



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

September 7, 2023

RE: AUGUST 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 August 2023.

The August 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 for the raw water on August 31 due to an instrument malfunction at the time of sampling. The maximum turbidity was greater than 0.30 NTU for Filter 1 on August 9, Filter 3 on August 3, 7, and 14, and Filter 5 on August 15; the elevated turbidities occurred for less than 12 consecutive hours. On August 20, the turbidity on Filter 8 exceeded 1.00 NTU; additional information is provided in CAR-10-2023. With the exception of this event, the turbidity results for the filter effluent met the licence requirements.

The August on-line and grab sampling chlorine reports include results obtained for the Deacon Booster Pumping Station at the Water Treatment Plant. On August 24, 2023, the Branch 2 free chlorine online analyzer readings fell below 0.5mg/L during start-up following an unplanned power outage; additional information is provided in CAR-11-2023. With the exception of this event, the free chlorine results at the Water Treatment Plant met the licence requirements.

The August 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

August 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
1/08/2023	2.49	0.13	0.20	0.09	0.20	0.09	0.19	0.11	0.21	0.06	0.13	0.05	0.09	0.04	0.09	0.03	0.10
2/08/2023	2.54	0.11	0.20	0.08	0.14	0.09	0.22	0.10	0.18	0.05	0.11	0.04	0.08	0.04	0.10	0.02	0.08
3/08/2023	2.46	0.09	0.17	0.08	0.12	0.08	0.31	0.09	0.23	0.04	0.08	0.03	0.08	0.04	0.10	0.02	0.05
4/08/2023	2.23	0.10	0.19	0.08	0.16	0.09	0.19	0.11	0.15	0.04	0.09	0.03	0.09	0.03	0.08	0.03	0.23
5/08/2023	2.26	0.10	0.20	0.08	0.15	0.09	0.18	0.11	0.17	0.06	0.10	0.03	0.08	0.04	0.09	0.03	0.07
6/08/2023	2.29	0.11	0.20	0.10	0.15	0.11	0.19	0.14	0.20	0.08	0.12	0.05	0.09	0.05	0.14	0.06	0.13
7/08/2023	2.47	0.16	0.21	0.13	0.23	0.12	0.58	0.16	0.25	0.09	0.15	0.05	0.16	0.06	0.16	0.07	0.13
8/08/2023	2.87	0.15	0.23	0.14	0.22	0.13	0.26	0.16	0.24	0.09	0.16	0.05	0.10	0.07	0.19	0.08	0.13
9/08/2023	2.57	0.14	0.34	0.19	0.21	0.15	0.29	0.12	0.21	0.12	0.19	0.06	0.13	0.08	0.17	0.09	0.15
10/08/2023	2.32	0.14	0.18	0.18	0.25	0.11	0.20	0.13	0.15	0.12	0.18	0.06	0.12	0.08	0.14	0.13	0.20
11/08/2023	2.37	0.18	0.22	0.15	0.24	0.11	0.20	0.11	0.18	0.12	0.17	0.05	0.08	0.07	0.12	0.07	0.23
