

## 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 2009, 1,341 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	720	100
Coliform bacteria	0 per 100ml	0	0	1	720	99
Residual disinfectant	No value (mg Cl <sub>2</sub> /l)	<0.02	0.12	0.58	621	
Aluminium	200 µg Al/l	3	25	148	100	100
Ammonium	0.50 mg NH <sub>4</sub> /l	<0.04	0.04	0.28	100	100
Clostridium perfringens	0 per 100ml	0	0	0	100	100
Colony counts	No abnormal change	No abnormal change			621	100
Colour	20 mg/l Pt/Co	<0.69	1.86	13.9	100	100
Conductivity	2500 µS/cm at 20°C	415	566	686	100	100
Hydrogen ion	10.0 pH value 6.5 (min)	7.42	7.76	8.24	100	100
Iron	200 µg Fe/l	<3	18	128	100	100
Manganese	50 µg Mn/l	<0.7	4.6	38.7	100	100
Nitrate	50 mg NO <sub>3</sub> /l	24.3	41.8	59.8	100	77
Nitrite	0.5 mg NO <sub>2</sub> /l	<0.013	0.019	0.118	100	100
Odour	3 at 25°C Dilution number	1	1	1	100	100
Taste	3 at 25°C Dilution number	1	1	2	99	100
Turbidity	4 NTU	0.08	0.16	0.92	100	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	0.14	0.27	0.36	12	100
Arsenic	10 µg As/l	0.37	0.52	0.86	12	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	12	100
Boron	1.0 mg B/l	0.060	0.074	0.110	12	100
Cadmium	5.0 µg Cd/l	<0.5	<0.5	<0.5	12	100
Chromium	50 µg Cr/l	0.17	0.35	0.75	12	100
Copper	2.0 mg Cu/l	0.002	0.009	0.032	12	100
Cyanide	50 µg CN/l	<1.0	1.9	5.0	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	0.060	0.070	12	100
Lead	25 µg Pb/l <sup>1</sup>	<0.5	0.6	6.8	12	100
Mercury	1.0 µg Hg/l	<0.002	<0.002	0.003	12	100
Nickel	20 µg Ni/l	1.10	1.49	1.90	12	100
Diuron <sup>2</sup>	0.1 µg/l	<0.005	<0.005	0.005	12	100
Hexachlorocyclohexane Alpha <sup>2</sup>	0.1 µg/l	<0.010	<0.010	0.020	12	100
Metaldehyde <sup>2</sup>	0.1 µg/l	<0.025	<0.025	0.027	9	100
Pesticides total	0.5 µg/l	<0.010	<0.010	0.027	12	100
Polycyclic aromatic hydrocarbons	0.10 µg/l	<0.010	<0.010	<0.010	12	100
Selenium	10 µg Se/l	0.5	0.9	1.3	12	100
Sodium	200 mg Na/l	42.5	51.7	58.1	12	100
Trichloroethene and Tetrachloroethene	10 µg/l	<0.1	<0.1	<0.1	12	100
Tetrachloromethane	3 µg/l	<0.1	<0.1	<0.1	12	100
Trihalomethanes	100 µg/l	6.0	11.5	18.8	12	100
Chloride	250 mg Cl/l	60.2	65.5	70.2	12	100
Sulphate	250 mg SO <sub>4</sub> /l	82.3	98.0	114.0	12	100
Total Organic Carbon	No abnormal change	1.61	2.23	4.21	12	100
Tritium	100 Bq/l	<10.0	<10.0	<10.0	12	100
Gross alpha	0.1 Bq/l	<0.03	<0.03	0.032	12	100
Gross beta	1.0 Bq/l	0.18	0.21	0.24	12	100

<sup>1</sup> 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.

<sup>2</sup> Detected pesticide - 81 other pesticides analysed for and not detected.