



Your local supply, on tap

Annual Report on Water Quality Hertsmere Borough Council 2015

Affinity Water



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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. In 2015, 99.98% of the 175,000 tests taken as part of the Company's regulatory monitoring programme complied with the standards confirming that drinking water quality continues to be of a very high standard.

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 2015.

2 Water Treatment Works, Service Reservoirs and Water Supply Zones

In 2015, the Company met the demand for drinking water by operating 85 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 2015, Affinity Water (Central Region) had 75 such zones.

In 2015, Hertsmere Borough Council's area was served by Zones:

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

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

3 Water Quality

In January, lead was detected at a concentration above the standard in a sample taken from a customer's property in Zone 052. The investigation established that the elevated concentration of lead was likely to have been caused by lead pipework leading to and within the customer's property. We replaced the lead on our side of the boundary stop tap and a letter was sent to the customer explaining the situation and how to reduce the lead concentration in their water supply.

In February, a single coliform bacteria was detected in a sample taken from Zone 072. Our investigation identified that the water supply to the area was satisfactory but was unable to identify a cause for the failure. Coliforms do not pose a risk to public health.

In September, coliform bacteria were detected in a sample taken in Zone 049 and, in November, coliform bacteria were detected in a sample taken in Zone 050. In both cases, our investigations identified that the most likely cause of the failure was the condition of the tap where the sample was taken.

In Zone 023, coliform bacteria were detected in a sample taken in September. Our investigation identified that the water supply to the area was satisfactory but was unable to identify a cause for the failure.

Also in Zone 023, elevated concentrations of the pesticide Metaldehyde were detected in June and September. At these times, 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 2015	No. of samples containing oocysts	Maximum Concentration (Oocysts/10 litres)
Iver	366	0	<0.10

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	0.40	0.98	1.38
Zone 023 (82,595)	0.44	1.37	1.80
Zone 049 (82,770)	0.56	1.11	1.67
Zone 050 (51,795)	0.46	0.83	1.29
Zone 052 (73,524)	0.52	1.05	1.56
Zone 072 (3052)	0	0	0

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 2015.

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 2015 there was one notifiable event within your Council's area of responsibility.

In mid-March, we received a telephone call from the Environmental Health Department at Hertsmere Borough Council, reporting a fuel spillage at a primary school in Radlett. Building Control records showed that the spill had occurred in close proximity to the route of the plastic water supply pipe.

We advised Environmental Health that permeation of the supply pipe would not be immediate; this was supported by the fact that occupants at the school had not noticed any unusual odour or taste to the water and by subsequent sample results. However we also advised that the supply pipe would need to be re-laid in barrier pipe and the contaminated soil removed from site.

The event was classified by the DWI as a minor event.

8 Further information and advice

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

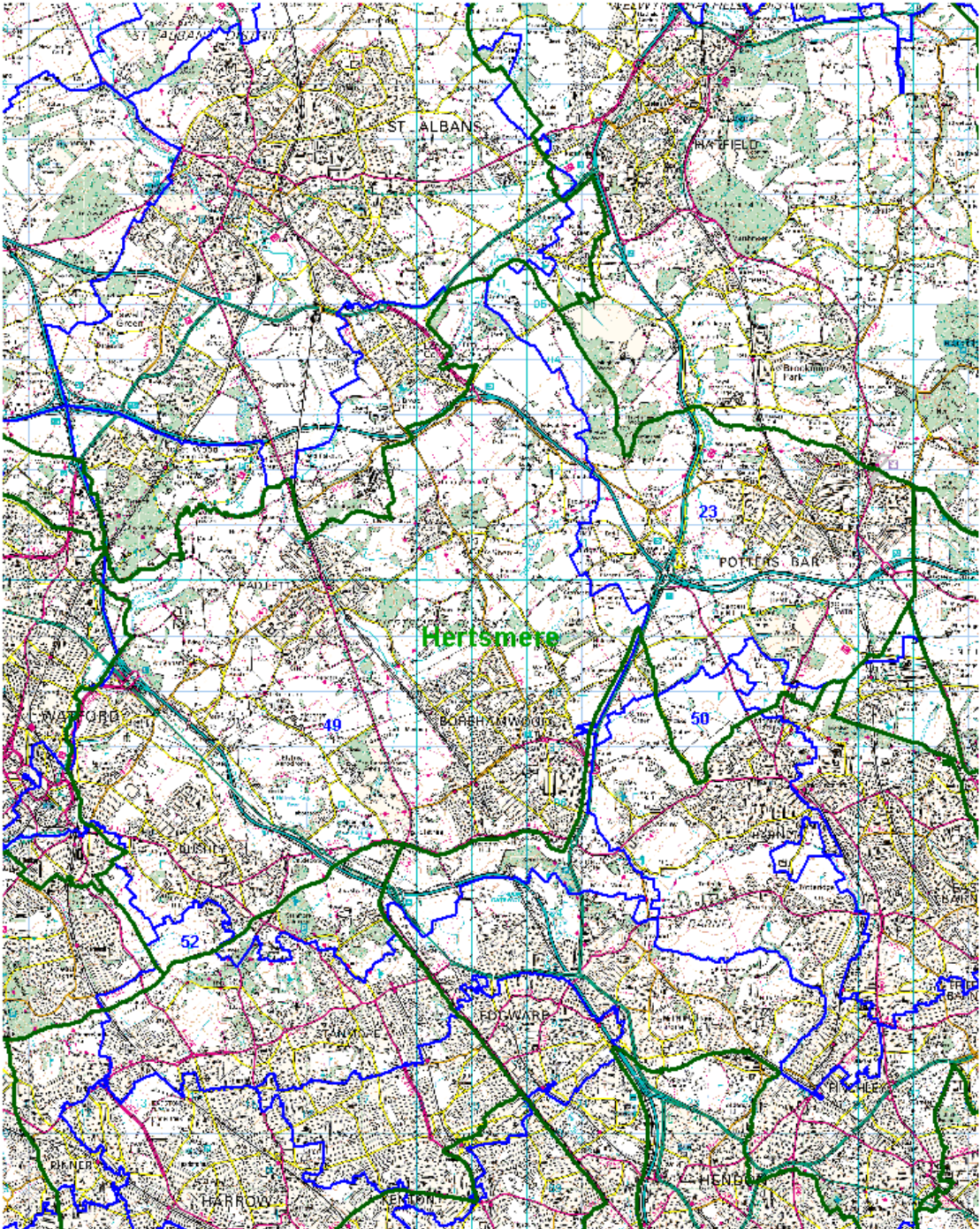
Eddie Lintott
Water Quality Manager
Affinity Water
Tamblin Way
Hatfield
Hertfordshire
AL10 9EZ



