



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 7, 2022

RE: DECEMBER 2021 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 2021.

The December on-line and grab sampling turbidity reports include results obtained for the Water Treatment Plant raw water and the eight filters. The turbidity results for the 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.

Yours sincerely,

*Original signed by,
(Signed original available upon request)*

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. S. Roberecki, Manitoba Health and Seniors Care (email)
M. L. Geer, CPA, CA (email)
T. Shanks, M. Eng., P. Eng. (e-mail)
C. Wiebe, P. Eng., CAMP (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 2021 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
1/12/2021	1.14	0.02	0.05	0.03	0.05	0.02	0.04	0.02	0.05	0.07	0.08	0.03	0.05	OL	OL	0.03	0.06
2/12/2021	1.12	0.03	0.04	0.03	0.06	0.02	0.06	0.03	0.05	0.06	0.09	0.03	0.07	OL	OL	0.03	0.06
3/12/2021	1.11	0.03	0.05	0.03	0.06	0.02	0.07	0.03	0.05	0.06	0.09	0.03	0.09	OL	OL	0.04	0.07
4/12/2021	1.09	0.04	0.08	0.04	0.10	0.03	0.08	0.03	0.06	0.06	0.11	0.04	0.07	OL	OL	0.04	0.09
5/12/2021	1.08	0.04	0.09	0.04	0.09	0.04	0.07	0.03	0.07	0.06	0.12	0.04	0.10	OL	OL	0.04	0.09
6/12/2021	1.08	0.05	0.10	0.05	0.08	0.03	0.07	0.04	0.08	0.07	0.13	0.05	0.10	OL	OL	0.04	0.10
7/12/2021	1.07	0.04	0.10	0.05	0.10	0.03	0.09	0.03	0.06	0.08	0.12	0.04	0.09	0.03	0.21	0.04	0.10
8/12/2021	1.07	0.05	0.08	0.04	0.10	0.03	0.08	0.04	0.08	0.06	0.14	0.03	0.10	0.03	0.09	0.04	0.06
9/12/2021	1.06	0.05	0.09	0.04	0.11	0.03	0.10	0.04	0.09	0.05	0.11	0.04	0.06	0.03	0.05	0.05	0.10
10/12/2021	1.04	0.08	0.15	0.05	0.17	0.05	0.10	0.06	0.15	0.06	0.17	0.06	0.09	0.05	0.10	0.05	0.10
11/12/2021	1.03	0.07	0.19	0.11	0.17	0.09	0.16	0.06	0.11	0.08	0.12	0.05	0.13	0.05	0.14	0.05	0.14
12/12/2021	1.02	0.10	0.14	0.07	0.18	0.06	0.16	0.09	0.19	0.06	0.17	0.04	0.07	0.04	0.15	0.05	0.08
