Affinity Water

Your local supply, on tap

Annual Report on Water Quality
Hertsmere Borough Council 2014

Affinity Water

Table of Contents

1 Introduction

Affinity Water produces an annual report for each local authority regarding the general quality of water supplied to premises in the authority's area. The information includes results of samples taken from water supply zones in the authority's area of responsibility and any associated exceedences (see section 3 Water Quality) relevant to those supply areas i.e. exceedences from supplying water treatment works and service reservoirs. The report also includes details of the actions taken to comply with any enforcement orders, authorised departures and notices under regulation 19(4). This report is for Hertsmere Borough Council and covers the year ending 31 December 2014.

2 Water Treatment Works, Service Reservoirs and Water Supply Zones

A map of the water treatment works, service reservoirs and water supply zones within the Council's area is included in Appendix 1.

In 2014, the Company met the demand for drinking water by operating 83 water treatment works. The water supply to the area covered by the Council was provided by the following WTWs:

Clay Lane 27"
Clay Lane 36"
Iver
North Mymms
Queens
Waterhall

In addition to the above Company-operated water treatment works there was a bulk import of treated water from Anglian Water's Grafham water treatment works. This was used as a supplementary supply to assist demand management.

Treated water from the above works is either passed directly into supply or via one of the following service reservoirs:

Arkley 1 & 2
Arkley 3 & 4
Arkley WT
Brookmans Park
Brookmans Park WT
Bushey Heath 1
Bushey Heath 2
Bushey Heath 3
Bushey Heath 5 East
Bushey Heath 5 West
Epping Green WT
Hatfield
Merry Hill East
Merry Hill West

The Company's area is divided into discrete Water Supply Zones, each with a population of 100,000 or less. In 2014, Affinity Water (Central Region) had 71 such zones.

In 2014, Hertsmere Borough Council's area was served by Zones:

023 Hatfield / Potters Bar
049 Borehamwood / Bushey
050 Barnet
052 Pinner / Stanmore
072 Shenley

Maps of and results of analyses for the above Zones can be found in Appendix 2.

3 Water Quality

In June there was a single contravention of the standard for coliform bacteria in a sample taken in Zone 049. The subsequent investigation identified that the most likely cause was the condition of the tap where the sample was taken.

An elevated concentration of the pesticide metaldehyde was detected in a sample taken in Zone 023 in December. At this time, this zone was supplied from our North Mymms water treatment works. The raw waters that feed this treatment works have all been found to contain metaldehyde. An Undertaking is in place for this parameter in this zone which requires Affinity Water to investigate catchment management and install a treatment solution. The concentration detected was well below that which could affect public health.

All exceedences of the standards are reported to the Drinking Water Inspectorate (DWI) in monthly exception reports. In the event that the DWI is not satisfied with the Company's explanation of the circumstances and the action taken, enforcement action can be initiated.

4 Cryptosporidium

Listed below is a summary of the results for Cryptosporidium from treatment works that were originally identified as being at significant risk from Cryptosporidium and which supply water to the area covered by the Council.

Treatment Works	No. of samples taken in 2014	No. of samples containing oocysts	Maximum Concentration (Oocysts/10 litres)
Iver	365	0	<0.1

5 Customer Contacts

Under the Water Industry (Suppliers' Information) Direction 2009, the Company must provide the DWI with annual information on all consumer contacts received related to drinking water quality. For each water supply zone, the consumer contacts are separated into five main categories (with further division into sub-categories). An overall rate of contact per 1000 population is calculated for each zone as well as contact rates for combined categories.

The customer contact data for water supply zones within your Council's area of responsibility is shown in the table below.

Zone (Pop.)	Zone Rate (Enquiries & Drinking Water Quality Concern per 1000 population)	Zone Rate (Appearance, taste and odour & illness per 1000 pop.)	Overall zone rate (Contacts per 1000 pop.)
Company average	**0.46**	**1.07**	**1.53**
Zone 023 (82,242)	0.45	1.33	1.78
Zone 049 (80,453)	0.75	0.94	1.69
Zone 050 (49,182)	0.26	0.71	0.98
Zone 052 (70,859)	0.51	1.26	1.76
Zone 072 (3,074)	0.00	0.00	0.00

6 Section 19 Undertakings, Authorised Departures & Programmes of Work

Within the Council's area of supply there are Undertakings in place for Zones 023 and 050 relating to Metaldehyde & Total Pesticides for the Company's North Mymms and Iver WTWs and for the bulk import of treated water from Anglian Water's Grafham WTW. In all cases the Company has agreed to: implement a monitoring strategy; engage in catchment management activities, including support for voluntary initiatives to influence Metaldehyde use, in order to reduce concentrations in untreated waters; to engage with & provide data to relevant stakeholders; review possible alternative supply arrangements; optimise removal through current treatment processes; investigate new, sustainable treatment processes; and to continually review & appraise the risk from these hazards as part of the Regulatory process.

The Company did not have any Authorised Departures in place in the Council's area during 2014.

In order to meet the standard relating to lead, the Company has continued operating orthophosphate dosing plants at 35 sites across the Company's area. All the zones within the Council's area receive water dosed with orthophosphate.

7 Notifiable events

Under the Water Industry (Suppliers Information) Direction 2009, the DWI must be notified of any situation where water quality is likely to be, or has been, adversely affected. Since 2009 the DWI has been using an event classification system to assess and quantify the significance of a notifiable event, giving each one a number (1 to 5) with an equivalent rating ("not significant" through to "major"). The Company regards any event classified as a 3 Significant or above as being equivalent to the previously designated 'incident'.

During 2014 there were no such notifiable events within your Council's area of responsibility.

8 Further information and advice

For further information and advice on all water quality matters please contact:

