



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

June 7, 2021

RE: MAY 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 May 2021.

As previously advised, the SCADA system at the WTP experienced reduced functionality from May 17 at 13:50 to May 18 at 02:30. Although the monitoring instruments for chlorine, turbidity and UVT as well as the local control panels that display reactor UV dose remained online during this time, a significant portion of the data values were not logged to our historical database. To comply with Operating Licence requirements, Operators took grab samples every 4 hours for chlorine and turbidity; the results are included with this report. Based on our Operators' observations of the process and grab sample results, there were no noted impacts to water quality or treatment processes.

The May on-line and grab sampling turbidity reports include results obtained for the Water Treatment Plant raw water and the eight filters. On May 29 the maximum turbidity for Filter 6 was greater than 0.30 NTU; the elevated turbidity occurred for less than 12 consecutive hours. On May 21 the turbidity on Filter 6 exceeded 1.00 NTU, additional information is provided separately in a Corrective Action Report. With the exception of this event, the turbidity results for the filter effluent met the licence requirements.

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



**Water and Waste
Eaux et déchets**

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 R. Grosselle
(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, Seniors and Active Living (email)
M. L. Geer, CPA, CA (email)
T. Shanks, M. Eng., P. Eng. (e-mail)
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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

May 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
1/05/2021	0.67	O/L	O/L	0.02	0.06	0.02	0.04	0.02	0.04	0.06	0.08	0.05	0.12	0.03	0.05	0.03	0.05
2/05/2021	0.68	O/L	O/L	0.02	0.05	0.01	0.04	0.02	0.05	0.05	0.09	0.05	0.12	0.03	0.05	0.03	0.05
3/05/2021	0.69	O/L	O/L	0.02	0.05	0.02	0.04	0.02	0.08	0.06	0.08	0.05	0.09	0.03	0.05	0.03	0.05
4/05/2021	0.74	O/L	O/L	0.02	0.05	0.01	0.05	0.03	0.04	0.06	0.09	0.05	0.14	0.03	0.05	0.03	0.07
5/05/2021	0.70	O/L	O/L	0.02	0.06	0.01	0.05	0.02	0.06	0.06	0.09	0.05	0.08	0.03	0.05	0.03	0.05
6/05/2021	0.71	O/L	O/L	0.02	0.05	0.01	0.04	0.03	0.05	0.05	0.09	0.06	0.08	0.03	0.05	0.03	0.05