13/12/2021	1.02	0.06	0.16	0.05	0.16	0.05	0.09	0.06	0.15	0.05	0.15	0.06	0.12	0.05	0.07	0.05	0.12
14/12/2021	1.02	0.05	0.12	0.07	0.11	0.06	0.12	0.04	0.12	0.04	0.08	0.04	0.11	0.04	0.11	0.05	0.11
15/12/2021	1.02	0.04	0.08	0.08	0.13	0.06	0.12	0.06	0.10	0.07	0.13	0.05	0.11	0.04	0.10	0.04	0.12
16/12/2021	1.02	0.08	0.18	0.07	0.17	0.05	0.12	0.06	0.21	0.06	0.26	0.04	0.19	0.04	0.17	0.06	0.19
17/12/2021	1.02	0.06	0.13	0.07	0.17	0.05	0.08	0.06	0.14	0.06	0.15	0.06	0.13	0.05	0.08	0.06	0.13
18/12/2021	1.00	0.07	0.17	0.10	0.13	0.09	0.14	0.06	0.16	0.06	0.11	0.05	0.13	0.05	0.14	0.06	0.14
19/12/2021	0.99	0.06	0.11	0.08	0.19	0.05	0.15	0.07	0.12	0.08	0.18	0.05	0.16	0.04	0.15	0.04	0.13
20/12/2021	0.97	0.09	0.13	0.08	0.19	0.07	0.17	0.07	0.12	0.07	0.16	0.05	0.08	0.05	0.15	0.07	0.10
21/12/2021	0.97	0.04	0.15	0.06	0.18	0.05	0.16	0.04	0.15	0.05	0.12	0.05	0.14	0.05	0.11	0.04	0.14
22/12/2021	0.97	0.04	0.11	0.08	0.12	0.05	0.11	0.04	0.11	0.05	0.08	0.03	0.09	0.04	0.09	0.03	0.10
23/12/2021	0.95	0.04	0.08	0.05	0.14	0.03	0.15	0.05	0.10	0.05	0.12	0.03	0.07	0.03	0.10	0.03	0.07
24/12/2021	0.94	0.04	0.08	0.04	0.09	0.03	0.08	0.03	0.07	0.04	0.08	0.03	0.06	0.03	0.05	0.04	0.07
25/12/2021	0.93	0.03	0.08	0.06	0.08	0.05	0.07	0.03	0.08	0.04	0.10	0.03	0.08	0.05	0.09	0.03	0.07
26/12/2021	0.92	0.04	0.07	0.06	0.12	0.04	0.11	0.04	0.08	0.06	0.10	0.02	0.07	0.04	0.11	0.03	0.07
27/12/2021	0.90	0.04	0.07	0.04	0.12	0.03	0.10	0.03	0.07	0.03	0.08	0.04	0.08	0.05	0.07	0.04	0.07
28/12/2021	0.88	0.04	0.09	0.07	0.09	0.07	0.10	0.02	0.07	0.05	0.07	0.03	0.07	0.06	0.11	0.02	0.07
29/12/2021	0.88	0.05	0.07	0.06	0.11	0.05	0.11	0.04	0.06	0.07	0.12	0.03	0.09	0.05	0.12	0.03	0.05
30/12/2021	0.87	0.06	0.11	0.06	0.12	0.05	0.12	0.04	0.07	0.06	0.12	0.04	0.07	0.06	0.09	0.04	0.08
31/12/2021	0.86	0.05	0.11	0.08	0.11	0.08	0.11	0.03	0.09	0.06	0.14	0.04	0.08	0.09	0.13	0.03	0.07

