



Water and Waste Department • Service des eaux et des déchets

May 7, 2013

Our File: 040-18-18-55-00

Melanie Betsill
Office of Drinking Water
Manitoba Conservation and Water Stewardship
1007 Century Street
Winnipeg, Manitoba
R3H 0W4

Dear Ms. Betsill:

**RE: APRIL 2013 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 reports for the Water Treatment Plant for April 2013. We have also included one corrective action report for a positive total coliform in the distribution system.

Please note that the plant was off-line on April 24, 2013 for scheduled maintenance from 6:45 am to 10:00 pm. There were no chlorine and turbidity grab samples collected for that day. In the future, arrangements have been made to ensure sampling and testing is performed before and/or after any plant shutdowns.

The April 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 effluent from the filters are in compliance with the licence requirements.

The April 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 have met the licence requirements.

The UV submission includes a summary report and reports for each reactor for April 2013 in accordance with Section 4.13, Table 2 of the Operating Licence. You will note that all 6 UV reactors are in compliance with the licence requirements.

On April 8, a positive total coliform result was reported [REDACTED]. On April 9, the location was resampled and results were reported to be negative. Our resampling also indicated that the chlorine levels at the location were normal and provided adequate disinfection.

Please let me know of any concerns or questions respecting this submission. I may be reached at the below address, by telephone at 204-986-4807 or by e-mail at kkjartanson@winnipeg.ca.

Thanks for your ongoing cooperation and understanding in this matter.

Yours sincerely,

Original signed by:

K.J.T. Kjartanson, P.Eng.
Manager of Environmental Standards

KJTK:rg
Attachments

c: Dr. L. Richards, Winnipeg Regional Health Authority
Dr. S. Roberecki, Manitoba Health
D.P. Sacher, P.Eng (e-mail)
G. Patton, P.Eng.
T. Josephson, P.Eng (e-mail)
A.J. Weremy, P.Eng
S. Fletcher (e-mail)

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WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00 Licence No. PWS-09-412 A	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				
01-Apr-2013	NS	NS	NS	NS
02-Apr-2013	1.26	1.46	1.27	1.43
03-Apr-2013	1.33	1.41	1.28	1.48
04-Apr-2013	1.24	1.39	1.18	1.35
05-Apr-2013	1.27	1.44	1.19	1.35
06-Apr-2013	NS	NS	NS	NS
07-Apr-2013	NS	NS	NS	NS
08-Apr-2013	1.00	1.19	0.95	1.15
09-Apr-2013	1.05	1.23	1.09	1.24
10-Apr-2013	1.01	1.22	1.05	1.17
11-Apr-2013	0.95	1.13	0.99	1.13
12-Apr-2013	1.03	1.15	1.12	1.15
13-Apr-2013	NS	NS	NS	NS
14-Apr-2013	NS	NS	NS	NS
15-Apr-2013	0.95	1.09	1.00	1.11
16-Apr-2013	1.18	1.26	1.02	1.11
17-Apr-2013	0.98	1.16	1.00	1.20
18-Apr-2013	0.90	1.08	0.98	1.18
19-Apr-2013	1.16	1.34	1.15	1.37
20-Apr-2013	NS	NS	NS	NS
21-Apr-2013	NS	NS	NS	NS
22-Apr-2013	0.99	1.20	0.93	1.19
23-Apr-2013	1.07	1.22	1.03	1.20
24-Apr-2013	OL	OL	OL	OL
25-Apr-2013	1.04	1.25	1.04	1.17
26-Apr-2013	0.97	1.08	0.98	1.13
27-Apr-2013	NS	NS	NS	NS
28-Apr-2013	NS	NS	NS	NS
29-Apr-2013	1.08	1.26	1.05	1.23
30-Apr-2013	0.97	1.20	0.98	1.15
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

Comments:

On April 24, 2013, the plant was off-line due to a scheduled plant shut down from 6:45 am to 10:00 pm.

Report Compiled By: H. Demchenko

Approved in LIMS By: S.Fletcher

Date Approved: 6-May-13



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

Water System Code: **252.00**
Licence Number: **PWS-09-412 A**
Report Created: 01 May 2013

Report Period: April 2013

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
1/04/2013	1.17	1.11	1.12	1.08
2/04/2013	1.16	1.02	1.16	1.03
3/04/2013	2.04	1.01	2.05	1.05
4/04/2013	1.50	0.94	1.43	0.91
5/04/2013	1.06	0.99	0.96	0.93
6/04/2013	0.98	0.91	0.91	0.85
7/04/2013	0.97	0.87	0.87	0.79
8/04/2013	0.99	0.95	0.99	0.88
9/04/2013	1.02	0.92	1.01	0.99
10/04/2013	1.04	0.98	0.99	0.96
11/04/2013	0.96	0.90	0.97	0.91
12/04/2013	0.91	0.86	0.95	0.92
13/04/2013	1.01	0.95	0.94	0.90
14/04/2013	0.91	0.86	0.96	0.92
15/04/2013	1.04	0.88	1.10	0.98
16/04/2013	1.00	0.87	1.00	0.94
17/04/2013	0.94	0.81	1.03	0.94
18/04/2013	0.86	0.81	1.03	0.96
19/04/2013	0.95	0.86	1.11	1.02
20/04/2013	0.97	0.92	1.08	1.03
21/04/2013	0.98	0.84	1.06	0.82
22/04/2013	1.00	0.80	1.01	0.87
23/04/2013	1.13	1.05	1.00	0.89
24/04/2013	0.95	0.83	0.93	0.85
25/04/2013	1.11	0.95	0.99	0.89
26/04/2013	0.99	0.92	0.95	0.88
27/04/2013	1.04	1.01	1.02	0.99
28/04/2013	1.02	0.99	1.00	0.97
29/04/2013	1.05	0.99	1.01	0.96
30/04/2013	1.00	0.94	1.00	0.82

Total Number of Measurements, A:	20725	20676
Minimum Free Chlorine Standard:	0.50	0.50
Number of Measurements Meeting Standard, B:	20725	20676
COMPLIANCE, C = B/A X 100%:	100	100

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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-09-412RR	Turbidity (NTU)								
Date	Raw Water	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8
01-Apr-2013	NS	NS	0.25	0.20	NS	NS	0.28	0.28	NS
02-Apr-2013	0.29	0.12	0.13	0.10	0.10	0.10	0.10	0.12	OL
03-Apr-2013	0.29	0.08	0.10	0.07	0.13	0.15	0.10	0.09	0.07
04-Apr-2013	0.25	0.12	0.06	0.10	0.11	OL	0.10	0.08	0.09
05-Apr-2013	0.28	0.10	0.06	0.06	0.06	0.10	0.10	0.16	0.06
06-Apr-2013	NS	0.29	0.22	0.27	0.29	0.27	0.24	0.17	0.11
07-Apr-2013	NS	NS	0.24	0.29	0.28	NS	0.08	0.09	0.28
08-Apr-2013	0.29	0.09	0.10	0.14	0.09	0.08	0.09	0.07	0.09
09-Apr-2013	0.30	0.10	0.06	0.09	0.07	0.06	0.11	0.06	0.06
10-Apr-2013	0.28	0.06	0.16	0.08	0.08	0.16	0.06	0.08	0.08
11-Apr-2013	0.25	0.11	0.09	0.07	0.07	0.06	0.09	0.09	0.07
12-Apr-2013	0.25	0.05	0.07	0.07	0.06	<0.05	0.06	0.15	<0.05
13-Apr-2013	NS	0.07	NS	0.10	NS	NS	NS	NS	0.09
14-Apr-2013	NS	0.10	NS	NS	NS	0.09	NS	0.09	NS
15-Apr-2013	0.29	0.10	0.15	0.09	0.10	0.07	0.06	0.07	0.08
16-Apr-2013	0.30	0.08	0.09	0.07	0.07	0.10	0.10	0.09	0.09
17-Apr-2013	0.30	0.08	0.09	0.08	0.09	0.06	0.06	0.06	0.07
18-Apr-2013	0.29	0.06	0.10	0.06	0.07	0.12	0.06	0.09	0.07
19-Apr-2013	0.28	0.06	<0.05	0.07	0.08	0.08	0.10	<0.05	0.07
20-Apr-2013	NS	NS	NS	NS	NS	NS	NS	NS	NS
21-Apr-2013	NS	NS	NS	NS	NS	NS	NS	NS	NS
22-Apr-2013	0.49	0.12	0.06	0.17	0.11	0.09	0.15	0.15	0.07
23-Apr-2013	0.31	0.12	0.08	0.07	0.08	0.08	0.06	0.08	0.07
24-Apr-2013	OL	OL	OL	OL	OL	OL	OL	OL	OL
25-Apr-2013	0.37	0.14	0.08	0.13	0.14	0.09	0.09	0.10	0.08
26-Apr-2013	0.41	0.05	0.10	0.07	0.05	0.06	0.07	0.06	0.05
27-Apr-2013	NS	NS	NS	NS	NS	NS	NS	NS	NS
28-Apr-2013	NS	NS	NS	NS	NS	NS	NS	NS	NS
29-Apr-2013	0.34	0.07	0.09	0.11	0.07	0.06	0.11	0.09	0.07
30-Apr-2013	0.45	0.09	0.12	0.07	0.10	0.06	0.05	0.12	0.11
Total number of measurements taken, A:	23	22	24	22	20	23	23	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:	23	22	24	22	20	23	23	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