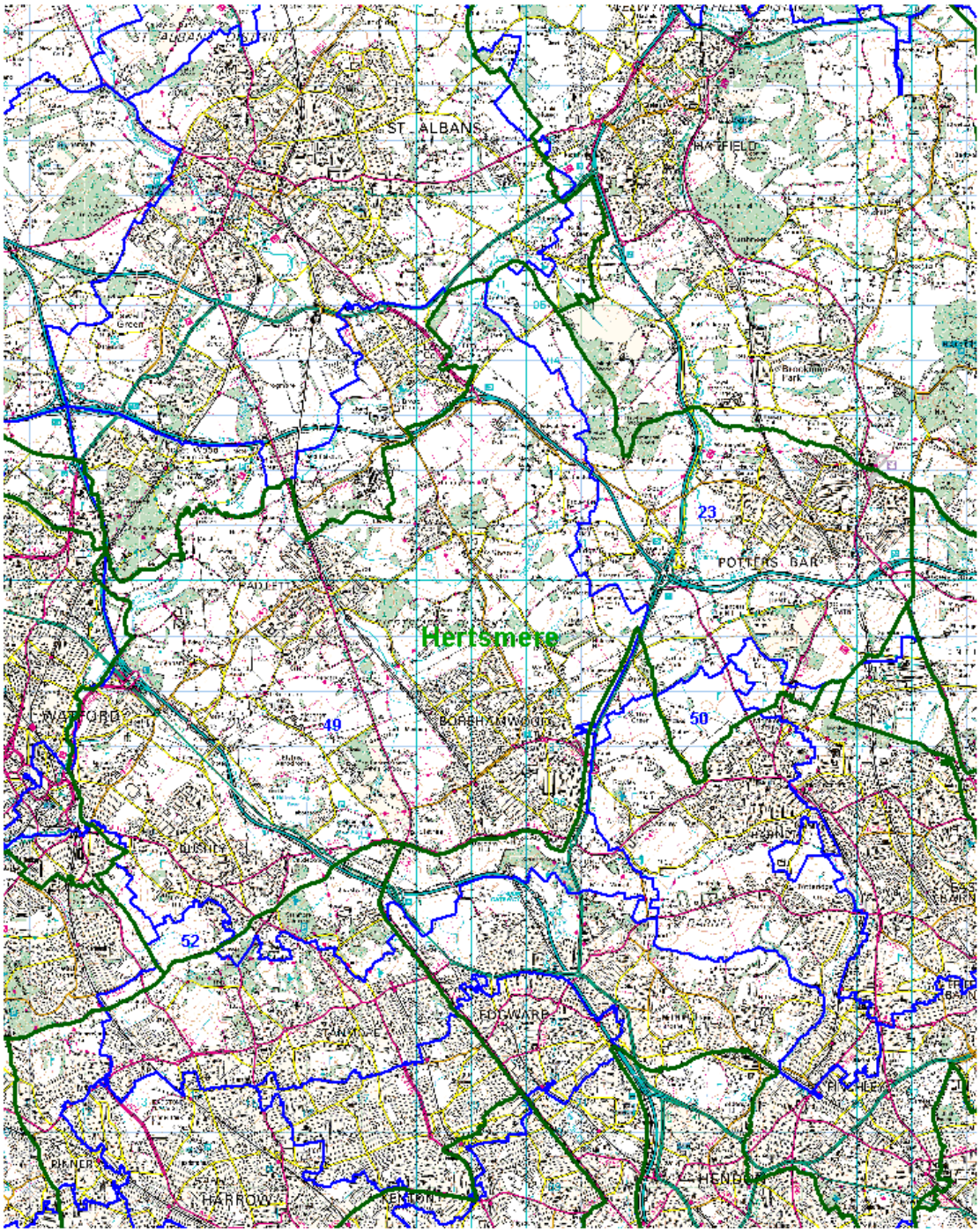
Eddie Lintott
Water Quality Manager
Affinity Water
Tamblin Way
Hatfield
Hertfordshire
AL10 9EZ

Telephone: 01707 277165

Appendix one

Map

Hertsmere Borough Council

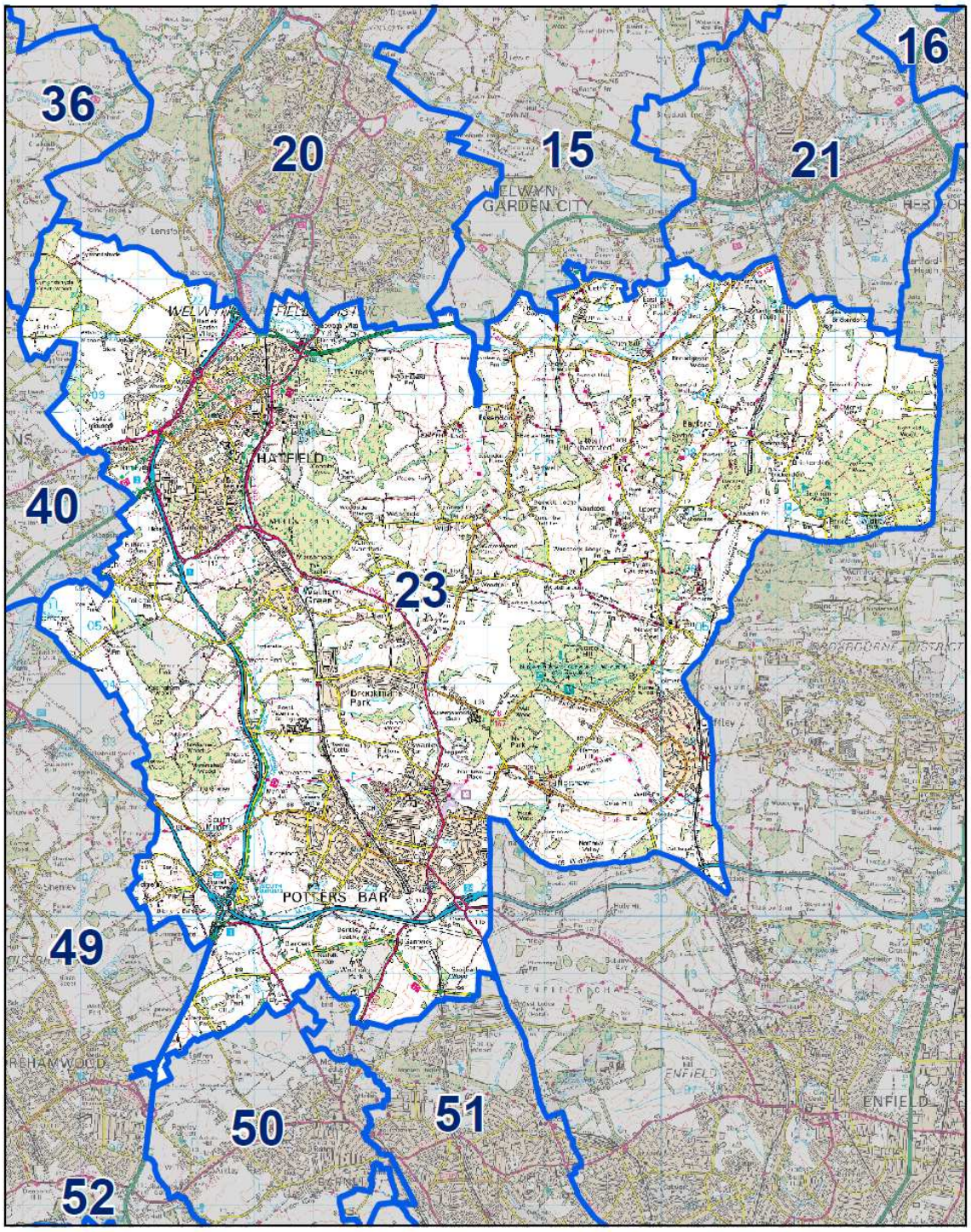


Local Authority Boundary
Water Supply Zone Boundary

Appendix two

Water Quality Results

WQZ 23 - Hatfield / Potters Bar



Water Supply Zone: Hatfield/Potters Bar (AF023)
Period: 01 January 2014 to 31 December 2014
Population: 82242