Total Number of Measurements Taken, A:	11496	11621	11800	12459	13549	13941	10538	14907
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:	11496	11621	11800	12459	13549	13941	10538	14907
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=Offline								

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2021\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 Licence No. PWS-09-412-02	Turbidity (NTU)																	
	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-2021	1.03	1.13	0.07	0.03	0.08	0.04	0.08	0.03	0.06	0.02	0.07	0.07	0.09	0.05	OL	OL	0.06	0.03
02-Dec-2021	1.02	1.10	0.07	0.04	0.08	0.04	0.07	0.03	0.07	0.03	0.08	0.08	0.07	0.04	OL	OL	0.07	0.03
03-Dec-2021	1.01	1.09	0.08	0.04	0.08	0.03	0.08	0.03	0.08	0.04	0.08	0.08	0.08	0.06	OL	OL	0.07	0.08
04-Dec-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	OL	OL	NS	NS
05-Dec-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	OL	OL	NS	NS
06-Dec-2021	1.05	1.06	0.10	0.05	0.11	0.05	0.12	0.05	0.08	0.04	0.09	0.10	0.14	0.08	OL	OL	0.12	0.06
07-Dec-2021	0.87	1.04	0.10	0.06	0.13	0.07	0.16	0.08	0.09	0.04	0.09	0.10	0.15	0.08	0.15	0.07	0.09	0.04
08-Dec-2021	0.97	1.04	0.11	0.06	0.12	0.07	0.16	0.08	0.12	0.08	0.15	0.14	0.10	0.05	0.09	0.03	0.09	0.04
09-Dec-2021	0.94	1.04	0.13	0.07	0.10	0.02	0.11	0.04	0.14	0.08	0.16	0.11	0.10	0.05	0.09	0.03	0.10	0.04
10-Dec-2021	0.89	1.02	0.22	0.14	0.13	0.07	0.14	0.06	0.25	0.15	0.10	0.06	0.13	0.07	0.11	0.04	0.15	0.08
11-Dec-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.13	0.06	NS	NS
12-Dec-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
13-Dec-2021	0.93	0.99	0.17	0.10	0.15	0.09	0.15	0.08	0.18	0.11	0.11	0.08	0.13	0.07	0.12	0.04	0.14	0.07
14-Dec-2021	0.92	1.00	0.12	0.07	0.14	0.09	0.14	0.07	0.10	0.05	0.09	0.06	0.12	0.07	0.13	0.06	0.12	0.06
15-Dec-2021	0.88	1.00	0.13	0.07	0.17	0.11	0.17	0.09	0.13	0.07	0.12	0.08	0.10	0.05	0.16	0.08	0.10	0.04
16-Dec-2021	0.87	0.98	0.16	0.09	0.15	0.10	0.14	0.07	0.16	0.10	0.10	0.08	0.11	0.06	0.11	0.04	0.12	0.05
17-Dec-2021	0.87	0.98	0.17	0.10	0.15	0.09	0.14	0.07	0.19	0.12	0.12	0.09	0.13	0.08	0.12	0.05	0.14	0.07
18-Dec-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
19-Dec-2021	NS	NS	0.13	0.07	0.15	0.11	0.17	0.09	0.11	0.06	0.10	0.07	0.20	0.14	0.20	0.11	0.11	0.05
20-Dec-2021	0.84	0.95	0.17	0.10	0.21	0.19	0.14	0.07	0.20	0.13	0.20	0.14	0.13	0.07	0.11	0.05	0.12	0.06
21-Dec-2021	0.86	0.95	0.16	0.11	0.11	0.07	0.11	0.06	0.11	0.06	0.10	0.07	0.11	0.05	0.09	0.03	0.13	0.07
22-Dec-2021	0.82	0.96	0.10	0.06	0.11	0.08	0.12	0.06	0.08	0.04	0.08	0.06	0.14	0.07	0.12	0.06	0.17	0.09
23-Dec-2021	0.84	0.94	0.09	0.05	0.11	0.08	0.11	0.06	0.09	0.06	0.08	0.07	0.07	0.04	0.10	0.05	0.07	0.03
24-Dec-2021	0.81	0.92	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
25-Dec-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
26-Dec-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
27-Dec-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
28-Dec-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
29-Dec-2021	0.80	0.87	0.09	0.06	0.12	0.10	0.12	0.09	0.09	0.04	0.08	0.10	0.08	0.05	0.12	0.11	0.07	0.04
30-Dec-2021	0.78	0.85	0.13	0.08	0.11	0.09	0.10	0.07	0.11	0.06	0.13	0.12	0.09	0.05	0.08	0.07	0.08	0.04
31-Dec-2021	0.76	0.87	0.15	0.11	0.11	0.10	0.11	0.09	0.09	0.05	0.07	0.09	0.10	0.07	0.08	0.09	0.08	0.05
Total number of measurements taken, A:			21		21		21		21		21		21		18		21	
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:			21		21		21		21		21		21		18		21	
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 NR: No Result IM: Instrument Maintenance

Comments:

Note: Filter 7 was offline from November 23 to December 7 for valve maintenance.