Telephone: 01707 277165

Appendix one

Map

Hertsmere Borough Council

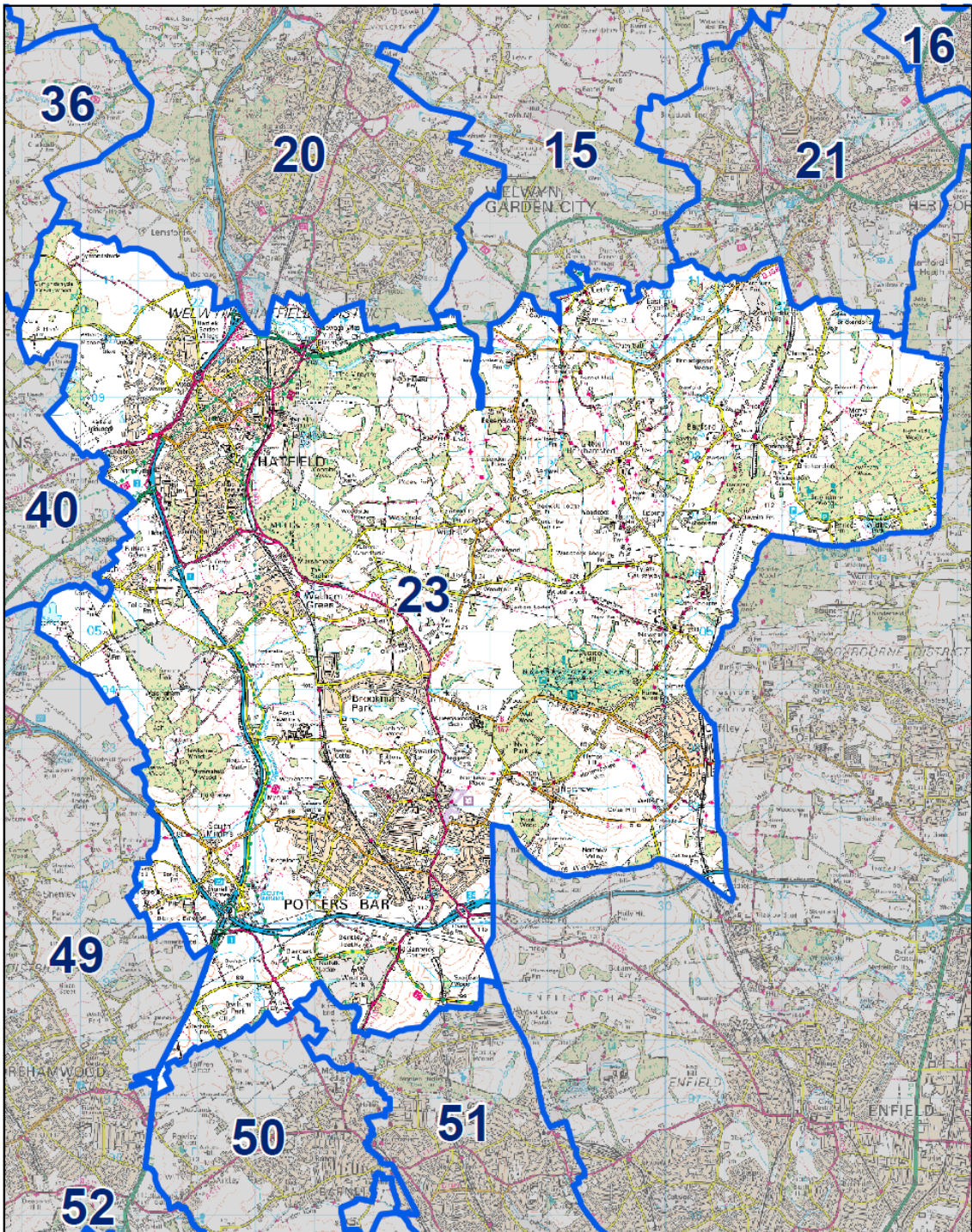


-  Local Authority Boundary
-  Water Supply Zone Boundary

Appendix two

Water Quality Results



WQZ 23 - Hatfield / Potters Bar



0 700 1,400 2,800 Meters

January 2010

Legend

-  This Water Quality Zone
-  Other WQZ

Water Supply Zone: Hatfield/Potters Bar (AF023)

Period: 01-Jan-2015 to 31-Dec-2015

Population: 82595



Parameter	Units	No. of Samples	No. of Samples			Min.	Mean	Max.
			PCV	>PCV	% of Samples >PCV			
Microbiological Parameters								
Coliform bacteria	No./100ml	204	0	1	<1	0	0	2
E coli	No./100ml	204	0	0	0	0	0	0
Clostridium perfringens	No./100ml	38	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	8	170
3 day plate count 22 °C	No./1ml at 22 °C	76	No abnormal change	0	0	0	6	174
Customer Parameters								
Alkalinity	mgHCO ₃ /l	1	No PCV	0	0	324	324	324
Calcium	mgCa/l	1	No PCV	0	0	153	153	153
Chlorine (Residual)	mgCl ₂ /l	204	No PCV	0	0	0.05	0.22	0.61
Colour	mg/l Pt/Co	38	20	0	0	<1.0	<1.0	1.5
Fluoride	mgF/l	8	1.5	0	0	0.135	0.168	0.23
Hardness (Total)	mgCaCO ₃ /l	1	No PCV	0	0	383	383	383
Hydrogen Ion (pH)	pH value	76	6.5-9.5	0	0	6.9	7.3	7.8
Quantitative Odour	Dilution No.	38	Abnormal & unacceptable to consumers	0	0	0	0	0
Quantitative Taste	Dilution No.	38		0	0	0	0	0
Temperature	°C	197	No PCV	0	0	6.5	12.7	18.7
Turbidity	NTU	76	4	0	0	<0.10	<0.10	0.5
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	22.6
Antimony	µgSb/l	8	5	0	0	<0.20	<0.20	0.3
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	0.023	0.076
Iron	µgFe/l	76	200	0	0	<15.0	<15.0	83
Lead	µgPb/l	8	10	0	0	<1.00	<1.00	<1.00
Manganese	µgMn/l	76	50	0	0	<1.0	<1.0	1.7
Mercury	µgHg/l	8	1	0	0	<0.10	<0.10	<0.10
Nickel	µgNi/l	8	20	0	0	<2.0	<2.0	3.6
Sodium	mgNa/l	8	200	0	0	20.8	25.8	34

