RICHMOND 2004 (2807003) WATER SUPPLY ZONE.

COMMENTARY ON WATER QUALITY

The water supplied to the zone is classified as being hard water, which is spring/borehole derived. As we have a grid system in place whereby we can move water around the Yorkshire region as required, occasionally the hardness of your water may vary.

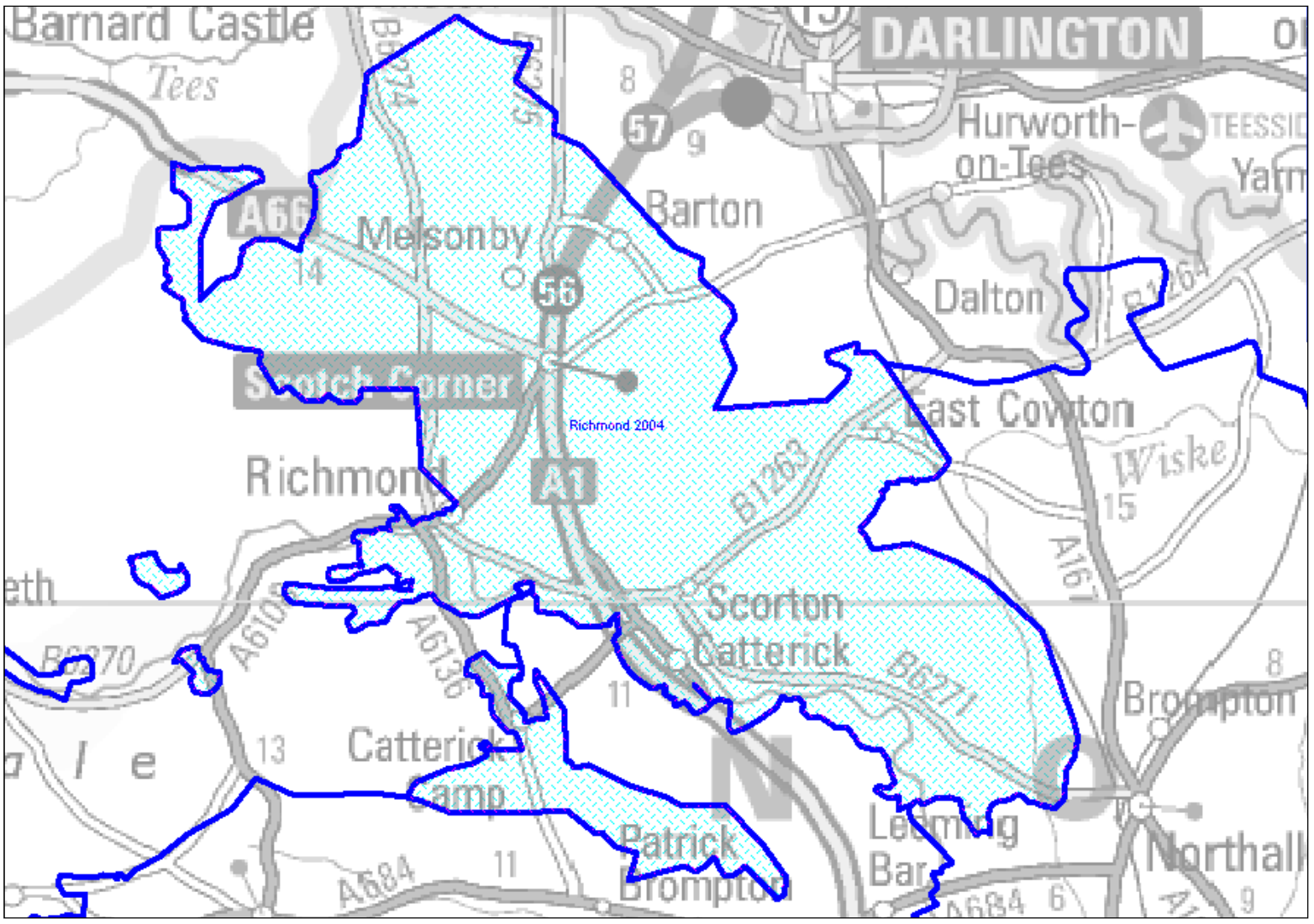
No fluoride is added to the water. Any fluoride that is there is naturally occurring.