7/05/2021	0.73	O/L	O/L	0.02	0.06	0.02	0.04	0.02	0.05	0.05	0.08	0.05	0.08	0.03	0.05	0.02	0.05
8/05/2021	0.71	O/L	O/L	0.02	0.05	0.02	0.04	0.02	0.05	0.04	0.08	0.05	0.11	0.03	0.05	0.02	0.04
9/05/2021	0.69	O/L	O/L	0.02	0.06	0.02	0.03	0.02	0.05	0.04	0.07	0.05	0.08	0.03	0.05	0.03	0.06
10/05/2021	0.70	O/L	O/L	0.02	0.13	0.02	0.04	0.03	0.07	0.05	0.09	0.05	0.09	0.03	0.05	0.02	0.05
11/05/2021	0.71	O/L	O/L	0.00	0.03	0.02	0.04	0.04	0.06	0.06	0.17	0.05	0.10	0.03	0.05	0.03	0.06
12/05/2021	0.72	O/L	O/L	0.00	0.04	0.02	0.04	0.04	0.06	0.04	0.08	0.06	0.09	0.04	0.11	0.03	0.05
13/05/2021	0.77	O/L	O/L	0.00	0.03	0.02	0.03	0.03	0.06	0.03	0.07	0.06	0.10	0.03	0.07	0.02	0.05
14/05/2021	0.81	O/L	O/L	0.00	0.04	0.02	0.04	0.04	0.07	0.02	0.07	0.06	0.10	0.03	0.05	0.03	0.05
15/05/2021	0.83	O/L	O/L	0.00	0.04	0.02	0.05	0.04	0.07	0.02	0.06	0.07	0.12	0.04	0.06	0.03	0.06
16/05/2021	0.86	O/L	O/L	0.00	0.03	0.02	0.04	0.04	0.06	0.02	0.07	0.07	0.16	0.04	0.07	0.03	0.06
17/05/2021	0.88	O/L	O/L	0.00	0.03	0.03	0.04	0.05	0.07	0.01	0.04	0.06	0.14	0.04	0.08	0.06	0.16
18/05/2021	0.92	O/L	O/L	0.00	0.02	0.02	0.05	0.05	0.08	0.00	0.03	0.03	0.07	0.04	0.25	0.07	0.11
19/05/2021	0.99	O/L	O/L	0.00	0.02	0.03	0.06	0.05	0.08	0.00	0.01	0.03	0.15	0.03	0.05	0.06	0.09
20/05/2021	0.99	O/L	O/L	0.00	0.04	0.03	0.05	0.05	0.08	0.00	0.03	0.03	0.07	0.04	0.06	0.06	0.09
21/05/2021	0.99	O/L	O/L	0.00	0.03	0.03	0.05	0.06	0.09	0.00	0.00	0.04	1.06	0.03	0.06	0.06	0.09
22/05/2021	1.01	O/L	O/L	0.00	0.04	0.04	0.07	0.06	0.08	0.00	0.01	0.04	0.08	0.04	0.07	0.05	0.09
23/05/2021	1.08	O/L	O/L	0.01	0.03	0.04	0.07	0.07	0.10	0.00	0.02	0.03	0.11	0.04	0.07	0.05	0.08
24/05/2021	1.31	O/L	O/L	0.01	0.03	0.05	0.08	0.06	0.10	0.00	0.00	0.04	0.07	0.04	0.06	0.05	0.08
25/05/2021	1.33	O/L	O/L	0.01	0.04	0.06	0.08	0.07	0.10	0.00	0.00	0.04	0.08	0.05	0.07	0.05	0.09
26/05/2021	0.77	O/L	O/L	0.03	0.12	0.03	0.10	0.04	0.08	0.02	0.07	0.01	0.07	0.04	0.10	0.08	0.11
27/05/2021	0.79	O/L	O/L	0.04	0.16	0.00	0.00	0.02	0.06	0.05	0.09	0.00	0.03	0.04	0.07	0.08	0.12
28/05/2021	0.66	O/L	O/L	0.05	0.08	0.00	0.01	0.02	0.06	0.05	0.07	0.00	0.05	0.06	0.09	0.08	0.13
29/05/2021	0.66	O/L	O/L	0.06	0.09	0.00	0.01	0.04	0.06	0.06	0.09	0.00	0.31	0.07	0.11	0.08	0.12
30/05/2021	0.67	O/L	O/L	0.07	0.14	0.00	0.00	0.04	0.07	0.07	0.11	0.00	0.09	0.10	0.15	0.09	0.12
31/05/2021	0.63	O/L	O/L	0.09	0.16	0.00	0.00	0.05	0.07	0.09	0.14	0.01	0.04	0.14	0.30	0.09	0.13