Parameter	Units	No. of Samples	PCV	No. of Samples		Min.	Mean	Max.
				>PCV	% of Samples >PCV			
Pesticides								
Atrazine	µg/l	8	0.1	0	0	0.006	0.008	0.015
Carbetamide	µg/l	8	0.1	0	0	<0.009	<0.009	0.011
Clopyralid	µg/l	8	0.1	0	0	<0.012	<0.012	0.034
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
Metalddehyde	µg/l	8	0.1	2	25	0.029	0.064	0.105
Metazachlor	µg/l	8	0.1	0	0	<0.005	<0.005	0.006
Propyzamide	µg/l	8	0.1	0	0	<0.008	<0.008	0.026
Simazine	µg/l	8	0.1	0	0	<0.004	<0.007	<0.007
Total Pesticide	µg/l	8	0.5	0	0	0.054	0.103	0.183
2,4-D	µg/l	8	0.1	0	0	<0.007	<0.007	<0.007
Additional Parameters								
Ammonium	mgNH4/l	38	0.5	0	0	<0.04	<0.04	0.11
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	µgBrO3/l	8	10	0	0	<0.5	1.6	4.4
Chloride	mgCl/l	8	250	0	0	38	47	57
Electrical Conductivity at 20 °C	µS/cm at 20 °C	39	2500	0	0	567	679	728
Nitrate	mgNO3/l	8	50	0	0	22.8	25.3	27.2
Nitrite	mgNO2/l	8	0.5	0	0	<0.008	0.01	0.065
Nitrite Nitrate Formula		8	1	0	0	<0.48	<0.54	<0.54
Selenium	µgSe/l	8	10	0	0	<1.0	<1.0	<1.0
Sulphate	mgSO4/l	8	250	0	0	46	63	94
Sum of Tri & Tetrachloroethene	µg/l	8	10	0	0	0	0.2	0.3
Tetrachloromethane	µg/l	8	3	0	0	<0.1	<0.1	<0.1
Total Cyanide	µgCN/l	8	50	0	0	<1.0	<1.0	1.1
Total Organic Carbon	mgC/l	8	No abnormal change	0	0	0.9	1.7	2.9
Total PAHs	µg/l	8	0.1	0	0	0	0	0.002
Total Trihalomethanes	µg/l	8	100	0	0	8.68	15.28	25.24
1, 2 dichloroethane	µg/l	8	3	0	0	<0.0	<0.1	<0.1

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

PCV = Prescribed Concentration or Value or Specification Concentration or Value

Commentary on Water Quality

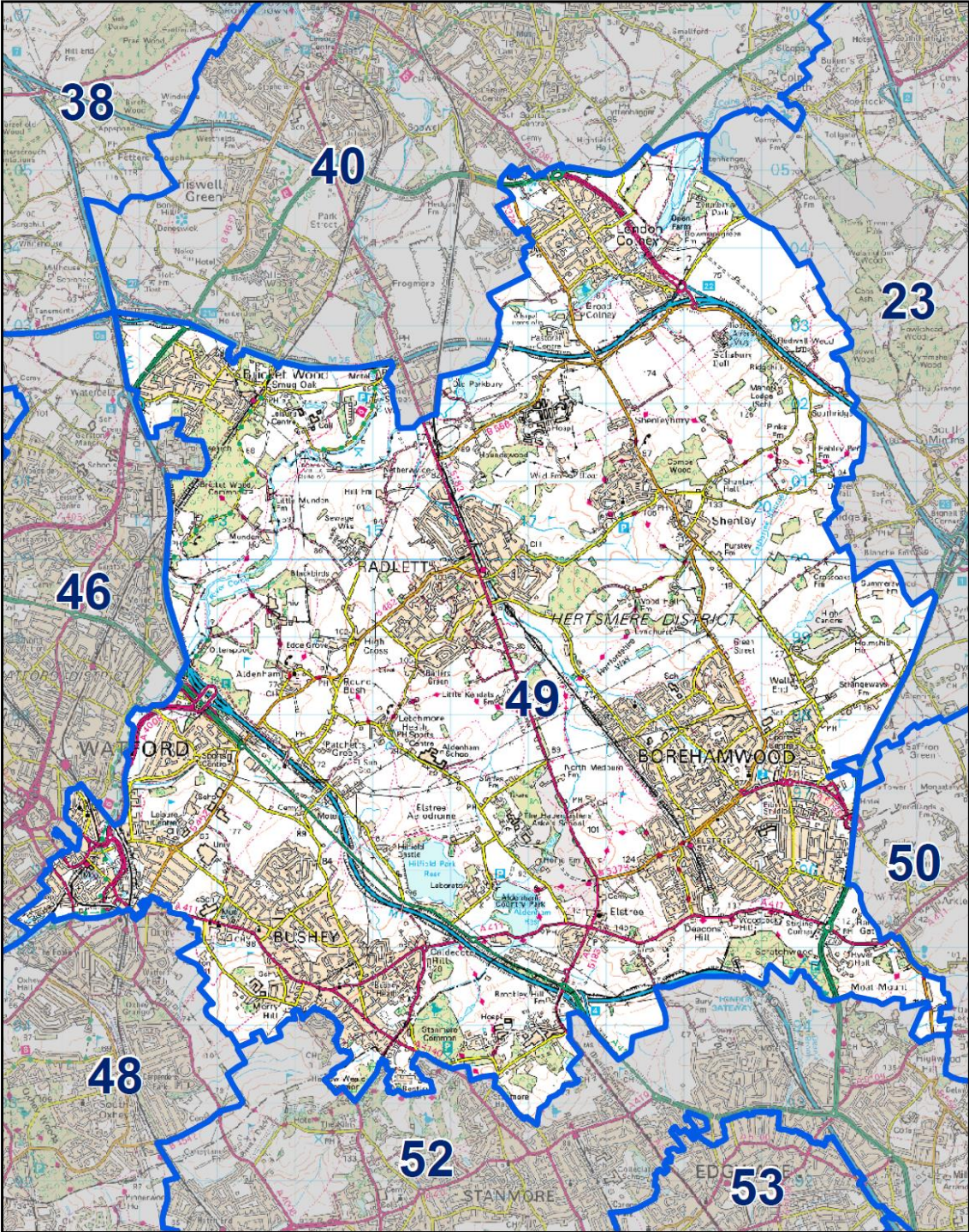
Coliform bacteria were detected in a sample taken from a customer's property in Batterdale, Hatfield in September. Our investigation identified that the water supply to the area was satisfactory but was unable to identify a cause for the failure. Coliforms do not pose a risk to public health. Elevated concentrations of the pesticide Metaldehyde were detected in June and September. At these times, 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

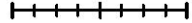
No Authorised Departures applied to this water supply zone during 2015.