Samples taken in the period showed that the water complied in all respects with the prescribed standards.

DETAILS OF UNDERTAKINGS AND NOTICES APPLICABLE

No Undertakings or Notices apply during the period.

The geographical area covered by this Water Supply Zone is shown below:



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Yorkshire Water Services **Reporting Period: 01-01-2016 to 31-12-2016**

Water Supply Zone: Richmond 2004 **Population 24205**

ParameterName:	Std	Und Std	Units	No of Samples taken	No of Fails	% Fails	No of Fails (Und)	% Fails (Und)	Min	Mean	Max
Colony Counts After 3 Days At 22øc	-		no'/ml	24	0	0.00%	0	0.00%	0	0	0
Colony Counts After 48 Hours At 37øc	-		no'/ml	24	0	0.00%	0	0.00%	0	0	1
E. coli	0		no'/100 ml	60	0	0.00%	0	0.00%	0	0	0
Enterococci	0		no'/100 ml	8	0	0.00%	0	0.00%	0	0	0
Residual Disinfectant - Free	-		mg/l	60	0	0.00%	0	0.00%	0.35	0.52	0.67
Residual Disinfectant - Total	-		mg/l	60	0	0.00%	0	0.00%	0.42	0.57	0.79
Total coliforms(Indicator)	0		no'/100 ml	60	0	0.00%	0	0.00%	0	0	0
1,2 Dichloroethane	3		µg/l	8	0	0.00%	0	0.00% <	0.07 <	0.1 <	0.1
Aluminium	200		µg Al/l	24	0	0.00%	0	0.00% <	0.9 <	3.088	3.21
Ammonium(ammonia and ammonium ions)	0.5		mg NH4/l	24	0	0.00%	0	0.00% <	0.004 <	0.0041	0.006
Antimony	5		µg Sb/l	8	0	0.00%	0	0.00% <	0.033 <	0.039	0.077
Arsenic	10		µg As/l	8	0	0.00%	0	0.00% <	0.06 <	0.1812	0.23
Benzene	1		µg/l	8	0	0.00%	0	0.00% <	0.02 <	0.04 <	0.07
Benzo 3,4 pyrene	0.01		ug/l	8	0	0.00%	0	0.00% <	0.00022 <	0.0002 <	0.00022
Boron	1		mg B/l	8	0	0.00%	0	0.00%	0.0131	0.0276	0.033
Bromate	10		µg BrO3/l	8	0	0.00%	0	0.00% <	0.1 <	0.1875	0.4
Cadmium	5		µg Cd/l	8	0	0.00%	0	0.00% <	0.006 <	0.0119	0.015
Chloride	250		mg Cl/l	8	0	0.00%	0	0.00%	9.9	30.775	34.8
Chromium	50		µg Cr/l	8	0	0.00%	0	0.00%	0.14	0.3012	0.4
Colour	20		mg/l Pt/Co scale	24	0	0.00%	0	0.00% <	0.5 <	0.75 <	1
Conductivity	2500		µS/cm	24	0	0.00%	0	0.00%	363	527.5	563
Copper	2		mg Cu/l	8	0	0.00%	0	0.00%	0.0065	0.0313	0.102
Cyanide	50		µg CN/l	8	0	0.00%	0	0.00% <	0.7 <	1.78	5.4
Fluoride	1.5		mg F/l	8	0	0.00%	0	0.00%	0.07	0.126	0.15
Gross Alpha Activity	0.1		Bq/l	9	0	0.00%	0	0.00% <	0.017 <	0	0.042
Gross Beta Activity	1		Bq/l	8	0	0.00%	0	0.00%	0.033	0.1	0.095
Hydrogen Ion (pH)	6.5 - 9.5		pH value	24	0	0.00%	0	0.00%	7.3	7.48	7.78
Iron	200		µg Fe/l	24	0	0.00%	0	0.00% <	1.73 <	2.54	9.1
Lead	10		µg/l	8	0	0.00%	0	0.00% <	0.03 <	0.109	0.23
Manganese	50		µg Mn/l	24	0	0.00%	0	0.00% <	0.14 <	0.33	2.6
Mercury	1		µg Hg/l	8	0	0.00%	0	0.00% <	0.02 <	0.039 <	0.05
Nickel	20		µg Ni/l	8	0	0.00%	0	0.00%	0.15	0.626	1.33