12/08/2023	2.42	0.16	0.24	0.13	0.23	0.10	0.15	0.10	0.17	0.09	0.16	0.06	0.11	0.07	0.11	0.04	0.09
13/08/2023	2.34	0.17	0.26	0.17	0.26	0.13	0.17	0.11	0.22	0.08	0.16	0.05	0.10	0.06	0.11	0.04	0.06
14/08/2023	2.63	0.22	0.27	0.20	0.28	0.19	0.32	0.18	0.21	0.10	0.23	0.10	0.25	0.09	0.18	0.08	0.15
15/08/2023	2.89	0.18	0.25	0.17	0.26	0.13	0.19	0.13	0.24	0.13	0.39	0.14	0.19	0.10	0.18	0.08	0.16
16/08/2023	2.92	0.15	0.24	0.15	0.22	0.11	0.18	0.10	0.17	0.10	0.24	0.13	0.23	0.10	0.17	0.08	0.12
17/08/2023	2.74	0.13	0.19	0.13	0.16	0.09	0.12	0.08	0.14	0.08	0.15	0.09	0.16	0.08	0.14	0.05	0.12
18/08/2023	2.68	0.12	0.18	0.13	0.18	0.08	0.14	0.08	0.12	0.08	0.13	0.09	0.15	0.07	0.15	0.06	0.12
19/08/2023	2.91	0.14	0.16	0.12	0.18	0.07	0.14	0.09	0.14	0.07	0.10	0.08	0.13	0.07	0.15	0.06	0.25
20/08/2023	2.74	0.12	0.19	0.12	0.19	0.07	0.12	0.08	0.14	0.10	0.15	0.09	0.13	0.07	0.13	0.06	1.34
21/08/2023	3.57	0.13	0.19	0.11	0.16	0.06	0.09	0.07	0.12	0.08	0.17	0.07	0.14	0.07	0.12	0.04	0.09
22/08/2023	4.74	0.13	0.18	0.10	0.13	0.07	0.12	0.07	0.12	0.06	0.11	0.05	0.11	0.05	0.10	0.02	0.09
23/08/2023	3.65	0.13	0.17	0.11	0.15	0.07	0.12	0.07	0.11	0.06	0.11	0.05	0.11	0.05	0.12	0.03	0.06
24/08/2023	3.62	0.13	0.19	0.09	0.17	0.06	0.16	0.08	0.14	0.14	0.09	0.05	0.15	0.04	0.13	0.02	0.07
25/08/2023	2.96	0.14	0.19	0.11	0.16	0.07	0.13	0.08	0.14	0.08	0.11	0.06	0.12	0.05	0.11	0.02	0.07
26/08/2023	2.61	0.12	0.18	0.10	0.15	0.07	0.09	0.07	0.13	0.05	0.11	0.05	0.10	0.05	0.09	0.01	0.07
27/08/2023	2.53	0.11	0.18	0.11	0.13	0.07	0.13	0.07	0.14	0.04	0.08	0.04	0.08	0.05	0.10	0.01	0.04
28/08/2023	2.67	0.11	0.16	0.08	0.16	0.07	0.13	0.08	0.13	0.08	0.19	0.04	0.09	0.06	0.13	0.03	0.08
29/08/2023	2.84	0.12	0.15	0.08	0.13	0.08	0.14	0.08	0.13	0.15	0.17	0.05	0.10	0.08	0.15	0.04	0.12
30/08/2023	3.33	0.11	0.16	0.08	0.13	0.08	0.14	0.07	0.12	0.14	0.22	0.06	0.09	0.10	0.12	0.05	0.11
31/08/2023	3.75	0.11	0.17	0.08	0.13	0.08	0.11	0.08	0.14	0.14	0.21	0.06	0.11	0.13	0.17	0.05	0.11

Total Number of Measurements Taken, A:	14602	15801	15645	16356	16742	16643	16567	17184
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:	14601	15801	15637	16356	16741	16643	16567	17183
Compliance with Turbidity Standard, C = B/A X 100%:	99.993%	100.000%	99.949%	100.000%	99.994%	100.000%	100.000%	99.994%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2023\08-August