Compiled By: H. Demchenko

Authorized By: C. Diduck

Report Date: 7-Jan-22

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 2022**

Report Period: December 2021

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/12/2021	1.24	1.13	1.25	1.06
02/12/2021	1.28	1.15	1.31	1.21
03/12/2021	1.27	1.15	1.23	1.11
04/12/2021	1.12	1.00	1.12	1.00
05/12/2021	1.12	0.98	1.13	1.02
06/12/2021	1.16	1.02	1.16	1.06
07/12/2021	1.19	1.09	1.19	1.08
08/12/2021	1.17	1.04	1.23	1.09
09/12/2021	1.17	1.08	1.27	1.20
10/12/2021	1.17	1.10	1.27	1.17
11/12/2021	1.06	0.94	1.18	1.09
12/12/2021	1.04	0.98	1.21	1.15
13/12/2021	1.09	0.98	1.19	1.11
14/12/2021	1.08	1.01	1.22	1.13
15/12/2021	1.05	0.98	1.27	1.21
16/12/2021	1.05	0.69	1.31	0.81
17/12/2021	1.08	0.98	1.30	1.17
18/12/2021	1.04	0.99	1.24	1.17
19/12/2021	1.20	1.00	1.25	1.16
20/12/2021	1.27	1.17	1.22	1.12
21/12/2021	1.24	1.12	1.24	1.14
22/12/2021	1.25	1.08	1.28	1.19
23/12/2021	1.23	1.17	1.26	1.13
24/12/2021	1.13	1.07	1.18	1.09
25/12/2021	1.09	1.01	1.15	1.08
26/12/2021	1.17	0.99	1.22	1.05
27/12/2021	1.18	1.12	1.24	1.18
28/12/2021	1.19	1.09	1.28	1.20
29/12/2021	1.18	1.08	1.25	1.16
30/12/2021	1.22	1.06	1.29	1.17
31/12/2021	1.19	1.10	1.29	1.21

Total Number of Measurements, A:	21604	21604
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21604	21604
COMPLIANCE, C = B/A X 100%:	100.00	100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2021\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 Licence No. PWS-09-412-02	Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Date	Analyser	Grab	Grab	Analyser	Grab
01-Dec-2021	1.22	1.27	1.47	1.28	1.34	1.51
02-Dec-2021	1.27	1.36	1.55	1.33	1.40	1.56
03-Dec-2021	1.28	1.29	1.49	1.24	1.31	1.47
04-Dec-2021	NS	NS	NS	NS	NS	NS
05-Dec-2021	NS	NS	NS	NS	NS	NS
06-Dec-2021	1.17	1.20	1.40	1.17	1.23	1.42
07-Dec-2021	1.18	1.22	1.42	1.18	1.24	1.44
08-Dec-2021	1.18	1.26	1.42	1.19	1.26	1.45
09-Dec-2021	1.09	1.16	1.38	1.26	1.28	1.46
10-Dec-2021	1.19	1.20	1.38	1.26	1.30	1.49
11-Dec-2021	NS	NS	NS	NS	NS	NS
12-Dec-2021	NS	NS	NS	NS	NS	NS
13-Dec-2021	1.04	1.04	1.26	1.19	1.21	1.43
14-Dec-2021	1.09	1.09	1.29	1.18	1.28	1.48
15-Dec-2021	1.07	1.03	1.24	1.30	1.28	1.48
16-Dec-2021	1.39	0.97	1.17	1.25	1.21	1.41
17-Dec-2021	1.11	1.10	1.24	1.34	1.31	1.44
18-Dec-2021	NS	NS	NS	NS	NS	NS
19-Dec-2021	NS	NS	NS	NS	NS	NS
20-Dec-2021	1.28	1.26	1.43	1.27	1.22	1.43
21-Dec-2021	1.29	1.26	1.44	1.26	1.29	1.45
22-Dec-2021	1.23	1.23	1.41	1.25	1.28	1.44
23-Dec-2021	1.25	1.23	1.41	1.28	1.30	1.44
24-Dec-2021	1.13	1.15	1.34	1.15	1.20	1.37
25-Dec-2021	NS	NS	NS	NS	NS	NS
26-Dec-2021	NS	NS	NS	NS	NS	NS
27-Dec-2021	NS	NS	NS	NS	NS	NS
28-Dec-2021	NS	NS	NS	NS	NS	NS
29-Dec-2021	1.21	1.20	1.38	1.25	1.27	1.44
30-Dec-2021	1.31	1.30	1.47	1.39	1.44	1.62
31-Dec-2021	1.21	1.22	1.41	1.30	1.32	1.50
Total number of measurements taken, A:		21			21	
Chlorine Standard for Monitoring Location (mg/L):		0.50			0.50	
Number of measurements meeting standard, B:		21			21	
Compliance with Chlorine Standard, C= B/A X 100%:		100%			100%	