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



0 480 960 1,920 Meters



January 2010

Legend

- This Water Quality Zone
- Other WQZ

Water Supply Zone: Borehamwood/Bushey (AF049)

Period: 01-Jan-2015 to 31-Dec-2015

Population: 82770



Parameter	Units	No. of Samples	No. of Samples			Min.	Mean	Max.
			PCV	>PCV	% of Samples >PCV			
Microbiological Parameters								
Coliform bacteria	No./100ml	204	0	1	<1	0	0	9
E coli	No./100ml	204	0	0	0	0	0	0
Clostridium perfringens	No./100ml	38	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	3	119
3 day plate count 22 °C	No./1ml at 22 °C	76	No abnormal change	0	0	0	5	144
Customer Parameters								
Alkalinity	mgHCO ₃ /l	1	No PCV	0	0	333	333	333
Calcium	mgCa/l	1	No PCV	0	0	148	148	148
Chlorine (Residual)	mgCl ₂ /l	204	No PCV	0	0	0.08	0.3	0.7
Colour	mg/l Pt/Co	38	20	0	0	<1.0	<1.0	2.9
Fluoride	mgF/l	8	1.5	0	0	0.125	0.129	0.133
Hardness (Total)	mgCaCO ₃ /l	1	No PCV	0	0	370	370	370
Hydrogen Ion (pH)	pH value	38	6.5-9.5	0	0	7	7.2	7.5
Quantitative Odour	Dilution No.	38	Abnormal & unacceptable to consumers	0	0	0	0	0
Quantitative Taste	Dilution No.	38	consumers	0	0	0	0	0
Temperature	°C	200	No PCV	0	0	7.3	13.2	20.7
Turbidity	NTU	76	4	0	0	<0.10	<0.10	0.53
Chemicals								
Metals								
Arsenic	µgAs/l	8	10	0	0	<1.0	<1.0	<1.0
Aluminium	µgAl/l	38	200	0	0	<5.0	<5.0	12.6
Antimony	µgSb/l	8	5	0	0	<0.20	<0.20	0.27
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	0.091	0.468
Iron	µgFe/l	76	200	0	0	<15.0	<15.0	113
Lead	µgPb/l	8	10	0	0	<1.00	<1.00	5.02
Manganese	µgMn/l	76	50	0	0	<1.0	<1.0	5.7
Mercury	µgHg/l	8	1	0	0	<0.10	<0.10	<0.10
Nickel	µgNi/l	8	20	0	0	2.3	2.6	3
Sodium	mgNa/l	8	200	0	0	31	32.2	34