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 A																		
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-Aug-2023	1.94	2.48	0.17	0.14	0.15	0.10	0.16	0.10	0.18	0.14	0.15	0.10	0.13	0.06	0.14	0.04	0.12	<0.02
02-Aug-2023	1.83	2.55	0.17	0.14	0.16	0.10	0.17	0.10	0.14	0.10	0.16	0.07	0.14	0.07	0.14	0.04	0.13	<0.02
03-Aug-2023	1.63	2.29	0.21	0.17	0.15	0.10	0.16	0.10	0.13	0.11	0.11	0.06	0.11	0.04	0.14	0.05	0.12	0.02
04-Aug-2023	1.58	2.04	0.13	0.12	0.17	0.13	0.22	0.14	0.14	0.13	0.11	0.09	0.11	0.05	0.12	0.03	0.13	0.03
05-Aug-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
06-Aug-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
07-Aug-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
08-Aug-2023	1.58	2.57	0.19	0.19	0.16	0.15	0.19	0.14	0.15	0.18	0.13	0.10	0.15	0.08	0.14	0.07	0.12	0.07
09-Aug-2023	1.42	2.99	0.22	0.22	0.18	0.19	0.20	0.17	0.17	0.14	0.12	0.12	0.18	0.10	0.15	0.08	0.14	0.10
10-Aug-2023	1.39	1.95	0.14	0.17	0.17	0.22	0.23	0.19	0.15	0.13	0.13	0.14	0.13	0.07	0.14	0.07	0.16	0.14
11-Aug-2023	1.68	2.59	0.15	0.18	0.13	0.18	0.14	0.11	0.15	0.12	0.11	0.13	0.13	0.06	0.13	0.06	0.19	0.07
12-Aug-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
13-Aug-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
14-Aug-2023	1.59	2.58	0.24	0.27	0.27	0.27	0.29	0.24	0.22	0.20	0.14	0.12	0.14	0.08	0.15	0.07	0.17	0.07
15-Aug-2023	1.90	2.82	0.19	0.22	0.18	0.20	0.19	0.16	0.18	0.16	0.17	0.16	0.17	0.17	0.16	0.12	0.22	0.14
16-Aug-2023	1.74	2.91	0.17	0.21	0.18	0.20	0.17	0.16	0.16	0.15	0.17	0.17	0.18	0.18	0.18	0.14	0.17	0.10
17-Aug-2023	1.75	2.81	0.11	0.15	0.12	0.14	0.13	0.09	0.11	0.09	0.15	0.12	0.16	0.13	0.15	0.08	0.13	0.04
18-Aug-2023	1.90	2.51	0.11	0.15	0.13	0.15	0.15	0.10	0.11	0.09	0.11	0.10	0.13	0.10	0.21	0.12	0.16	0.06
19-Aug-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
20-Aug-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
21-Aug-2023	1.77	3.99	0.12	0.17	0.11	0.14	0.12	0.06	0.09	0.08	0.12	0.12	0.12	0.10	0.13	0.07	0.12	0.05
22-Aug-2023	1.56	4.81	0.10	0.15	0.11	0.12	0.12	0.08	0.10	0.08	0.15	0.09	0.16	0.09	0.15	0.06	0.12	0.02
23-Aug-2023	1.67	3.29	0.10	0.15	0.12	0.13	0.14	0.09	0.10	0.08	0.11	0.07	0.12	0.06	0.16	0.07	0.13	0.03
24-Aug-2023	1.69	3.98	0.10	0.15	0.13	0.13	0.15	0.09	0.10	0.08	0.11	0.07	0.12	0.05	0.12	0.03	0.13	0.03
25-Aug-2023	1.83	2.94	0.11	0.17	0.11	0.12	0.10	0.08	0.12	0.12	0.10	0.10	0.11	0.07	0.12	0.05	0.10	0.03
26-Aug-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
27-Aug-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
28-Aug-2023	1.61	2.64	0.10	0.15	0.13	0.14	0.14	0.10	0.11	0.09	0.10	0.07	0.10	0.04	0.11	0.04	0.10	<0.02
29-Aug-2023	1.82	2.84	0.14	0.14	0.11	0.08	0.12	0.09	0.13	0.10	0.11	0.15	0.12	0.06	0.14	0.07	0.15	0.05
30-Aug-2023	1.79	3.16	0.13	0.14	0.11	0.09	0.11	0.09	0.15	0.11	0.12	0.18	0.13	0.07	0.13	0.09	0.12	0.03
31-Aug-2023	1.95	na	0.16	0.14	0.12	0.10	0.13	0.09	0.11	0.08	0.17	0.18	0.16	0.08	0.16	0.13	0.14	0.05
Total number of measurements taken, A:			22		22		22		22		22		22		22		22	
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:			22		22		22		22		22		22		22		22	
Compliance with Turbidity Standard, C= B/A X 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:

The raw water analyzer is cleaned daily during warm water months because it is susceptible to frequent fouling

Report Date: 5-Sep-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 September 2023

Report Period: August 2023

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/08/2023	1.28	1.06	1.37	1.17
02/08/2023	1.28	1.10	1.37	1.18
03/08/2023	1.32	1.18	1.44	1.29
04/08/2023	1.28	1.13	1.45	1.24
05/08/2023	1.15	1.02	1.30	1.09
06/08/2023	1.25	1.00	1.29	1.05
07/08/2023	1.26	1.13	1.34	1.20
08/08/2023	1.45	1.34	1.49	1.31
09/08/2023	1.39	1.24	1.49	1.34
10/08/2023	1.44	1.24	1.57	1.24
11/08/2023	1.44	1.09	1.58	1.22
12/08/2023	1.22	1.15	1.35	1.21
13/08/2023	1.29	1.15	1.40	1.22
14/08/2023	1.25	0.98	1.32	1.00
15/08/2023	1.35	1.22	1.47	1.30
16/08/2023	1.32	1.14	1.45	1.29
17/08/2023	1.32	1.00	1.46	1.07
18/08/2023	1.36	1.24	1.48	1.36
19/08/2023	1.35	1.27	1.49	1.40
20/08/2023	1.40	1.30	1.53	1.47
21/08/2023	1.37	1.26	1.47	1.31
22/08/2023	1.33	1.20	1.37	1.22
23/08/2023	1.30	1.16	1.29	1.13
24/08/2023	1.30	0.87	1.28	0.49
25/08/2023	1.37	1.06	1.37	0.96
26/08/2023	1.54	1.38	1.58	1.38
27/08/2023	1.48	1.35	1.37	1.29
28/08/2023	1.44	1.35	1.32	1.24
29/08/2023	1.50	1.36	1.39	1.29
30/08/2023	1.49	1.38	1.36	1.25
31/08/2023	1.42	1.18	1.33	1.14

Total Number of Measurements, A:	21621	21611
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21621	21610
COMPLIANCE, C = B/A X 100%:	100.000	99.995%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2023\08-August