Comments:

On April 24, 2013, the plant was off-line due to a scheduled plant shut down from 6:45 am to 10:00 pm.

Report Compiled By: H. Demchenko

Approved in LIMS By: S.Fletcher

Date Approved: 6-May-13



CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT
 WATER SERVICES DIVISION

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

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

April 2013 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
1/04/2013	0.27	0.04	0.07	0.01	0.04	0.04	0.11	0.05	0.07	0.04	0.06	0.02	0.07	0.04	0.10	0.02	0.05
2/04/2013	0.26	0.06	0.11	0.01	0.03	0.03	0.07	0.03	0.12	0.03	0.10	0.01	0.04	0.07	0.09	0.01	0.04
3/04/2013	0.26	0.04	0.09	0.00	0.02	0.04	0.05	0.03	0.07	0.02	0.05	0.02	0.04	0.04	0.10	0.01	0.01
4/04/2013	0.25	0.05	0.06	0.00	0.03	0.03	0.07	0.04	0.07	0.00	0.00	0.01	0.05	0.05	0.07	0.01	0.04
5/04/2013	0.25	0.04	0.14	0.00	0.01	0.03	0.29	0.03	0.09	0.03	0.07	0.01	0.03	0.06	0.10	0.00	0.05
6/04/2013	0.25	0.03	0.08	0.00	0.03	0.04	0.08	0.02	0.04	0.02	0.06	0.01	0.03	0.04	0.13	0.01	0.01
7/04/2013	0.25	0.05	0.06	0.00	0.01	0.03	0.07	0.03	0.08	0.03	0.05	0.01	0.03	0.04	0.07	0.00	0.03
8/04/2013	0.25	0.03	0.07	0.00	0.00	0.02	0.04	0.02	0.06	0.03	0.07	0.01	0.02	0.05	0.10	0.00	0.03
9/04/2013	0.25	0.03	0.05	0.00	0.04	0.03	0.06	0.03	0.04	0.02	0.16	0.01	0.04	0.04	0.08	0.01	0.01
10/04/2013	0.25	0.05	0.07	0.00	0.02	0.02	0.08	0.03	0.05	0.03	0.05	0.01	0.03	0.05	0.06	0.00	0.03
11/04/2013	0.25	0.04	0.08	0.00	0.00	0.03	0.04	0.03	0.05	0.03	0.05	0.01	0.02	0.05	0.08	0.01	0.02
12/04/2013	0.26	0.04	0.06	0.00	0.01	0.04	0.06	0.03	0.04	0.03	0.07	0.01	0.03	0.04	0.09	0.01	0.01
13/04/2013	0.26	0.05	0.09	0.00	0.00	0.04	0.08	0.04	0.07	0.04	0.05	0.01	0.06	0.06	0.07	0.01	0.03
14/04/2013	0.26	0.05	0.09	0.00	0.02	0.04	0.05	0.03	0.06	0.04	0.07	0.02	0.03	0.05	0.09	0.01	0.01
15/04/2013	0.27	0.06	0.10	0.00	0.03	0.04	0.10	0.04	0.08	0.04	0.06	0.02	0.15	0.06	0.08	0.01	0.04
16/04/2013	0.28	0.05	0.10	0.00	0.01	0.04	0.05	0.03	0.08	0.04	0.08	0.02	0.03	0.05	0.09	0.00	0.01
17/04/2013	0.28	0.06	0.07	0.00	0.02	0.04	0.09	0.04	0.06	0.03	0.05	0.02	0.05	0.06	0.07	0.01	0.03
18/04/2013	0.28	0.05	0.10	0.00	0.01	0.04	0.05	0.04	0.07	0.04	0.08	0.02	0.03	0.05	0.10	0.01	0.04
19/04/2013	0.30	0.06	0.07	0.00	0.02	0.04	0.08	0.04	0.05	0.03	0.07	0.01	0.05	0.05	0.07	0.01	0.03
20/04/2013	0.31	0.05	0.08	0.00	0.01	0.03	0.09	0.03	0.06	0.04	0.05	0.01	0.02	0.06	0.09	0.01	0.03
21/04/2013	0.31	0.04	0.07	0.00	0.03	0.04	0.06	0.03	0.04	0.03	0.07	0.02	0.11	0.05	0.11	0.01	0.01
22/04/2013	0.32	0.06	0.11	0.00	0.02	0.06	0.18	0.03	0.07	0.04	0.14	0.01	0.12	0.06	0.08	0.01	0.08
23/04/2013	0.33	0.06	0.15	0.00	0.03	0.06	0.13	0.03	0.08	0.04	0.13	0.02	0.04	0.05	0.11	0.01	0.01
24/04/2013	0.33	0.05	0.06	0.01	0.06	0.05	0.18	0.03	0.19	0.03	0.10	0.01	0.06	0.04	0.12	0.01	0.10
25/04/2013	0.34	0.09	0.23	0.01	0.03	0.09	0.17	0.07	0.21	0.04	0.08	0.02	0.08	0.05	0.09	0.01	0.05
26/04/2013	0.35	0.10	0.17	0.01	0.02	0.04	0.07	0.03	0.04	0.05	0.08	0.01	0.04	0.05	0.08	0.01	0.02
27/04/2013	0.37	0.08	0.19	0.00	0.03	0.03	0.06	0.03	0.05	0.05	0.06	0.01	0.04	0.06	0.08	0.01	0.03
28/04/2013	0.39	0.01	0.04	0.02	0.04	0.04	0.07	0.03	0.06	0.06	0.10	0.02	0.03	0.06	0.10	0.01	0.05
29/04/2013	0.40	0.01	0.04	0.01	0.03	0.04	0.08	0.03	0.05	0.05	0.09	0.02	0.05	0.06	0.08	0.01	0.04
30/04/2013	0.42	0.01	0.02	0.01	0.02	0.03	0.07	0.03	0.05	0.06	0.07	0.01	0.02	0.06	0.09	0.01	0.03

Total Number of Measurements Taken, A:	14712	12465	14747	11771	14790	15225	15426	15154
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:	14712	12465	14747	11771	14790	15225	15426	15154
Compliance with Turbidity Standard, C = B/A X 100%:	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

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Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



Water and Waste Department • Service des eaux et des déchets

Friday, May 3, 2013

Our Incident/Report No: 02-2013

LIMS Reference No: **35531**

Ms. Melanie Betsill
Drinking Water Officer
Manitoba Water Stewardship, Office of Drinking Water
1007 Century Street
Winnipeg MB R3H 0W4

RE: CORRECTIVE ACTION REPORT

WATER SYSTEM	Winnipeg Public Water System
WATER SYSTEM CODE	252.00
LOCATION OF NON-COMPLIANT INCIDENT	Winnipeg 3-Dist SW01
OPERATOR IN CHARGE	NA
INCIDENT REPORTED BY	Steve Fletcher, Supervisor of Analytical Services Branch
TYPE OF NON-COMPLIANT INCIDENT	1. Low positive Total Coliform (<10 per100mL), 3 MR 41/2007
INCIDENT DATE	April 08, 2013
DESCRIPTION OF CORRECTIVE ACTIONS	AS SOON AS POSSIBLE: Resampled original location, also tested for turbidity, free/total chlorine, temperature and contacted the ODW.
TEST RESULTS	See Attached

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water
3. INITIAL chlorine, turbidity and temperature only tested at the required 39 sample locations.
4. NR-No Result due to laboratory/analyst error.
5. NA-Not Analyzed.

EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING

DISTRIBUTION

FORWARD THE ORIGINAL TO THE DRINKING WATER OFFICER WITH THE MONTHLY COMPLIANCE SUBMISSIONS.

Contact the Drinking Water Officer for any comments, questions or concerns

REFERENCE: ODW-RF-016

Embrace the spirit • Vivez l'esprit

Environmental Standards Division • Division des normes environnementales
2230 Main Street. • 2230, rue Main • Winnipeg • Manitoba R2V 4T8
fax/téléc. (204) 339-2147 • www.winnipeg.ca

SampleName	Sample Number	Date Sampled	ColiEsch-QT (MPNU/100mL)	ColiTotal-QT (MPNU/100mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity (ntu)	
SW01	[REDACTED]	356168	08-Apr-13	<1	1	0.62	0.83	6.8	0.17
SW01	[REDACTED]	356637	09-Apr-13	<1	<1	0.87	1.05	4.8	0.30



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

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

WATER TREATMENT PLANT UV REPORT

Report Period: **April 2013**

Report Created: **Wednesday, May 01, 2013**

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	
1/04/2013	93.34	0.00	0.04	42.00	42.04	0.00	0.00	17.36	17.36	0.00	0.00	66.47	66.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.13	69.13	0.00	0.04	194.96	195.01	99.98
2/04/2013	93.48	0.00	0.04	23.15	23.18	0.00	0.00	39.80	39.80	0.00	0.00	27.30	27.30	0.00	0.00	37.86	37.86	0.00	0.00	25.99	25.99	0.00	0.00	40.42	40.42	0.00	0.04	194.52	194.55	99.98
3/04/2013	93.34	0.00	0.00	0.00	0.00	0.00	0.00	63.82	63.82	0.00	0.00	8.63	8.63	0.00	0.00	59.68	59.68	0.00	0.00	62.87	62.87	0.00	0.00	0.00	0.00	0.00	0.00	194.99	194.99	100.00
4/04/2013	93.09	0.00	0.00	38.29	38.29	0.00	0.00	24.88	24.88	0.00	0.04	24.33	24.37	0.00	0.46	46.06	46.51	0.00	0.00	57.30	57.30	0.00	0.00	12.29	12.29	0.00	0.50	203.14	203.64	99.76
5/04/2013	93.26	0.00	0.00	56.47	56.47	0.00	0.00	51.93	51.93	0.00	0.00	0.00	0.00	0.00	0.00	20.46	20.46	0.00	0.00	77.60	77.60	0.00	0.00	0.00	0.00	0.00	0.00	206.46	206.46	100.00
6/04/2013	94.67	0.00	0.08	31.18	31.26	0.00	0.00	73.50	73.50	0.00	0.00	31.06	31.06	0.00	0.00	0.00	0.00	0.00	0.00	70.18	70.18	0.00	0.00	0.00	0.00	0.00	0.08	205.92	206.00	99.96
7/04/2013	94.83	0.00	0.08	10.20	10.28	0.00	0.00	40.72	40.72	0.00	0.00	72.35	72.35	0.00	0.00	0.00	0.00	0.00	0.00	37.56	37.56	0.00	0.00	44.31	44.31	0.00	0.08	205.15	205.23	99.96
8/04/2013	95.01	0.00	0.00	0.00	0.00	0.00	0.00	67.60	67.60	0.00	0.00	53.12	53.12	0.00	0.00	11.76	11.76	0.00	0.00	13.39	13.39	0.00	0.00	60.09	60.09	0.00	0.00	205.96	205.96	100.00
9/04/2013	95.03	0.00	0.00	27.99	27.99	0.00	0.00	42.20	42.20	0.00	0.00	41.63	41.63	0.00	0.00	26.41	26.41	0.00	0.00	0.00	0.00	0.00	0.00	67.80	67.80	0.00	0.00	206.03	206.03	100.00
10/04/2013	95.16	0.25	0.29	67.85	68.40	0.00	0.00	0.00	0.00	0.00	0.00	28.92	28.92	0.00	0.00	39.88	39.88	0.00	0.00	0.52	0.52	0.00	0.00	68.32	68.32	0.25	0.29	205.49	206.03	99.74
11/04/2013	95.36	0.00	0.04	41.52	41.57	0.00	0.00	25.63	25.63	0.00	0.00	44.79	44.79	0.05	0.05	22.02	22.11	0.00	0.00	0.99	0.99	0.00	0.00	70.12	70.12	0.05	0.09	205.08	205.21	99.94
12/04/2013	95.74	0.00	0.03	8.17	8.20	0.00	0.00	67.93	67.93	0.00	0.00	3.68	3.68	0.00	0.00	55.77	55.77	0.00	0.00	1.84	1.84	0.00	0.00	66.69	66.69	0.00	0.03	204.07	204.10	99.98
13/04/2013	95.21	0.00	0.00	19.05	19.05	0.00	0.00	0.00	0.00	0.00	0.00	78.87	78.87	0.00	0.00	0.00	0.00	0.00	0.00	40.19	40.19	0.00	0.00	62.57	62.57	0.00	0.00	200.68	200.68	100.00
14/04/2013	95.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.44	85.44	0.00	0.00	0.00	0.00	0.00	0.00	42.35	42.35	0.00	0.00	69.07	69.07	0.00	0.00	196.85	196.85	100.00
15/04/2013	95.13	0.00	0.47	0.27	0.74	0.00	0.00	0.00	0.00	0.03	0.03	49.86	49.91	0.00	0.06	29.07	29.13	0.00	0.05	42.26	42.31	0.00	0.00	71.65	71.66	0.03	0.61	193.11	193.75	99.67
16/04/2013	95.21	0.00	0.00	21.28	21.28	0.00	0.00	0.00	0.00	0.00	0.00	8.15	8.15	0.00	0.00	60.83	60.83	0.00	0.00	44.98	44.98	0.00	0.00	61.95	61.95	0.00	0.00	197.18	197.18	100.00
17/04/2013	95.19	0.00	0.00	68.33	68.33	0.00	0.00	14.90	14.90	0.00	0.00	54.93	54.93	0.00	0.00	0.00	0.00	0.00	0.00	41.41	41.41	0.00	0.00	0.00	0.00	0.00	0.00	179.57	179.57	100.00
18/04/2013	95.19	0.00	0.04	53.08	53.11	0.00	0.00	0.00	0.00	0.00	0.00	30.92	30.92	0.00	0.00	40.70	40.70	0.00	0.00	74.75	74.75	0.00	0.00	0.00	0.00	0.00	0.04	199.44	199.48	99.98
19/04/2013	95.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.58	61.58	0.00	0.00	27.33	27.33	0.00	0.00	67.73	67.73	0.00	0.00	48.32	48.32	0.00	0.00	204.96	204.96	100.00
20/04/2013	95.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.01	55.01	0.00	0.00	0.00	0.00	0.00	0.00	63.35	63.35	0.00	0.00	84.98	84.98	0.00	0.00	203.34	203.34	100.00
21/04/2013	95.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.94	51.94	0.00	0.00	0.00	0.00	0.00	0.00	67.64	67.64	0.00	0.00	82.02	82.02	0.00	0.00	201.60	201.60	100.00
22/04/2013	95.04	0.14	0.14	1.86	2.13	0.00	0.00	0.00	0.00	0.00	0.12	14.35	14.47	0.00	0.00	65.88	65.88	0.00	0.00	42.98	42.98	0.00	0.00	69.29	69.29	0.14	0.26	194.37	194.76	99.80
23/04/2013	94.69	0.00	0.00	84.82	84.82	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	56.77	56.77	0.00	0.00	84.75	84.75	0.00	0.00	226.33	226.33	100.00	
24/04/2013	94.61	0.00	0.06	30.86	30.92	0.00	0.00	0.00	0.00	0.00	0.00	3.25	3.25	0.00	0.00	0.00	0.00	0.00	0.00	15.80	15.80	0.00	0.00	29.26	29.26	0.00	0.06	79.17	79.23	99.93
25/04/2013	94.03	0.00	0.00	69.91	69.91	0.00	0.00	0.00	0.00	0.00	0.00	73.87	73.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.11	75.11	0.00	0.00	218.89	218.89	100.00
26/04/2013	94.73	0.00	0.00	71.67	71.67	0.00	0.00	0.00	0.00	0.00	0.00	76.86	76.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.49	78.49	0.00	0.00	227.03	227.03	100.00
27/04/2013	94.86	0.00	0.00	71.41	71.41	0.00	0.00	0.00	0.00	0.00	0.00	76.82	76.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.75	78.75	0.00	0.00	226.98	226.98	100.00
28/04/2013	94.70	0.00	0.00	71.11	71.11	0.00	0.00	0.00	0.00	0.00	0.00	77.11	77.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.76	78.76	0.00	0.00	226.98	226.98	100.00
29/04/2013	94.85	0.00	0.00	71.17	71.17	0.00	0.00	0.00	0.00	0.00	0.00	76.05	76.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	76.31	76.31	0.00	0.00	223.53	223.53	100.00
30/04/2013	93.48	0.00	0.00	28.47	28.47	0.00	0.00	0.00	0.00	0.00	0.00	63.99	63.99	0.00	0.00	0.00	0.00	0.00	0.00	20.87	20.87	0.00	0.00	66.15	66.15	0.00	0.00	179.47	179.47	100.00
		0.39	1.30	1010.12	1011.81	0.00	0.00	530.27	530.28	0.03	0.19	1341.25	1341.46	0.05	0.56	543.71	544.32	0.00	0.05	969.30	969.35	0.00	0.00	1616.59	1616.59	0.47	2.11	6011.23	6013.81	