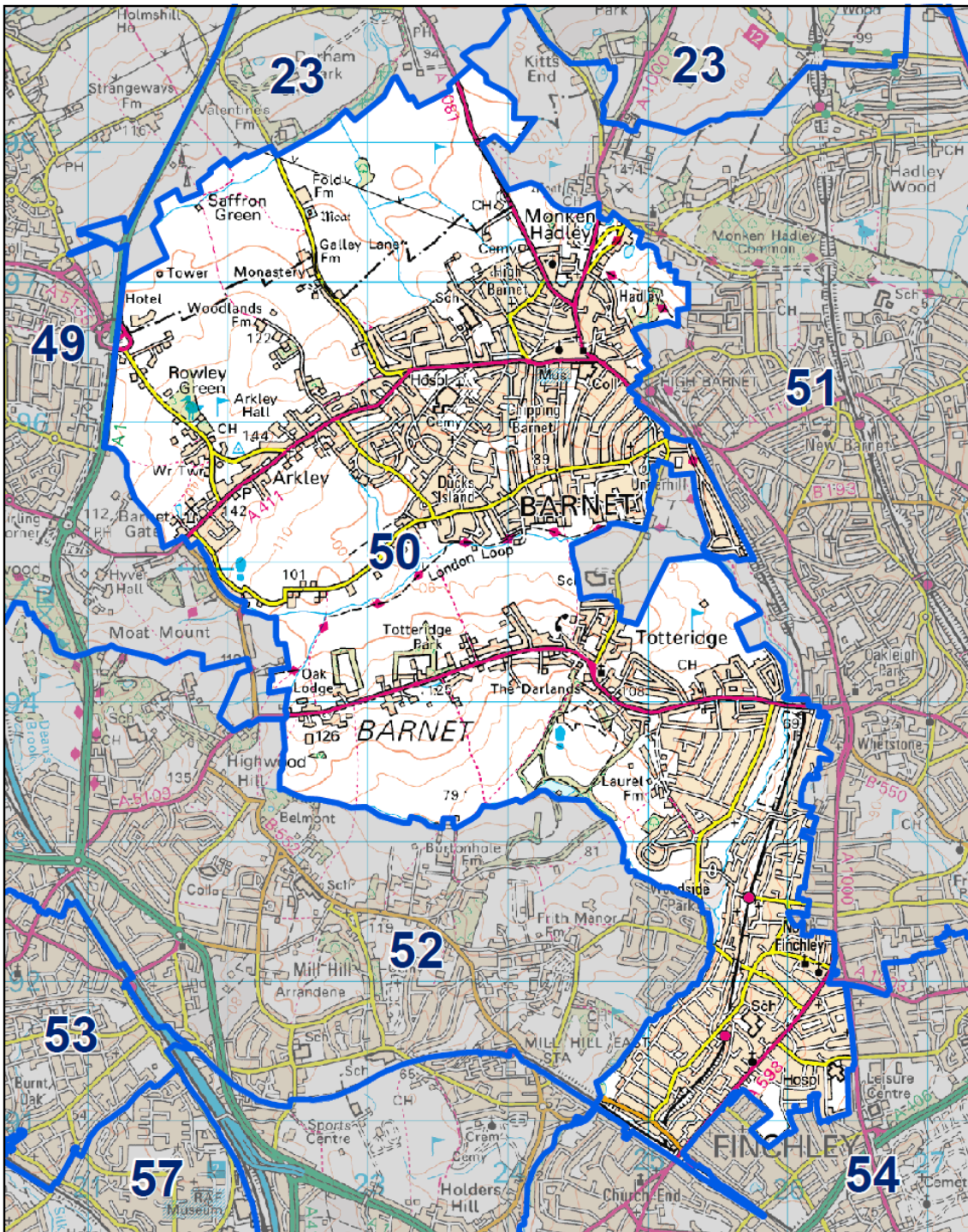
Parameter	Units	No. of Samples	PCV	No. of Samples		Min.	Mean	Max.
				>PCV	% of Samples >PCV			
Pesticides								
Atrazine	µg/l	8	0.1	0	0	0.013	0.016	0.018
Carbetamide	µg/l	8	0.1	0	0	<0.009	<0.009	<0.009
Clopyralid	µg/l	8	0.1	0	0	<0.012	<0.012	<0.012
Diuron	µg/l	8	0.1	0	0	<0.009	<0.010	<0.010
Mecoprop	µg/l	8	0.1	0	0	<0.005	<0.005	<0.005
Simazine	µg/l	8	0.1	0	0	<0.004	<0.007	<0.007
Total Pesticide	µg/l	8	0.5	0	0	0	0.063	0.091
Additional Parameters								
Ammonium	mgNH4/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	7	0.01	0	0	<0.001	<0.001	<0.001
Boron	mgB/l	8	1	0	0	<0.100	<0.100	<0.100
Bromate	µgBrO3/l	8	10	0	0	<0.5	<0.5	<0.5
Chloride	mgCl/l	8	250	0	0	54	56	57
Electrical Conductivity at 20 °C	µS/cm at 20 °C	38	2500	0	0	564	730	792
Nitrate	mgNO3/l	8	50	0	0	26.6	29.3	31.5
Nitrite	mgNO2/l	8	0.5	0	0	<0.008	<0.008	<0.008
Nitrite Nitrate Formula		8	1	0	0	<0.53	<0.63	<0.63
Selenium	µgSe/l	8	10	0	0	<1.0	<1.0	1.2
Sulphate	mgSO4/l	8	250	0	0	47	50	53
Sum of Tri & Tetrachloroethene	µg/l	8	10	0	0	1.2	1.7	2.3
Tetrachloromethane	µg/l	8	3	0	0	<0.1	<0.1	<0.1
Total Cyanide	µgCN/l	8	50	0	0	1.1	1.6	2
Total Organic Carbon	mgC/l	7	No abnormal change	0	0	1.1	1.3	1.6
Total PAHs	µg/l	7	0.1	0	0	0	0	0.002
Total Trihalomethanes	µg/l	8	100	0	0	10.39	18.06	22.97
1, 2 dichloroethane	µg/l	8	3	0	0	<0.0	<0.1	<0.1

Notes

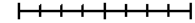
PCV = Prescribed Concentration or Value or Specification Concentration or Value

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 Hampton Close, Borehamwood in September. 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 2015.								

WQZ 50 - Barnet



0 262.5525 1,050 Meters



January 2010

Legend

- This Water Quality Zone
- Other WQZ

Water Supply Zone: Barnet (AF050)

Period: 01-Jan-2015 to 31-Dec-2015

Population: 51795



Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Microbiological Parameters								
Coliform bacteria	No./100ml	132	0	1	<1	0	0	1
E coli	No./100ml	132	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	30	640
3 day plate count 22 °C	No./1ml at 22 °C	52	No abnormal change	0	0	0	38	1500
Customer Parameters								
Alkalinity	mgHCO ₃ /l	1	No PCV	0	0	321	321	321
Calcium	mgCa/l	1	No PCV	0	0	146	146	146
Chlorine (Residual)	mgCl ₂ /l	132	No PCV	0	0	0.07	0.33	0.94
Colour	mg/l Pt/Co	26	20	0	0	<1.0	<1.0	1.1
Fluoride	mgF/l	8	1.5	0	0	0.108	0.124	0.143
Hardness (Total)	mgCaCO ₃ /l	1	No PCV	0	0	365	365	365
Hydrogen Ion (pH)	pH value	26	6.5-9.5	0	0	7	7.3	7.6
Quantitative Odour	Dilution No.	26	Abnormal & unacceptable to consumers	0	0	0	0	0
Quantitative Taste	Dilution No.	26	consumers	0	0	0	0	0
Temperature	°C	130	No PCV	0	0	6.5	13.5	19.6
Turbidity	NTU	52	4	0	0	<0.10	<0.10	0.27
Chemicals								
Metals								
Arsenic	µgAs/l	8	10	0	0	<1.0	<1.0	<1.0
Aluminium	µgAl/l	52	200	0	0	5.5	23.7	79
Antimony	µgSb/l	8	5	0	0	<0.20	<0.20	0.42
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	0.061	0.297
Iron	µgFe/l	52	200	0	0	<15.0	<15.0	52.4
Lead	µgPb/l	8	10	0	0	<1.00	1.55	8.79
Manganese	µgMn/l	52	50	0	0	<1.0	<1.0	4.7
Mercury	µgHg/l	8	1	0	0	<0.10	<0.10	<0.10
Nickel	µgNi/l	8	20	0	0	2.1	2.7	3.4
Sodium	mgNa/l	8	200	0	0	25.2	30.3	40.3