Submitted By (Print): D. Merredew

Signature: Original signed by D. Merredew



WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT						
Water System Code: 252.00 Licence No. PWS-09-412-02 A	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-Aug-2023	1.29	1.31	1.55	1.40	1.50	1.75
02-Aug-2023	1.23	1.31	1.58	1.29	1.38	1.68
03-Aug-2023	1.33	1.37	1.66	1.45	1.48	1.76
04-Aug-2023	1.39	1.35	1.59	1.58	1.54	1.74
05-Aug-2023	ns	ns	ns	ns	ns	ns
06-Aug-2023	ns	ns	ns	ns	ns	ns
07-Aug-2023	ns	ns	ns	ns	ns	ns
08-Aug-2023	1.42	1.43	1.58	1.43	1.51	1.86
09-Aug-2023	1.43	1.44	1.70	1.53	1.52	1.86
10-Aug-2023	1.41	1.40	1.70	1.52	1.45	1.75
11-Aug-2023	1.48	1.52	1.75	1.61	1.59	1.90
12-Aug-2023	ns	ns	ns	ns	ns	ns
13-Aug-2023	ns	ns	ns	ns	ns	ns
14-Aug-2023	1.36	1.31	1.58	1.38	1.42	1.65
15-Aug-2023	1.40	1.41	1.70	1.51	1.50	1.80
16-Aug-2023	1.35	1.33	1.58	1.44	1.41	1.73
17-Aug-2023	1.40	1.37	1.61	1.53	1.55	1.72
18-Aug-2023	1.32	1.33	1.52	1.45	1.49	1.69
19-Aug-2023	ns	ns	ns	ns	ns	ns
20-Aug-2023	ns	ns	ns	ns	ns	ns
21-Aug-2023	1.48	1.38	1.68	1.58	1.56	1.80
22-Aug-2023	1.31	1.31	1.60	1.27	1.22	1.51
23-Aug-2023	1.33	1.31	1.55	1.33	1.34	1.58
24-Aug-2023	1.45	1.20	1.48	1.42	1.22	1.47
25-Aug-2023	1.26	1.22	1.52	1.41	1.38	1.67
26-Aug-2023	ns	ns	ns	ns	ns	ns
27-Aug-2023	ns	ns	ns	ns	ns	ns
28-Aug-2023	1.40	1.46	1.74	1.28	1.38	1.67
29-Aug-2023	1.56	1.56	1.86	1.51	1.52	1.88
30-Aug-2023	1.49	1.44	1.70	1.36	1.39	1.69
31-Aug-2023	1.45	1.37	1.65	1.35	1.35	1.60
Total number of measurements taken, A:			22			22
Chlorine Standard for Monitoring Location (mg/L):			0.50			0.50
Number of measurements meeting standard, B:			22			22
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: 5-Sep-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: August 2023