Total Number of Measurements Taken, A:	0	13614	12572	14830	12141	14956	16110	17301
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:	0	13614	12572	14830	12141	14955	16110	17301
Compliance with Turbidity Standard, C = B/A X 100%:	O/L	100.000%	100.000%	100.000%	100.000%	99.993%	100.000%	100.000%
O/L= Offline								

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2021\05-May

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-May-2021	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
02-May-2021	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
03-May-2021	0.63	0.69	OL	OL	0.06	0.02	0.08	0.02	0.06	0.03	0.06	0.09	0.07	0.06	0.08	0.04	0.07	0.03
04-May-2021	0.62	0.68	OL	OL	0.05	0.02	0.05	0.02	0.06	0.03	0.06	0.08	0.06	0.06	0.06	0.03	0.07	0.03
05-May-2021	0.59	0.68	OL	OL	0.06	0.02	0.05	0.02	0.06	0.03	0.07	0.08	0.06	0.06	0.06	0.02	0.07	0.03
06-May-2021	0.65	0.68	OL	OL	0.06	0.03	0.06	0.02	0.06	0.04	0.07	0.08	0.07	0.07	0.07	0.03	0.06	0.03
07-May-2021	0.58	0.69	OL	OL	0.06	0.03	0.06	0.02	0.05	0.03	0.06	0.06	0.07	0.07	0.06	0.02	0.06	0.02
08-May-2021	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
09-May-2021	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10-May-2021	0.61	0.68	OL	OL	0.05	0.03	0.05	0.02	0.05	0.04	0.06	0.06	0.06	0.06	0.07	0.03	0.07	0.02
11-May-2021	0.60	0.70	OL	OL	0.05	<0.02	0.05	0.02	0.05	0.04	0.06	0.06	0.06	0.06	0.08	0.02	0.07	0.03
12-May-2021	0.60	0.70	OL	OL	0.05	<0.02	0.05	0.03	0.05	0.05	0.07	0.08	0.06	0.08	0.06	0.03	0.05	0.02
13-May-2021	0.68	0.75	OL	OL	0.06	<0.02	0.07	0.02	0.08	0.05	0.06	0.04	0.07	0.07	0.07	0.03	0.07	0.02
14-May-2021	0.65	0.78	OL	OL	0.06	<0.02	0.05	0.03	0.06	0.05	0.05	0.03	0.07	0.07	0.06	0.03	0.08	0.02
15-May-2021	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
16-May-2021	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
17-May-2021	0.67	0.83	OL	OL	0.07	<0.02	0.05	0.03	0.07	0.06	0.06	<0.02	0.07	0.09	0.06	0.04	0.06	0.15
18-May-2021	0.96	0.87	OL	OL	0.09	<0.02	0.09	0.03	0.07	0.05	0.10	<0.02	0.10	0.03	0.11	0.04	0.09	0.07
19-May-2021	0.73	0.97	OL	OL	0.06	<0.02	0.08	0.04	0.06	0.06	0.07	<0.02	0.08	0.04	0.08	0.03	0.07	0.06
20-May-2021	0.56	0.94	OL	OL	0.07	<0.02	0.07	0.04	0.05	0.06	0.07	<0.02	0.09	0.04	0.07	0.04	0.09	0.06
21-May-2021	0.65	0.96	OL	OL	0.08	<0.02	0.06	0.04	0.06	0.07	0.07	<0.02	0.08	0.04	0.08	0.04	0.09	0.06
22-May-2021	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
23-May-2021	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
24-May-2021	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
25-May-2021	0.73	IM	OL	OL	0.08	<0.02	0.06	0.07	0.07	0.09	0.07	<0.02	0.09	0.05	0.09	0.04	0.07	0.05
26-May-2021	0.66	0.74	OL	OL	0.07	0.02	0.06	0.08	0.05	<0.02	0.07	0.05	0.07	<0.02	0.08	0.03	0.08	0.08
27-May-2021	0.63	0.68	OL	OL	0.07	0.05	0.07	<0.02	0.06	0.03	0.08	0.06	0.08	<0.02	0.09	0.04	0.08	0.09
28-May-2021	0.63	0.63	OL	OL	0.07	0.05	0.07	<0.02	0.07	0.03	0.09	0.07	0.09	<0.02	0.09	0.06	0.09	0.09
29-May-2021	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
30-May-2021	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
31-May-2021	0.60	0.61	OL	OL	0.07	0.11	0.07	<0.02	0.06	0.06	0.07	0.10	0.10	<0.02	0.08	0.13	0.07	0.09
Total number of measurements taken, A:			0		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	
Number of measurements meeting standard, B:			0		20		20		20		20		20		20		20	
Compliance with Turbidity Standard, C= B/A X 100%:			OL		100%		100%		100%		100%		100%		100%		100%	

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

Comments:

Filter 1 was taken offline for maintenance on April 14th at 4:24 pm and has remained offline.