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Microbiological Parameters								
Coliform bacteria	No./100ml	204	0	0	0	0	0	0
E coli	No./100ml	204	0	0	0	0	0	0
Clostridium perfringens	No./100ml	39	0	0	0	0	0	0
Enterococci	No./100ml	8	0	0	0	0	0	0
2 day plate count 37 °C	No./1ml at 37 °C	77	No abnormal change	0	0	0	11	320
3 day plate count 22 °C	No./1ml at 22 °C	77	No abnormal change	0	0	0	4	115
Customer Parameters								
Alkalinity	mgHCO_3/l	33	No PCV	0	0	235	312	331
Calcium	mgCa/l	33	No PCV	0	0	116	137	160
Chlorine (Residual)	mgCl_2/l	204	No PCV	0	0	0.05	0.20	0.52
Colour	mg/l Pt/Co	39	20	0	0	<1.0	<1.0	1.3
Fluoride	mgF/l	8	1.5	0	0	0.121	0.148	0.221
Hardness (Total)	mg$CaCO_3$/l	33	No PCV	0	0	290	343	400
Hydrogen Ion (pH)	pH value	77	6.5-9.5	0	0	7.0	7.2	7.7
Quantitative Odour	Dilution No.	39	Abnormal & unacceptable to	0	0	0	0	0
Quantitative Taste	Dilution No.	39	consumers	0	0	0	0	0
Temperature	°C	204	No PCV	0	0	6.9	13.2	20.1
Turbidity	NTU	77	4	0	0	<0.10	0.11	0.50
Chemicals								
Metals								
Arsenic	µgAs/l	8	10	0	0	<1.0	<1.0	<1.0
Aluminium	µgAl/l	77	200	0	0	<5.0	<5.0	9.9
Antimony	µgSb/l	8	5	0	0	<0.20	<0.20	0.26
Cadmium	µgCd/l	8	5	0	0	<0.20	<0.20	<0.20
Chromium	µgCr/l	8	50	0	0	<2.0	<2.0	<2.0
Copper	mgCu/l	8	2	0	0	<0.010	0.059	0.186
Iron	µgFe/l	77	200	0	0	<15.0	<15.0	37.6
Lead	µgPb/l	8	10	0	0	<1.00	<1.00	2.29
Manganese	µgMn/l	77	50	0	0	<1.0	<1.0	7.0
Mercury	µgHg/l	8	1	0	0	<0.10	<0.10	<0.10
Nickel	µgNi/l	8	20	0	0	<2.0	2.8	10.6
Sodium	mgNa/l	8	200	0	0	9.9	22.2	36.2

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Pesticides								
Atrazine	µg/l	8	0.1	0	0	0.006	0.010	0.013
Carbetamide	µg/l	8	0.1	0	0	<0.009	<0.009	0.012
Clopyralid	µg/l	8	0.1	0	0	<0.008	<0.008	0.022
Glyphosate	µg/l	8	0.1	0	0	<0.003	<0.003	<0.003
Mecoprop	µg/l	8	0.1	0	0	<0.005	<0.005	<0.005
Metaldehyde	µg/l	8	0.1	1	13	<0.009	0.058	0.102
Metazachlor	µg/l	8	0.1	0	0	<0.005	<0.005	<0.005
Propyzamide	µg/l	8	0.1	0	0	<0.007	<0.007	0.020
Simazine	µg/l	8	0.1	0	0	<0.004	0.006	0.007
Total Pesticide	µg/l	8	0.5	0	0	0.020	0.085	0.164
2,4-D	µg/l	8	0.1	0	0	<0.007	<0.007	<0.007
Additional Parameters								
Ammonium	mgNH_4/l	39	0.5	0	0	<0.04	<0.04	0.09
Benzene	µg/l	8	1	0	0	<0.02	<0.02	<0.02
Benzo (a) Pyrene	µg/l	8	0.01	0	0	<0.001	<0.001	<0.001
Boron	mgB/l	8	1	0	0	<0.100	<0.100	0.120
Bromate	µgBrO_3/l	8	10	0	0	<0.5	<0.5	2.2
Chloride	mgCl/l	8	250	0	0	21	40	55
Electrical Conductivity at 20 °C	µS/cm at 20 °C	77	2500	0	0	538	649	741
Nitrate	mgNO_3/l	8	50	0	0	17.3	25.0	29.7
Nitrite	mgNO_2/l	8	0.5	0	0	<0.008	0.012	0.096
Nitrite Nitrate Formula		8	1	0	0	<0.46	<0.59	<0.59
Selenium	µgSe/l	8	10	0	0	<1.0	<1.0	<1.0
Sulphate	mgSO_4/l	8	250	0	0	15	49	92
Sum of Tri & Tetrachloroethene	µg/l	8	10	0	0	0.0	0.0	0.0
Tetrachloromethane	µg/l	8	3	0	0	<0.1	<0.1	<0.1
Total Cyanide	µgCN/l	8	50	0	0	<0.5	<0.5	1.1
Total Organic Carbon	mgC/l	8	No abnormal change	0	0	0.4	1.3	2.6
Total PAHs	µg/l	8	0.1	0	0	0.000	0.000	0.001
Total Trihalomethanes	µg/l	8	100	0	0	4.01	18.13	26.23
1, 2 dichloroethane	µg/l	8	3	0	0	<0.1	<0.1	<0.1

Notes
PCV = Prescribed Concentration or Value or Specification Concentration or Value

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Additional Parameters (continued)								

Commentary on Water Quality

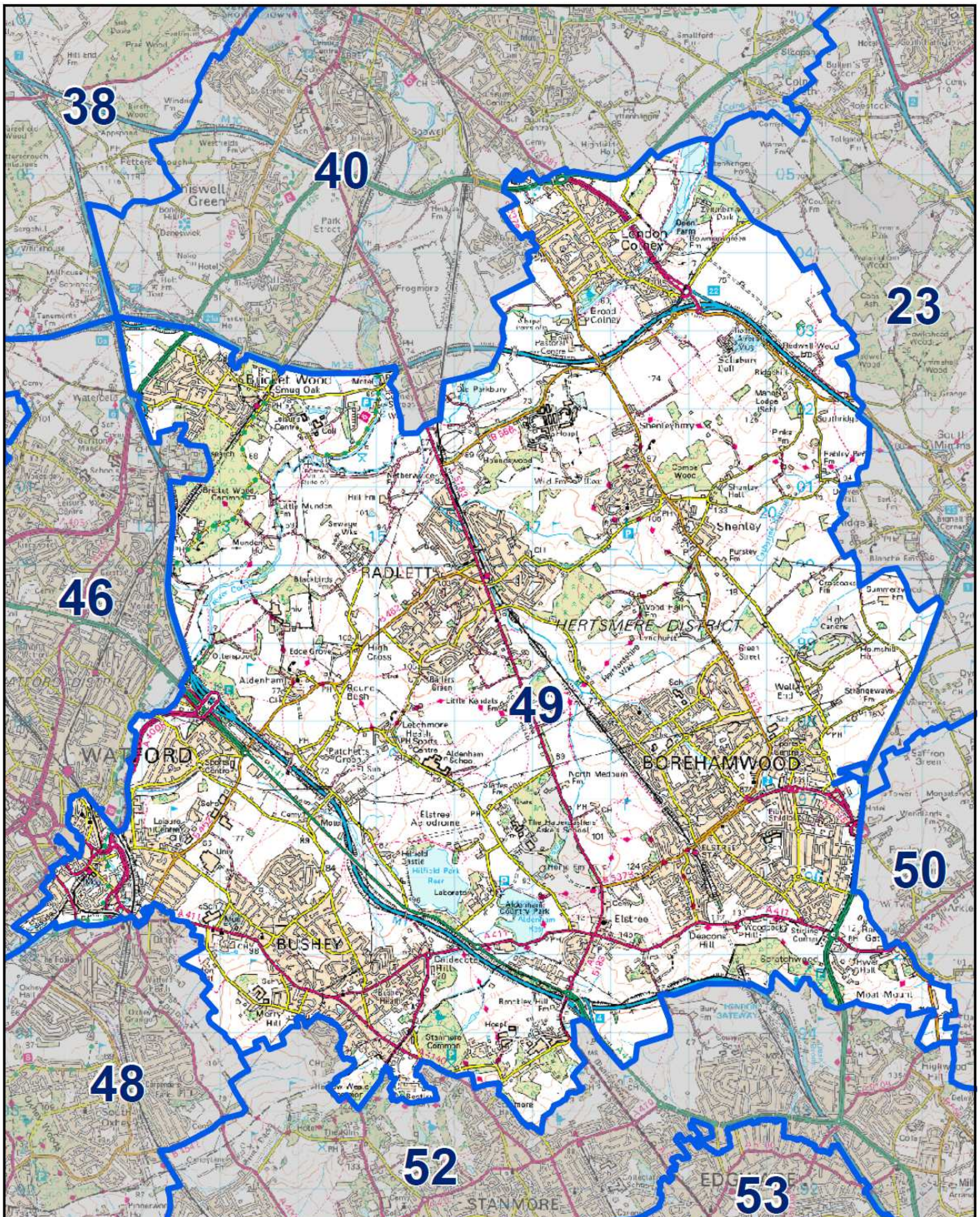
An elevated concentrations of the pesticide Metaldehyde was detected in a sample taken in December. At this time, this zone was supplied from our North Mymms water treatment works. The raw waters that feed this treatment works have all been found to contain Metaldehyde. An Undertaking is in place for this parameter in this zone which requires Affinity Water to investigate catchment management and install a treatment solution. The concentration detected was well below that which could affect public health.