Report Created: Friday, September 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				
01/08/2023	0.00	0.33	52.82	53.15	0.00	0.00	81.01	81.01	0.00	0.29	83.55	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	0.00	0.00	0.00	0.62	217.37	218.00	99.71
02/08/2023	0.00	0.30	52.90	53.19	0.00	0.06	80.94	81.00	0.00	0.23	83.57	83.81	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	0.00	0.59	217.41	218.00	99.73	
03/08/2023	0.00	0.37	52.75	53.12	0.00	0.00	80.88	80.88	0.00	0.23	83.47	83.71	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	0.00	0.60	217.11	217.71	99.72	
04/08/2023	0.00	0.44	52.73	53.17	0.00	0.00	80.92	80.92	0.00	0.41	83.36	83.77	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	0.00	0.85	217.00	217.85	99.61	
05/08/2023	0.00	0.22	52.99	53.21	0.00	0.00	80.99	80.99	0.00	0.23	83.54	83.77	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	0.00	0.46	217.52	217.97	99.79	
06/08/2023	0.00	0.29	52.81	53.10	0.00	0.11	80.80	80.91	0.00	0.17	83.35	83.53	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	0.00	0.58	216.96	217.54	99.73	
07/08/2023	0.00	0.33	52.76	53.09	0.00	0.00	80.99	80.99	0.00	0.41	83.04	83.45	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	0.00	0.74	216.79	217.53	99.66	
08/08/2023	0.00	0.44	52.74	53.18	0.00	0.00	81.13	81.13	0.00	0.12	83.57	83.68	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	0.00	0.56	217.44	218.00	99.74	
09/08/2023	0.00	0.37	52.68	53.05	0.00	0.00	80.91	80.91	0.00	0.41	83.18	83.59	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	0.00	0.78	216.77	217.55	99.64	
10/08/2023	0.00	0.49	49.84	50.33	0.00	0.05	74.24	74.29	0.00	0.06	40.19	40.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	37.15	37.31	0.00	0.00	0.76	201.42	202.18	99.62		
11/08/2023	0.00	0.35	49.97	50.32	0.00	0.05	72.62	72.67	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	1.18	75.71	76.89	0.00	0.00	1.58	198.30	199.88	99.21		
12/08/2023	0.00	0.35	50.53	50.88	0.00	0.05	72.22	72.27	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	0.75	75.93	76.67	0.00	0.00	1.15	198.67	199.82	99.42		
13/08/2023	0.00	0.43	51.84	52.27	0.00	0.00	71.84	71.84	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	75.15	75.88	0.00	0.00	1.17	198.82	200.00	99.41		
14/08/2023	0.00	11.21	23.57	34.78	0.00	0.17	70.22	70.39	0.00	0.00	0.00	0.00	0.00	0.00	19.88	19.88	0.00	0.00	0.00	0.00	0.00	1.00	71.73	72.73	0.00	0.00	12.38	185.40	197.78	93.74		
15/08/2023	0.00	0.00	0.00	0.00	0.00	0.00	68.44	68.44	0.00	0.00	0.00	0.00	0.00	0.00	65.05	65.05	0.00	0.00	0.00	0.00	0.00	0.81	63.74	64.55	0.00	0.00	0.81	197.23	198.04	99.59		
16/08/2023	0.00	0.00	0.00	0.00	0.00	0.05	70.01	70.06	0.00	0.00	0.00	0.00	0.00	0.00	67.05	67.05	0.00	0.00	0.00	0.00	0.00	0.93	65.01	65.94	0.00	0.00	0.98	202.07	203.05	99.52		