Parameter	Units	No. of Samples	PCV	No. of Samples		Min.	Mean	Max.
				>PCV	% of Samples >PCV			
Pesticides								
Atrazine	µg/l	8	0.1	0	0	0.005	0.007	0.011
Carbetamide	µg/l	8	0.1	0	0	<0.009	<0.009	<0.009
Clopyralid	µg/l	8	0.1	0	0	<0.012	<0.012	<0.012
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
Metalddehyde	µg/l	8	0.1	0	0	0.013	0.034	0.094
Metazachlor	µg/l	8	0.1	0	0	<0.005	<0.005	<0.005
Propyzamide	µg/l	8	0.1	0	0	<0.007	<0.008	0.014
Simazine	µg/l	8	0.1	0	0	<0.004	<0.007	<0.007
Total Pesticide	µg/l	8	0.5	0	0	0.031	0.056	0.099
2,4-D	µg/l	8	0.1	0	0	<0.007	<0.007	<0.007
Additional Parameters								
Ammonium	mgNH4/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	7	0.01	0	0	<0.001	<0.001	0.002
Boron	mgB/l	8	1	0	0	<0.100	<0.100	<0.100
Bromate	µgBrO3/l	8	10	0	0	<0.5	1.2	2.4
Chloride	mgCl/l	8	250	0	0	45	52	58
Electrical Conductivity at 20 °C	µS/cm at 20 °C	26	2500	0	0	564	648	747
Nitrate	mgNO3/l	8	50	0	0	22.4	25.1	27.9
Nitrite	mgNO2/l	8	0.5	0	0	<0.008	<0.008	<0.008
Nitrite Nitrate Formula		8	1	0	0	<0.45	<0.56	<0.56
Selenium	µgSe/l	8	10	0	0	<1.0	<1.0	<1.0
Sulphate	mgSO4/l	8	250	0	0	41	55	71
Sum of Tri & Tetrachloroethene	µg/l	8	10	0	0	0.2	0.4	0.8
Tetrachloromethane	µg/l	8	3	0	0	<0.1	<0.1	<0.1
Total Cyanide	µgCN/l	8	50	0	0	<1.0	<1.0	1.3
Total Organic Carbon	mgC/l	8	No abnormal change	0	0	1.3	1.8	2.3
Total PAHs	µg/l	7	0.1	0	0	0	0.002	0.01
Total Trihalomethanes	µg/l	8	100	0	0	19.65	30.58	52.97
1, 2 dichloroethane	µg/l	8	3	0	0	<0.0	<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.
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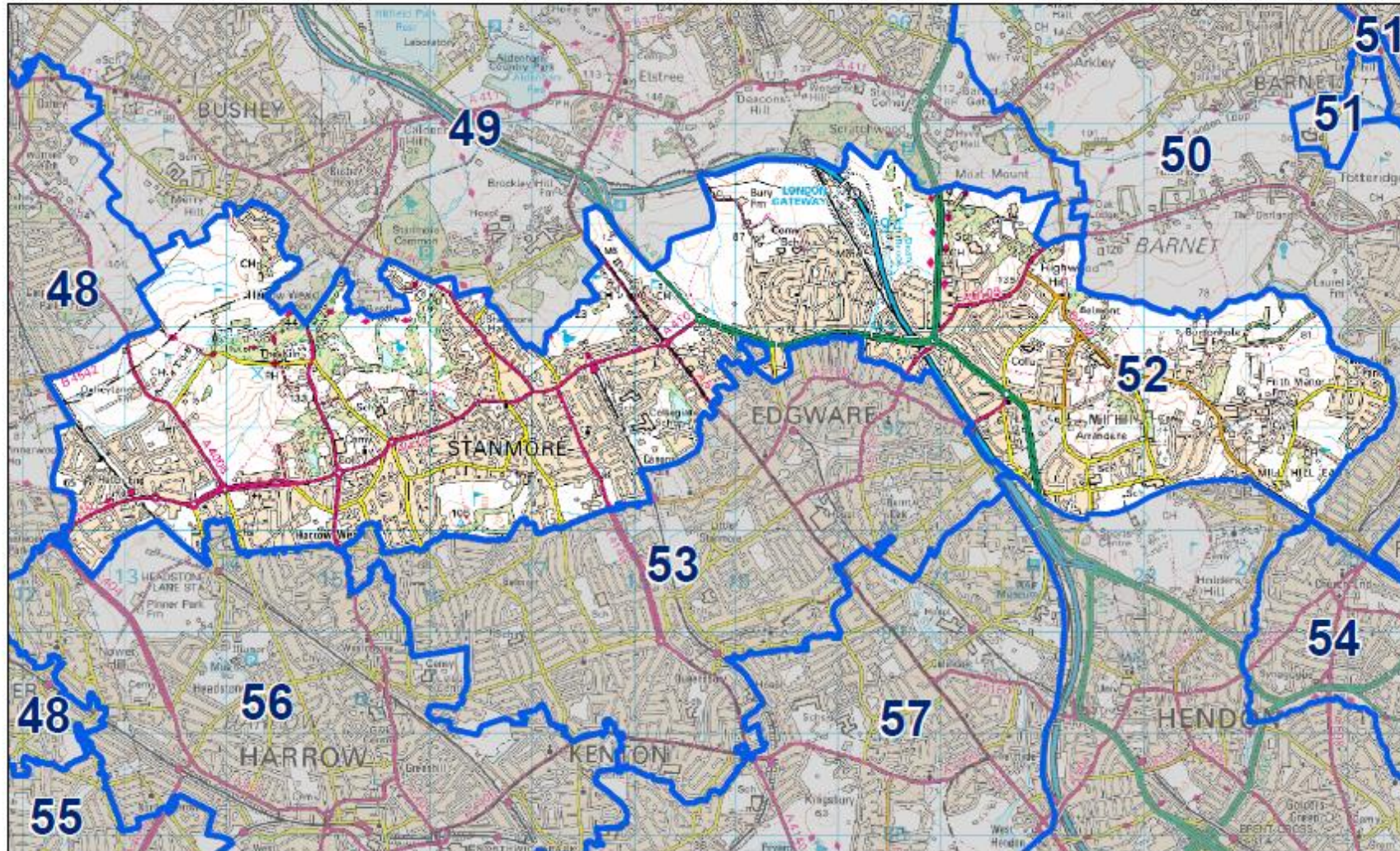
Commentary on Water Quality

A single coliform bacteria was detected in a sample taken from a customer's property in Woodberry Gardens, London in November. 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 Authorised Departures applied to this water supply zone during 2015.