Undertakings & Authorised Departures

No Authorised Departures applied to this water supply zone during 2014.

An Undertaking is in place for this zone relating to Metaldehyde & Total Pesticides from North Mymms Water Treatment Works (WTW) & from Anglian Water Services' (AWS) Grafham WTW. The Company has agreed to: implement a monitoring strategy; engage in catchment management activities, including support for voluntary initiatives to influence Metaldehyde use, in order to reduce concentrations in untreated waters; to engage with & provide data to relevant stakeholders; review possible alternative supply arrangements; optimise removal through current treatment processes; investigate new, sustainable treatment processes; and to continually review & appraise the risk from these hazards as part of the Regulatory process. AWS has agreed to: implement a monitoring strategy; to engage with relevant stakeholders & provide regular updates on data; investigate new, sustainable treatment processes, supporting national research programmes where appropriate; and to continually review & appraise the risk from these hazards as part of the Regulatory process.

WQZ 49 - Borehamwood / Bushey



N

0 480 960 1,920 Meters

January 2010

Legend

This Water Quality Zone

Other WQZ

Water Supply Zone: Borehamwood/Bushey (AF049)
Period: 01 January 2014 to 31 December 2014
Population: 80453

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Microbiological Parameters								
Coliform bacteria	No./100ml	204	0	1	<1	0	0	100
E coli	No./100ml	204	0	0	0	0	0	0
Clostridium perfringens	No./100ml	76	0	0	0	0	0	0
Enterococci	No./100ml	8	0	0	0	0	0	0
2 day plate count 37 °C	No./1ml at 37 °C	76	No abnormal change	0	0	0	6	162
3 day plate count 22 °C	No./1ml at 22 °C	76	No abnormal change	0	0	0	13	700
Customer Parameters								
Alkalinity	mgHCO_3/l	1	No PCV	0	0	310	310	310
Calcium	mgCa/l	1	No PCV	0	0	123	123	123
Chlorine (Residual)	mgCl_2/l	204	No PCV	0	0	0.08	0.27	0.87
Colour	mg/l Pt/Co	38	20	0	0	<1.0	<1.0	2.1
Fluoride	mgF/l	8	1.5	0	0	0.097	0.127	0.143
Hardness (Total)	mg$CaCO_3$/l	1	No PCV	0	0	308	308	308
Hydrogen Ion (pH)	pH value	76	6.5-9.5	0	0	7.0	7.1	7.9
Quantitative Odour	Dilution No.	38	Abnormal & unacceptable to	0	0	0	0	0
Quantitative Taste	Dilution No.	38	consumers	0	0	0	0	0
Temperature	°C	204	No PCV	0	0	7.9	13.6	23.5
Turbidity	NTU	76	4	0	0	<0.10	<0.10	0.48
Chemicals								
Metals								
Arsenic	µgAs/l	8	10	0	0	<1.0	<1.0	<1.0
Aluminium	µgAl/l	76	200	0	0	<5.0	<5.0	12.2
Antimony	µgSb/l	8	5	0	0	<0.20	<0.20	0.20
Cadmium	µgCd/l	8	5	0	0	<0.20	<0.20	<0.20
Chromium	µgCr/l	8	50	0	0	<2.0	<2.0	<2.0
Copper	mgCu/l	8	2	0	0	<0.010	0.089	0.218
Iron	µgFe/l	76	200	0	0	<15.0	<15.0	27.6
Lead	µgPb/l	8	10	0	0	<1.00	<1.00	2.87
Manganese	µgMn/l	76	50	0	0	<1.0	<1.0	2.9
Mercury	µgHg/l	8	1	0	0	<0.10	<0.10	<0.10
Nickel	µgNi/l	8	20	0	0	<2.0	2.4	3.2
Sodium	mgNa/l	8	200	0	0	15.6	30.1	35.8

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Pesticides								
Atrazine	µg/l	8	0.1	0	0	0.015	0.021	0.026
Carbetamide	µg/l	8	0.1	0	0	<0.009	<0.009	<0.009
Clopyralid	µg/l	8	0.1	0	0	<0.008	<0.008	<0.008
Diuron	µg/l	8	0.1	0	0	<0.009	<0.009	<0.009
Mecoprop	µg/l	8	0.1	0	0	<0.005	<0.005	<0.005
Simazine	µg/l	8	0.1	0	0	0.006	0.009	0.013
Total Pesticide	µg/l	8	0.5	0	0	0.031	0.075	0.106
Additional Parameters								
Ammonium	mgNH_4/l	38	0.5	0	0	<0.04	<0.04	<0.04
Benzene	µg/l	8	1	0	0	<0.02	<0.02	<0.02
Benzo (a) Pyrene	µg/l	8	0.01	0	0	<0.001	<0.001	<0.001
Boron	mgB/l	8	1	0	0	<0.100	<0.100	<0.100
Bromate	µgBrO_3/l	8	10	0	0	<0.5	<0.5	1.3
Chloride	mgCl/l	8	250	0	0	29	51	55
Electrical Conductivity at 20 °C	µS/cm at 20 °C	76	2500	0	0	637	737	791
Nitrate	mgNO_3/l	8	50	0	0	26.0	28.3	31.8
Nitrite	mgNO_2/l	8	0.5	0	0	<0.008	<0.008	<0.008
Nitrite Nitrate Formula		8	1	0	0	<0.52	<0.64	<0.64
Selenium	µgSe/l	8	10	0	0	<1.0	<1.0	1.9
Sulphate	mgSO_4/l	8	250	0	0	20	48	58
Sum of Tri & Tetrachloroethene	µg/l	8	10	0	0	0.2	1.3	1.9
Tetrachloromethane	µg/l	8	3	0	0	<0.1	<0.1	<0.1
Total Cyanide	µgCN/l	8	50	0	0	1.0	2.1	4.9
Total Organic Carbon	mgC/l	8	No abnormal change	0	0	1.1	1.5	2.2
Total PAHs	µg/l	8	0.1	0	0	0.000	0.000	0.000
Total Trihalomethanes	µg/l	8	100	0	0	2.46	15.71	25.83
1, 2 dichloroethane	µg/l	8	3	0	0	<0.1	<0.1	<0.1

Notes

PCV = Prescribed Concentration or Value or Specification Concentration or Value

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.

