



Derek Clarke, Drinking Water Officer
Office of Drinking Water, Manitoba Sustainable Development
Box 6000
Gimli, MB R0C 1B0

June 6, 2019

RE: MAY 2019 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 2019.

The May on-line and grab sampling turbidity reports include results obtained for the Water Treatment Plant raw water and the eight filters. Please note that on May 31, the maximum turbidity for Filter 4 was greater than 0.3 for a short period of time, which did not exceed 12 consecutive hours. The turbidity results for the effluent from the filters 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.

Please let me know of any concerns or questions respecting this submission. I may be reached by telephone at 204-986-8359 or by e-mail at rgrosselle@winnipeg.ca.

Yours sincerely,

Original signed by:

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)
G. Patton, P.Eng. (email)
T. Shanks, P.Eng. (email)
M. Szmon, P.Eng. (email)
C. Diduck (email)



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
 Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

May 2019 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
1/05/2019	0.62	0.03	0.07	0.02	0.07	0.07	0.09	0.02	0.09	0.01	0.04	0.02	0.04	0.05	0.08	0.03	0.07
2/05/2019	0.63	0.02	0.08	0.03	0.05	0.06	0.13	0.02	0.04	0.01	0.04	0.03	0.08	0.04	0.08	0.03	0.08
3/05/2019	0.67	0.04	0.06	0.02	0.07	0.06	0.14	0.03	0.08	0.01	0.03	0.02	0.07	0.04	0.09	0.03	0.05
4/05/2019	0.72	0.03	0.08	0.02	0.07	0.06	0.09	0.02	0.09	0.03	0.06	0.02	0.08	0.05	0.07	0.04	0.08
5/05/2019	0.73	0.02	0.08	0.02	0.04	0.08	0.13	0.02	0.04	0.03	0.07	0.04	0.06	0.05	0.10	0.03	0.08
6/05/2019	0.74	0.03	0.05	0.02	0.05	0.06	0.12	0.03	0.09	0.03	0.05	0.03	0.07	0.04	0.12	0.03	0.08
7/05/2019	0.76	0.03	0.07	0.02	0.06	0.06	0.14	0.03	0.12	0.06	0.11	0.03	0.10	0.05	0.07	0.04	0.06
8/05/2019	0.75	0.02	0.07	0.02	0.03	0.10	0.12	0.02	0.10	0.06	0.11	0.05	0.07	0.06	0.12	0.03	0.08
9/05/2019	0.78	0.02	0.04	0.03	0.06	0.08	0.16	0.04	0.07	0.06	0.14	0.06	0.11	0.05	0.13	0.03	0.08
10/05/2019	0.81	0.04	0.08	0.02	0.07	0.09	0.18	0.04	0.11	0.10	0.13	0.06	0.13	0.05	0.12	0.03	0.05
11/05/2019	0.84	0.03	0.09	0.02	0.07	0.08	0.14	0.04	0.13	0.03	0.16	0.06	0.15	0.07	0.09	0.05	0.08
12/05/2019	0.86	0.03	0.10	0.02	0.04	0.08	0.15	0.04	0.14	0.00	0.01	0.10	0.12	0.07	0.14	0.03	0.09
13/05/2019	0.82	0.04	0.22	0.04	0.12	0.07	0.23	0.08	0.30	0.00	0.01	0.10	0.17	0.06	0.15	0.03	0.09
14/05/2019	1.08	0.04	0.11	0.02	0.11	0.05	0.12	0.07	0.18	0.01	0.01	0.10	0.21	0.08	0.15	0.04	0.06
15/05/2019	0.87	0.03	0.08	0.02	0.08	0.07	0.14	0.07	0.18	0.00	0.01	0.12	0.18	0.10	0.12	0.05	0.08
16/05/2019	1.01	0.04	0.14	0.03	0.06	0.08	0.16	0.05	0.13	0.02	0.06	0.07	0.26	0.05	0.20	0.03	0.11
17/05/2019	0.94	0.05	0.08	0.04	0.13	0.07	0.21	0.03	0.08	0.01	0.03	0.01	0.08	0.01	0.10	0.02	0.09
18/05/2019	0.96	0.05	0.12	0.03	0.13	0.10	0.13	0.02	0.16	0.03	0.06	0.01	0.06	0.01	0.06	0.02	0.04
19/05/2019	1.00	0.04	0.13	0.03	0.06	0.09	0.20	0.02	0.14	0.03	0.08	0.01	0.03	0.01	0.03	0.03	0.07
20/05/2019	0.94	0.05	0.07	0.05	0.13	0.07	0.20	0.03	0.06	0.02	0.04	0.02	0.07	0.01	0.07	0.02	0.08
21/05/2019	0.80	0.05	0.13	0.04	0.12	0.11	0.14	0.02	0.15	0.05	0.09	0.02	0.07	0.01	0.07	0.02	0.05
22/05/2019	0.66	0.04	0.14	0.03	0.13	0.09	0.20	0.02	0.14	0.05	0.11	0.02	0.03	0.01	0.03	0.03	0.08
23/05/2019	0.77	0.04	0.14	0.05	0.07	0.08	0.21	0.02	0.04	0.05	0.13	0.03	0.08	0.01	0.07	0.03	0.09
24/05/2019	0.87	0.07	0.10	0.04	0.13	0.08	0.21	0.03	0.14	0.08	0.12	0.03	0.10	0.01	0.09	0.03	0.09
25/05/2019	1.00	0.05	0.13	0.04	0.12	0.11	0.14	0.02	0.12	0.10	0.15	0.04	0.12	0.01	0.06	0.03	0.05
26/05/2019	1.01	0.05	0.13	0.03	0.11	0.09	0.20	0.02	0.12	0.09	0.19	0.06	0.08	0.01	0.03	0.03	0.08
27/05/2019	1.02	0.04	0.10	0.05	0.07	0.09	0.20	0.02	0.04	0.07	0.14	0.06	0.14	0.02	0.06	0.03	0.08
28/05/2019	1.16	0.06	0.13	0.04	0.13	0.06	0.17	0.05	0.15	0.02	0.10	0.01	0.12	0.02	0.15	0.03	0.16
29/05/2019	1.18	0.06	0.15	0.05	0.13	0.12	0.23	0.05	0.18	0.03	0.14	0.01	0.10	0.02	0.12	0.05	0.08
30/05/2019	1.13	0.06	0.12	0.04	0.16	0.08	0.22	0.04	0.15	0.02	0.10	0.00	0.03	0.02	0.07	0.04	0.15
31/05/2019	1.15	0.07	0.14	0.04	0.07	0.08	0.18	0.04	0.31	0.01	0.07	0.01	0.10	0.02	0.13	0.04	0.13