NS: No Sample NA: Not Analyzed OL: Off-Line NR: No Result IM: Instrument Maintenance

Comments:

Compiled By: H. Demchenko

Authorized By: C. Diduck

Report Date: 7-Jan-22



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 2021

Report Created: Saturday, January 01, 2022

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
01/12/2021	0.00	0.00	0.00	0.00	0.00	0.00	59.99	59.99	0.00	0.00	0.00	0.00	0.00	0.00	61.72	61.72	0.00	0.00	69.31	69.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	191.02	191.02	100.00	
02/12/2021	0.00	0.00	0.00	0.00	0.00	0.00	60.01	60.01	0.00	0.00	0.00	0.00	0.00	0.00	61.17	61.17	0.00	0.05	68.76	68.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	189.94	189.99	99.97
03/12/2021	0.00	0.00	0.00	0.00	0.00	0.00	60.00	60.00	0.00	0.00	0.00	0.00	0.00	0.00	60.04	60.04	0.00	0.14	66.29	66.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	186.33	186.47	99.93
04/12/2021	0.00	0.00	0.00	0.00	0.00	0.00	59.99	59.99	0.00	0.00	0.00	0.00	0.00	0.09	63.68	63.77	0.00	0.10	70.96	71.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	194.64	194.83	99.90
05/12/2021	0.00	0.00	0.00	0.00	0.00	0.00	60.01	60.01	0.00	0.00	0.00	0.00	0.00	0.66	62.90	63.57	0.00	0.05	71.39	71.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	194.30	195.02	99.63
06/12/2021	0.00	0.00	0.00	0.00	0.00	0.00	60.00	60.00	0.00	0.00	0.00	0.00	0.00	1.06	62.36	63.42	0.00	0.15	71.45	71.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.21	193.81	195.02	99.38
07/12/2021	0.00	0.00	0.00	0.00	0.00	0.00	59.97	59.97	0.00	0.00	26.15	26.15	0.00	0.53	35.56	36.09	0.00	0.15	71.36	71.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	193.04	193.72	99.65
08/12/2021	0.00	0.00	0.26	0.26	0.00	0.00	63.35	63.35	0.00	0.09	61.52	61.60	0.00	0.00	0.07	0.07	0.00	0.00	28.14	28.14	0.31	0.31	39.57	40.18	0.31	0.31	0.31	0.39	192.90	193.60	99.64
09/12/2021	0.00	0.00	0.00	0.00	0.00	0.00	68.01	68.01	0.00	0.09	67.42	67.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.46	67.46	0.00	0.09	202.89	202.99	99.95		
10/12/2021	0.00	0.00	0.00	0.00	0.00	0.00	64.53	64.53	0.00	0.18	62.21	62.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.35	65.35	0.00	0.18	192.09	192.27	99.91		
11/12/2021	0.00	0.00	0.00	0.00	0.00	0.00	62.90	62.90	0.00	0.08	54.54	54.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	64.03	64.76	0.00	0.81	181.47	182.28	99.56		
12/12/2021	0.00	0.00	0.00	0.00	0.00	0.00	63.05	63.05	0.00	0.27	53.54	53.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	64.67	65.12	0.00	0.72	181.26	181.98	99.60		
13/12/2021	0.00	0.00	0.00	0.00	0.00	0.00	62.71	62.71	0.00	0.34	54.24	54.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	64.15	64.69	0.00	0.88	181.10	181.98	99.52		
14/12/2021	0.00	0.00	0.00	0.00	0.00	0.00	63.29	63.29	0.00	0.53	56.56	57.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	64.57	65.03	0.00	0.98	184.42	185.40	99.47		
15/12/2021	0.00	0.00	0.00	0.00	0.00	0.04	63.90	63.94	0.00	0.60	56.72	57.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	64.98	65.81	0.00	1.47	185.60	187.07	99.21		