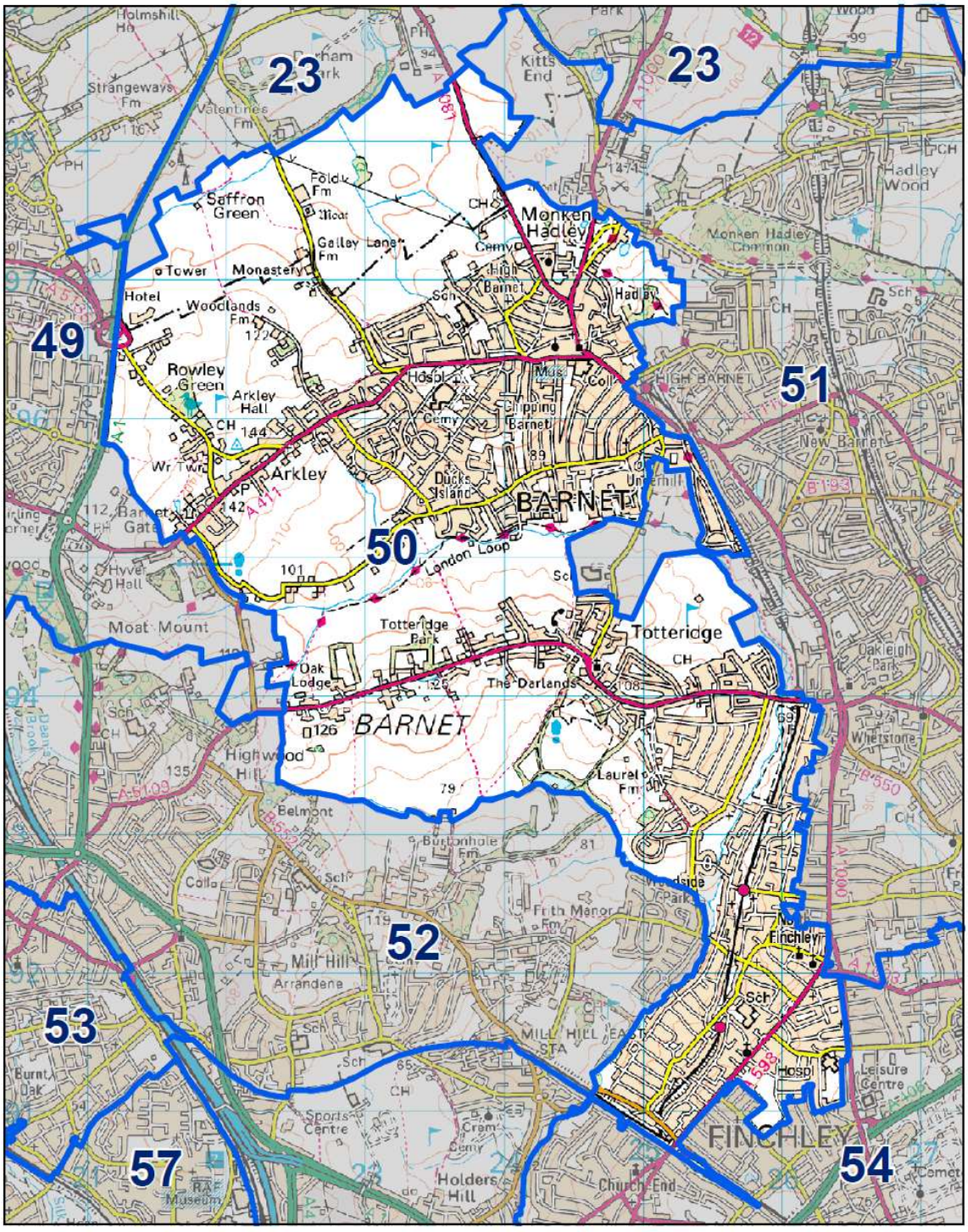
Commentary on Water Quality

Coliform bacteria were detected in a sample taken from a customer's property in Oundle Avenue, Bushey in June. Our investigation identified that the most likely cause of the failure was the condition of the tap where the sample was taken. Coliforms do not pose a risk to public health.

Undertakings & Authorised Departures

No Undertakings or Authorised Departures applied to this water supply zone during 2014.

WQZ 50 - Barnet



Water Supply Zone: Barnet (AF050)
Period: 01 January 2014 to 31 December 2014
Population: 49182

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Microbiological Parameters								
Coliform bacteria	No./100ml	120	0	0	0	0	0	0
E coli	No./100ml	120	0	0	0	0	0	0
Clostridium perfringens	No./100ml	18	0	0	0	0	0	0
Enterococci	No./100ml	8	0	0	0	0	0	0
2 day plate count 37 °C	No./1ml at 37 °C	36	No abnormal change	0	0	0	11	210
3 day plate count 22 °C	No./1ml at 22 °C	36	No abnormal change	0	0	0	23	720
Customer Parameters								
Alkalinity	mgHCO_3/l	1	No PCV	0	0	276	276	276
Calcium	mgCa/l	1	No PCV	0	0	128	128	128
Chlorine (Residual)	mgCl_2/l	120	No PCV	0	0	0.13	0.28	0.68
Colour	mg/l Pt/Co	18	20	0	0	<1.0	<1.0	<1.0
Fluoride	mgF/l	8	1.5	0	0	0.129	0.134	0.145
Hardness (Total)	mg$CaCO_3$/l	1	No PCV	0	0	320	320	320
Hydrogen Ion (pH)	pH value	36	6.5-9.5	0	0	7.0	7.3	7.7
Quantitative Odour	Dilution No.	18	Abnormal & unacceptable to	0	0	0	0	0
Quantitative Taste	Dilution No.	18	consumers	0	0	0	0	0
Temperature	°C	117	No PCV	0	0	7.5	13.7	23.2
Turbidity	NTU	36	4	0	0	<0.10	<0.10	0.36
Chemicals								
Metals								
Arsenic	µgAs/l	8	10	0	0	<1.0	<1.0	<1.0
Aluminium	µgAl/l	36	200	0	0	6.9	18.0	43.4
Antimony	µgSb/l	8	5	0	0	<0.20	<0.20	0.25
Cadmium	µgCd/l	8	5	0	0	<0.20	<0.20	<0.20
Chromium	µgCr/l	8	50	0	0	<2.0	<2.0	<2.0
Copper	mgCu/l	8	2	0	0	<0.010	0.015	0.033
Iron	µgFe/l	36	200	0	0	<15.0	<15.0	16.7
Lead	µgPb/l	8	10	0	0	<1.00	<1.00	<1.00
Manganese	µgMn/l	36	50	0	0	<1.0	<1.0	3.7
Mercury	µgHg/l	8	1	0	0	<0.10	<0.10	<0.10
Nickel	µgNi/l	8	20	0	0	2.1	3.0	5.2
Sodium	mgNa/l	8	200	0	0	23.3	27.6	32.1

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Pesticides								
Atrazine	µg/l	8	0.1	0	0	0.005	0.007	0.010
Carbetamide	µg/l	8	0.1	0	0	<0.009	<0.009	<0.009
Clopyralid	µg/l	8	0.1	0	0	<0.008	<0.008	<0.008
Glyphosate	µg/l	8	0.1	0	0	<0.003	<0.003	<0.003
Mecoprop	µg/l	8	0.1	0	0	<0.005	<0.005	<0.005
Metaldehyde	µg/l	8	0.1	0	0	0.012	0.036	0.066
Metazachlor	µg/l	8	0.1	0	0	<0.005	<0.005	<0.005
Propyzamide	µg/l	8	0.1	0	0	<0.007	<0.007	0.023
Simazine	µg/l	8	0.1	0	0	<0.004	<0.004	0.005
Total Pesticide	µg/l	8	0.5	0	0	0.028	0.055	0.092
2,4-D	µg/l	8	0.1	0	0	<0.007	<0.007	<0.007
Additional Parameters								
Ammonium	mgNH_4/l	18	0.5	0	0	<0.04	<0.04	<0.04
Benzene	µg/l	8	1	0	0	<0.02	<0.02	<0.02
Benzo (a) Pyrene	µg/l	8	0.01	0	0	<0.001	<0.001	<0.001
Boron	mgB/l	8	1	0	0	<0.100	<0.100	<0.100
Bromate	µgBrO_3/l	8	10	0	0	<0.5	1.3	2.7
Chloride	mgCl/l	8	250	0	0	41	46	53
Electrical Conductivity at 20 °C	µS/cm at 20 °C	36	2500	0	0	538	634	728
Nitrate	mgNO_3/l	8	50	0	0	18.8	23.3	26.3
Nitrite	mgNO_2/l	8	0.5	0	0	<0.008	<0.008	<0.008
Nitrite Nitrate Formula		8	1	0	0	<0.38	<0.53	<0.53
Selenium	µgSe/l	8	10	0	0	<1.0	<1.0	<1.0
Sulphate	mgSO_4/l	8	250	0	0	39	49	57
Sum of Tri & Tetrachloroethene	µg/l	8	10	0	0	0.0	0.2	0.9
Tetrachloromethane	µg/l	8	3	0	0	<0.1	<0.1	<0.1
Total Cyanide	µgCN/l	8	50	0	0	<0.5	<0.5	1.2
Total Organic Carbon	mgC/l	8	No abnormal change	0	0	1.5	1.9	2.5
Total PAHs	µg/l	8	0.1	0	0	0.000	0.000	0.000
Total Trihalomethanes	µg/l	8	100	0	0	19.83	29.64	36.66
1, 2 dichloroethane	µg/l	8	3	0	0	<0.1	<0.1	<0.1

Notes
PCV = Prescribed Concentration or Value or Specification Concentration or Value

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Additional Parameters (continued)								

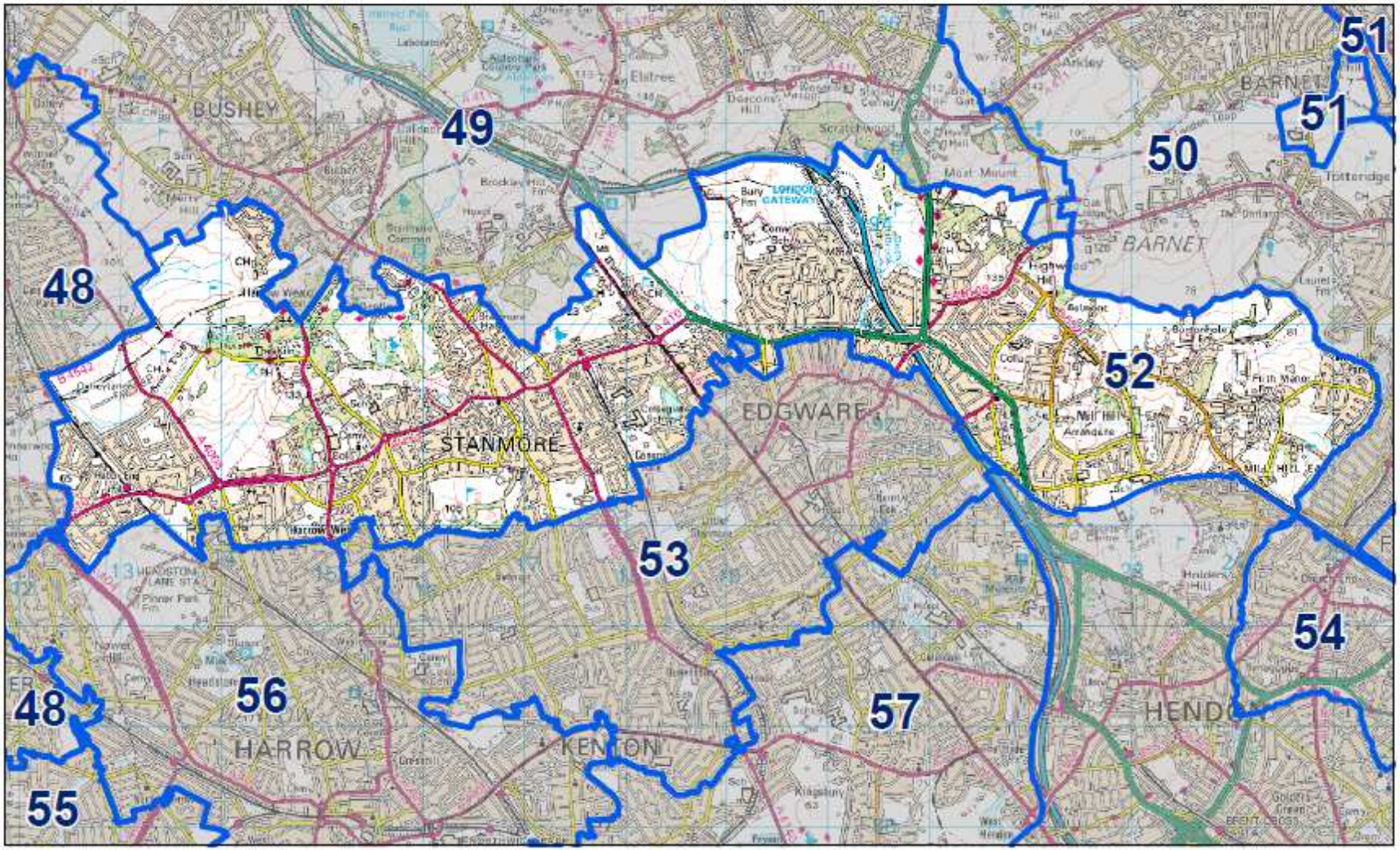
Commentary on Water Quality

Water quality was satisfactory in this zone in 2014.

Undertakings & Authorised Departures

No Authorised Departures applied to this water supply zone during 2014.

An Undertaking is in place for this zone relating to Metaldehyde & Total Pesticides from North Mymms and Iver Water Treatment Works (WTW). The Company has agreed to: implement a monitoring strategy; engage in catchment management activities, including support for voluntary initiatives to influence Metaldehyde use, in order to reduce concentrations in untreated waters; to engage with & provide data to relevant stakeholders; review possible alternative supply arrangements; optimise removal through current treatment processes; investigate new, sustainable treatment processes; and to continually review & appraise the risk from these hazards as part of the regulatory process.



WQZ 52 - Pinner / Stanmore

N

0 230 460 920 Meters

January 2010

Legend

This Water Quality Zone

Other WQZ

Water Supply Zone: Mill Hill/Stanmore (AF052)
Period: 01 January 2014 to 31 December 2014
Population: 70859

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Microbiological Parameters								
Coliform bacteria	No./100ml	180	0	0	0	0	0	0
E coli	No./100ml	180	0	0	0	0	0	0
Clostridium perfringens	No./100ml	26	0	0	0	0	0	0
Enterococci	No./100ml	8	0	0	0	0	0	0
2 day plate count 37 °C	No./1ml at 37 °C	52	No abnormal change	0	0	0	6	77
3 day plate count 22 °C	No./1ml at 22 °C	52	No abnormal change	0	0	0	2	66
Customer Parameters								
Alkalinity	mgHCO_3/l	1	No PCV	0	0	328	328	328
Calcium	mgCa/l	1	No PCV	0	0	150	150	150
Chlorine (Residual)	mgCl_2/l	180	No PCV	0	0	0.08	0.26	0.56
Colour	mg/l Pt/Co	26	20	0	0	<1.0	<1.0	2.1
Fluoride	mgF/l	8	1.5	0	0	0.125	0.129	0.135
Hardness (Total)	mg$CaCO_3$/l	1	No PCV	0	0	375	375	375
Hydrogen Ion (pH)	pH value	52	6.5-9.5	0	0	6.9	7.1	7.7
Quantitative Odour	Dilution No.	26	Abnormal & unacceptable to	0	0	0	0	0
Quantitative Taste	Dilution No.	26	consumers	0	0	0	0	0
Temperature	°C	174	No PCV	0	0	7.9	13.8	21.3
Turbidity	NTU	52	4	0	0	<0.10	<0.10	0.34
Chemicals								
Metals								
Arsenic	µgAs/l	8	10	0	0	<1.0	<1.0	<1.0
Aluminium	µgAl/l	52	200	0	0	<5.0	<5.0	21.2
Antimony	µgSb/l	8	5	0	0	<0.20	<0.20	0.26
Cadmium	µgCd/l	8	5	0	0	<0.20	<0.20	<0.20
Chromium	µgCr/l	8	50	0	0	<2.0	<2.0	<2.0
Copper	mgCu/l	8	2	0	0	<0.010	0.041	0.134
Iron	µgFe/l	52	200	0	0	<15.0	<15.0	160.0
Lead	µgPb/l	8	10	0	0	<1.00	2.15	9.58
Manganese	µgMn/l	52	50	0	0	<1.0	<1.0	2.0
Mercury	µgHg/l	8	1	0	0	<0.10	<0.10	<0.10
Nickel	µgNi/l	8	20	0	0	2.5	2.8	3.0
Sodium	mgNa/l	8	200	0	0	30.6	32.5	34.9

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Pesticides								
Atrazine	µg/l	8	0.1	0	0	0.016	0.021	0.030
Carbetamide	µg/l	8	0.1	0	0	<0.009	<0.009	0.012
Clopyralid	µg/l	8	0.1	0	0	<0.008	<0.008	0.012
Diuron	µg/l	8	0.1	0	0	<0.009	<0.009	<0.009
Mecoprop	µg/l	8	0.1	0	0	<0.005	<0.005	<0.005
Simazine	µg/l	8	0.1	0	0	0.007	0.009	0.015
Total Pesticide	µg/l	8	0.5	0	0	0.046	0.077	0.132
Additional Parameters								
Ammonium	mgNH_4/l	26	0.5	0	0	<0.04	<0.04	<0.04
Benzene	µg/l	8	1	0	0	<0.02	<0.02	<0.02
Benzo (a) Pyrene	µg/l	8	0.01	0	0	<0.001	<0.001	<0.001
Boron	mgB/l	8	1	0	0	<0.100	<0.100	0.110
Bromate	µgBrO_3/l	8	10	0	0	<0.5	<0.5	<0.5
Chloride	mgCl/l	8	250	0	0	52	54	57
Electrical Conductivity at 20 °C	µS/cm at 20 °C	52	2500	0	0	583	720	783
Nitrate	mgNO_3/l	8	50	0	0	22.7	28.2	30.8
Nitrite	mgNO_2/l	8	0.5	0	0	<0.008	<0.008	0.010
Nitrite Nitrate Formula		8	1	0	0	<0.45	<0.62	0.62
Selenium	µgSe/l	8	10	0	0	<1.0	1.1	1.3
Sulphate	mgSO_4/l	8	250	0	0	50	53	61
Sum of Tri & Tetrachloroethene	µg/l	8	10	0	0	1.6	1.9	2.1
Tetrachloromethane	µg/l	8	3	0	0	<0.1	<0.1	<0.1
Total Cyanide	µgCN/l	8	50	0	0	0.9	2.2	4.8
Total Organic Carbon	mgC/l	8	No abnormal change	0	0	1.1	1.7	2.9
Total PAHs	µg/l	8	0.1	0	0	0.000	0.000	0.000
Total Trihalomethanes	µg/l	8	100	0	0	16.47	19.57	24.02
1, 2 dichloroethane	µg/l	8	3	0	0	<0.1	<0.1	<0.1

Notes

PCV = Prescribed Concentration or Value or Specification Concentration or Value

Commentary on Water Quality

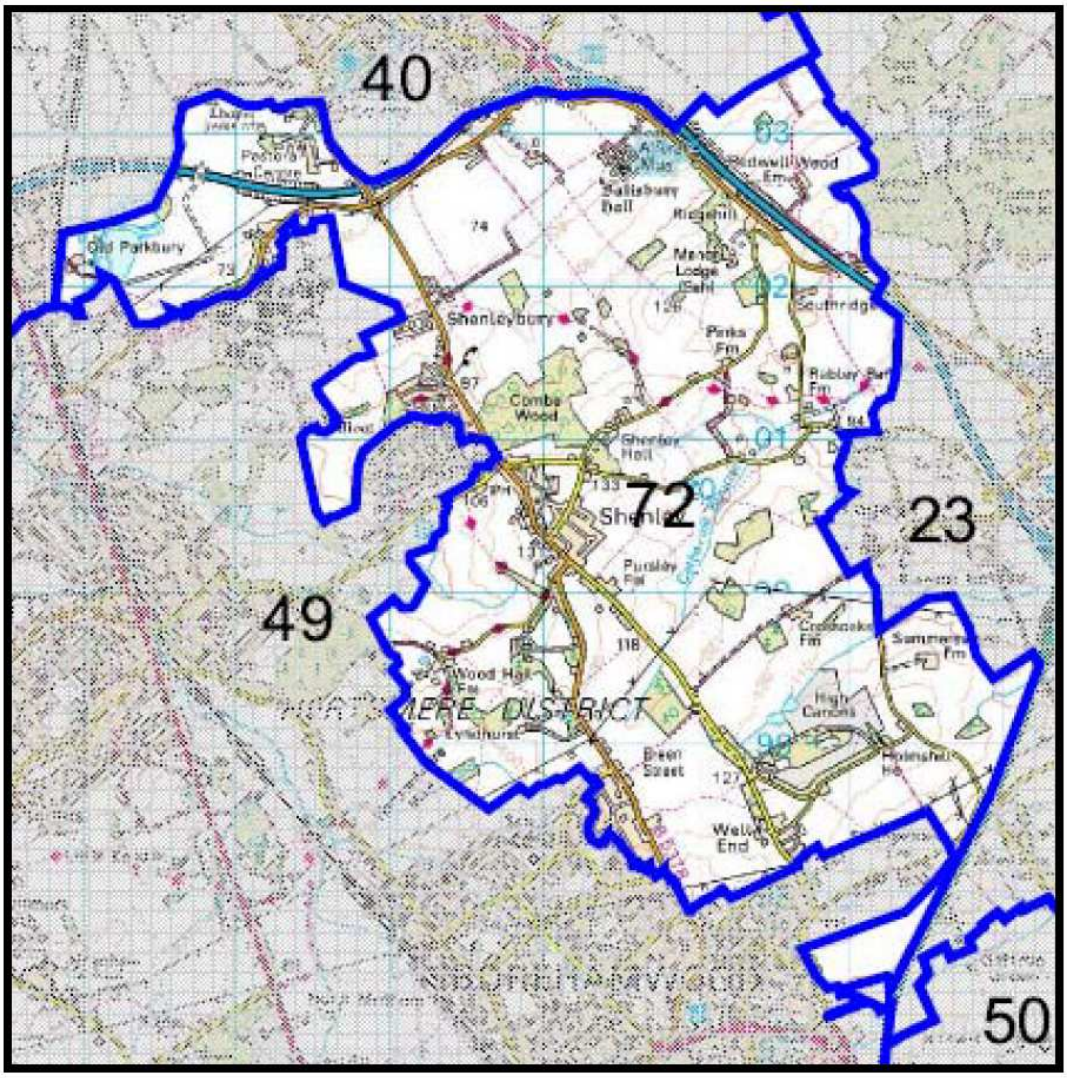
Water quality was satisfactory in this zone in 2014.