Compiled By: H. Demchenko

Authorized By: C. Diduck

Report Date: 3-Jun-21

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 June 2021

Report Period: May 2021

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/05/2021	1.15	1.03	1.22	1.12
02/05/2021	1.15	1.07	1.21	1.15
03/05/2021	1.18	1.10	1.26	1.18
04/05/2021	1.16	1.08	1.25	1.19
05/05/2021	1.13	1.04	1.22	1.18
06/05/2021	1.11	1.04	1.18	1.11
07/05/2021	1.17	1.10	1.20	1.13
08/05/2021	1.17	1.08	1.17	1.11
09/05/2021	1.13	1.05	1.17	1.12
10/05/2021	1.14	1.08	1.16	1.11
11/05/2021	1.20	1.15	1.19	1.14
12/05/2021	1.24	1.19	1.23	1.18
13/05/2021	1.38	1.13	1.34	1.14
14/05/2021	1.25	1.19	1.20	1.13
15/05/2021	1.28	1.16	1.23	1.16
16/05/2021	1.20	1.12	1.15	1.08
17/05/2021	1.25	1.18	1.19	1.12
18/05/2021	1.23	1.06	1.18	1.06
19/05/2021	1.17	0.97	1.24	1.04
20/05/2021	1.10	0.88	1.17	1.03
21/05/2021	1.24	1.11	1.26	1.13
22/05/2021	1.33	1.24	1.32	1.24
23/05/2021	1.31	1.23	1.34	1.27
24/05/2021	1.35	1.24	1.28	1.16
25/05/2021	1.35	1.22	1.23	1.18
26/05/2021	1.34	1.26	1.26	1.19
27/05/2021	1.28	1.12	1.23	1.14
28/05/2021	1.31	1.22	1.29	1.22
29/05/2021	1.24	1.11	1.18	1.07
30/05/2021	1.27	1.15	1.24	1.03
31/05/2021	1.28	1.15	1.31	1.20

Total Number of Measurements, A:	21390	21390
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21390	21390
COMPLIANCE, C = B/A X 100%:	100.00	100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2021\05-May

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-May-2021	NS	NS	NS	NS	NS	NS
02-May-2021	NS	NS	NS	NS	NS	NS
03-May-2021	1.18	1.16	1.28	1.26	1.27	1.40
04-May-2021	1.15	1.15	1.28	1.23	1.22	1.47
05-May-2021	1.14	1.16	1.37	1.22	1.28	1.46
06-May-2021	1.11	1.10	1.25	1.21	1.21	1.35
07-May-2021	1.15	1.15	1.32	1.20	1.15	1.36
08-May-2021	NS	NS	NS	NS	NS	NS
09-May-2021	NS	NS	NS	NS	NS	NS
10-May-2021	1.15	1.17	1.35	1.19	1.21	1.39
11-May-2021	1.18	1.23	1.39	1.19	1.24	1.43
12-May-2021	1.24	1.29	1.44	1.22	1.30	1.45
13-May-2021	1.21	1.27	1.42	1.16	1.21	1.40
14-May-2021	1.23	1.23	1.42	1.19	1.24	1.44
15-May-2021	NS	NS	NS	NS	NS	NS
16-May-2021	NS	NS	NS	NS	NS	NS
17-May-2021	1.29	1.24	1.45	1.25	1.24	1.44
18-May-2021	1.30	1.27	1.48	1.23	1.27	1.49
19-May-2021	1.14	1.11	1.33	1.11	1.13	1.30
20-May-2021	1.03	1.02	1.17	1.15	1.12	1.31
21-May-2021	1.25	1.21	1.41	1.23	1.21	1.41
22-May-2021	NS	NS	NS	NS	NS	NS
23-May-2021	NS	NS	NS	NS	NS	NS
24-May-2021	NS	NS	NS	NS	NS	NS
25-May-2021	1.32	1.37	1.53	1.27	1.28	1.50
26-May-2021	1.34	1.31	1.52	1.25	1.21	1.45
27-May-2021	1.31	1.24	1.49	1.23	1.19	1.38
28-May-2021	1.31	1.34	1.59	1.33	1.33	1.53
29-May-2021	NS	NS	NS	NS	NS	NS
30-May-2021	NS	NS	NS	NS	NS	NS
31-May-2021	1.30	1.28	1.54	1.34	1.33	1.53
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%	