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



0 230 460 920 Meters
 January 2010

Legend

-  This Water Quality Zone
-  Other WQZ

Water Supply Zone: Mill Hill/Stanmore (AF052)

Period: 01-Jan-2015 to 31-Dec-2015

Population: 73524



Parameter	Units	No. of Samples	No. of Samples			Min.	Mean	Max.
			PCV	>PCV	% of Samples >PCV			
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	1	17
3 day plate count 22 °C	No./1ml at 22 °C	52	No abnormal change	0	0	0	0	5
Customer Parameters								
Alkalinity	mgHCO ₃ /l	1	No PCV	0	0	342	342	342
Calcium	mgCa/l	1	No PCV	0	0	151	151	151
Chlorine (Residual)	mgCl ₂ /l	180	No PCV	0	0	0.08	0.3	0.56
Colour	mg/l Pt/Co	26	20	0	0	<1.0	<1.0	1.8
Fluoride	mgF/l	8	1.5	0	0	0.118	0.127	0.136
Hardness (Total)	mgCaCO ₃ /l	1	No PCV	0	0	378	378	378
Hydrogen Ion (pH)	pH value	26	6.5-9.5	0	0	7	7.2	7.5
Quantitative Odour	Dilution No.	26	Abnormal & unacceptable to consumers	0	0	0	0	0
Quantitative Taste	Dilution No.	26	consumers	0	0	0	0	0
Temperature	°C	175	No PCV	0	0	6.9	13.4	20.3
Turbidity	NTU	52	4	0	0	<0.10	<0.10	0.23
Chemicals								
Metals								
Arsenic	µgAs/l	8	10	0	0	<1.0	<1.0	<1.0
Aluminium	µgAl/l	51	200	0	0	<5.0	<5.0	38.4
Antimony	µgSb/l	8	5	0	0	<0.20	<0.20	0.29
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	0.043	0.123
Iron	µgFe/l	51	200	0	0	<15.0	<15.0	28.3
Lead	µgPb/l	8	10	1	13	<1.00	2.64	10.2
Manganese	µgMn/l	51	50	0	0	<1.0	<1.0	1.2
Mercury	µgHg/l	8	1	0	0	<0.10	<0.10	<0.10
Nickel	µgNi/l	8	20	0	0	2.4	2.7	3.1
Sodium	mgNa/l	8	200	0	0	26.3	32.8	38.4

Parameter	Units	No. of Samples	PCV	No. of Samples		Min.	Mean	Max.
				>PCV	% of Samples >PCV			
Pesticides								
Atrazine	µg/l	8	0.1	0	0	0.008	0.015	0.019
Carbetamide	µg/l	8	0.1	0	0	<0.009	<0.009	<0.009
Clopyralid	µg/l	8	0.1	0	0	<0.012	<0.012	<0.012
Diuron	µg/l	8	0.1	0	0	<0.009	<0.010	<0.010
Mecoprop	µg/l	8	0.1	0	0	<0.005	<0.005	<0.005
Simazine	µg/l	8	0.1	0	0	<0.007	<0.007	0.007
Total Pesticide	µg/l	8	0.5	0	0	0.046	0.066	0.082
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	7	0.01	0	0	<0.001	<0.001	<0.001
Boron	mgB/l	8	1	0	0	<0.100	<0.100	0.11
Bromate	µgBrO ₃ /l	8	10	0	0	<0.5	<0.5	1.1
Chloride	mgCl/l	8	250	0	0	55	57	59
Electrical Conductivity at 20 °C	µS/cm at 20 °C	26	2500	0	0	688	731	763
Nitrate	mgNO ₃ /l	8	50	0	0	24.9	28.1	30.1
Nitrite	mgNO ₂ /l	8	0.5	0	0	<0.008	<0.008	<0.008
Nitrite Nitrate Formula		8	1	0	0	<0.50	<0.60	<0.60
Selenium	µgSe/l	8	10	0	0	<1.0	<1.0	1.3
Sulphate	mgSO ₄ /l	8	250	0	0	47	52	60
Sum of Tri & Tetrachloroethene	µg/l	8	10	0	0	0.6	1.7	2.3
Tetrachloromethane	µg/l	8	3	0	0	<0.1	<0.1	<0.1
Total Cyanide	µgCN/l	8	50	0	0	<1.0	1.6	2.5
Total Organic Carbon	mgC/l	8	No abnormal change	0	0	1.1	1.5	2.5
Total PAHs	µg/l	7	0.1	0	0	0	0	0.001
Total Trihalomethanes	µg/l	8	100	0	0	14.82	21.79	37
1, 2 dichloroethane	µg/l	8	3	0	0	<0.0	<0.1	<0.1

Notes

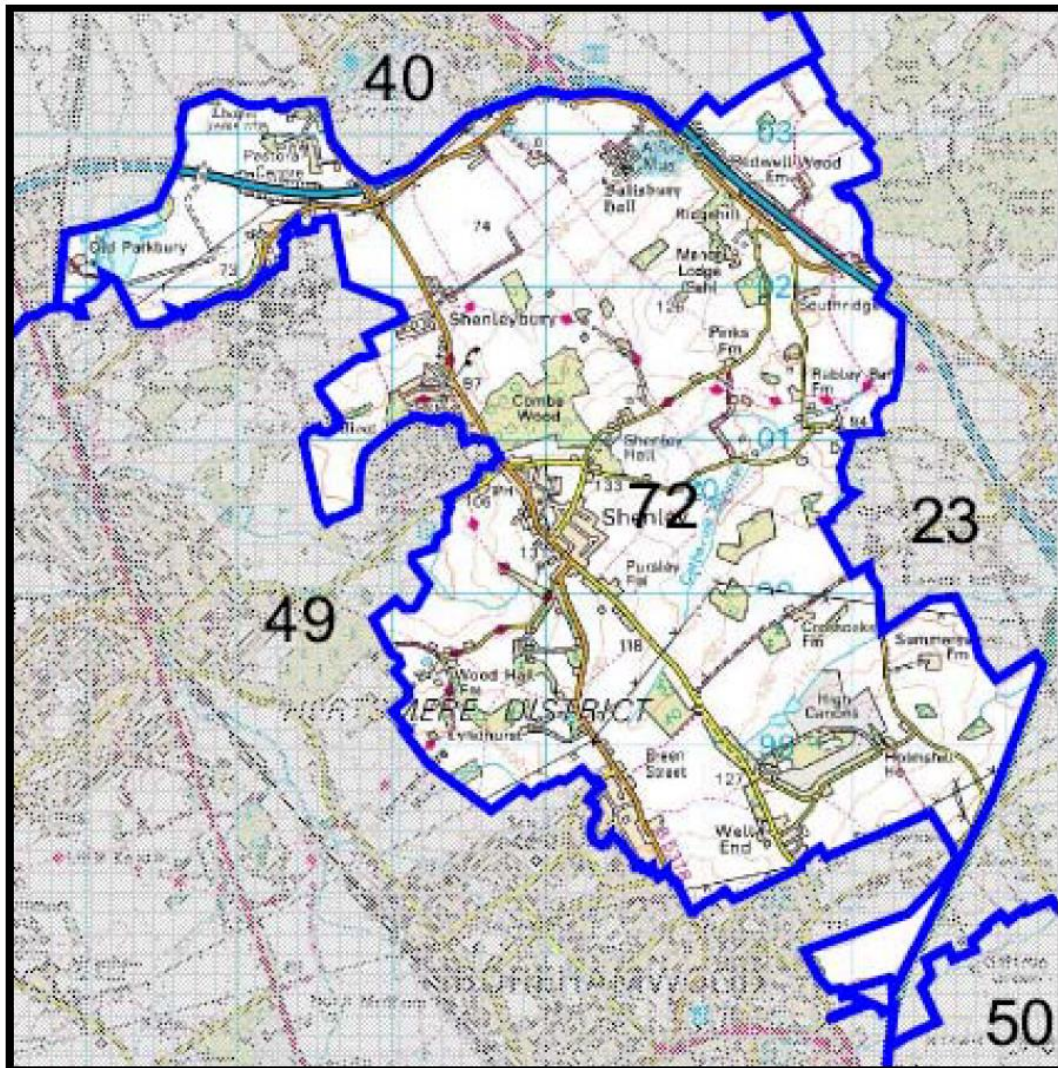
PCV = Prescribed Concentration or Value or Specification Concentration or Value

Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Commentary on Water Quality								
In January, lead was detected at a concentration above the standard in a sample taken from a customer's property in Saddlescombe Way, Finchley. The investigation established that the elevated concentration of lead was likely to have been caused by lead pipework leading to and within the customer's property. We replaced the lead on our side of the boundary stop tap and a letter was sent to the customer explaining the situation and how to reduce the lead concentration in their water supply.								



Undertakings & Authorised Departures

No Undertakings or Authorised Departures applied to this water supply zone during 2015.

WQZ 72 – Shenley North



Legend

-  This Water Quality Zone
-  Other WQZ

Water Supply Zone: Shenley (AF072)

Period: 01-Jan-2015 to 31-Dec-2015

Population: 3052



Parameter	Units	No. of Samples	PCV	No. of Samples >PCV	% of Samples >PCV	Min.	Mean	Max.
Microbiological Parameters								
Coliform bacteria	No./100ml	12	0	1	8	0	0	1
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	6	24
3 day plate count 22 °C	No./1ml at 22 °C	4	No abnormal change	0	0	0	1	5
Customer Parameters								
Alkalinity	mgHCO ₃ /l	1	No PCV	0	0	326	326	326
Calcium	mgCa/l	1	No PCV	0	0	143	143	143
Chlorine (Residual)	mgCl ₂ /l	12	No PCV	0	0	0.17	0.23	0.31
Colour	mg/l Pt/Co	2	20	0	0	<1.0	<1.0	1.2
Fluoride	mgF/l	4	1.5	0	0	0.104	0.122	0.129
Hardness (Total)	mgCaCO ₃ /l	1	No PCV	0	0	358	358	358
Hydrogen Ion (pH)	pH value	2	6.5-9.5	0	0	7.1	7.2	7.2
Quantitative Odour	Dilution No.	2	Abnormal & unacceptable to consumers	0	0	0	0	0
Quantitative Taste	Dilution No.	2	Abnormal & unacceptable to consumers	0	0	0	0	0
Temperature	°C	12	No PCV	0	0	8.4	12.8	17.2
Turbidity	NTU	4	4	0	0	<0.10	<0.10	0.19
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	0.21
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	0.045	0.15
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	2.3	2.8	3.9
Sodium	mgNa/l	4	200	0	0	26.2	31.8	35

Parameter	Units	No. of Samples	PCV	No. of Samples		Min.	Mean	Max.
				>PCV	% of Samples >PCV			
Pesticides								
Atrazine	µg/l	4	0.1	0	0	0.013	0.015	0.018
Carbetamide	µg/l	4	0.1	0	0	<0.009	<0.009	<0.009
Clopyralid	µg/l	4	0.1	0	0	<0.012	<0.012	<0.012
Diuron	µg/l	4	0.1	0	0	<0.009	<0.010	<0.010
Mecoprop	µg/l	4	0.1	0	0	<0.005	<0.005	<0.005
Simazine	µg/l	4	0.1	0	0	<0.007	<0.007	0.007
Total Pesticide	µg/l	4	0.5	0	0	0.041	0.059	0.075
Additional Parameters								
Ammonium	mgNH ₄ /l	2	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	<0.5
Chloride	mgCl/l	4	250	0	0	42	53	57
Electrical Conductivity at 20 °C	µS/cm at 20 °C	2	2500	0	0	707	727	747
Nitrate	mgNO ₃ /l	4	50	0	0	24.6	27.7	31.6
Nitrite	mgNO ₂ /l	4	0.5	0	0	<0.008	<0.008	<0.008
Nitrite Nitrate Formula		4	1	0	0	<0.49	<0.63	<0.63
Selenium	µgSe/l	4	10	0	0	<1.0	<1.0	1.5
Sulphate	mgSO ₄ /l	4	250	0	0	48	50	52
Sum of Tri & Tetrachloroethene	µg/l	4	10	0	0	0.8	1.2	1.6
Tetrachloromethane	µg/l	4	3	0	0	<0.1	<0.1	<0.1
Total Cyanide	µgCN/l	4	50	0	0	<1.0	1.2	2.1
Total Organic Carbon	mgC/l	4	No abnormal change	0	0	0.9	1.2	1.5
Total PAHs	µg/l	4	0.1	0	0	0	0	0
Total Trihalomethanes	µg/l	4	100	0	0	17.46	18.63	19.71
1, 2 dichloroethane	µg/l	4	3	0	0	<0.0	<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								
A single coliform bacteria was detected in a sample taken from a customer's property in Broadley Gardens, Shenley in February. Our investigation identified that the water supply to the area was satisfactory but was unable to identify a cause for the failure. Coliforms do not pose a risk to public health.								
Undertakings & Authorised Departures								
No Undertakings or Authorised Departures applied to this water supply zone during 2015.								