16/12/2021	0.00	0.00	0.00	0.00	0.07	0.57	59.81	60.45	0.00	0.20	21.25	21.45	0.00	0.00	42.36	42.36	0.00	0.00	0.00	0.00	0.00	0.64	61.15	61.79	0.07	1.41	184.58	186.06	99.21		
17/12/2021	0.00	0.00	0.00	0.00	0.00	0.61	58.27	58.88	0.00	0.00	0.00	0.00	0.00	0.00	80.03	80.03	0.00	0.00	0.00	0.00	0.00	0.55	64.49	65.03	0.00	1.16	202.79	203.95	99.43		
18/12/2021	0.00	0.00	0.00	0.00	0.00	0.93	52.04	52.97	0.00	0.00	0.00	0.00	0.00	0.00	81.32	81.32	0.00	0.00	0.00	0.00	0.00	0.69	69.19	69.88	0.00	1.62	202.54	204.16	99.21		
19/12/2021	0.00	0.14	41.68	41.82	0.00	0.67	17.36	18.03	0.00	0.00	0.00	0.00	0.00	0.00	73.56	73.56	0.00	0.00	0.00	0.00	0.00	0.95	69.93	70.88	0.00	1.76	202.53	204.29	99.14		
20/12/2021	0.00	0.13	61.91	62.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.17	60.17	0.00	0.00	28.44	28.45	0.00	0.42	36.85	37.27	0.00	0.55	187.38	187.93	99.71		
21/12/2021	0.00	0.36	64.15	64.52	0.00	0.00	0.27	0.27	0.00	0.00	0.00	0.00	0.00	0.00	63.94	63.94	0.00	0.00	66.04	66.04	0.00	0.00	0.00	0.00	0.00	0.00	0.36	194.40	194.77	99.81	
22/12/2021	0.00	0.23	64.25	64.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.05	62.05	0.00	0.00	65.81	65.81	0.00	0.00	0.00	0.00	0.00	0.00	0.23	192.11	192.33	99.88	
23/12/2021	0.00	0.40	63.15	63.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.76	60.76	0.00	0.00	66.21	66.21	0.00	0.00	0.00	0.00	0.00	0.00	0.40	190.12	190.52	99.79	
24/12/2021	0.00	0.52	61.61	62.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.77	58.77	0.00	0.00	65.68	65.68	0.00	0.00	0.00	0.00	0.00	0.00	0.52	186.06	186.58	99.72	
25/12/2021	0.00	0.44	57.24	57.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.16	53.16	0.00	0.00	63.07	63.07	0.00	0.00	0.00	0.00	0.00	0.00	0.44	173.47	173.91	99.75	
26/12/2021	0.00	0.39	55.83	56.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.54	51.54	0.00	0.00	62.22	62.22	0.00	0.00	0.00	0.00	0.00	0.00	0.39	169.59	169.98	99.77	
27/12/2021	0.00	0.39	55.80	56.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.54	51.54	0.00	0.00	62.29	62.29	0.00	0.00	0.00	0.00	0.00	0.00	0.39	169.63	170.02	99.77	
28/12/2021	0.00	0.90	55.26	56.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.50	51.50	0.00	0.00	62.34	62.34	0.00	0.00	0.00	0.00	0.00	0.00	0.90	169.10	170.00	99.47	
29/12/2021	0.00	0.86	55.29	56.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.51	51.51	0.00	0.00	62.33	62.33	0.00	0.00	0.00	0.00	0.00	0.00	0.86	169.13	170.00	99.49	
30/12/2021	0.00	0.83	55.89	56.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.19	52.19	0.00	0.00	62.66	62.66	0.00	0.00	0.00	0.00	0.00	0.00	0.83	170.74	171.57	99.52	
31/12/2021	0.00	1.23	58.01	59.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.72	55.72	0.00	0.00	63.72	63.72	0.00	0.00	0.00	0.00	0.00	0.00	1.23	177.45	178.68	99.31	
Total [ML]:	0.00	6.83	750.34	757.17	0.07	2.83	1119.47	1122.37	0.00	2.37	514.16	516.53	0.00	2.34	1357.62	1359.96	0.00	0.64	1248.46	1249.10	0.31	6.55	796.39	803.24	0.37	21.56	5786.44	5808.37			