17/08/2023	0.00	0.00	0.00	0.00	0.00	0.00	71.30	71.30	0.00	0.00	0.00	0.00	0.00	0.05	68.22	68.27	0.00	0.00	0.00	0.00	0.00	1.12	66.30	67.42	0.00	0.00	1.17	205.82	206.99	99.43		
18/08/2023	0.00	0.00	0.00	0.00	0.00	0.00	72.78	72.78	0.00	0.00	0.00	0.00	0.00	0.00	69.51	69.51	0.00	0.00	0.00	0.00	0.00	0.63	68.13	68.76	0.00	0.00	0.63	210.42	211.05	99.70		
19/08/2023	0.00	0.00	0.00	0.00	0.00	0.00	73.74	73.74	0.00	0.00	0.00	0.00	0.00	0.00	70.37	70.37	0.00	0.00	0.00	0.00	0.00	0.91	67.98	68.88	0.00	0.00	0.91	212.09	213.00	99.57		
20/08/2023	0.00	0.00	0.00	0.00	0.00	0.05	73.70	73.75	0.00	0.00	0.00	0.00	0.00	0.00	70.34	70.34	0.00	0.00	0.00	0.00	0.00	0.96	67.94	68.90	0.00	0.00	1.01	211.98	212.99	99.53		
21/08/2023	0.00	0.00	0.00	0.00	0.00	0.12	70.82	70.93	0.00	0.16	18.50	18.66	0.19	0.19	48.90	49.29	0.18	0.18	10.46	10.82	0.00	0.90	62.10	63.00	0.37	1.55	210.78	212.70	99.10			
22/08/2023	0.00	0.00	0.06	0.06	0.00	0.00	70.32	70.32	0.00	0.00	24.10	24.10	0.00	0.00	43.17	43.17	0.00	0.00	25.94	25.94	0.00	0.42	47.87	48.29	0.00	0.00	0.42	211.45	211.87	99.80		
23/08/2023	0.00	0.00	0.00	0.00	0.00	0.05	73.67	73.72	0.00	0.00	0.00	0.00	0.00	0.00	68.45	68.45	0.00	0.00	0.00	0.00	0.00	0.52	67.90	68.42	0.00	0.00	0.57	210.02	210.59	99.73		
24/08/2023	0.00	0.00	7.90	7.90	0.00	0.00	58.53	58.53	0.00	0.00	0.00	0.00	0.00	0.00	54.20	54.20	0.00	0.00	4.63	4.63	0.04	2.43	60.56	63.02	0.04	2.43	210.81	188.28	98.69			
25/08/2023	0.00	0.24	81.07	81.31	0.00	0.02	9.79	9.81	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.00	0.00	49.45	49.45	0.00	4.13	68.48	72.61	0.00	0.00	4.39	208.92	213.31	97.94		
26/08/2023	0.00	0.41	84.59	85.01	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	44.06	44.06	0.00	0.45	80.21	80.66	0.00	0.00	0.86	208.87	209.73	99.59		
27/08/2023	0.00	0.41	84.48	84.89	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	42.48	42.48	0.00	1.46	76.06	77.52	0.00	0.00	1.87	203.02	204.89	99.09		
28/08/2023	0.00	0.71	84.28	85.00	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	0.00	42.95	42.95	0.00	0.60	77.80	78.40	0.00	0.00	1.32	205.03	206.35	99.36		
29/08/2023	0.00	0.75	81.47	82.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.10	37.10	0.00	0.00	39.43	39.43	0.00	1.23	52.97	54.19	0.00	0.00	1.97	210.96	212.94	99.07		
30/08/2023	0.00	0.88	78.31	79.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.80	51.80	0.00	0.00	0.00	0.00	0.00	1.37	77.63	79.00	0.00	0.00	2.25	207.74	209.99	98.93		
31/08/2023	0.00	0.89	79.24	80.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.84	51.84	0.00	0.00	0.00	0.00	0.00	2.46	76.00	78.46	0.00	0.00	3.35	207.08	210.44	98.41		
Total [ML]:	0.00	20.25	1282.32	1302.57	0.00	0.79	1802.81	1803.60	0.00	2.73	833.42	836.15	0.19	0.24	786.01	786.44	0.18	0.18	259.39	259.75	0.04	25.13	1482.35	1507.52	0.41	49.31	6446.30	6496.02				

