

5 Water Quality in the Distribution System

It is very important that the quality of water is maintained as it passes through the distribution network and to ensure this sampling of water is carried out throughout the distribution network in accordance with an approved programme. The analysis of water is carried out to ensure the water maintains its high level of physical, bacteriological and chemical standards.

During 2010, 1462 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	731	100
Coliform bacteria	0 per 100ml	0	0	1	731	99.7
Residual disinfectant	No value mg Cl ₂ /l	<0.02	0.12	0.56	631	
Aluminium	200 µg Al/l	<20	<20	66	100	100
Ammonium	0.50 mg NH ₄ /l	<0.04	0.05	0.13	100	100
Clostridium perfringens	0 per 100ml	0	0	0	100	100
Colony counts	No abnormal change	No abnormal change			631	100
Colour	20 mg/l Pt/Co	<0.69	2.11	8.82	100	100
Conductivity	2500 µS/cm at 20°C	487	580	638	100	100
Hydrogen ion	10.0 pH value 6.5(min)	7.00	7.37	8.48	100	100
Iron	200 µg Fe/l	<4	16	100	100	100
Manganese	50 µg Mn/l	<2.0	6.2	31.0	100	100
Nitrate ¹	50 mg NO ₃ /l	25.1	42.1	56.7	100	77
Nitrite	0.5 mg NO ₂ /l	<0.010	0.030	0.213	100	100
Odour	3 at 25°C Dilution number	1	1	1	100	100
Taste	3 at 25°C Dilution number	1	1	3	100	100
Turbidity	4 NTU	0.11	0.21	0.57	100	100

¹A dispensation for nitrates exists which allows up to 33% of samples to be above 50mg/l but not exceed 70 mg/l

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	0.24	0.31	0.37	12	100
Arsenic	10 µg As/l	0.12	0.42	0.63	12	100
Benzene	1.0 µg/l	<0.07	<0.07	<0.07	12	100
Benzo(a)pyrene	10.0 ng/l	<0.5	<0.5	<0.5	12	100
Boron	1.0 mg B/l	0.060	0.075	0.100	12	100
Cadmium	5.0 µg Cd/l	<0.02	<0.02	0.03	12	100
Chromium	50 µg Cr/l	<0.15	<0.15	0.31	12	100
Copper	2.0 mg Cu/l	<0.003	0.007	0.021	12	100
Cyanide	50 µg CN/l	<1.0	1.7	110	12	100
1,2 dichloroethane	3.0 µg/l	<0.12	<0.12	<0.12	12	100
Enterococci	0 per 100ml	0	0	0	12	100
Fluoride	1.5 mg F/l	0.050	0.056	0.070	12	100
Lead	25 µg Pb/l ¹	<0.5	1.2	14.0	12	100
Mercury	1.0 µg Hg/l	<0.002	<0.002	0.004	12	100
Nickel	20 µg Ni/l	<0.90	0.93	1.40	12	100
Isoproturon ²	0.1 µg/l	<0.003	<0.003	0.004	12	100
Linuron ²	0.1 µg/l	<0.004	<0.004	0.008	12	100
Diuron ²	0.1 µg/l	<0.005	<0.005	0.008	12	100
2,4-D ²	0.1 µg/l	<0.011	<0.011	0.048	12	100
Mecoprop ²	0.1 µg/l	<0.010	<0.010	0.011	12	100
Prometryne ²	0.1 µg/l	<0.002	<0.002	0.003	12	100
Tebuconazole ²	0.1 µg/l	<0.003	<0.003	0.003	12	100
Glyphosate ²	0.1 µg/l	<0.014	<0.014	0.039	12	100
Pesticides total	0.5 µg/l	<0.010	0.013	0.048	12	100
Polycyclic aromatic hydrocarbons	0.10 µg/l	<0.010	<0.010	<0.010	12	100
Selenium	10 µg Se/l	<0.2	0.5	1.1	12	100
Sodium	200 mg Na/l	46.3	53.8	60.0	12	100
Trichloroethene and Tetrachloroethene	10 µg/l	<0.1	<0.1	0.16	12	100
Tetrachloromethane	3 µg/l	<0.1	<0.1	<0.1	12	100
Trihalomethanes	100 µg/l	7.78	13.0	18.6	12	100
Chloride	250 mg Cl/l	62.8	66.7	69.4	12	100
Sulphate	250 mg SO ₄ /l	87.3	100.2	113.0	12	100
Total Organic Carbon	No abnormal change	1.55	1.87	2.35	12	100
Tritium	100 Bq/l	<10.0	<10.0	<10.0	12	100
Gross alpha	0.1 Bq/l	<0.024	<0.024	0.025	12	100
Gross beta	1.0 Bq/l	0.16	0.19	0.22	12	100

¹ The 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.

² Detected pesticide – 81 other pesticides analysed for and not detected.