Water Volume [%]:

Untreated: 0.01 %
 Below Dose: 0.37 %
 To Dose: 99.62 %

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**

WATER TREATMENT PLANT UV REPORT

Report Period: **December 2021**

Report Created: **Saturday, January 01, 2022**

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.
01/12/2021	94.6	92.2	94.5	94.0	OL	OL	OL	18.6	23.9	21.2	OL	OL	OL	18.2	22.3	21.4	18.0	30.0	21.2	OL	OL	OL
02/12/2021	94.5	93.5	94.4	93.9	OL	OL	OL	18.6	22.7	21.2	OL	OL	OL	18.0	22.3	21.3	17.4	27.7	21.4	OL	OL	OL
03/12/2021	94.6	93.5	94.5	93.7	OL	OL	OL	18.6	22.8	21.2	OL	OL	OL	17.8	22.4	21.3	17.3	25.2	21.5	OL	OL	OL
04/12/2021	95.3	94.1	95.3	94.9	OL	OL	OL	18.5	21.7	21.2	OL	OL	OL	17.7	22.2	21.0	17.6	25.3	21.4	OL	OL	OL
05/12/2021	95.2	93.1	95.4	94.9	OL	OL	OL	18.6	21.7	21.2	OL	OL	OL	17.2	21.5	20.4	17.6	25.6	21.3	OL	OL	OL
06/12/2021	95.0	89.0	95.5	94.7	OL	OL	OL	18.6	21.7	21.2	OL	OL	OL	16.1	20.9	19.6	17.3	24.5	21.3	OL	OL	OL
07/12/2021	94.8	93.5	95.6	95.1	OL	OL	OL	18.6	21.8	21.2	16.6	66.9	21.4	0.0	30.4	19.0	17.1	23.3	21.3	OL	OL	OL
08/12/2021	94.7	93.1	95.6	93.4	0.0	93.3	31.0	18.5	24.3	21.1	17.2	27.9	21.3	0.0	61.7	27.0	0.0	31.9	21.3	0.0	103.5	24.5
09/12/2021	94.4	92.5	95.5	94.7	OL	OL	OL	18.5	21.6	21.1	17.7	23.1	21.2	OL	OL	OL	OL	OL	OL	18.6	25.6	23.7
10/12/2021	93.7	91.4	94.9	93.7	OL	OL	OL	18.6	21.7	21.1	17.5	23.2	21.2	OL	OL	OL	OL	OL	OL	17.5	24.8	22.5
11/12/2021	93.0	80.1	94.2	93.6	OL	OL	OL	18.1	27.1	21.2	17.5	23.0	21.3	OL	OL	OL	OL	OL	OL	17.2	23.7	21.2
12/12/2021	93.3	91.6	93.9	93.1	OL	OL	OL	18.1	22.1	21.4	17.4	22.7	21.3	OL	OL	OL	OL	OL	OL	17.2	23.7	21.2
13/12/2021	93.6	82.0	94.0	93.3	OL	OL	OL	18.1	22.1	21.4	17.2	23.0	21.2	OL	OL	OL	OL	OL	OL	17.1	22.3	21.2
14/12/2021	93.8	90.6	94.3	93.7	OL	OL	OL	18.1	25.3	21.4	17.4	27.4	21.2	OL	OL	OL	OL	OL	OL	16.9	22.7	21.2
15/12/2021	93.5	90.7	94.1	93.1	OL	OL	OL	17.7	22.0	21.2	17.2	23.1	21.2	OL	OL	OL	OL	OL	OL	16.9	22.3	21.2