Water Supply Zone: Richmond 2004 **Population 24205**

ParameterName:	Std	Und Std	Units	No of Samples taken	No of Fails	% Fails	No of Fails (Und)	% Fails (Und)	Min	Mean	Max
Nitrate	50		mg NO3/l	8	0	0.00%	0	0.00%	6.18	6.635	7.56
Nitrite - Consumer's Taps	0.5		mg/l NO2	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
Nitrite/ Nitrate formula	1		mg/l	8	0	0.00%	0	0.00% <	0.37 <	0.37 <	0.37
Odour	0		dilution number	24	0	0.00%	0	0.00%	0	0	0
Polycyclic Aromatic Hydrocarbons (PAHs)	0.1		µg/l	8	0	0.00%	0	0.00%	0	0.0002	0.001
Selenium	10		µg Se/l	8	0	0.00%	0	0.00%	0.32	0.722	0.99
Sodium	200		mg Na/l	8	0	0.00%	0	0.00%	5.47	13.68	16.7
Sulphate	250		mg SO4/l	8	0	0.00%	0	0.00%	12.4	31.9	38.8
Taste	0		dilution number	24	0	0.00%	0	0.00%	0	0	0
Tetrachloroethene/Trichlorethene - Sum	10		µg/l	8	0	0.00%	0	0.00%	0	0	0
Tetrachloromethane	3		µg/l	8	0	0.00%	0	0.00% <	0.02 <	0.065 <	0.14
Total organic carbon	-		mg C/l	8	0	0.00%	0	0.00% <	0.11 <	0.304	0.6
Total Trihalomethanes (THM's)	100		µg/l	8	0	0.00%	0	0.00%	4.43	5.815	7.95
Turbidity	4		NTU	24	0	0.00%	0	0.00% <	0.03 <	0.069	0.18
Calcium	-		mg Ca/l	8	0	0.00%	0	0.00%	69.1	79.7875	85.2
Magnesium	-		mg Mg/l	8	0	0.00%	0	0.00%	6.95	16.1425	19.2
Total Hardness	-		mg Ca/l	8	0	0.00%	0	0.00%	80.6	106.6375	117
2,4,5-T	0.1		µg/l	8	0	0.00%	0	0.00% <	0.003 <	0.006 <	0.009
2,4-D	0.1		µg/l	8	0	0.00%	0	0.00% <	0.004 <	0.0055 <	0.007
2,4-DB	0.1		µg/l	8	0	0.00%	0	0.00% <	0.005 <	0.006 <	0.007
Aldrin	0.03		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.001 <	0.001
Atrazine	0.1		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.0016 <	0.002
Bentazone	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
Bromacil	0.1		µg/l	8	0	0.00%	0	0.00% <	0.003 <	0.003 <	0.003
Bromoxynil	0.1		µg/l	8	0	0.00%	0	0.00% <	0.004 <	0.0048 <	0.006
Carbetamide	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
Chlorpropham	0.1		µg/l	8	0	0.00%	0	0.00% <	0.003 <	0.003 <	0.003
Chlorpyrifos	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.0026	0.003
Chlortoluron	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.0024 <	0.003
Clomazone	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.0026 <	0.003
Clopyralid	0.1		µg/l	8	0	0.00%	0	0.00% <	0.005 <	0.0055 <	0.006
Cyanazine	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
Cypermethrin	0.1		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.001 <	0.001