Total Number of Measurements Taken, A:	13574	12123	14089	12412	13652	13143	13465	14574
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:	13574	12123	14089	12411	13652	13143	13465	14574
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	100.000%	99.992%	100.000%	100.000%	100.000%	100.000%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2019\05-May

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT
 ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT

Water System Code: 252.00		Turbidity (NTU)																	
Licence No. PWS-09-412-01																			
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-May-2019	0.61	0.61	OL	OL	0.08	0.03	0.08	0.07	OL	OL	0.09	0.05	0.07	0.04	0.07	0.05	0.10	0.04	
02-May-2019	0.51	0.57	0.11	0.02	0.08	0.03	0.12	0.08	0.09	0.02	OL	OL	0.07	0.04	0.09	0.06	OL	OL	
03-May-2019	0.53	0.64	0.07	0.03	0.10	0.04	OL	OL	0.09	0.05	0.07	0.03	OL	OL	0.06	0.04	0.06	0.03	
04-May-2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
05-May-2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
06-May-2019	0.60	0.70	0.07	0.02	0.08	0.03	OL	OL	0.08	0.04	0.06	0.07	0.08	0.06	OL	OL	0.06	0.03	
07-May-2019	0.59	0.76	0.08	0.03	OL	OL	0.08	0.09	0.11	0.08	0.08	0.09	0.06	0.05	0.07	0.06	0.07	0.04	
08-May-2019	0.56	0.70	OL	OL	0.08	0.03	0.10	0.10	0.08	0.03	OL	OL	0.09	0.06	0.09	0.07	0.08	0.05	
09-May-2019	0.58	0.76	0.08	0.02	0.08	0.03	0.11	0.12	0.07	0.04	0.06	0.10	0.07	0.08	OL	OL	OL	OL	
10-May-2019	0.63	0.78	0.07	0.03	0.09	0.05	OL	OL	0.08	0.06	0.06	0.13	OL	OL	0.06	0.06	0.07	0.04	
11-May-2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
12-May-2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
13-May-2019	0.75	0.79	0.08	0.03	0.09	0.04	OL	OL	0.09	0.08	0.06	<0.02	0.09	0.15	OL	OL	0.08	0.04	
14-May-2019	1.05	1.55	0.11	0.03	OL	OL	0.09	0.08	0.12	0.11	0.07	<0.02	OL	OL	0.08	0.09	0.11	0.04	
15-May-2019	0.63	1.09	OL	OL	0.06	0.03	0.09	0.09	OL	OL	0.09	<0.02	0.11	0.17	0.07	0.10	0.08	0.05	
16-May-2019	1.10	1.12	0.08	0.03	0.10	0.03	OL	OL	0.08	0.02	OL	OL	0.09	0.03	0.10	0.02	0.11	0.04	
17-May-2019	0.68	0.89	0.10	0.05	0.11	0.07	0.10	0.11	0.11	0.03	0.07	0.02	0.10	0.04	OL	OL	OL	OL	
18-May-2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
19-May-2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
20-May-2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
21-May-2019	0.86	0.64	0.12	0.06	OL	OL	0.11	0.11	0.14	0.07	0.13	0.06	OL	OL	0.09	<0.02	0.07	0.02	