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: 3-Jun-21



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: **May 2021**

Report Created: **Tuesday, June 01, 2021**

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
01/05/2021	0.00	1.06	55.64	56.70	0.00	0.00	0.00	0.00	0.00	0.51	65.92	66.43	0.00	0.00	0.00	0.00	0.00	0.00	66.86	66.86	0.00	0.00	0.00	0.00	0.00	1.56	188.42	189.99	99.18		
02/05/2021	0.00	1.33	55.06	56.39	0.00	0.00	0.00	0.00	0.00	0.78	65.19	65.97	0.00	0.00	0.00	0.00	0.00	0.00	66.09	66.09	0.00	0.00	0.00	0.00	0.00	2.11	186.34	188.45	98.88		
03/05/2021	0.00	1.24	54.25	55.49	0.00	0.00	0.00	0.00	0.00	0.32	64.57	64.89	0.00	0.00	0.00	0.00	0.00	0.00	64.60	64.60	0.00	0.00	0.00	0.00	0.00	1.55	183.41	184.97	99.16		
04/05/2021	0.00	1.29	53.62	54.92	0.00	0.00	0.00	0.00	0.00	0.40	63.17	63.57	0.00	0.00	0.00	0.00	0.00	0.00	63.10	63.10	0.00	0.00	0.00	0.00	0.00	1.69	179.90	181.59	99.07		
05/05/2021	0.00	1.22	53.72	54.95	0.00	0.00	0.00	0.00	0.00	0.62	62.51	63.13	0.00	0.00	0.00	0.00	0.00	0.00	62.78	62.78	0.00	0.00	0.00	0.00	0.00	1.84	179.02	180.86	98.98		
06/05/2021	0.00	1.04	54.22	55.25	0.00	0.00	0.00	0.00	0.00	0.22	63.31	63.53	0.00	0.00	0.00	0.00	0.00	0.00	63.21	63.21	0.00	0.00	0.00	0.00	0.00	1.26	180.73	181.99	99.31		
07/05/2021	0.00	0.31	54.95	55.26	0.00	0.00	0.00	0.00	0.00	0.00	63.52	63.52	0.00	0.00	0.00	0.00	0.00	0.00	63.22	63.22	0.00	0.00	0.00	0.00	0.00	0.31	181.69	182.00	99.83		
08/05/2021	0.00	0.61	54.60	55.21	0.00	0.00	0.00	0.00	0.00	0.80	62.80	63.59	0.00	0.00	0.00	0.00	0.00	0.00	63.20	63.20	0.00	0.00	0.00	0.00	0.00	1.41	180.59	182.00	99.23		
09/05/2021	0.00	0.50	54.69	55.19	0.00	0.00	0.00	0.00	0.00	1.06	62.53	63.59	0.00	0.00	0.00	0.00	0.00	0.00	63.26	63.26	0.00	0.00	0.00	0.00	0.00	1.56	180.48	182.04	99.14		
10/05/2021	0.00	0.58	54.95	55.53	0.00	0.00	0.00	0.00	0.00	0.97	63.10	64.07	0.00	0.00	0.00	0.00	0.00	0.00	63.73	63.73	0.00	0.00	0.00	0.00	0.00	1.55	181.78	183.33	99.15		
11/05/2021	0.00	0.44	57.12	57.56	0.00	0.00	0.00	0.00	0.00	0.43	66.90	67.33	0.00	0.00	0.00	0.00	0.00	0.00	67.67	67.67	0.00	0.00	0.00	0.00	0.00	0.87	191.69	192.56	99.55		
12/05/2021	0.00	0.26	63.65	63.91	0.00	0.00	0.00	0.00	0.00	0.40	70.84	71.24	0.00	0.00	0.00	0.00	0.00	0.00	71.45	71.45	0.00	0.00	0.00	0.00	0.00	0.66	205.94	206.60	99.68		
13/05/2021	0.00	0.73	69.19	69.92	0.00	0.00	0.00	0.00	0.00	0.72	29.59	30.31	0.00	0.11	45.54	45.65	0.00	0.00	74.21	74.21	0.00	0.00	0.00	0.00	0.00	1.56	218.53	220.09	99.29		
14/05/2021	0.00	0.55	71.54	72.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	78.77	78.88	0.00	0.00	74.01	74.01	0.00	0.00	0.00	0.00	0.00	0.66	224.32	224.98	99.71		
15/05/2021	0.00	0.45	71.44	71.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	78.91	79.02	0.00	0.00	73.62	73.62	0.00	0.00	0.00	0.00	0.00	0.56	223.97	224.53	99.75		
16/05/2021	0.00	0.43	68.37	68.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	74.72	74.93	0.00	0.00	71.26	71.26	0.00	0.00	0.00	0.00	0.00	0.64	214.35	214.99	99.70		
17/05/2021	0.00	0.38	56.48	56.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	62.26	62.31	0.00	0.00	59.12	59.12	0.00	0.00	0.00	0.00	0.00	0.44	177.86	178.29	99.76		
18/05/2021	0.00	0.63	62.34	62.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	68.97	69.13	0.00	0.00	65.34	65.34	0.00	0.00	0.00	0.00	0.00	0.79	196.65	197.43	99.60		
19/05/2021	0.00	0.56	62.67	63.24	0.00	0.00	0.00	0.00	0.00	0.26	28.10	28.36	0.00	0.05	50.49	50.54	0.00	0.00	73.71	73.71	0.00	0.00	0.00	0.00	0.00	0.87	214.97	215.85	99.60		
20/05/2021	0.00	0.60	56.97	57.57	0.00	0.00	0.00	0.00	0.00	0.47	74.01	74.48	0.00	0.04	0.76	0.80	0.00	0.00	38.98	38.98	0.00	0.63	43.56	44.19	0.00	1.73	214.29	216.02	99.20		
21/05/2021	0.00	0.43	61.33	61.76	0.00	0.00	0.00	0.00	0.00	0.63	68.54	69.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.04	70.63	71.67	0.00	2.10	200.49	202.59	98.96		
22/05/2021	0.00	0.44	57.50	57.94	0.00	0.00	0.00	0.00	0.00	0.68	64.68	65.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	66.09	66.70	0.00	1.73	188.27	190.00	99.09		
23/05/2021	0.00	0.53	54.03	54.56	0.00	0.00	0.00	0.00	0.00	0.47	61.23	61.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	61.38	62.03	0.00	1.65	176.64	178.29	99.08		
24/05/2021	0.00	0.59	62.54	63.13	0.00	0.00	0.00	0.00	0.00	0.29	51.92	52.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	58.74	59.48	0.00	1.62	173.20	174.83	99.07		
25/05/2021	0.00	0.54	70.01	70.55	0.00	0.00	0.00	0.00	0.00	0.40	47.98	48.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	60.14	60.86	0.00	1.66	178.13	179.79	99.08		
26/05/2021	0.00	0.89	70.20	71.08	0.00	0.00	0.00	0.00	0.00	0.27	47.84	48.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	59.86	60.79	0.00	2.08	177.90	179.99	98.84		
27/05/2021	0.00	0.74	70.36	71.10	0.00	0.00	0.00	0.00	0.00	0.20	47.93	48.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89	59.91	60.80	0.00	1.83	178.20	180.03	98.98		
28/05/2021	0.00	0.73	74.12	74.86	0.00	0.00	0.00	0.00	0.00	0.18	50.43	50.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	64.27	65.12	0.00	1.76	188.82	190.59	99.07		
29/05/2021	0.00	0.97	76.36	77.33	0.00	0.00	0.00	0.00	0.00	0.33	52.02	52.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	67.73	68.34	0.00	1.91	196.11	198.02	99.03		
30/05/2021	0.00	0.70	64.33	65.04	0.00	0.00	0.00	0.00	0.00	0.52	62.68	63.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	68.98	69.61	0.00	1.85	195.99	197.84	99.07		
31/05/2021	0.00	0.70	58.20	58.90	0.00	0.00	0.00	0.00	0.00	0.73	68.44	69.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	69.24	69.97	0.00	2.15	195.88	198.03	98.91		
Total [ML]:	0.00	21.47	1904.47	1925.93	0.00	0.00	0.00	0.00	0.00	12.64	1529.76	1542.40	0.00	0.85	460.42	461.27	0.00	0.00	1309.40	1309.40	0.00	9.03	750.52	759.55	0.00	43.98	5954.58	5998.56			

Water Volume [%]:

Untreated: 0.00 %
 Below Dose: 0.73 %
 To Dose: 99.27 %

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: **May 2021**

Report Created: **Tuesday, June 01, 2021**

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.
01/05/2021	93.8	93.1	93.1	92.3	15.6	23.4	21.4	OL	OL	OL	16.7	22.1	21.1	OL	OL	OL	18.2	23.2	21.2	OL	OL	OL
02/05/2021	93.9	93.6	92.9	91.9	15.9	22.8	21.4	OL	OL	OL	16.9	22.4	21.1	OL	OL	OL	18.3	23.0	21.2	OL	OL	OL
03/05/2021	93.8	93.5	92.9	91.8	15.7	22.6	21.5	OL	OL	OL	16.7	22.2	21.1	OL	OL	OL	18.3	21.9	21.2	OL	OL	OL
04/05/2021	93.8	93.6	92.7	91.7	15.8	22.8	21.5	OL	OL	OL	17.1	22.9	21.2	OL	OL	OL	18.4	22.0	21.2	OL	OL	OL
05/05/2021	93.7	93.4	92.4	90.8	16.0	22.7	21.5	OL	OL	OL	17.1	22.7	21.2	OL	OL	OL	18.3	22.9	21.2	OL	OL	OL
06/05/2021	93.5	93.1	92.5	91.4	15.6	29.4	21.4	OL	OL	OL	16.9	22.5	21.2	OL	OL	OL	18.1	21.9	21.2	OL	OL	OL
07/05/2021	93.2	92.9	92.2	90.6	16.7	26.5	21.3	OL	OL	OL	16.9	22.4	21.2	OL	OL	OL	18.3	22.8	21.2	OL	OL	OL
08/05/2021	93.0	90.3	92.1	90.4	16.7	26.4	21.3	OL	OL	OL	16.8	22.3	21.2	OL	OL	OL	18.4	21.8	21.2	OL	OL	OL
09/05/2021	92.9	92.5	92.3	90.6	16.7	26.9	21.3	OL	OL	OL	17.1	22.7	21.2	OL	OL	OL	18.2	21.9	21.2	OL	OL	OL
10/05/2021	92.8	92.4	92.5	91.0	16.6	26.6	21.3	OL	OL	OL	17.0	22.3	21.2	OL	OL	OL	18.3	21.9	21.2	OL	OL	OL
11/05/2021	92.9	92.4	92.3	90.5	16.6	26.1	21.3	OL	OL	OL	17.0	22.5	21.1	OL	OL	OL	18.3	23.8	21.2	OL	OL	OL
12/05/2021	92.8	92.2	92.5	90.6	16.7	24.2	21.2	OL	OL	OL	16.9	22.1	21.1	OL	OL	OL	18.2	23.1	21.1	OL	OL	OL
13/05/2021	93.2	92.6	92.9	91.3	16.8	33.4	21.2	OL	OL	OL	0.0	34.0	21.0	15.0	61.7	21.3	18.3	25.2	21.1	OL	OL	OL
14/05/2021	93.4	92.5	93.9	91.3	17.1	24.0	21.2	OL	OL	OL	OL	OL	OL	17.7	22.1	21.2	18.3	22.7	21.1	OL	OL	OL
15/05/2021	93.7	93.2	95.1	93.4	16.7	23.5	21.2	OL	OL	OL	OL	OL	OL	17.5	22.0	21.2	18.2	21.8	21.1	OL	OL	OL
16/05/2021	94.3	93.2	95.9	94.5	16.5	24.2	21.2	OL	OL	OL	OL	OL	OL	17.7	22.1	21.3	18.2	21.9	21.1	OL	OL	OL
17/05/2021	94.3	93.6	96.4	95.5	16.6	23.9	21.2	OL	OL	OL	OL	OL	OL	17.9	22.1	21.3	17.9	23.6	21.1	OL	OL	OL
18/05/2021	94.3	93.3	96.4	95.0	16.7	24.1	21.2	OL	OL	OL	OL	OL	OL	17.6	22.1	21.3	18.3	21.9	21.1	OL	OL	OL
19/05/2021	94.3	93.6	96.7	96.0	0.0	52.0	21.3	OL	OL	OL	0.0	94.8	21.5	0.0	37.9	21.3	18.2	23.0	21.1	OL	OL	OL
20/05/2021	94.4	92.9	96.6	95.3	0.0	102.6	21.4	OL	OL	OL	17.0	25.9	21.1	0.0	52.1	22.5	0.0	36.0	21.5	15.8	77.4	21.2
21/05/2021	93.4	92.5	96.7	95.8	16.9	21.8	21.2	OL	OL	OL	17.0	23.2	21.1	OL	OL	OL	OL	OL	OL	16.3	22.1	21.1
22/05/2021	93.3	92.4	96.7	95.2	16.9	21.8	21.2	OL	OL	OL	17.0	23.2	21.2	OL	OL	OL	OL	OL	OL	16.4	22.2	21.2
23/05/2021	93.5	92.3	97.1	96.0	16.6	23.7	21.2	OL	OL	OL	17.2	23.2	21.2	OL	OL	OL	OL	OL	OL	16.7	22.2	21.2
24/05/2021	93.7	92.6	97.1	96.1	16.7	35.4	21.2	OL	OL	OL	16.8	36.6	21.3	OL	OL	OL	OL	OL	OL	16.2	38.2	21.2
25/05/2021	93.9	92.8	97.1	96.3	16.4	27.6	21.1	OL	OL	OL	17.1	27.8	21.4	OL	OL	OL	OL	OL	OL	16.3	26.4	21.2
26/05/2021	93.8	92.5	97.0	96.4	16.9	21.7	21.1	OL	OL	OL	17.1	23.6	21.4	OL	OL	OL	OL	OL	OL	16.4	21.8	21.2
27/05/2021	94.0	92.9	96.9	95.9	16.8	21.8	21.1	OL	OL	OL	17.1	24.3	21.4	OL	OL	OL	OL	OL	OL	16.6	21.8	21.2
28/05/2021	94.2	93.2	97.0	96.1	16.8	21.8	21.1	OL	OL	OL	17.1	23.3	21.3	OL	OL	OL	OL	OL	OL	16.9	21.8	21.2
29/05/2021	93.9	92.7	96.5	95.4	16.7	22.3	21.1	OL	OL	OL	17.1	23.1	21.3	OL	OL	OL	OL	OL	OL	17.1	21.8	21.1
30/05/2021	94.0	92.9	96.4	95.2	16.4	37.7	21.2	OL	OL	OL	17.1	34.3	21.2	OL	OL	OL	OL	OL	OL	16.4	38.3	21.1
31/05/2021	93.4	92.1	96.3	95.4	16.8	22.1	21.2	OL	OL	OL	16.8	22.9	21.1	OL	OL	OL	OL	OL	OL	16.3	22.1	21.1