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Additional Parameters (continued)								

Undertakings & Authorised Departures

No Undertakings or Authorised Departures applied to this water supply zone during 2014.

WQZ 72 – Shenley North



N

Legend

This Water Quality Zone

Other WQZ

Water Supply Zone: Shenley (AF072)
Period: 01 January 2014 to 31 December 2014
Population: 3074

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Microbiological Parameters								
Coliform bacteria	No./100ml	12	0	0	0	0	0	0
E coli	No./100ml	12	0	0	0	0	0	0
Clostridium perfringens	No./100ml	4	0	0	0	0	0	0
Enterococci	No./100ml	4	0	0	0	0	0	0
2 day plate count 37 °C	No./1ml at 37 °C	4	No abnormal change	0	0	0	0	0
3 day plate count 22 °C	No./1ml at 22 °C	4	No abnormal change	0	0	0	0	1
Customer Parameters								
Alkalinity	mgHCO_3/l	1	No PCV	0	0	296	296	296
Calcium	mgCa/l	1	No PCV	0	0	138	138	138
Chlorine (Residual)	mgCl_2/l	12	No PCV	0	0	0.15	0.27	0.42
Colour	mg/l Pt/Co	3	20	0	0	<1.0	<1.0	<1.0
Fluoride	mgF/l	4	1.5	0	0	0.102	0.124	0.136
Hardness (Total)	mg$CaCO_3$/l	1	No PCV	0	0	345	345	345
Hydrogen Ion (pH)	pH value	4	6.5-9.5	0	0	7.1	7.2	7.3
Quantitative Odour	Dilution No.	3	Abnormal & unacceptable to	0	0	0	0	0
Quantitative Taste	Dilution No.	3	consumers	0	0	0	0	0
Temperature	°C	12	No PCV	0	0	8.9	14.0	19.6
Turbidity	NTU	4	4	0	0	<0.10	<0.10	<0.10
Chemicals								
Metals								
Arsenic	µgAs/l	4	10	0	0	<1.0	<1.0	<1.0
Aluminium	µgAl/l	4	200	0	0	<5.0	<5.0	<5.0
Antimony	µgSb/l	4	5	0	0	<0.20	<0.20	0.23
Cadmium	µgCd/l	4	5	0	0	<0.20	<0.20	<0.20
Chromium	µgCr/l	4	50	0	0	<2.0	<2.0	<2.0
Copper	mgCu/l	4	2	0	0	<0.010	0.021	0.048
Iron	µgFe/l	4	200	0	0	<15.0	<15.0	<15.0
Lead	µgPb/l	4	10	0	0	<1.00	<1.00	<1.00
Manganese	µgMn/l	4	50	0	0	<1.0	<1.0	<1.0
Mercury	µgHg/l	4	1	0	0	<0.10	<0.10	<0.10
Nickel	µgNi/l	4	20	0	0	<2.0	2.1	2.9
Sodium	mgNa/l	4	200	0	0	18.0	30.1	38.1

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Pesticides								
Atrazine	µg/l	4	0.1	0	0	0.008	0.020	0.028
Carbetamide	µg/l	4	0.1	0	0	<0.009	<0.009	0.015
Clopyralid	µg/l	4	0.1	0	0	<0.008	<0.008	<0.008
Diuron	µg/l	4	0.1	0	0	<0.009	<0.009	<0.009
Mecoprop	µg/l	4	0.1	0	0	<0.005	<0.005	<0.005
Simazine	µg/l	4	0.1	0	0	<0.004	0.008	0.012
Total Pesticide	µg/l	4	0.5	0	0	0.008	0.059	0.093
Additional Parameters								
Ammonium	mgNH_4/l	3	0.5	0	0	<0.04	<0.04	<0.04
Benzene	µg/l	4	1	0	0	<0.02	<0.02	<0.02
Benzo (a) Pyrene	µg/l	4	0.01	0	0	<0.001	<0.001	<0.001
Boron	mgB/l	4	1	0	0	<0.100	<0.100	<0.100
Bromate	µgBrO_3/l	4	10	0	0	<0.5	<0.5	0.6
Chloride	mgCl/l	4	250	0	0	33	49	54
Electrical Conductivity at 20 °C	µS/cm at 20 °C	4	2500	0	0	605	698	751
Nitrate	mgNO_3/l	4	50	0	0	21.7	26.9	29.3
Nitrite	mgNO_2/l	4	0.5	0	0	<0.008	<0.008	<0.008
Nitrite Nitrate Formula		4	1	0	0	<0.43	<0.59	<0.59
Selenium	µgSe/l	4	10	0	0	1.1	1.6	2.4
Sulphate	mgSO_4/l	4	250	0	0	50	54	61
Sum of Tri & Tetrachloroethene	µg/l	4	10	0	0	0.0	1.6	2.6
Tetrachloromethane	µg/l	4	3	0	0	<0.1	<0.1	<0.1
Total Cyanide	µgCN/l	4	50	0	0	<0.5	1.7	4.7
Total Organic Carbon	mgC/l	4	No abnormal change	0	0	1.0	1.4	2.2
Total PAHs	µg/l	4	0.1	0	0	0.000	0.001	0.004
Total Trihalomethanes	µg/l	4	100	0	0	12.98	20.70	29.93
1, 2 dichloroethane	µg/l	4	3	0	0	<0.1	<0.1	<0.1

Notes

PCV = Prescribed Concentration or Value or Specification Concentration or Value

Commentary on Water Quality

Water quality was satisfactory in this zone in 2014.

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Additional Parameters (continued)								

Undertakings & Authorised Departures

No Undertakings or Authorised Departures applied to this water supply zone during 2014.