Water Supply Zone: Richmond 2004 **Population 24205**

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Cyproconazole	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
Diazinon	0.1		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.001 <	0.001
Dicamba	0.1		µg/l	8	0	0.00%	0	0.00% <	0.005 <	0.0054 <	0.006
Dichlobenil	0.1		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.001 <	0.001
Dichlorprop	0.1		µg/l	8	0	0.00%	0	0.00% <	0.003 <	0.004 <	0.005
Dieldrin	0.03		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.001 <	0.001
Difenconazole	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
Diflufenican	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
Diuron	0.1		µg/l	8	0	0.00%	0	0.00% <	0.003 <	0.003 <	0.003
Epoxiconazole	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
EPTC	0.1		µg/l	8	0	0.00%	0	0.00% <	0.004 <	0.0052 <	0.006
Fluazifop-butyl	0.1		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.001	0.001
Flufenacet	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.0025 <	0.003
Fluroxypyr	0.1		µg/l	8	0	0.00%	0	0.00% <	0.003 <	0.004 <	0.005
Flurtamone	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
Flusilazole	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
Flutriafol	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
Gamma-HCH (Lindane)	0.1		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.001 <	0.001
Heptachlor	0.03		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.001 <	0.001
Heptachlor epoxide	0.03		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.0015 <	0.002
Imazapyr	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
Ioxynil	0.1		µg/l	8	0	0.00%	0	0.00% <	0.003 <	0.003 <	0.003
Isoproturon	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
Linuron	0.1		µg/l	8	0	0.00%	0	0.00% <	0.003 <	0.0045 <	0.007
MCPA	0.1		µg/l	8	0	0.00%	0	0.00% <	0.003 <	0.0035 <	0.004
Mecoprop-P	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.0025 <	0.003
Metaldehyde	0.1		µg/l	8	0	0.00%	0	0.00% <	0.005 <	0.0054 <	0.006
Metazachlor	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
Monuron	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
op'-DDD (TDE)	0.1		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.001 <	0.001
op'-DDE	0.1		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.001 <	0.001
op'-DDT	0.1		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.001 <	0.001
Oxadixyl	0.1		µg/l	8	0	0.00%	0	0.00% <	0.003 <	0.0038 <	0.005
Pendimethalin	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.0024 <	0.003

Yorkshire Water Services **Reporting Period: 01-01-2016 to 31-12-2016**

Water Supply Zone: Richmond 2004 **Population 24205**

ParameterName:	Std	Und Std	Units	No of Samples taken	No of Fails	% Fails	No of Fails (Und)	% Fails (Und)	Min	Mean	Max
Pesticides - Total Substances	0.5		µg/l	8	0	0.00%	0	0.00%	0	0.0009	0.004
pp'-DDD (TDE)	0.1		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.001 <	0.001
pp'-DDE	0.1		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.001 <	0.001
pp'-DDT	0.1		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.001 <	0.001
Propachlor	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
Propham	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.0026 <	0.003
Propiconazole	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.0024 <	0.003
Propyzamide	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.0035 <	0.005
Prosulfocarb	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.002 <	0.002
Quinmerac	0.1		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.0016 <	0.002
Simazine	0.1		µg/l	8	0	0.00%	0	0.00% <	0.001 <	0.0022 <	0.003
Tri-allate	0.1		µg/l	8	0	0.00%	0	0.00% <	0.003 <	0.0035	0.004
Trichlopyr	0.1		µg/l	8	0	0.00%	0	0.00% <	0.006 <	0.0065 <	0.007
Trietazine	0.1		µg/l	8	0	0.00%	0	0.00% <	0.002 <	0.0026 <	0.003

Notes:

1) Qualified values are taken at face value in all calculations.