Water Volume [%]:
 Untreated: 0.01 %
 Below Dose: 0.04 %
 To Dose: 99.96 %

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

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

WATER TREATMENT PLANT UV REPORT

Report Period: **April 2013**

Report Created: **Wednesday, May 01, 2013**

Reactor: **UVR-100A**

Date	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated	Daily Totals				
	mJ/cm ²			MLD			W/m ²									Hours										to Validate Conditions	Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3			Untreated	Below Dose	To Dose	Total
1/04/2013	17.8	81.6	24.3	3.6	60.9	57.9	118.7	59.8	59.5	87.1	59.7	59.6	160.4	59.5	59.7	997	868	1270	391	3090	3088	2309	975	3799	99.91	0.00	0.04	42.00	42.04	
2/04/2013	0.0	47.0	24.3	0.0	64.6	57.7	100.7	59.4	59.1	92.0	59.3	59.1	159.8	59.3	59.4	1006	877	1280	401	3100	3098	2318	985	3808	99.85	0.00	0.04	23.15	23.18	
3/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1006	877	1280	401	3100	3098	2318	985	3808	OL	0.00	0.00	0.00	0.00	
4/04/2013	19.2	102.6	24.1	2.9	75.5	67.0	200.5	108.3	107.6	128.1	107.8	108.2	167.5	59.4	114.8	1020	891	1294	415	3114	3112	2319	985	3809	100.00	0.00	0.00	38.29	38.29	
5/04/2013	18.4	34.6	24.2	48.6	75.4	56.5	123.2	74.6	70.9	90.5	74.5	75.3	162.2	53.4	52.5	1044	915	1318	439	3138	3136	2336	1002	3826	100.00	0.00	0.00	56.47	56.47	
6/04/2013	0.0	34.5	24.0	0.0	58.8	50.7	95.5	53.7	52.3	68.5	54.7	53.7	163.8	57.4	54.3	1058	929	1331	454	3152	3151	2351	1017	3841	99.75	0.00	0.08	31.18	31.26	
7/04/2013	0.0	31.6	23.3	0.0	65.1	37.1	OL	OL	OL	62.7	60.4	56.0	152.5	60.7	61.0	1058	929	1331	460	3159	3157	2357	1024	3847	99.22	0.00	0.08	10.20	10.28	
8/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1058	929	1331	460	3159	3157	2357	1024	3847	OL	0.00	0.00	0.00	0.00	
9/04/2013	18.9	104.1	24.0	3.5	74.7	70.9	204.1	113.9	113.9	158.5	113.7	114.6	188.0	67.6	130.8	1067	938	1341	470	3169	3167	2358	1024	3848	100.00	0.00	0.00	27.99	27.99	
10/04/2013	0.0	70.6	23.9	0.0	74.9	68.7	129.0	93.2	92.3	107.9	92.7	93.2	175.6	68.2	68.3	1091	962	1364	494	3192	3191	2369	1036	3859	99.20	0.25	0.29	67.85	68.40	
11/04/2013	0.0	31.8	23.7	0.0	80.7	62.7	93.9	64.8	62.5	86.5	66.4	64.9	176.4	67.7	66.6	1107	977	1380	510	3208	3207	2385	1051	3875	99.90	0.00	0.04	41.52	41.57	
12/04/2013	12.7	42.5	23.7	4.6	69.8	52.9	71.7	51.4	48.6	86.2	72.6	61.1	150.8	77.7	76.4	1109	980	1382	513	3212	3210	2389	1055	3879	99.58	0.00	0.03	8.17	8.20	
13/04/2013	0.0	31.6	22.6	0.0	64.0	60.2	OL	OL	OL	96.8	96.8	86.6	169.4	96.8	96.8	1109	980	1382	521	3220	3218	2396	1063	3886	100.00	0.00	0.00	19.05	19.05	
14/04/2013	OL	OL	OL	OL	OL	OL	OL	0.0	OL	OL	OL	OL	OL	OL	OL	1109	980	1382	521	3220	3218	2396	1063	3886	OL	0.00	0.00	0.00	0.00	
15/04/2013	0.0	36.2	19.4	0.0	67.3	52.8	62.3	55.0	35.9	72.6	55.9	51.4	138.8	56.2	59.8	1110	980	1383	521	3220	3218	2397	1063	3887	36.50	0.00	0.47	0.27	0.74	
16/04/2013	0.0	106.2	24.5	0.0	97.0	80.0	223.1	125.6	123.1	168.4	123.8	126.5	213.8	83.6	137.6	1116	987	1389	528	3227	3225	2398	1064	3888	100.00	0.00	0.00	21.28	21.28	
17/04/2013	18.4	30.6	24.0	25.3	84.1	68.4	148.0	95.9	94.4	118.5	95.5	95.4	167.9	75.9	76.2	1140	1011	1413	552	3251	3249	2407	1073	3897	100.00	0.00	0.00	68.33	68.33	
18/04/2013	0.0	37.2	23.2	0.0	81.5	66.0	94.8	68.0	64.4	88.0	68.3	67.8	162.6	68.3	67.7	1159	1030	1433	571	3270	3268	2426	1093	3916	99.93	0.00	0.04	53.08	53.11	
19/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1159	1030	1433	571	3270	3268	2426	1093	3916	OL	0.00	0.00	0.00	0.00	
20/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1159	1030	1433	571	3270	3268	2426	1093	3916	OL	0.00	0.00	0.00	0.00	
21/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1159	1030	1433	571	3270	3268	2426	1093	3916	OL	0.00	0.00	0.00	0.00	
22/04/2013	0.0	106.3	31.2	0.0	108.6	64.9	185.1	109.2	102.1	155.2	99.3	116.2	191.2	70.5	122.5	1160	1031	1434	572	3271	3269	2427	1093	3917	87.28	0.14	0.14	1.86	2.13	
23/04/2013	18.8	48.1	24.0	0.0	107.8	84.9	168.7	127.0	126.1	135.7	127.0	127.2	155.1	86.3	86.1	1184	1055	1458	596	3295	3293	2432	1098	3922	100.00	0.00	0.00	84.82	84.82	
24/04/2013	0.0	71.9	24.3	0.0	90.6	79.1	97.6	80.6	79.9	83.7	80.8	79.4	150.6	80.5	80.4	1194	1065	1467	606	3304	3303	2441	1108	3931	99.81	0.00	0.06	30.86	30.92	
25/04/2013	18.7	25.6	24.2	56.4	77.3	69.9	119.5	71.6	73.3	91.8	71.4	71.8	194.2	71.4	84.8	1218	1089	1491	630	3328	3327	2465	1132	3955	100.00	0.00	0.00	69.91	69.91	
26/04/2013	18.7	25.3	24.3	67.5	76.5	71.7	156.9	73.3	93.8	108.3	73.1	92.0	214.4	73.1	117.7	1242	1113	1515	654	3352	3351	2489	1156	3979	100.00	0.00	0.00	71.67	71.67	
27/04/2013	18.2	25.3	24.2	66.5	76.7	71.4	183.0	73.0	74.3	113.7	72.9	83.1	200.7	72.8	101.3	1266	1137	1539	678	3376	3375	2513	1180	4003	100.00	0.00	0.00	71.41	71.41	
28/04/2013	18.7	25.5	24.2	66.9	76.1	71.1	201.9	72.7	72.7	127.7	72.7	76.0	192.5	72.6	96.3	1290	1161	1563	702	3400	3399	2537	1204	4027	100.00	0.00	0.00	71.11	71.11	
29/04/2013	18.1	25.3	24.1	60.5	79.4	71.2	207.8	84.7	84.0	149.3	89.8	86.5	192.6	74.5	94.0	1314	1185	1587	726	3424	3423	2554	1221	4044	100.00	0.00	0.00	71.17	71.17	
30/04/2013	0.0	31.5	24.1	0.0	71.8	60.3	203.0	98.9	97.2	150.4	99.6	98.0	OL	OL	OL	1325	1196	1598	737	3436	3434	2554	1221	4044	100.00	0.00	0.00	28.47	28.47	

Total [ML]: 0.39 1.30 1010.12 1011.81

Water Volume [%]:

Untreated: 0.04 %
 Below Dose 0.13 %
 To Dose 99.83 %

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

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2013\04-April



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

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

WATER TREATMENT PLANT UV REPORT

Report Period: **April 2013**

Report Created: **Wednesday, May 01, 2013**

Reactor: **UVR-200A**

Date	UV Dose			Reactor Flow			Average UV Lamp Intensity										UV Lamp Status										% Volume Treated to Validate Conditions	Daily Totals			
	mJ/cm ²			MLD			W/m ²										Hours											Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/04/2013	0.0	27.8	24.2	0.0	65.9	63.0	OL	OL	OL	101.3	101.2	101.2	174.2	101.2	101.2	3041	3041	3041	2362	1846	4460	3049	3050	3049	99.99	0.00	0.00	17.36	17.36		
2/04/2013	0.0	66.4	24.5	5.3	69.8	67.2	171.6	86.9	152.8	68.8	68.8	68.4	152.5	68.8	68.7	3055	3055	3056	2377	1860	4475	3064	3064	3064	100.00	0.00	0.00	39.80	39.80		
3/04/2013	18.4	24.9	23.9	53.4	69.7	63.8	114.7	75.3	95.2	68.5	68.5	67.2	137.7	74.2	70.9	3079	3079	3080	2394	1878	4492	3088	3088	3088	100.00	0.00	0.00	63.82	63.82		
4/04/2013	0.0	27.8	24.1	0.0	90.3	57.9	97.5	93.5	93.5	OL	OL	OL	131.4	92.9	87.3	3090	3089	3090	2394	1878	4492	3098	3099	3098	100.00	0.00	0.00	24.88	24.88		
5/04/2013	18.0	112.7	24.2	3.3	76.2	73.8	148.1	118.0	135.8	116.9	129.3	117.7	176.4	75.4	88.3	3107	3106	3107	2411	1895	4509	3099	3099	3099	100.00	0.00	0.00	51.93	51.93		
6/04/2013	17.8	25.0	23.6	54.1	81.6	73.5	116.2	100.2	98.0	75.4	75.6	75.2	193.4	99.3	80.2	3131	3130	3131	2422	1905	4520	3123	3123	3123	100.00	0.00	0.00	73.50	73.50		
7/04/2013	0.0	107.8	23.5	0.0	68.3	60.3	92.4	92.1	81.5	206.9	165.9	113.8	215.1	96.4	96.7	3138	3137	3138	2431	1915	4529	3139	3140	3139	100.00	0.00	0.00	40.72	40.72		
8/04/2013	20.8	34.6	24.3	61.7	100.1	67.6	164.7	111.5	133.0	109.8	97.5	86.6	176.8	86.5	87.0	3151	3150	3151	2455	1939	4553	3163	3164	3163	100.00	0.00	0.00	67.60	67.60		
9/04/2013	0.0	31.7	24.3	0.0	72.9	69.5	118.9	77.5	77.2	127.4	93.8	71.0	159.0	71.0	70.9	3165	3165	3165	2470	1954	4568	3178	3178	3178	100.00	0.00	0.00	42.20	42.20		
10/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3165	3165	3165	2470	1954	4568	3178	3178	3178	OL	0.00	0.00	0.00	0.00		
11/04/2013	20.2	70.4	24.3	5.5	74.7	70.6	84.4	72.4	72.0	110.5	74.4	71.9	138.0	72.0	67.2	3174	3174	3174	2479	1962	4577	3186	3187	3186	100.00	0.00	0.00	25.63	25.63		
12/04/2013	0.0	28.8	24.2	0.0	75.5	72.0	82.9	73.7	73.6	114.6	76.6	73.6	152.2	73.6	73.5	3197	3196	3197	2501	1985	4599	3209	3210	3209	100.00	0.00	0.00	67.93	67.93		
13/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2501	1985	4599	3209	3210	3209	OL	0.00	0.00	0.00	0.00		
14/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2501	1985	4599	3209	3210	3209	OL	0.00	0.00	0.00	0.00		
15/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2501	1985	4599	3209	3210	3209	OL	0.00	0.00	0.00	0.00		
16/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2501	1985	4599	3209	3210	3209	OL	0.00	0.00	0.00	0.00		
17/04/2013	0.0	39.9	24.1	0.0	68.5	44.1	OL	OL	OL	96.8	72.7	69.3	127.7	71.0	68.2	3197	3196	3197	2510	1993	4608	3217	3218	3217	100.00	0.00	0.00	14.90	14.90		
18/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2510	1993	4608	3217	3218	3217	OL	0.00	0.00	0.00	0.00		
19/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2510	1993	4608	3217	3218	3217	OL	0.00	0.00	0.00	0.00		
20/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2510	1993	4608	3217	3218	3217	OL	0.00	0.00	0.00	0.00		
21/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2510	1993	4608	3217	3218	3217	OL	0.00	0.00	0.00	0.00		
22/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2510	1993	4608	3217	3218	3217	OL	0.00	0.00	0.00	0.00		
23/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2510	1993	4608	3217	3218	3217	OL	0.00	0.00	0.00	0.00		
24/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2510	1993	4608	3217	3218	3217	OL	0.00	0.00	0.00	0.00		
25/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2510	1993	4608	3217	3218	3217	OL	0.00	0.00	0.00	0.00		
26/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2510	1993	4608	3217	3218	3217	OL	0.00	0.00	0.00	0.00		
27/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2510	1993	4608	3217	3218	3217	OL	0.00	0.00	0.00	0.00		
28/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2510	1993	4608	3217	3218	3217	OL	0.00	0.00	0.00	0.00		
29/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2510	1993	4608	3217	3218	3217	OL	0.00	0.00	0.00	0.00		
30/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3197	3196	3197	2510	1993	4608	3217	3218	3217	OL	0.00	0.00	0.00	0.00		
Total [ML]:																										0.00	0.00	530.27	530.28		

Water Volume [%]:
 Untreated: 0.00 %
 Below Dose: 0.00 %
 To Dose: 100.00 %

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

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

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

WATER TREATMENT PLANT UV REPORT

Report Period: **April 2013**

Report Created: **Wednesday, May 01, 2013**

Reactor: **UVR-300A**

Date	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated	Daily Totals				
	mJ/cm ²			MLD			W/m ²									Hours										to Validate	Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3			Conditions	Untreated	Below Dose	To Dose
1/04/2013	21.1	25.8	24.1	60.4	70.4	66.5	106.7	106.8	106.8	106.7	106.7	106.8	OL	OL	OL	4798	4798	4798	4889	4889	4889	4498	4498	4497	100.00	0.00	0.00	66.47	66.47	
2/04/2013	0.0	33.6	24.1	0.0	100.2	67.4	107.8	107.1	107.7	107.9	107.3	107.1	40.3	62.9	36.2	4808	4808	4808	4899	4899	4899	4498	4498	4498	100.00	0.00	0.00	27.30	27.30	
3/04/2013	21.3	72.0	24.7	4.8	37.2	32.9	71.6	39.1	62.9	74.8	63.2	48.7	32.7	34.8	32.6	4814	4814	4814	4906	4905	4905	4505	4504	4504	100.00	0.00	0.00	8.63	8.63	
4/04/2013	0.0	28.8	22.1	0.0	68.4	46.1	86.4	72.0	79.0	88.6	81.7	78.3	29.3	37.0	31.4	4827	4827	4827	4918	4918	4918	4512	4512	4512	99.83	0.00	0.04	24.33	24.37	
5/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4827	4827	4827	4918	4918	4918	4512	4512	4512	OL	0.00	0.00	0.00	0.00	0.00
6/04/2013	17.9	78.9	24.2	6.5	76.4	72.4	117.6	115.2	130.0	99.0	93.8	96.5	115.3	115.6	115.3	4837	4837	4837	4918	4918	4918	4523	4522	4522	100.00	0.00	0.00	31.06	31.06	
7/04/2013	20.5	34.7	24.3	52.5	98.4	72.4	82.1	79.8	83.6	90.1	79.4	77.3	79.8	79.9	65.3	4861	4861	4861	4939	4939	4939	4547	4546	4546	100.00	0.00	0.00	72.35	72.35	
8/04/2013	0.0	96.6	24.4	0.0	71.4	65.0	88.5	85.5	98.0	75.1	64.9	65.0	86.4	85.8	73.8	4881	4881	4881	4951	4950	4950	4566	4566	4566	100.00	0.00	0.00	53.12	53.12	
9/04/2013	0.0	34.9	24.3	0.0	71.8	68.0	87.0	78.1	83.6	94.6	74.2	69.3	78.4	78.4	76.1	4896	4896	4896	4962	4962	4962	4581	4581	4581	100.00	0.00	0.00	41.63	41.63	
10/04/2013	18.6	56.2	24.3	4.2	74.2	69.1	70.6	70.4	71.0	73.3	70.5	70.5	70.2	70.3	47.8	4906	4906	4906	4973	4972	4972	4591	4591	4591	100.00	0.00	0.00	28.92	28.92	
11/04/2013	0.0	41.0	24.3	0.0	78.0	70.7	72.2	72.2	72.1	73.6	72.2	72.3	69.2	72.1	44.5	4921	4921	4921	4988	4988	4987	4606	4606	4606	100.00	0.00	0.00	44.79	44.79	
12/04/2013	0.0	92.9	28.7	5.1	71.6	63.1	136.1	74.6	168.9	116.8	103.8	106.1	38.7	59.5	63.3	4923	4922	4922	4989	4989	4989	4608	4608	4607	100.00	0.00	0.00	3.68	3.68	
13/04/2013	15.8	34.6	24.5	57.2	92.0	78.9	99.3	87.9	105.2	95.5	88.8	89.0	89.2	90.2	78.8	4947	4946	4946	5010	5009	5009	4632	4632	4631	100.00	0.00	0.00	78.87	78.87	
14/04/2013	20.2	25.3	24.1	81.0	89.0	85.4	86.8	86.2	86.7	86.8	86.7	86.7	86.7	86.7	50.7	4971	4970	4970	5034	5033	5033	4656	4656	4655	100.00	0.00	0.00	85.44	85.44	
15/04/2013	0.0	55.3	23.7	0.0	88.6	80.4	81.9	78.2	81.7	82.1	81.8	81.6	81.6	81.7	62.0	4985	4985	4985	5048	5048	5048	4671	4670	4670	99.89	0.03	0.03	49.86	49.91	
16/04/2013	0.0	70.0	24.4	0.0	60.5	53.3	119.8	61.9	117.9	138.6	103.0	134.0	84.2	84.5	80.0	4985	4985	4985	5048	5048	5048	4671	4670	4670	100.00	0.00	0.00	8.15	8.15	
17/04/2013	21.3	25.9	24.2	29.2	81.9	54.9	OL	OL	OL	103.1	90.4	95.7	88.7	88.8	89.0	1	1	0	28	28	28	27	28	28	100.00	0.00	0.00	54.93	54.93	
18/04/2013	0.0	69.8	24.4	0.0	65.2	56.3	110.4	59.9	141.6	74.7	67.4	67.6	67.3	68.4	66.8	10	10	10	41	41	41	41	41	41	100.00	0.00	0.00	30.92	30.92	
19/04/2013	18.7	26.0	24.0	52.7	95.4	61.6	81.0	63.3	82.7	67.0	63.4	60.2	63.1	63.2	63.1	34	34	34	65	65	65	65	65	65	100.00	0.00	0.00	61.58	61.58	
20/04/2013	20.7	25.7	24.2	52.2	57.6	55.0	59.0	56.7	56.7	59.4	56.7	55.8	56.6	56.6	56.6	58	58	58	89	89	89	89	89	89	100.00	0.00	0.00	55.01	55.01	
21/04/2013	0.0	45.8	24.1	0.0	62.0	55.0	56.5	56.5	56.5	59.5	56.7	54.9	56.6	56.7	56.6	81	81	81	112	112	112	111	112	112	100.00	0.00	0.00	51.94	51.94	
22/04/2013	0.0	44.0	24.4	0.0	93.4	50.6	54.0	52.5	52.6	59.6	52.9	51.2	56.3	63.4	50.8	88	88	87	119	119	119	118	119	119	99.17	0.00	0.12	14.35	14.47	
23/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	88	88	87	119	119	119	118	119	119	OL	0.00	0.00	0.00	0.00	0.00
24/04/2013	0.0	90.0	24.7	0.0	76.8	73.3	138.0	109.3	175.8	98.8	97.1	109.1	113.0	115.9	29.4	89	89	89	119	119	119	119	120	120	100.00	0.00	0.00	3.25	3.25	
25/04/2013	21.0	33.3	24.1	64.5	81.3	73.9	123.6	117.1	139.5	83.5	77.6	79.9	117.0	117.1	117.4	113	113	113	120	120	120	143	144	144	100.00	0.00	0.00	73.87	73.87	
26/04/2013	20.7	25.8	24.3	71.0	81.1	76.9	79.2	78.2	78.9	86.3	78.3	78.2	78.3	78.3	78.3	137	137	137	144	144	144	167	168	168	100.00	0.00	0.00	76.86	76.86	
27/04/2013	20.5	25.8	24.2	71.4	81.2	76.8	78.3	78.2	78.2	78.2	78.2	78.2	78.2	78.3	78.2	161	161	161	168	168	168	191	192	192	100.00	0.00	0.00	76.82	76.82	
28/04/2013	20.6	25.8	24.2	71.1	81.3	77.1	78.6	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	185	185	185	192	192	192	215	216	216	100.00	0.00	0.00	77.11	77.11	
29/04/2013	20.7	25.7	24.3	64.7	86.1	76.1	77.7	77.7	77.7	77.7	77.6	77.7	77.7	77.8	77.5	209	209	209	216	216	216	239	240	240	100.00	0.00	0.00	76.05	76.05	
30/04/2013	0.0	59.6	24.3	0.0	90.5	73.0	74.6	74.4	74.6	75.0	74.6	74.3	74.7	74.8	71.7	230	230	230	237	237	237	260	261	261	100.00	0.00	0.00	63.99	63.99	
Total [ML]:																									0.03	0.19	1341.25	1341.46		

Water Volume [%]:
 Untreated: 0.00 %
 Below Dose: 0.01 %
 To Dose: 99.98 %

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

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

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

WATER TREATMENT PLANT UV REPORT

Report Period: **April 2013**

Report Created: **Wednesday, May 01, 2013**

Reactor: **UVR-400A**

Date	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated	Daily Totals				
	mJ/cm ²			MLD			W/m ²									Hours										to Validate	Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3			Conditions	Untreated	Below Dose	To Dose
1/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1037	1037	797	1488	1487	1488	1466	466	1466	OL	0.00	0.00	0.00	0.00	
2/04/2013	19.9	63.9	24.5	5.4	67.4	63.4	92.8	64.9	64.7	89.2	64.8	67.7	83.8	86.4	102.0	1052	1052	811	1502	1502	1502	1480	480	1481	100.00	0.00	0.00	37.86	37.86	
3/04/2013	17.2	25.1	23.2	43.3	66.2	59.7	65.8	65.3	63.7	70.9	69.1	65.2	69.9	71.9	70.1	1069	1069	829	1526	1526	1526	1504	504	1505	100.00	0.00	0.00	59.68	59.68	
4/04/2013	0.0	62.4	22.8	0.0	73.9	59.2	81.7	71.7	70.6	79.2	72.3	67.9	74.7	76.6	82.3	1080	1080	840	1545	1545	1545	1523	523	1523	99.02	0.00	0.46	46.06	46.51	
5/04/2013	0.0	39.4	22.8	0.0	73.7	68.7	70.2	70.2	65.6	70.7	70.2	70.2	70.2	70.2	70.2	1087	1087	847	1552	1552	1552	1530	530	1531	100.00	0.00	0.00	20.46	20.46	
6/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1087	1087	847	1552	1552	1552	1530	530	1531	OL	0.00	0.00	0.00	0.00	
7/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1087	1087	847	1552	1552	1552	1530	530	1531	OL	0.00	0.00	0.00	0.00	
8/04/2013	0.0	63.9	24.6	0.0	68.7	64.9	114.5	90.0	70.3	105.6	66.5	76.9	91.0	99.1	110.8	1092	1092	851	1557	1556	1557	1535	534	1535	100.00	0.00	0.00	11.76	11.76	
9/04/2013	20.8	63.9	24.3	5.5	72.6	67.7	84.8	69.3	69.0	80.8	69.1	69.1	73.1	75.0	75.2	1101	1101	861	1566	1566	1566	1544	544	1544	100.00	0.00	0.00	26.41	26.41	
10/04/2013	0.0	34.9	24.1	0.0	96.5	68.4	70.0	69.7	69.4	70.1	70.0	69.7	70.0	70.0	70.2	1115	1115	875	1580	1580	1580	1558	558	1558	100.00	0.00	0.00	39.88	39.88	
11/04/2013	19.2	63.9	24.5	0.0	68.0	63.7	107.3	81.5	66.1	95.6	65.3	70.9	80.3	92.9	96.5	1124	1123	883	1588	1588	1589	1567	566	1567	99.59	0.05	0.05	22.02	22.11	
12/04/2013	0.0	32.1	23.8	0.0	69.0	65.2	72.9	66.7	65.6	71.7	67.2	67.1	68.4	69.9	68.2	1144	1144	903	1609	1609	1609	1587	587	1587	100.00	0.00	0.00	55.77	55.77	
13/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1144	1144	903	1609	1609	1609	1587	587	1587	OL	0.00	0.00	0.00	0.00	
14/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1144	1144	903	1609	1609	1609	1587	587	1587	OL	0.00	0.00	0.00	0.00	
15/04/2013	0.0	63.9	24.2	0.0	84.5	81.7	112.4	89.3	82.5	102.1	83.0	82.8	88.2	94.2	107.6	1153	1152	912	1618	1617	1618	1596	595	1596	99.79	0.00	0.06	29.07	29.13	
16/04/2013	0.0	35.0	23.7	0.0	84.9	81.3	84.0	82.6	82.6	83.1	82.6	81.3	82.7	83.1	82.7	1171	1170	930	1636	1635	1636	1614	614	1614	100.00	0.00	0.00	60.83	60.83	
17/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1171	1170	930	1636	1635	1636	1614	614	1614	OL	0.00	0.00	0.00	0.00	
18/04/2013	21.2	63.9	24.5	4.8	67.6	62.7	90.6	64.1	64.7	86.8	64.3	68.3	83.2	87.1	95.1	1186	1186	946	1651	1651	1651	1630	629	1630	100.00	0.00	0.00	40.70	40.70	
19/04/2013	0.0	39.7	23.6	0.0	66.4	63.1	65.3	65.1	62.7	65.4	65.1	64.9	65.9	69.8	65.5	1197	1197	956	1662	1661	1662	1640	640	1640	100.00	0.00	0.00	27.33	27.33	
20/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1197	1197	956	1662	1661	1662	1640	640	1640	OL	0.00	0.00	0.00	0.00	
21/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1197	1197	956	1662	1661	1662	1640	640	1640	OL	0.00	0.00	0.00	0.00	
22/04/2013	0.0	63.9	24.3	0.0	93.3	76.2	93.3	77.1	80.5	92.6	77.3	83.1	88.5	79.2	96.3	1218	1217	977	1683	1682	1683	1661	660	1661	100.00	0.00	0.00	65.88	65.88	
23/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1218	1217	977	1683	1682	1683	1661	660	1661	OL	0.00	0.00	0.00	0.00	
24/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1218	1217	977	1683	1682	1683	1661	660	1661	OL	0.00	0.00	0.00	0.00	
25/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1218	1217	977	1683	1682	1683	1661	660	1661	OL	0.00	0.00	0.00	0.00	
26/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1218	1217	977	1683	1682	1683	1661	660	1661	OL	0.00	0.00	0.00	0.00	
27/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1218	1217	977	1683	1682	1683	1661	660	1661	OL	0.00	0.00	0.00	0.00	
28/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1218	1217	977	1683	1682	1683	1661	660	1661	OL	0.00	0.00	0.00	0.00	
29/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1218	1217	977	1683	1682	1683	1661	660	1661	OL	0.00	0.00	0.00	0.00	
30/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1218	1217	977	1683	1682	1683	1661	660	1661	OL	0.00	0.00	0.00	0.00	
Total [ML]:																									0.05	0.56	543.71	544.32		

Water Volume [%]:
 Untreated: 0.01 %
 Below Dose: 0.10 %
 To Dose: 99.89 %

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



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

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

WATER TREATMENT PLANT UV REPORT

Report Period: **April 2013**

Report Created: **Wednesday, May 01, 2013**

Reactor: **UVR-600A**

Date	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated	Daily Totals				
	mJ/cm ²			MLD			W/m ²									Hours										to Validate	Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3			Conditions	Untreated	Below Dose	To Dose
1/04/2013	18.5	25.7	24.2	62.4	72.8	69.1	70.6	70.6	70.6	70.5	70.5	70.5	71.6	70.5	70.6	4570	2431	2431	2811	2811	2812	4116	284	2718	100.00	0.00	0.00	69.13	69.13	
2/04/2013	0.0	34.1	24.2	0.0	90.4	67.6	72.1	69.0	69.6	68.9	69.0	69.0	74.1	69.1	69.0	4585	2445	2445	2825	2825	2826	4130	298	2733	100.00	0.00	0.00	40.42	40.42	
3/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4585	2445	2445	2825	2825	2826	4130	298	2733	OL	0.00	0.00	0.00	0.00	0.00
4/04/2013	0.0	69.8	24.6	0.0	64.2	46.2	65.2	48.1	55.0	48.0	47.8	47.9	69.4	48.1	47.8	4591	2452	2452	2832	2832	2832	4137	304	2739	100.00	0.00	0.00	12.29	12.29	
5/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4591	2452	2452	2832	2832	2832	4137	304	2739	OL	0.00	0.00	0.00	0.00	0.00
6/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4591	2452	2452	2832	2832	2832	4137	304	2739	OL	0.00	0.00	0.00	0.00	0.00
7/04/2013	18.6	65.6	24.3	3.5	78.3	60.6	79.0	63.2	63.8	63.5	63.3	63.3	79.9	63.1	63.2	4609	2470	2469	2850	2849	2850	4154	322	2757	100.00	0.00	0.00	44.31	44.31	
8/04/2013	18.4	26.2	24.3	47.6	73.2	60.1	85.8	61.9	62.0	62.1	62.1	62.1	84.2	62.0	62.0	4633	2494	2493	2874	2873	2874	4178	346	2781	100.00	0.00	0.00	60.09	60.09	
9/04/2013	18.4	25.6	24.2	58.7	73.2	67.8	86.6	69.3	69.3	69.3	69.3	69.3	86.2	69.3	69.3	4657	2518	2517	2898	2897	2898	4202	370	2805	100.00	0.00	0.00	67.80	67.80	
10/04/2013	18.1	26.8	24.2	38.9	75.1	68.3	87.6	69.8	69.8	69.7	69.8	69.7	86.6	69.8	69.7	4681	2542	2541	2922	2921	2922	4226	394	2829	100.00	0.00	0.00	68.32	68.32	
11/04/2013	18.5	26.5	24.2	39.2	79.6	70.1	89.8	71.6	71.8	71.6	71.6	71.6	87.9	71.6	71.6	4705	2566	2565	2946	2945	2946	4250	418	2853	100.00	0.00	0.00	70.12	70.12	
12/04/2013	18.5	26.6	24.3	43.9	83.8	66.7	95.5	68.5	69.3	68.3	68.9	68.3	93.1	68.7	68.3	4729	2590	2589	2970	2969	2970	4274	442	2877	100.00	0.00	0.00	66.69	66.69	
13/04/2013	18.4	25.9	24.4	43.3	74.4	62.7	108.7	66.4	70.8	65.4	68.6	65.4	94.6	67.5	65.3	4753	2613	2613	2994	2993	2994	4298	466	2901	100.00	0.00	0.00	62.57	62.57	
14/04/2013	18.2	26.1	24.3	62.8	74.6	69.0	120.9	70.5	72.4	70.5	70.5	71.0	97.2	70.5	70.5	4777	2637	2637	3018	3017	3018	4322	490	2925	100.00	0.00	0.00	69.07	69.07	
15/04/2013	0.0	88.1	24.3	0.0	80.9	73.1	119.5	74.8	80.2	74.7	74.9	78.0	98.3	74.8	74.4	4800	2661	2661	3041	3041	3042	4346	514	2948	99.99	0.00	0.00	71.65	71.66	
16/04/2013	0.0	42.6	24.3	0.0	76.8	73.3	122.8	74.7	90.4	74.6	74.8	80.4	100.5	74.7	74.6	4820	2681	2681	3062	3061	3062	4366	534	2969	100.00	0.00	0.00	61.95	61.95	
17/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4820	2681	2681	3062	3061	3062	4366	534	2969	OL	0.00	0.00	0.00	0.00	0.00
18/04/2013	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4820	2681	2681	3062	3061	3062	4366	534	2969	OL	0.00	0.00	0.00	0.00	0.00
19/04/2013	0.0	91.2	24.3	2.7	92.2	85.2	111.4	86.2	93.9	86.2	86.2	86.2	97.1	86.2	85.3	4834	2695	2695	3075	3075	3076	4380	548	2982	100.00	0.00	0.00	48.32	48.32	
20/04/2013	18.4	25.1	24.2	80.7	89.1	85.0	116.4	86.3	102.0	86.3	86.3	86.3	97.8	86.3	83.7	4858	2719	2719	3099	3099	3100	4404	572	3006	100.00	0.00	0.00	84.98	84.98	
21/04/2013	18.5	44.0	24.3	29.4	98.4	82.1	116.3	86.0	114.9	84.5	85.3	85.9	97.4	84.7	78.0	4881	2742	2742	3123	3123	3124	4428	596	3030	100.00	0.00	0.00	82.02	82.02	
22/04/2013	18.7	34.5	24.4	29.6	101.8	69.5	115.3	76.7	128.0	74.2	78.9	82.8	99.0	75.9	69.6	4903	2764	2764	3147	3147	3148	4452	620	3054	100.00	0.00	0.00	69.29	69.29	
23/04/2013	18.6	56.7	24.2	0.0	97.4	84.8	112.4	86.2	131.0	86.1	86.2	86.2	95.5	86.1	78.9	4927	2788	2788	3171	3171	3172	4476	644	3078	100.00	0.00	0.00	84.75	84.75	
24/04/2013	0.0	88.5	24.4	0.0	89.2	79.1	101.8	81.0	121.7	80.5	81.0	81.4	90.2	80.8	69.9	4936	2797	2797	3180	3180	3181	4485	653	3087	100.00	0.00	0.00	29.26	29.26	
25/04/2013	18.6	25.5	24.2	66.0	81.9	75.1	118.5	76.5	156.9	76.5	76.6	78.3	95.7	76.5	76.5	4960	2821	2821	3204	3204	3205	4509	677	3111	100.00	0.00	0.00	75.11	75.11	
26/04/2013	18.8	25.4	24.2	73.1	82.0	78.5	119.1	79.8	162.0	79.8	79.8	79.8	95.8	79.8	79.7	4984	2845	2845	3228	3228	3229	4533	701	3135	100.00	0.00	0.00	78.49	78.49	
27/04/2013	18.5	25.6	24.2	73.0	82.2	78.8	115.0	80.1	138.6	80.1	80.1	80.1	91.5	80.1	77.4	5008	2869	2869	3252	3252	3253	4557	725	3159	100.00	0.00	0.00	78.75	78.75	
28/04/2013	18.6	25.5	24.2	73.5	82.6	78.8	114.3	80.1	140.7	80.1	80.1	80.1	89.6	80.1	76.0	5032	2893	2893	3276	3276	3277	4581	749	3183	100.00	0.00	0.00	78.76	78.76	
29/04/2013	18.5	25.6	24.2	64.7	85.7	76.3	114.8	77.7	151.5	77.7	77.8	77.8	90.2	77.7	72.6	5056	2917	2917	3300	3300	3301	4605	773	3207	100.00	0.00	0.00	76.31	76.31	
30/04/2013	0.0	90.2	24.4	0.0	101.3	70.7	113.5	72.9	134.0	72.6	72.9	73.3	92.3	72.8	71.0	5079	2940	2939	3323	3323	3323	4627	795	3230	100.00	0.00	0.00	66.15	66.15	
Total [ML]:																0.00 0.00 1616.59 1616.59														

Water Volume [%]:
 Untreated: 0.00 %
 Below Dose: 0.00 %
 To Dose: 100.00 %

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

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2013\04-April