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

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



CITY OF WINNIPEG

WATER AND WASTE DEPARTMENT
 WATER SERVICES
 GRAB SAMPLE DATA

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

Date	17-May-2021	17-May-2021	17-May-2021	18-May-2021
Sample Time (24 hr)	15:30	18:43	22:30	2:45
Raw Water Turbidity (NTU)	0.98	1.21	1.18	1.14
Sample Time (24 hr)	N/A	N/A	N/A	N/A
Filter #1 Turbidity (NTU)	OL	OL	OL	OL
Sample Time (24 hr)	15:00	18:23	22:24	2:02
Filter #2 Turbidity (NTU)	0.07	0.06	0.08	0.20
Sample Time (24 hr)	15:02	18:26	22:21	2:06
Filter #3 Turbidity (NTU)	0.06	0.07	0.07	0.10
Sample Time (24 hr)	15:04	18:29	22:19	2:09
Filter #4 Turbidity (NTU)	0.06	0.05	0.08	0.09
Sample Time (24 hr)	N/A	18:31	22:17	2:11
Filter #5 Turbidity (NTU)	OL	0.15	0.08	0.12
Sample Time (24 hr)	15:06	18:35	22:14	2:13
Filter #6 Turbidity (NTU)	0.08	0.10	0.09	0.16
Sample Time (24 hr)	15:08	18:37	22:12	2:15
Filter #7 Turbidity (NTU)	0.17	0.11	0.03	0.14
Sample Time (24 hr)	15:10	18:39	22:10	N/A
Filter #8 Turbidity (NTU)	0.17	0.08	0.08	OL
Sample Time (24 hr)	15:15	18:25	22:44	2:27
Branch 1 Free Chlorine (mg/L)	1.16	1.20	1.19	1.22
Sample Time (24 hr)	15:20	18:30	22:48	2:32
Branch 2 Free Chlorine (mg/L)	1.12	1.16	1.12	1.19

Notes:

1. OL indicates that filter was offline at time of sampling