

5 Water Quality in the Distribution System

Sampling of water throughout the distribution network is undertaken in accordance with a programme to ensure the water we supply meets physical, bacteriological and chemical standards.

During 2006, 1300 samples of water were taken and the following tables show the results of the check and audit monitoring programme together with the compliance levels.

Check Monitoring : Supply Zone

Substances and parameters	Specific concentration or value (maximum) or state	Min	Mean	Max	No. of samples	% compliance
E.coli	0 per 100ml	0	0	0	650	100
Coliform bacteria	0 per 100ml	0	0	1	650	99.8
Residual disinfectant	No value mg Cl ₂ /l	<0.02	0.13	0.58	550	
Aluminium	200 µg Al/l	<20	25	125	100	100
Ammonium	0.50 mg NH ₄ /l	<0.04	<0.04	0.15	100	100
Clostridium perfringens	0 per 100ml	0	0	0	100	100
Colony counts	No abnormal change	No abnormal change			550	100
Colour	20 mg/l Pt/Co	<0.69	1.28	5.27	100	100
Conductivity	2500 µS/cm at 20°C	463	533	593	100	100
Hydrogen ion	10.0 pH value 6.5(min)	7.24	7.76	8.24	100	100
Iron	200 µg Fe/l	<10	27	371	100	99
Manganese	50 µg Mn/l	<1.0	4.4	21.3	100	100
Nitrate	50 mg NO ₃ /l	19.4	36.9	51.4	100	97
Nitrite	0.5 mg NO ₂ /l	<0.01	0.033	0.449	100	100
Odour	3 at 25°C Dilution number	1	1	3	100	100
Taste	3 at 25°C Dilution number	1	1	3	97	100
Turbidity	4 NTU	0.09	0.27	2.76	99	100

5 Water Quality in the Distribution System (continued)

Audit Monitoring : Supply Zone

Substances and parameters	Specific concentration or value (maximum) or state	Min	Mean	Max	No. of samples	% compliance
Antimony	5.0 µg Sb/l	<0.20	<0.20	0.36	11	100
Arsenic	10 µg As/l	<0.40	<0.40	0.64	11	100
Benzene	1.0 µg/l	<0.06	<0.06	<0.06	12	100
Benzo(a)pyrene	0.010 µg/l	<0.001	<0.001	<0.001	11	100
Boron	1.0 mg B/l	0.055	0.136	0.352	12	100
Cadmium	5.0 µg Cd/l	<0.5	<0.5	<0.5	11	100
Chromium	50 µg Cr/l	<0.6	<0.6	0.67	11	100
Copper	2.0 mg Cu/l	<0.004	0.009	0.026	11	100
Cyanide	50 µg CN/l	<0.005	<0.005	0.008	12	100
1,2 dichloroethane	3.0 µg/l	<0.1	<0.1	<0.1	12	100
Enterococci	0 per 100ml	0	0	0	11	100
Fluoride	1.5 mg F/l	<0.050	<0.050	0.06	12	100
Lead ¹	25 µg Pb/l	<0.5	<0.5	0.8	11	100
Mercury	1.0 µg Hg/l	<0.002	0.004	0.030	12	100
Nickel	20 µg Ni/l	<2	<2	2	11	100
Atrazine ²	0.1 µg/l	<0.002	0.002	0.007	11	100
Prometryne ²	0.1 µg/l	<0.002	<0.002	0.010	11	100
Tebuconazole ²	0.1 µg/l	<0.002	<0.002	0.008	11	100
Dalapon ²	0.1 µg/l	<0.010	0.012	0.027	11	100
Pesticides total	0.5 µg/l	<0.010	0.015	0.035	12	100

¹The value of 25 µg Pb/l is valid until immediately before 25th December 2013, reducing to 10 µg Pb/l on and after 25th December 2013.

²Detected pesticide - 83 other pesticides analysed for and not detected.

5 Water Quality in the Distribution System (continued)

Audit Monitoring : Supply Zone (continued)

Substances and parameters	Specific concentration or value (maximum) or state	Min	Mean	Max	No. of samples	% compliance
Polycyclic aromatic hydrocarbons	0.10 µg/l	<0.01	<0.01	<0.01	11	100
Selenium	10 µg Se/l	<1.0	<1.0	2.0	11	100
Sodium	200 mg Na/l	44.2	55.6	69.9	11	100
Trichloroethene and Tetrachloroethene	10 µg/l	<0.1	<0.1	0.3	12	100
Tetrachloromethane	3 µg/l	<0.1	<0.1	0.1	12	100
Trihalomethanes	100 µg/l	3.3	11.5	16.6	11	100
Chloride	250 mg Cl/l	57.4	67.4	85.5	12	100
Sulphate	250 mg SO ₄ /l	73.0	95.6	111.0	12	100
Total Organic Carbon	No abnormal change	0.99	1.48	1.83	12	100
Tritium	100 Bq/l	<10.0	<10.0	<10.0	12	100
Gross alpha	0.1 Bq/l	<0.03	<0.03	<0.03	12	100
Gross beta	1.0 Bq/l	0.12	0.19	0.23	12	100