16/12/2021	92.8	11.4	93.5	91.6	OL	OL	OL	0.0	42.9	20.6	0.0	67.5	21.3	18.7	67.2	21.9	OL	OL	OL	0.0	96.9	21.4
17/12/2021	93.1	52.8	93.8	93.2	OL	OL	OL	16.8	22.0	20.5	OL	OL	OL	18.5	22.9	21.1	OL	OL	OL	16.8	22.3	21.2
18/12/2021	92.7	82.5	93.7	93.0	OL	OL	OL	15.5	21.1	19.4	OL	OL	OL	18.2	21.7	21.1	OL	OL	OL	16.3	22.4	21.1
19/12/2021	92.6	85.5	93.9	93.3	16.2	81.9	21.5	0.0	32.3	18.6	OL	OL	OL	18.1	21.9	21.2	OL	OL	OL	16.8	22.4	21.1
20/12/2021	92.2	91.1	93.7	92.9	17.1	27.8	21.4	OL	OL	OL	OL	OL	OL	18.6	22.4	21.2	20.6	65.3	22.9	0.0	28.7	21.2
21/12/2021	92.9	90.3	94.6	92.4	17.2	32.5	21.3	0.0	97.8	55.4	OL	OL	OL	18.3	22.4	21.2	20.6	26.4	21.5	OL	OL	OL
22/12/2021	93.4	87.9	95.2	94.6	17.3	26.7	21.3	OL	OL	OL	OL	OL	OL	18.5	22.7	21.2	20.3	26.2	21.3	OL	OL	OL
23/12/2021	92.9	91.2	94.8	94.0	17.0	25.6	21.2	OL	OL	OL	OL	OL	OL	18.2	22.8	21.2	20.6	22.7	21.3	OL	OL	OL
24/12/2021	92.4	90.8	94.4	93.8	17.2	23.7	21.2	OL	OL	OL	OL	OL	OL	18.3	22.0	21.2	20.6	22.0	21.3	OL	OL	OL
25/12/2021	92.3	90.8	94.2	93.7	17.3	23.5	21.3	OL	OL	OL	OL	OL	OL	18.1	22.1	21.2	20.7	21.9	21.3	OL	OL	OL
26/12/2021	92.2	91.7	94.2	93.4	17.2	23.5	21.3	OL	OL	OL	OL	OL	OL	18.3	22.4	21.3	20.7	22.0	21.3	OL	OL	OL
27/12/2021	92.2	89.7	94.2	93.6	17.4	23.0	21.3	OL	OL	OL	OL	OL	OL	18.0	22.2	21.3	20.8	22.0	21.3	OL	OL	OL
28/12/2021	92.1	89.3	94.1	93.4	17.1	22.6	21.2	OL	OL	OL	OL	OL	OL	18.2	22.0	21.3	20.7	21.9	21.3	OL	OL	OL
29/12/2021	92.0	68.0	94.0	93.6	16.6	29.8	21.3	OL	OL	OL	OL	OL	OL	18.1	22.1	21.3	20.8	21.9	21.3	OL	OL	OL
30/12/2021	91.7	84.0	93.8	93.2	16.6	23.3	21.5	OL	OL	OL	OL	OL	OL	18.1	22.2	21.2	20.8	21.9	21.3	OL	OL	OL
31/12/2021	91.4	76.4	93.8	93.1	16.5	22.3	21.4	OL	OL	OL	OL	OL	OL	18.2	22.0	21.2	20.1	21.9	21.2	OL	OL	OL

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

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew