00	1.15	78.27	79.43	0.00	0.06	84.95	85.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.71	67.83	69.54	0.00	0.00	0.00	0.00	0.00	2.92	231.05	233.98				98.75
23/07/2023	0.00	1.15	77.78	78.93	0.00	0.00	85.01	85.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	58.39	59.30	0.00	0.00	0.00	0.00	0.00	2.06	221.18	223.24				99.08
24/07/2023	0.00	1.25	73.70	74.96	0.00	0.12	84.93	85.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.92	54.08	54.99	0.00	0.00	0.00	0.00	0.00	2.29	212.71	215.00				98.94
25/07/2023	0.02	0.33	45.09	45.44	0.01	0.01	68.82	68.85	0.00	0.00	62.39	62.39	0.00	0.00	0.00	0.00	0.03	0.07	2.91	3.02	0.00	0.00	0.17	0.17	0.07	0.42	179.38	179.87				99.73
26/07/2023	0.00	0.29	52.54	52.83	0.00	0.06	81.65	81.71	0.00	0.29	81.57	81.86	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	0.64	215.76	216.39				99.71
27/07/2023	0.00	0.15	52.98	53.13	0.00	0.06	80.98	81.04	0.00	0.17	83.22	83.40	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	0.38	217.19	217.57				99.83
28/07/2023	0.00	0.18	52.98	53.16	0.00	0.00	81.10	81.10	0.00	0.29	83.43	83.72	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	0.48	217.50	217.98				99.78
29/07/2023	0.00	0.48	52.68	53.16	0.00	0.00	81.00	81.00	0.00	0.12	83.71	83.83	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	0.60	217.39	217.99				99.73
30/07/2023	0.00	0.44	52.73	53.18	0.00	0.00	80.99	80.99	0.00	0.23	83.61	83.84	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	0.67	217.33	218.01				99.69
31/07/2023	0.00	0.33	52.83	53.16	0.00	0.06	80.94	80.99	0.00	0.35	83.48	83.84	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	0.74	217.25	217.99				99.66
Total [ML]:	0.02	10.74	1433.32	1444.08	0.01	1.12	1923.04	1924.17	0.01	4.52	749.38	753.91	0.11	0.30	312.82	313.23	0.03	6.17	967.32	973.52	0.00	16.29	1219.83	1236.13	0.19	39.14	6605.71	6645.04				

Water Volume [%]:
 Untreated: 0.00 %
 Below Dose 0.59 %
 To Dose 99.41 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²

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 A

WATER TREATMENT PLANT UV REPORT

Report Period: July 2023

Report Created: Tuesday, August 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.
01/07/2023	93.4	91.6	91.5	90.4	15.3	23.2	20.9	OL	OL	OL	17.1	29.5	21.3	OL	OL	OL	17.9	29.7	21.7	17.0	23.7	21.2
02/07/2023	93.2	0.0	91.4	90.5	15.8	24.3	21.6	OL	OL	OL	16.7	23.8	21.5	OL	OL	OL	17.7	31.2	22.0	16.6	24.0	21.1
03/07/2023	93.3	90.8	91.4	90.4	16.5	24.4	21.6	OL	OL	OL	15.9	23.8	21.5	OL	OL	OL	17.4	28.5	22.0	16.9	22.1	21.1
04/07/2023	93.0	92.2	91.2	90.0	15.3	24.2	21.6	OL	OL	OL	0.0	35.4	21.5	0.0	104.8	24.1	16.5	26.3	22.0	16.6	24.9	21.1
05/07/2023	92.7	0.0	90.9	90.1	15.6	23.2	21.6	OL	OL	OL	OL	OL	OL	17.3	24.8	22.0	17.8	23.7	22.0	16.5	21.9	21.1
06/07/2023	92.5	90.7	90.6	88.7	0.0	54.6	21.6	16.8	85.7	21.4	OL	OL	OL	0.0	92.4	21.9	0.0	31.8	20.6	0.0	84.0	21.2
07/07/2023	93.1	91.7	91.3	89.7	0.0	81.0	39.9	14.9	23.3	21.4	0.0	69.5	50.5	15.5	32.8	21.9	15.5	24.6	20.9	16.6	24.4	21.2
08/07/2023	93.7	92.9	91.9	90.9	OL	OL	OL	18.0	21.9	21.4	OL	OL	OL	15.4	29.2	23.2	17.4	27.0	22.1	16.9	23.3	21.2
09/07/2023	93.6	92.5	91.9	90.9	OL	OL	OL	17.1	22.0	21.3	OL	OL	OL	14.2	31.8	23.0	18.0	25.1	22.2	16.9	23.3	21.2
10/07/2023	93.6	92.8	91.9	90.7	25.9	79.3	35.7	18.0	22.1	21.4	OL	OL	OL	0.0	29.1	22.3	18.0	24.3	22.1	16.8	22.0	21.2
11/07/2023	93.9	92.9	92.3	91.4	20.4	45.8	28.1	17.9	21.9	21.4	OL	OL	OL	OL	OL	OL	18.0	24.1	22.2	16.1	24.4	21.4
12/07/2023	95.1	94.3	93.5	92.4	20.5	43.7	25.9	17.1	22.0	21.4	OL	OL	OL	OL	OL	OL	17.7	26.6	22.2	16.4	22.9	21.5
13/07/2023	95.0	93.7	93.4	92.4	20.1	42.2	25.3	18.0	21.9	21.3	OL	OL	OL	OL	OL	OL	17.9	29.0	22.1	16.2	23.3	21.5
14/07/2023	95.0	93.8	93.4	92.6	20.1	41.3	25.4	18.0	21.9	21.3	OL	OL	OL	OL	OL	OL	17.7	32.3	22.1	16.5	23.8	21.4
15/07/2023	95.1	93.8	93.1	80.0	20.6	41.7	25.4	17.8	21.9	21.3	OL	OL	OL	OL	OL	OL	17.8	33.4	22.1	16.1	29.6	21.3
16/07/2023	95.0	93.8	93.4	92.0	20.4	42.8	25.8	17.9	21.9	21.4	OL	OL	OL	OL	OL	OL	16.1	34.6	22.0	17.0	22.3	21.2
17/07/2023	94.9	93.5	93.3	92.1	19.7	42.9	25.2	17.8	22.0	21.4	OL	OL	OL	OL	OL	OL	17.8	32.6	22.2	16.9	24.1	21.2
18/07/2023	94.7	93.3	93.1	92.5	19.8	41.0	24.6	17.9	21.9	21.4	OL	OL	OL	OL	OL	OL	18.0	31.1	22.2	16.9	22.1	21.2
19/07/2023	94.7	93.6	93.2	92.2	18.5	41.0	23.8	17.9	22.0	21.4	OL	OL	OL	0.0	104.6	44.8	18.0	30.2	22.2	16.6	22.5	21.2
20/07/2023	94.4	92.6	92.7	90.6	0.0	74.9	22.1	0.0	78.0	21.4	OL	OL	OL	OL	OL	OL	0.0	34.5	21.2	0.0	40.7	21.2
21/07/2023	95.0	93.8	93.3	91.9	16.6	23.1	21.1	17.5	21.9	21.3	OL	OL	OL	OL	OL	OL	16.0	22.1	20.4	0.0	0.0	0.0
22/07/2023	95.1	93.2	93.5	92.2	16.5	21.6	21.0	17.7	21.8	21.3	OL	OL	OL	OL	OL	OL	15.2	21.1	18.8	OL	OL	OL
23/07/2023	95.0	93.1	93.4	92.4	16.6	21.7	21.0	17.6	21.8	21.3	OL	OL	OL	OL	OL	OL	15.4	21.0	19.2	OL	OL	OL
24/07/2023	95.2	93.7	93.4	92.3	16.4	21.6	21.1	17.5	21.8	21.3	OL	OL	OL	OL	OL	OL	15.6	20.3	19.1	OL	OL	OL
25/07/2023	94.8	92.3	92.9	90.4	0.0	84.9	21.4	0.0	72.7	21.3	0.0	101.1	21.7	OL	OL	OL	0.0	79.2	19.8	0.0	84.4	46.7
26/07/2023	95.3	94.1	93.4	91.6	16.0	29.0	21.4	17.7	21.8	21.3	17.4	29.6	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL
27/07/2023	95.4	94.3	93.4	92.5	15.8	29.8	21.4	17.3	21.8	21.3	17.5	29.7	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL
28/07/2023	95.5	94.0	93.6	92.2	15.5	30.5	21.4	17.7	21.8	21.3	17.6	22.0	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL
29/07/2023	94.9	92.4	93.0	91.9	15.3	28.0	21.4	17.9	21.8	21.3	17.4	21.9	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL
30/07/2023	95.0	93.2	93.0	90.9	16.2	27.3	21.4	17.8	21.9	21.3	17.3	22.0	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL
31/07/2023	95.4	94.1	93.5	92.3	16.2	28.0	21.4	17.8	21.8	21.3	17.3	24.0	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL

- Notes:**
- UV Comparative Dose: 18.1 mJ/cm²
 - OL - Off Line

Submitted By (Print): D. Merredew

Signature: Original signed by D. Merredew