Water Volume [%]:

Untreated: 0.01 %
 Below Dose: 0.76 %
 To Dose: 99.23 %

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: **August 2023**

Report Created: **Friday, September 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.
01/08/2023	95.4	93.9	93.5	92.2	16.2	28.3	21.4	17.8	21.9	21.3	17.5	21.9	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL
02/08/2023	95.5	93.8	93.5	91.4	16.3	29.0	21.4	17.7	21.9	21.3	17.6	22.0	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL
03/08/2023	95.6	94.1	93.7	92.0	15.6	30.0	21.4	17.7	21.9	21.3	17.5	21.9	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL
04/08/2023	95.7	94.0	93.8	92.6	16.4	29.9	21.4	17.8	21.8	21.3	17.4	21.9	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL
05/08/2023	95.8	94.4	93.9	93.1	16.6	30.4	21.4	17.8	21.8	21.3	17.5	21.9	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL
06/08/2023	95.0	86.1	93.2	91.4	15.2	29.4	21.4	15.8	21.8	21.3	17.2	21.9	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL
07/08/2023	94.9	93.6	93.0	92.0	15.7	28.0	21.4	17.3	21.8	21.3	17.6	21.9	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL
08/08/2023	94.9	93.0	92.9	91.3	16.0	26.4	21.4	17.8	21.8	21.3	17.3	21.9	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL
09/08/2023	94.9	93.9	93.0	91.1	16.4	25.3	21.4	17.7	21.8	21.3	17.4	21.8	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL
10/08/2023	95.3	94.1	93.4	92.4	16.5	26.2	21.4	17.7	22.1	21.4	0.0	37.9	21.1	OL	OL	OL	OL	OL	OL	17.1	84.6	21.4
11/08/2023	95.5	94.2	93.6	91.3	15.5	27.3	21.4	17.8	22.0	21.4	OL	OL	OL	OL	OL	OL	OL	OL	OL	16.9	22.7	21.1
12/08/2023	95.4	93.8	93.5	92.3	16.3	34.8	21.4	16.9	31.0	21.4	OL	OL	OL	OL	OL	OL	OL	OL	OL	13.6	40.5	21.1
13/08/2023	95.2	93.5	93.4	91.8	15.2	27.6	21.4	17.9	21.9	21.4	OL	OL	OL	OL	OL	OL	OL	OL	OL	16.9	24.9	21.1
14/08/2023	93.4	91.8	91.4	89.9	0.0	34.6	18.8	15.3	34.1	21.2	OL	OL	OL	0.0	102.4	21.3	OL	OL	OL	16.4	40.7	21.1
15/08/2023	93.6	92.7	91.5	90.8	OL	OL	OL	18.0	22.0	21.4	OL	OL	OL	18.8	22.9	21.2	OL	OL	OL	16.8	22.2	21.2
16/08/2023	94.3	93.0	92.3	90.9	OL	OL	OL	17.6	21.9	21.4	OL	OL	OL	18.7	22.2	21.2	OL	OL	OL	16.6	22.5	21.2
17/08/2023	95.8	94.9	94.1	92.6	OL	OL	OL	17.6	21.9	21.4	OL	OL	OL	16.1	30.0	21.2	OL	OL	OL	17.0	22.2	21.2
18/08/2023	95.9	94.1	94.1	92.8	OL	OL	OL	17.5	21.9	21.4	OL	OL	OL	18.8	22.9	21.2	OL	OL	OL	16.4	22.2	21.2
19/08/2023	96.0	94.8	94.3	93.1	OL	OL	OL	17.8	22.0	21.4	OL	OL	OL	18.6	21.7	21.2	OL	OL	OL	16.8	22.2	21.2
20/08/2023	96.0	94.5	94.3	92.8	OL	OL	OL	17.8	21.8	21.4	OL	OL	OL	18.8	22.5	21.2	OL	OL	OL	16.7	24.3	21.2
21/08/2023	96.2	94.8	94.7	92.8	OL	OL	OL	16.2	22.4	21.4	0.0	54.9	21.2	0.0	21.7	21.2	0.0	71.3	30.6	5.9	24.9	21.2
22/08/2023	96.2	95.2	94.9	89.2	0.0	102.1	69.0	17.6	22.2	21.4	0.0	36.3	21.5	0.0	72.6	21.5	0.0	58.8	27.5	0.0	84.6	21.8
23/08/2023	96.3	94.9	94.8	92.9	OL	OL	OL	17.5	21.9	21.4	OL	OL	OL	18.1	26.5	21.5	OL	OL	OL	16.8	24.1	21.2
24/08/2023	96.2	94.9	93.4	0.0	0.0	93.2	26.9	0.0	27.3	21.3	OL	OL	OL	0.0	33.7	21.5	17.5	66.6	25.4	0.0	49.2	20.9
25/08/2023	95.2	93.0	93.4	89.0	17.3	34.9	21.8	0.0	77.5	21.2	OL	OL	OL	0.0	96.1	53.2	18.2	33.8	22.5	0.0	84.6	21.1
26/08/2023	96.1	94.9	94.8	92.4	16.6	23.7	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.2	34.3	21.8	17.0	21.8	21.1
27/08/2023	96.1	95.3	94.8	93.9	17.1	22.9	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.2	35.0	21.6	16.7	21.8	21.1
28/08/2023	96.2	94.8	94.8	93.3	16.8	22.3	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	17.8	34.1	21.5	16.6	21.8	21.1
29/08/2023	96.0	94.6	94.6	93.6	16.1	21.9	21.1	OL	OL	OL	OL	OL	OL	18.0	101.2	26.5	0.0	33.6	21.3	0.0	84.6	21.2
30/08/2023	95.7	93.5	94.4	92.6	16.2	22.1	21.1	OL	OL	OL	OL	OL	OL	18.9	25.4	22.9	OL	OL	OL	16.3	22.5	21.2
31/08/2023	95.5	93.3	94.1	92.8	15.1	21.8	21.0	OL	OL	OL	OL	OL	OL	18.6	25.0	21.4	OL	OL	OL	16.2	22.0	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