22-May-2019	0.71	0.49	0.13	0.08	0.10	0.05	0.13	0.13	0.09	0.03	0.10	0.09	0.09	0.02	0.07	<0.02	0.07	0.03	
23-May-2019	0.85	0.86	0.09	0.04	0.10	0.05	OL	OL	0.13	0.02	0.06	0.07	0.09	0.04	0.09	0.02	OL	OL	
24-May-2019	0.80	0.45	0.15	0.05	0.12	0.08	0.11	0.11	0.10	0.03	0.10	0.10	0.10	0.06	OL	OL	0.12	0.03	
25-May-2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
26-May-2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
27-May-2019	0.89	0.90	0.18	0.05	0.14	0.07	OL	OL	0.15	0.04	OL	OL	0.11	0.11	0.08	<0.02	0.13	0.04	
28-May-2019	0.97	1.05	0.07	0.05	0.08	0.06	0.07	0.10	0.09	0.03	0.09	0.02	OL	OL	0.17	0.06	0.09	0.04	
29-May-2019	1.05	1.24	0.16	0.12	OL	OL	0.11	0.13	OL	OL	0.12	0.05	0.10	0.02	0.10	0.02	0.10	0.06	
30-May-2019	1.03	1.28	OL	OL	0.08	0.04	0.08	0.11	OL	OL	0.09	0.03	0.14	<0.02	0.07	<0.02	0.08	0.03	
31-May-2019	0.91	1.26	0.09	0.09	0.11	0.05	OL	OL	0.10	0.06	OL	OL	0.09	0.02	0.13	0.02	0.11	0.07	
Total number of measurements taken, A:			18		18		14		18		17		17		17		18		
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:			18		18		14		18		17		17		17		18		
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

Comments:

Report Compiled By: H.Demchenko

Authorized in Sample Manager By: C.Diduck

Date Authorized: 6-Jun-19



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

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**
Report Created: **01 June 2019**

Report Period: May 2019

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/05/2019	1.14	1.01	1.09	1.03
02/05/2019	1.03	0.92	1.07	0.99
03/05/2019	1.05	0.96	1.08	0.92
04/05/2019	1.13	1.00	1.13	1.01
05/05/2019	1.12	0.93	1.06	0.98
06/05/2019	1.13	0.98	1.04	0.98
07/05/2019	1.12	0.98	0.99	0.94
08/05/2019	1.11	0.98	0.97	0.93
09/05/2019	1.10	0.97	0.98	0.89
10/05/2019	1.10	0.92	1.13	0.93
11/05/2019	1.13	1.04	1.19	1.11
12/05/2019	1.09	0.95	1.16	1.04
13/05/2019	1.12	0.91	1.14	1.03
14/05/2019	1.17	1.08	1.13	0.99
15/05/2019	1.18	1.10	1.12	1.03
16/05/2019	1.15	1.08	1.13	1.05
17/05/2019	1.16	1.05	1.15	1.01
18/05/2019	1.11	1.01	1.07	0.98
19/05/2019	1.08	0.97	1.00	0.90
20/05/2019	1.07	0.98	0.98	0.92
21/05/2019	1.04	0.95	1.02	0.94
22/05/2019	1.03	0.98	1.07	1.02
23/05/2019	1.03	0.96	1.05	0.96
24/05/2019	1.14	0.99	1.13	0.99
25/05/2019	1.19	1.14	1.18	1.13
26/05/2019	1.19	1.13	1.12	1.04
27/05/2019	1.14	1.00	1.08	1.00
28/05/2019	1.10	0.83	1.06	0.74
29/05/2019	1.24	1.10	1.18	1.07
30/05/2019	1.21	1.11	1.16	1.09
31/05/2019	1.14	0.79	1.10	0.78

Total Number of Measurements, A:	21612	21612
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21612	21612
COMPLIANCE, C = B/A X 100%:	100.00	100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2019\05-May

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT
 ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00 Licence No. PWS-09-412-01	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	Analysed	Grab	Grab	Analysed	Grab
01-May-2019	1.21	1.22	1.35	1.12	1.11	1.23
02-May-2019	1.07	1.02	1.22	1.19	1.14	1.23
03-May-2019	1.06	1.07	1.20	1.15	1.05	1.17
04-May-2019	NA	NA	NA	NA	NA	NA
05-May-2019	NA	NA	NA	NA	NA	NA
06-May-2019	1.12	1.15	1.32	1.05	1.12	1.23
07-May-2019	1.10	1.14	1.36	0.97	1.04	1.23
08-May-2019	1.08	1.12	1.28	1.03	1.03	1.15
09-May-2019	1.15	1.11	1.26	0.92	0.96	1.08
10-May-2019	1.14	1.21	1.33	1.22	1.28	1.37
11-May-2019	NA	NA	NA	NA	NA	NA
12-May-2019	NA	NA	NA	NA	NA	NA
13-May-2019	1.14	1.16	1.32	1.14	1.17	1.32
14-May-2019	1.16	1.14	1.29	1.10	1.03	1.32
15-May-2019	1.22	1.17	1.30	1.16	1.12	1.28
16-May-2019	1.15	1.12	1.29	1.14	1.13	1.29
17-May-2019	1.17	1.12	1.29	1.15	1.07	1.29
18-May-2019	NA	NA	NA	NA	NA	NA
19-May-2019	NA	NA	NA	NA	NA	NA
20-May-2019	NA	NA	NA	NA	NA	NA
21-May-2019	1.06	1.01	1.19	1.03	0.99	1.11
22-May-2019	1.02	1.04	1.18	1.05	1.04	1.21
23-May-2019	1.03	1.01	1.18	1.01	1.06	1.18
24-May-2019	1.08	1.12	1.25	1.09	1.12	1.26
25-May-2019	NA	NA	NA	NA	NA	NA
26-May-2019	NA	NA	NA	NA	NA	NA
27-May-2019	1.05	1.10	1.24	1.01	1.17	1.29
28-May-2019	1.13	1.14	1.27	1.09	1.15	1.31
29-May-2019	1.28	1.23	1.45	1.30	1.30	1.45
30-May-2019	1.19	1.22	1.45	1.14	1.24	1.40
31-May-2019	1.30	1.26	1.44	1.25	1.25	1.42
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%	

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

Report Compiled By: H.Demchenko

Authorized By: C.Diduck

Date Authorized: 6-Jun-19



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
 Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT UV REPORT

Report Period: **May 2019**

Report Created: **Saturday, June 01, 2019**

Date	Transmittance %	UVR-D100A Water Volume [ML]				UVR-D200A Water Volume [ML]				UVR-D300A Water Volume [ML]				UVR-D400A Water Volume [ML]				UVR-D500A Water Volume [ML]				UVR-D600A Water Volume [ML]				Total Water Volume [ML]				% Volume Treated To Dose
		Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	
01/05/2019	96.09	0.00	0.00	23.85	23.85	0.00	0.00	55.42	55.42	0.00	0.00	0.00	0.00	0.00	0.00	54.07	54.07	0.00	0.00	61.82	61.82	0.00	0.00	0.00	0.00	0.00	0.00	195.16	195.16	100.00
02/05/2019	96.14	0.00	0.00	74.40	74.40	0.00	0.00	2.19	2.19	0.00	0.00	17.97	17.97	0.00	0.00	36.40	36.40	0.00	0.00	41.35	41.35	0.00	0.00	22.71	22.71	0.00	0.00	195.01	195.01	100.00
03/05/2019	96.14	0.00	0.00	74.91	74.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.94	53.94	0.00	0.00	0.00	0.00	0.00	0.00	62.39	62.39	0.00	0.00	191.24	191.24	100.00
04/05/2019	96.14	0.00	0.00	42.87	42.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.36	61.36	0.00	0.03	16.65	16.68	0.00	0.00	63.18	63.18	0.00	0.03	184.06	184.09	99.98
05/05/2019	96.12	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	67.99	67.99	0.00	0.00	40.59	40.59	0.00	0.00	73.29	73.29	0.00	0.00	181.87	181.87	100.00
06/05/2019	95.52	0.00	0.00	0.00	0.00	0.00	0.00	32.30	32.30	0.00	0.00	0.00	0.00	0.00	0.00	56.75	56.75	0.00	0.00	22.52	22.52	0.00	0.10	70.34	70.45	0.00	0.10	181.91	182.01	99.94
07/05/2019	96.12	0.00	0.00	0.00	0.00	0.00	0.00	71.96	71.96	0.00	0.00	0.00	0.00	0.00	0.00	44.49	44.49	0.00	0.00	0.00	0.00	0.00	0.00	65.56	65.56	0.00	0.00	182.00	182.00	100.00
08/05/2019	96.05	0.00	0.00	0.00	0.00	0.00	0.00	74.21	74.21	0.00	0.00	0.00	0.00	0.00	0.00	45.29	45.29	0.00	0.00	0.00	0.00	0.00	0.00	68.75	68.75	0.00	0.00	188.24	188.24	100.00
09/05/2019	96.04	0.00	0.00	30.00	30.00	0.00	0.00	43.99	43.99	0.00	0.00	30.53	30.53	0.00	0.00	19.07	19.07	0.00	0.38	0.06	0.44	0.00	0.05	69.96	70.00	0.00	0.42	193.61	194.03	99.78
10/05/2019	96.00	0.00	0.00	60.29	60.29	0.00	0.00	11.80	11.80	0.00	0.00	47.75	47.75	0.00	0.00	0.00	0.00	0.00	0.00	47.10	47.10	0.00	0.00	27.08	27.08	0.00	0.00	194.02	194.02	100.00
11/05/2019	95.90	0.00	0.00	71.73	71.73	0.00	0.00	0.00	0.00	0.00	0.00	48.00	48.00	0.00	0.00	0.00	0.00	0.00	0.00	74.48	74.48	0.00	0.00	0.00	0.00	0.00	0.00	194.21	194.21	100.00
12/05/2019	95.90	0.00	0.00	71.83	71.83	0.00	0.00	0.00	0.00	0.00	0.00	48.02	48.02	0.00	0.00	0.00	0.00	0.00	0.00	74.59	74.59	0.00	0.00	0.00	0.00	0.00	0.00	194.43	194.43	100.00
13/05/2019	95.57	0.00	0.00	23.12	23.12	0.00	0.00	52.73	52.73	0.00	0.00	15.69	15.69	0.00	0.00	31.22	31.22	0.00	0.00	72.23	72.23	0.00	0.00	0.00	0.00	0.00	0.00	194.98	194.98	100.00
14/05/2019	96.00	0.00	0.00	0.00	0.00	0.00	0.00	78.37	78.37	0.00	0.00	0.00	0.00	0.00	0.00	47.30	47.30	0.00	0.00	71.74	71.74	0.00	0.00	0.00	0.00	0.00	0.00	197.41	197.41	100.00
15/05/2019	96.01	0.00	0.00	0.00	0.00	0.00	0.00	79.76	79.76	0.00	0.00	0.00	0.00	0.00	0.00	48.97	48.97	0.00	0.00	74.05	74.05	0.00	0.00	0.00	0.00	0.00	0.00	202.79	202.79	100.00
16/05/2019	95.47	0.00	0.00	0.00	0.00	0.00	0.00	80.41	80.41	0.00	0.00	0.00	0.00	0.00	0.00	49.30	49.30	0.00	0.00	74.95	74.95	0.00	0.00	0.00	0.00	0.00	0.00	204.65	204.65	100.00
17/05/2019	95.37	0.00	0.00	0.00	0.00	0.00	0.00	79.91	79.91	0.00	0.00	0.00	0.00	0.00	0.00	48.93	48.93	0.00	0.00	74.17	74.17	0.00	0.00	0.00	0.00	0.00	0.00	203.01	203.01	100.00
18/05/2019	95.88	0.00	0.00	0.00	0.00	0.00	0.00	78.24	78.24	0.00	0.00	0.00	0.00	0.00	0.00	47.99	47.99	0.00	0.00	71.77	71.77	0.00	0.00	0.00	0.00	0.00	0.00	198.00	198.00	100.00
19/05/2019	95.88	0.00	0.00	0.00	0.00	0.00	0.00	73.25	73.25	0.00	0.00	0.00	0.00	0.00	0.00	44.82	44.82	0.00	0.00	65.91	65.91	0.00	0.00	0.00	0.00	0.00	0.00	183.98	183.98	100.00
20/05/2019	95.90	0.00	0.00	0.00	0.00	0.00	0.00	69.50	69.50	0.00	0.00	0.00	0.00	0.00	0.00	42.24	42.24	0.00	0.00	61.97	61.97	0.00	0.00	0.00	0.00	0.00	0.00	173.72	173.72	100.00
21/05/2019	95.87	0.00	0.00	25.79	25.79	0.00	0.00	69.74	69.74	0.00	0.00	0.00	0.00	0.03	0.03	23.47	23.54	0.00	0.00	71.32	71.32	0.00	0.00	0.00	0.00	0.03	0.03	190.32	190.39	99.96
22/05/2019	95.88	0.00	0.00	55.43	55.43	0.00	0.00	66.88	66.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.40	78.40	0.00	0.00	0.00	0.00	0.00	0.00	200.72	200.72	100.00
23/05/2019	95.85	0.00	0.00	56.18	56.18	0.00	0.00	67.25	67.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.84	78.84	0.00	0.00	0.00	0.00	0.00	0.00	202.28	202.28	100.00
24/05/2019	95.73	0.00	0.00	55.48	55.48	0.00	0.00	66.50	66.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.01	78.01	0.00	0.00	0.00	0.00	0.00	0.00	199.99	199.99	100.00
25/05/2019	95.91	0.00	0.00	55.44	55.44	0.00	0.00	66.55	66.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.01	78.01	0.00	0.00	0.00	0.00	0.00	0.00	200.00	200.00	100.00
26/05/2019	95.96	0.00	0.00	55.34	55.34	0.00	0.00	66.62	66.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.03	78.03	0.00	0.00	0.00	0.00	0.00	0.00	199.99	199.99	100.00
27/05/2019	95.77	0.00	0.00	62.49	62.49	0.00	0.00	26.77	26.77	0.00	0.00	33.35	33.35	0.00	0.00	0.71	0.71	0.00	0.00	76.65	76.65	0.00	0.00	0.00	0.00	0.00	0.00	199.98	199.98	100.00
28/05/2019	94.94	0.00	0.00	64.03	64.04	0.00	0.00	0.00	0.00	0.10	0.10	44.48	44.68	0.00	0.00	0.00	0.00	0.00	0.00	59.83	59.83	0.00	0.00	0.00	0.00	0.10	0.10	168.34	168.54	99.88
29/05/2019	94.99	0.00	0.00	34.86	34.86	0.00	0.00	47.35	47.35	0.00	0.00	57.43	57.43	0.00	0.00	0.00	0.00	0.00	0.00	70.50	70.50	0.00	0.00	0.00	0.00	0.00	0.00	210.14	210.14	100.00
30/05/2019	94.80	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	60.17	60.17	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	0.00	218.72	218.72	100.00
31/05/2019	95.22	0.00	0.00	0.00	0.00	0.00	0.00	85.01	85.01	0.00	0.00	64.12	64.12	0.00	0.00	0.00	0.00	0.00	0.00	77.41	77.41	0.00	0.00	0.00	0.00	0.00	0.00	226.54	226.54	100.00
Total [ML]:		0.00	0.00	938.03	938.04	0.00	0.00	1531.71	1531.71	0.10	0.10	467.50	467.69	0.03	0.03	824.31	824.38	0.00	0.41	1766.53	1766.94	0.00	0.15	523.25	523.40	0.14	0.69	6051.34	6052.17	

Water Volume [%]:
 Untreated: 0.00 %
 Below Dose: 0.01 %
 To Dose: 99.99 %
Notes: 1. UV Comparative Dose: 18.1 mJ/cm²

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew