



# Activity Report

## 2009/10

Incorporating the Conservation, Recreation and Access Report 2009/2010 and information from the Water Quality Report 2009



# Foreword



## Our Annual Activity Report sets out the standards of service we provided to our customers in the 2009/10 year and also looks at our principal activities over the past year.

I have been delighted in recent years that our efforts in respect of Health & Safety have been recognised externally through the RoSPA Health & Safety Award Scheme. This year we have received a Gold Award, the fifth consecutive year recognising the initiatives and commitments of the management and staff in all areas of our business.

I am pleased to report that our customers continue to receive a high level of service in terms of pressure of mains water; interruptions to supply; responding to billing queries; dealing with complaints; meter reading and answering the telephone. All these key aspects of our service qualify for the highest possible rating by Ofwat, the Government's Water Industry Regulator.

For 2008/09 Ofwat assessed Portsmouth Water sewerage service unit costs and relative efficiency as leading band A status for operating efficiency - The results for 2009/10 are not currently available at the time of publishing this report. For 2009/10 we believe our customers continue to receive some of the best value for money in the country.

Portsmouth Water customers have for many years enjoyed very high standards of drinking water quality and customer service, together with the lowest charges for water supplies in England and Wales. In 2009 water quality remained of the highest level with 99.99% of our water samples meeting the prescribed concentration or value (PCV) designated in the Water Quality Regulations.

Following submission of our Business Plan setting out our intentions for the next five years, Ofwat, the Industry's economic regulator, issued its Final Determination last November setting out the charges we can raise over that period. This will mean the average bills to domestic customers will fall by £6 (excluding inflation) over the next 5 years. Our customers will continue to enjoy by some considerable distance the lowest bills in the country for water.

In arriving at its Final Determination Ofwat made some very challenging assumptions, however, the Company believes it can meet its obligations and maintain services to customers over the next five years. In this period the Company will deliver the following for customers:

- Completing a £39m programme of investment including:
- Replacing 23km of water mains every year.
- £5m to maintain the quality of drinking water.
- Enhancing of operational sites to improve security and resilience against flooding.
- The Company will strive to maintain our industry leading position on efficiency whilst continuing to provide a high quality service to our customers.
- The Company will provide value for money with average bills (excluding inflation) at £87 per annum by 2015, which compares to the next lowest of £116 and the average bill in the Country of £162.

The Water Resources Management Regulations require water companies to prepare a Water Resources Management Plan which determines how to ensure customers continue to enjoy secure and reliable water supplies while minimising any adverse effect on the environment. During 2009 a statutory review process has been followed which culminated in Defra announcing in August 2009 that the Company's Water Resources Management Plan would be subject to a Public Hearing presided over by the Planning Inspectorate. The Hearing will provide the Company with the opportunity to explain the basis of its assumptions using the best available evidence at the time of preparation and its proposals to overcome the expected deficits which the Company will have to invest in new resources, in the longer term continuing with the plans for the development of the Havant Thicket Winter Storage Reservoir. Since the report year Defra has subsequently informed the Company that a Public Inquiry will now be held which provides for a more formal and rigorous review of the Company's Plan.

During the year the Company spent a total of approximately £13.9m on the maintenance of operational assets to ensure customers continue to enjoy safe, secure and reliable water supplies. This included nearly £6.9m upon renewing old water mains and a further £1.0m on a trunk mains scheme required to blend water from the Company's Northbrook source with other sources at Hoads Hill Reservoir; thereby ensuring nitrate quality standards are maintained.

In arriving at its Final Determination Ofwat made some challenging assumptions. The Company plans to meet this challenge, recognising the impacts of climate change and the affordability problems faced by some parts of the community. The Company believes it can meet these challenges and the aspiration of customers by continuing to follow the key principles that have guided it throughout its long history together with a sustainable and innovative approach to its activities.

N.J. Roadnight  
Managing Director

# Contents

|          |  |                   |
|----------|--|-------------------|
| <b>1</b> | <b>Levels of Service</b>   | <b>2 - 3</b>      |
|          | <ul style="list-style-type: none"> <li>• Pressure of Mains Water (DG2)</li> <li>• Interruptions to Supply (DG3)</li> <li>• Billing Contacts (DG6)</li> <li>• Written Complaints (DG7)</li> <li>• Meters Read (DG8)</li> <li>• Telephone Contact (DG9)</li> </ul>   |                   |
| <b>2</b> | <b>Water Supply</b>  | <b>4 - 11</b>     |
|          | <ul style="list-style-type: none"> <li>• Rainfall</li> <li>• Groundwater Levels</li> <li>• Abstraction</li> <li>• Service Reservoirs</li> <li>• Treated Water Distributed</li> <li>• Leakage</li> <li>• Burst Mains</li> <li>• Water Consumption</li> <li>• Water Efficiency</li> </ul>  |                   |
| <b>3</b> | <b>Capital Works Improvements</b>  | <b>12 - 15</b>    |
|          | <ul style="list-style-type: none"> <li>• New Connections</li> <li>• Nitrate Reduction</li> <li>• Borehole Remedials and Improvements</li> <li>• Security Improvements</li> <li>• Local Mains and Services Renewals</li> <li>• Service Reservoir Maintenance</li> <li>• Water Treatment Works and Pumping Station Maintenance</li> <li>• Havant Thicket Winter Storage Reservoir</li> </ul> |                   |
| <b>4</b> | <b>Annual Report on Conservation, Recreation and Access</b>  | <b>16 - 19</b>    |
|          | <ul style="list-style-type: none"> <li>• Conservation and Environmental Policy</li> <li>• Biodiversity at Portsmouth Water Sites</li> <li>• Carbon Reduction Strategy</li> <li>• Sustainable Water Resources</li> <li>• Havant Thicket Winter Storage Reservoir</li> <li>• Sustainable Procurement</li> <li>• Amenities and Recreation</li> </ul>  |                   |
| <b>5</b> | <b>Annual Water Quality Report</b>   | <b>20 - 25</b>    |
|          | <ul style="list-style-type: none"> <li>• Water Quality Standards</li> <li>• Microbiological Quality</li> <li>• Cryptosporidium monitoring</li> <li>• Physical and Chemical Quality</li> <li>• Other Quality Issues</li> <li>• Summary of Monitoring in 2009</li> </ul>   |                   |
| <b>6</b> | <b>Work in the Community, Personnel and Training, Health and Safety</b>  | <b>26 - 27</b>    |
|          | <ul style="list-style-type: none"> <li>• Employees</li> <li>• Work in the Community</li> <li>• Health &amp; Safety</li> </ul>  |                   |
| <b>7</b> | <b>Company Supply Area</b>   | <b>28</b>         |
|          | <b>Advice and Information</b>  | <b>back cover</b> |
|          | <ul style="list-style-type: none"> <li>• Helpful Advice</li> <li>• Information About Your Water Supply</li> </ul>  |                   |

# 1 Levels of Service

The Water Services Regulatory Authority (Ofwat) collects information on water company performance on an annual basis. The data is published in a series of reports and used by Ofwat to measure companies' overall performance.

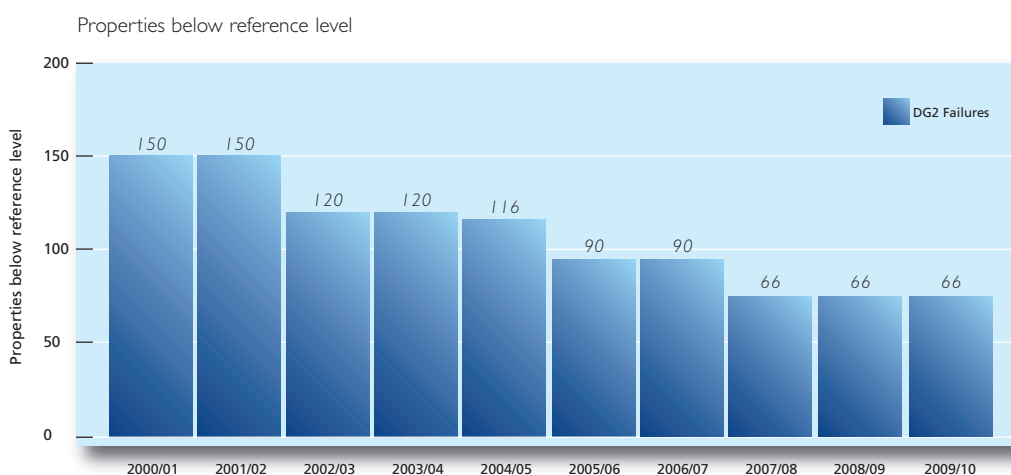
Our performance in all these areas falls in Ofwat's highest categories.

## Pressure of Mains Water (DG2)



Checking water pressure and flow

In 2009/10, only 66 properties experienced water pressure that was less than the Ofwat DG2 reference level of service, equivalent to 15 metres mains pressure. This means that only 2.2 in 10,000 properties in our supply area receive inadequate pressure. The 2009/10 figure maintains the already high level of service provided in previous years. The small number of affected properties are generally located on higher ground relatively close in elevation to the service reservoir supplying their water. Our level of service is classified by Ofwat as 'Good'.



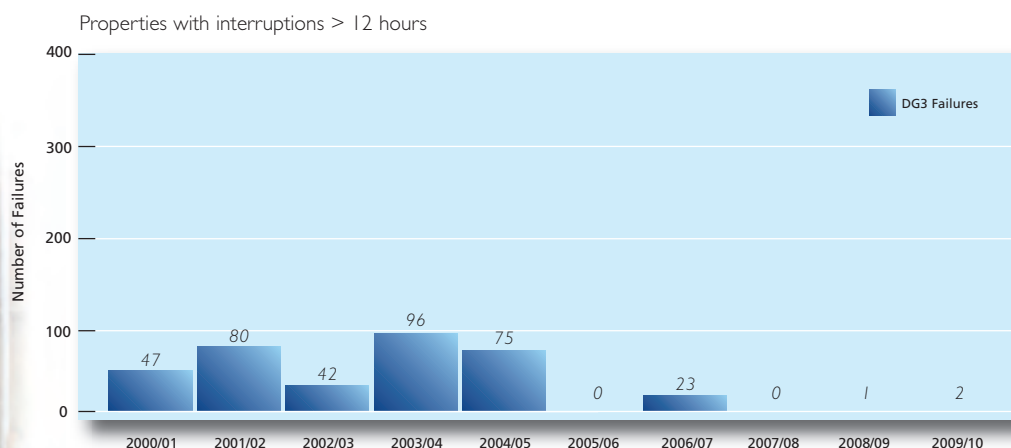
*Our level of service is classified by Ofwat as 'Good'*

## Interruptions to Supply (DG3)



Repairing water

Interruptions to supply usually result from burst mains, which can sometimes take a number of hours to repair, especially if the water main concerned is of large diameter or is in a location where repair is obstructed. Two properties experienced an interruption of their water supply in excess of 12 hours, which is the reference time period for Ofwat's DG3 level of service for interruptions to supplies. This level of service is classified by Ofwat as 'Good'.



*This level of service is classified by Ofwat as 'Good'*



# 1 Levels of Service

## Billing Contacts (DG6)



The Company dealt with 187,683 contacts from customers regarding their water bills, compared with 187,925 in 2008/09. A summary of our performance in handling contacts during 2009/10 is shown below and maintains the previous year's high level of service, which is classified by Ofwat as 'Good'.

| Dealt With in:-        | Number         | Percentage |
|------------------------|----------------|------------|
| 5 working days or less | 187,670        | 99.99      |
| 6 to 10 days           | 8              |            |
| More than 10 days      | 5              |            |
| <b>TOTAL</b>           | <b>187,683</b> | <b>100</b> |

*Our service is classified by Ofwat as 'Good'*

## Written Complaints (DG7)



The number of written complaints received increased from 197 in 2008/09 to 213 in 2009/10. While one complaint is too many, this performance indicates that fewer than approximately 1 in 1,450 of the Company's customers found cause to complain to us in writing about any aspect of our service. This is the lowest level of complaints to water companies in England and Wales. Every complaint is treated seriously and is investigated individually to identify the cause. A separate Company Complaint Review Board, chaired by a Director, is held monthly to assess our responses and evaluate the effectiveness of corrective action taken and recommend improvements if needed. Response times are shown in the table below. Our service in this area is classified by Ofwat as 'Good'.

| Dealt With:-      | Number     | Percentage |
|-------------------|------------|------------|
| 10 working days   | 213        | 100        |
| 11 to 20 days     | 0          | 0          |
| More than 20 days | 0          | 0          |
| <b>TOTAL</b>      | <b>213</b> | <b>100</b> |

*Our service in this area is classified by Ofwat as 'Good'*

## Meters Read (DG8)

The Company billed 61,244 metered accounts in the year. Within the year, five customers failed to receive a bill based on a real read largely due to access to read the meter being denied. This performance is classified by Ofwat as 'Good'.

## Telephone Contact (DG9)

The Company received 192,528 telephone calls from customers in the year. 126 callers received an 'all lines busy' response and 5,554 calls were abandoned. Our service in this area is classified by Ofwat as 'Acceptable' (there is no 'Good' category for telephone contact).

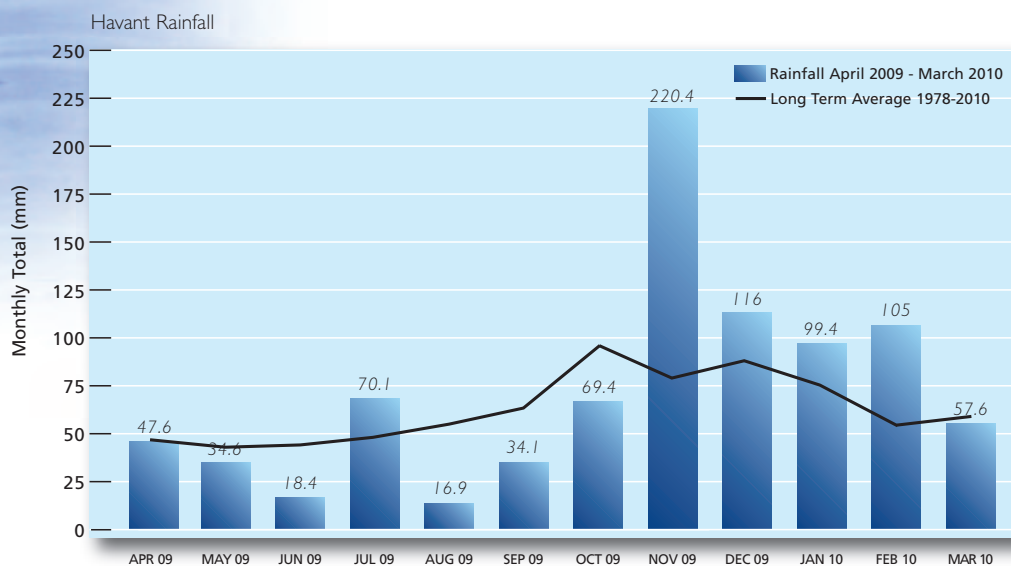
Other than our automatic payment line all calls to the Company are answered promptly by a member of staff. Automatic queuing systems are not used.



## 2 Water Supply

### Rainfall

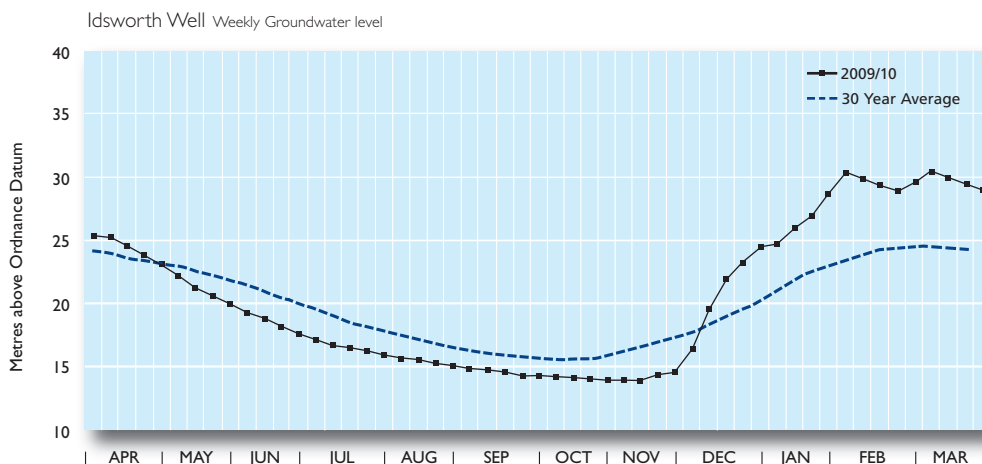
The Company has recorded rainfall at its Havant Office for over 120 years. The year's rainfall follows a two part distinctive and unusual pattern. The months of April, May, June, August, September and October have rainfall significantly less than average, whereas November, December, January, February and March experience significantly greater than average rainfall. The total rainfall was 889mm compared with the 30 year average of 751mm.



### Groundwater Levels

The Company has monitored the groundwater level at Idsworth Well, Rowlands Castle, for many years since the well is unaffected by abstraction and is representative of groundwater conditions in the South Downs chalk. Around 85% of Portsmouth Water's abstractions are from underground sources and so groundwater levels are critical to maintaining supplies.

The greater than average rainfall in the winter and spring time has led to significant groundwater recharge and resulted in levels significantly higher than the long term average for the start of 2010.



The Lavant at Lavant Water Treatment Works

## 2 Water Supply

### Abstraction



Springs at Head Office, Havant

Abstraction from the Company's various sources in 2009/10 was as shown in the table below:-

| Source              | Type            | Licenced Annual Abstraction (Million Litres) | Actual 2009/10 Abstraction (Million Litres) |
|---------------------|-----------------|--|---|
| Northbrook          | Boreholes }     | 7487   | 4892  |
| Lower Upham         | Borehole }      |  | 0   |
| West Street         | Boreholes       | 3327   | 3176  |
| West Meon           | Boreholes       | 160  | 15  |
| River Itchen        | River           | 16636  | 8880  |
| Maindell            | Wells & Adits   | 2491   | 3   |
| Soberton            | Wells & Adits } | 3294   | 1152  |
| Newtown             | Borehole }      |  | 3   |
| Worlds End          | Boreholes       | 8295   | 3839  |
| Lovedean            | Boreholes       | 4148   | 1599  |
| Havant & Bedhampton | Springs         | 42732  | 17186                                       |
| Walderton           | Boreholes       | 9955   | 7760  |
| Woodmancote         | Boreholes       | 1364   | 210   |
| Fishbourne          | Wells           | 3741   | 1470  |
| Funtington          | Wells & Adits   | 2920   | 1562  |
| Lavant              | Boreholes }     | 9950   | 5161  |
| Brickkiln           | Boreholes }     |  | 1184  |
| Eastergate          | Well/Borehole } |  | 3028  |
| Westergate          | Boreholes }     |  | 2109  |
| Slindon             | Boreholes }     | 10358  | 608   |
| Aldingbourne        | Boreholes }     |  | 2499  |
| <b>TOTALS</b>       |                 | <b>126858</b>                                | <b>66336</b>                                |

Abstraction is drawn from three groups of sources, the River Itchen Works which treats surface water, boreholes and wells which abstract groundwater from the underground chalk and Farlington Water Treatment Works which treats spring water from Havant & Bedhampton.

The Company's largest source utilises water from a group of natural springs at Havant & Bedhampton. Water from the springs is treated at Farlington Water Treatment Works and provides up to 40% of the Company's requirements.

The nature of the chalk aquifer of the South Downs ensures that at many sites high quality water is produced which requires only minimal treatment.

### Service Reservoirs



Water mains alterations at Shedfield Reservoir

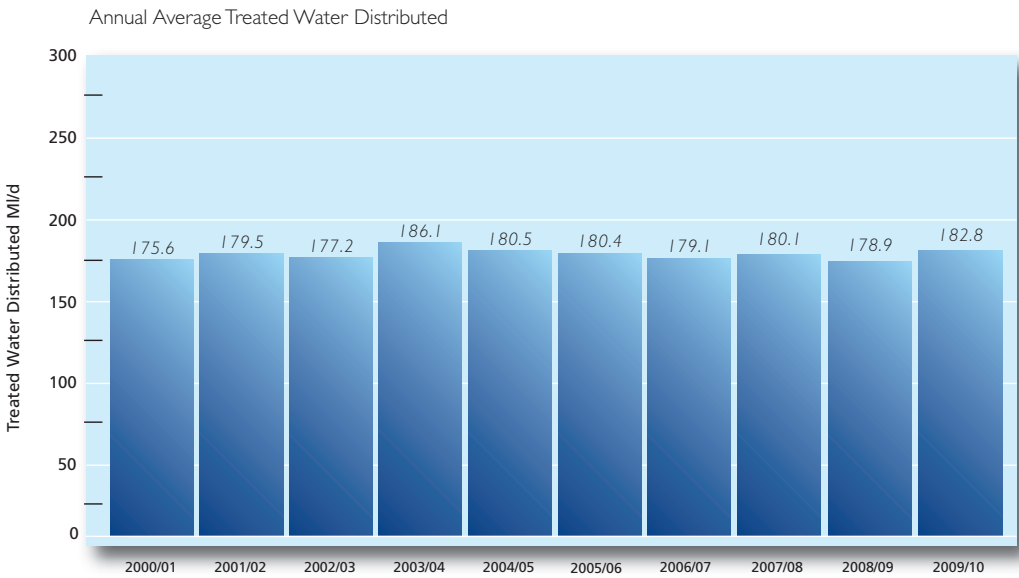
Short term local storage of treated water is provided in underground service reservoirs. Most are enclosed reinforced concrete structures. Their functions are to economise on pumping by evening out daily peaks and troughs in demand and to provide a consistent pressure in the distribution system. In addition, they provide security of supply in the event of plant, power or source failure.

| Service Reservoir Site | Number of Reservoirs | Capacity (Million Litres) | Top Water Level (Metres above Ordnance Datum) |
|------------------------|----------------------|---------------------------|---|
| Appledown              | 1                    | 2.10                      | 173.97  |
| Canada                 | 1                    | 0.10                      | 155.45  |
| Catherington           | 1                    | 5.00                      | 133.30  |
| Clanfield              | 2                    | 14.54                     | 161.54  |
| Farlington             | 5                    | 173.24                    | 44.64   |
| Fir Down               | 2                    | 5.91                      | 140.51  |
| Fort Southwick         | 1                    | 4.54                      | 124.66  |
| George                 | 1                    | 8.78                      | 87.88   |
| Highdown               | 1                    | 3.00                      | 129.27  |
| Hoads Hill             | 3                    | 71.38                     | 59.44   |
| Lavant                 | 3                    | 57.24                     | 70.83   |
| Littleheath            | 2                    | 31.84                     | 51.82   |
| Nelson                 | 1                    | 44.66                     | 90.00   |
| Racton                 | 2                    | 33.62                     | 67.06   |
| Shedfield              | 1                    | 16.06                     | 80.56   |
| Street End             | 2                    | 5.29                      | 117.65  |
| West Meon              | 2                    | 1.11                      | 151.28  |
| Whiteways Lodge        | 1                    | 4.8                       | 114.00  |
| <b>TOTAL</b>           | <b>32</b>            | <b>483.21</b>             |   |

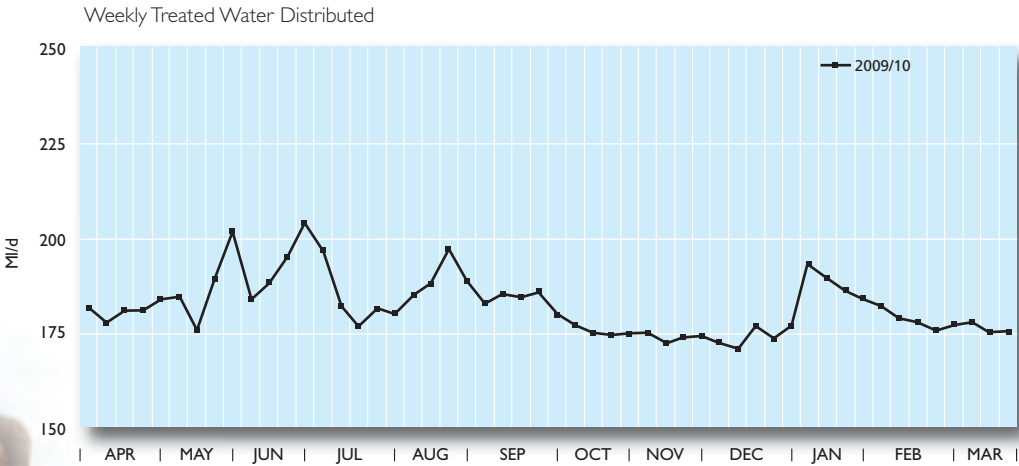


# 2 Water Supply

## Treated Water Distributed



The annual average treated water distributed rose slightly from 178.9 million litres per day (Ml/d) in 2008/09 to 182.8 Ml/d in 2009/10. The volume of water distributed is influenced by weather conditions which in 2008/09 were unseasonal. These figures exclude the volume provided via the bulk supply to Southern Water.



Distribution input in 2009/10 was unusually characterised by a rise in of water demand during January. The high January demand which continued into February was associated with the prolonged severe cold weather which resulted in a high number of burst water mains and damage to domestic plumbing.





## 2 Water Supply

### Leakage



Detecting leak noise

Overall leakage levels for the year have fallen marginally from 30.4 MI/d in 2008/09 to 28.7 MI/d in 2009/10 following improvements in leakage control practice.

Total leakage has fallen by more than 40% compared to the 1990/91 level, largely due to:-

- the determined efforts of leakage detection and repair staff utilising new technologies to improve detection
- the Company's continued drive to replace old corroded water mains and services
- the introduction and enhancement of pressure control to reduce excessive pressures in mains and services

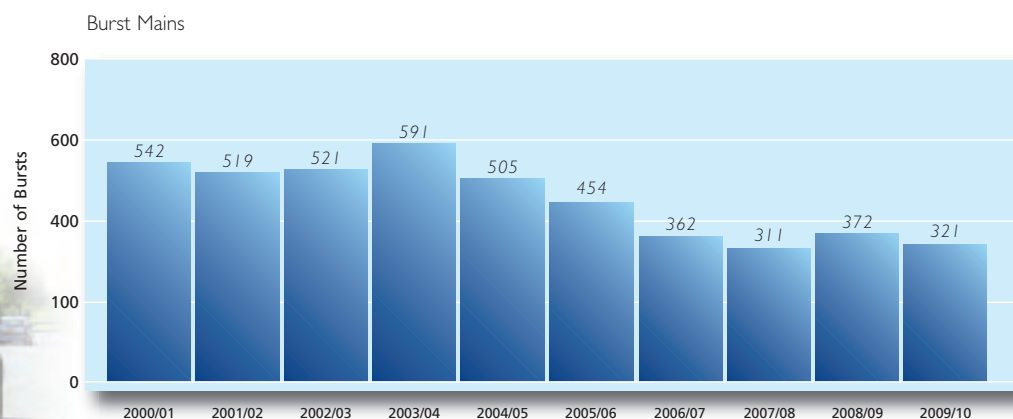
The Company will continue to make reductions in leakage where they are shown to be economic.



### Burst Mains

The number of burst mains experienced in 2009/10 was 321, compared to 372 that occurred in 2008/09. The majority of the bursts occurred on 3"-6" cast iron mains and were generally associated with the swelling and shrinking of clay due to changes in soil moisture and temperature. This was particularly evident in January 2010 when bursts increased from 50 to 84 due to the unusually severe weather experienced in the south of England. The sudden increase in bursts demonstrates that despite a programme of mains renewals, the network continues to deteriorate and it is vital that the Company continues to invest in mains renewals at the appropriate rate.

Installing leak location sensors



# 2 Water Supply

## Water Consumption

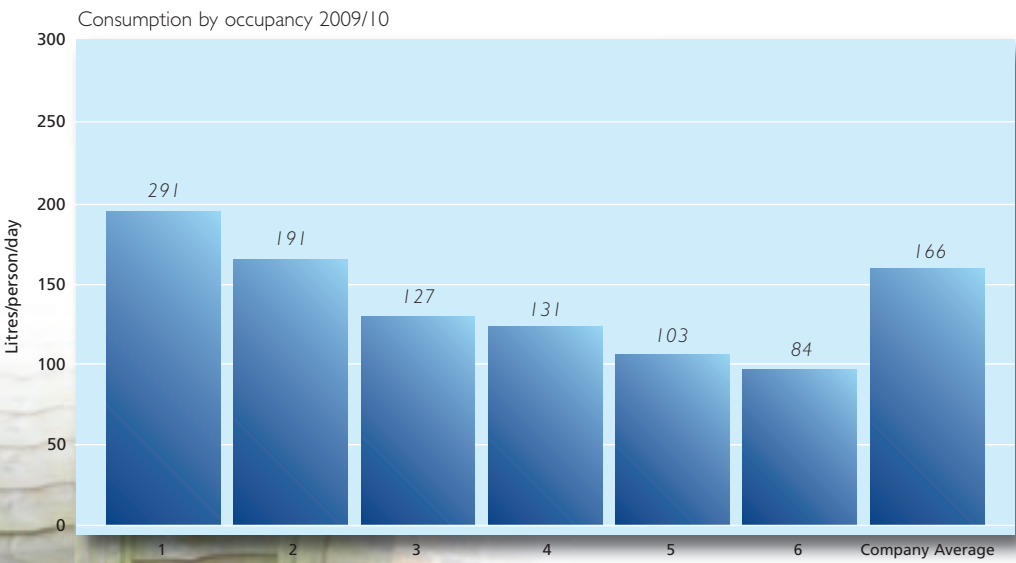


It is very important to have a reliable and sound means of determining the average water consumption for each person living in households in the Company's area of supply. This is a fundamental measure that helps to explain how water is used and also forms a basis on which to forecast future demand for water:

In the Company's supply area, there are some 479 householders who have a meter fitted to their property to measure water consumption, but who pay their water bill on an unmeasured basis. From a questionnaire provided to each householder, the Company is given information about the type of house, the number of occupants and the water appliances installed.

The Company collects water consumption data and the consumption by occupancy results for 2009/10 are presented in the graph below. The consumption figures include all water use in the property, including drinking, washing and garden watering.

The graph shows the substantial differences in personal water consumption according to the number of occupants in a property. Single person households in this year's survey used 291 litres per day, while each person in a household of six occupants used 84 litres per day. The Company average was 166 litres per person per day. For occupancies between one and six, per person consumption decreased as occupancy rate increased. The reason for these differences is primarily that domestic appliances such as washing machines in high occupancy households are used on full loads, whereas in single person households they tend to be used on part-loads.





## 2 Water Supply

In addition, garden watering is, of course, divided among the greater number of occupants and has more significant impact on personal consumption as occupancy falls.

These differences have very important implications for future water use because the number of single person households has increased in recent years and is likely to continue to do so, as more people choose to live alone for personal or social reasons as well as a rising divorce rate. With this will come increased water consumption and abstraction, adding to pressures on the environment.

This key factor adds more weight to the need for water efficiency in households to be addressed by the Government through planning and building regulations and statutory design standards for water using appliances.

### Water Efficiency

It is important that water is used wisely and efficiently to ensure that no adverse effects on the environment result from unnecessary abstraction. A number of initiatives were carried out during the year which are believed to have delivered a total saving of 0.18 Ml/d. The activities undertaken are described below. It remains the Company's view that, despite these initiatives, significant savings from water efficiency will not occur unless regulations for the planning and design of new houses are modified to make water efficiency a statutory obligation upon housing developers and manufacturers of water-using appliances such as, washing machines and dishwashers.

The Company intends to make greater use of its website to promote water efficient products and behaviour to increase water efficiency.

In 2009/10 approximately 11,800 'save-a-flush' bags were issued to individual customers, councils and schools. These simple devices comprise perforated bags containing a gel which, when the bag is placed in a toilet cistern, absorbs water and expands to a volume of 1 litre and then at each flush, 1 litre of water is saved. With 6,220 devices installed to date, a saving of 0.07 Ml/d has been achieved.



'Save-a-flush' bags





## 2 Water Supply

### Measured Customers

In 2009/10 a total of 5,362 meter optants received a 'Saving Water at Home' information pamphlet as part of their start-up pack. This ensures that the customers most likely to financially benefit from water efficiency are reminded of the advantages of saving water.

### Free Supply Pipe Replacement

When leaks are identified on a supply pipe, the customer is offered a number of options. One is for the leak to be repaired free of charge by Portsmouth Water. Another is to engage a Contractor to repair or replace the entire supply pipe at their cost. The Company has undertaken 326 free repairs or replacements this year which is believed to have saved 0.09 Ml/d. Where the customer arranges for replacement of the supply pipe under their home insurance, the Company pays the insurance excess, making replacement more economical. In 2009/10 207 customers took advantage of this offer which is believed to have saved 0.06 Ml/d.

### Water Audits

In 2009/10 a total of 7,862 Self Audit packs were issued to customers encouraging them to consider how they may save water. The packs provide information on water saving techniques and equipment together with additional information sources.

### Water Regulations Inspections

When Water Regulation Advisers visit commercial premises, their primary task is to ensure that the water supply cannot be contaminated. If they see examples of waste, such as dripping taps or overflows, they recommend improvements and provide a copy of our Self Audit leaflet. A total of 249 audits were completed in 2009/10. The Advisers do not conduct a separate water audit unless specifically requested, as many larger organisations have already carried out these for themselves. In the past non-household demand has fallen, partly because the economic situation has driven companies to be more efficient in their use of water.





## 2 Water Supply



### Other Initiatives

Portsmouth Water uses local radio and newspaper interviews to spread the water efficiency message whenever possible. This is also the case with talks to local groups and societies and for school visits. Portsmouth Water welcomes parties to its River Itchen Water Treatment Works.

In other water efficiency initiatives Portsmouth Water has:-

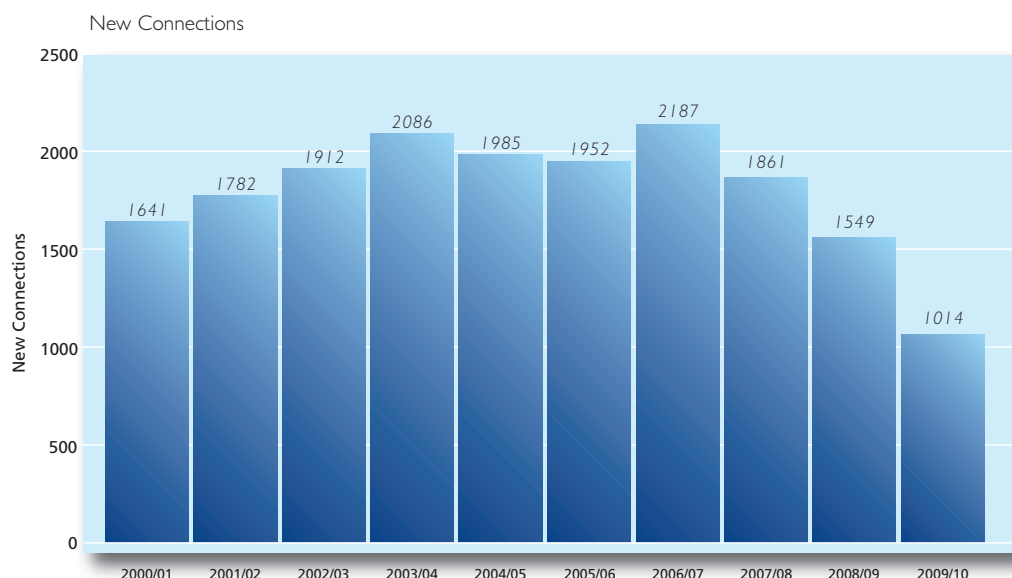
- a) Worked with Hampshire County Council and the George Staunton Country Park to produce education facilities for schools and colleges. This will link in with further work on Havant Thicket Winter Storage Reservoir which will be located nearby.
- b) Worked with Hampshire County Council on the Water Festival at Staunton Country Park, Havant.
- c) Continued to monitor domestic consumption using a control group of 479 households.
- d) Continued to study the affects of water efficient toilets and showers.
- e) Supported the Government's "Envirowise" organisation and provided their website address on the "Saving Water in Your Business" leaflet.
- f) Supported the UK Water Industry's "Waterwise" initiative.



### 3 Capital Works Improvements

#### New Connections

There were 1,014 new connections to our mains in 2009/10. The graph below illustrates that this activity is lower than normal due to the general economic downturn.



#### Nitrate Reduction



Work was completed in February 2010 on a scheme to reduce the concentration of nitrate in water supplied to customers from our Northbrook Water Treatment Works at Bishop's Waltham, Hampshire. On occasions in the past, the nitrate content at Northbrook has risen to a level close to the concentration permitted by the Water Supply (Water Quality) Regulations. The scheme involved laying an 11 kilometre long pipeline to enable water from Northbrook to be pumped direct to service reservoirs at Hoads Hill, Wickham. Here the water is blended with treated water from other sources with lower nitrate content.

A similar scheme to reduce the concentration of nitrate supplied to customers from our Maindell Water Treatment Works in Hampshire was completed in March 2010. The scheme involved the novel "No Dig" technique of inserting plastic water mains into old abandoned water mains for a length of approximately 3.5km, thereby minimising traffic disruption on the busy A32 trunk road as well as providing a rapid and cost effective method of mains laying. As in the Northbrook scheme water is pumped to service reservoirs at Hoads Hill, Wickham for blending.

These two nitrate blending schemes conclude the Company's AMP4 water quality improvement schemes and will ensure safe high quality water is delivered to our customers for the foreseeable future.

#### Borehole Remedials and Improvements

The Company operates 22 water abstraction sources and in 2008 as part of its maintenance programme it completed a programme of CCTV surveys of boreholes. As a result of the surveys, a scheme to replace a borehole at Lavant Water Treatment Works and to reline three boreholes at Walderton and two at Woodmancote Water Treatment Works began. Borehole drilling and refurbishment is relatively specialised and the contract was therefore awarded in March 2009 to G. Stow plc. The work is now substantially complete.





## 3 capital Works Improvements

### Security Improvements

The Government Department for Environment Food and Rural Affairs (DEFRA) has issued advice notes to the Water Industry providing guidance upon securing assets associated with the abstraction, treatment and distribution of water to customers. During the year the Company substantially completed security enhancement of operational assets in accordance with DEFRA's advice, which concludes a five year programme of approved improvements.

### Local Mains and Services Renewals

During the year the Company replaced 23.67km of mains and associated service pipes throughout its area. The work is necessary owing to the structural deterioration and increased burst frequency that results in some parts of the Company's area of supply. In such areas, where old iron mains are laid in clay soils, water mains are prone to bursting either as a result of ground movement or corrosion.

During the year the Company was requested by Brockhampton Holdings to divert a number of 24" and 36" water mains which ran through a field in Ranelagh Road, Havant, Hampshire, in order that Brockhampton Holdings could sell the land for housing development. Due to the complexity of the works the Company took the opportunity to renew the associated mains some of which dated back to 1878. The scheme consisted of excavating trenches up to five metres deep, many in congested locations. Undertaking the work in the public highway, and in an area where there are major springs, added to the complications of the scheme which necessitated tunnelling part of the works for a short distance. The project turned out to be one of the most complex schemes undertaken in recent years and as a consequence disrupted local residents for a longer than anticipated period.

### Service Reservoir Maintenance

Service reservoirs are utilised to balance fluctuating demand from the distribution network, delivering water to customers, against available output from water sources together with providing a safeguard for continuous supplies should there be any breakdown at the source or distribution system. Their structural integrity is of paramount importance to maintain water quality. In 2009/10 a two year programme of reservoir maintenance was completed consisting of replacing roof waterproofing membranes and flexible joint seals in the structural concrete elements of the reservoirs.



### Water Treatment Works and Pumping Station Maintenance

In 2009/10 the Company continued a rolling programme of maintaining these critical assets replacing unreliable or failing mechanical plant, electrical equipment, instrumentation control and automation elements. The work ensures continuous safe supplies are maintained to our customers.





### 3 capital Works Improvements

#### Havant Thicket Winter Storage Reservoir

Despite efforts to manage future demand for water, our current projections show that a new resource will be required in the future. The Company has a "twin-track" approach to balancing supply with demand, an approach in which new resources are developed whilst water efficiency measures are also put in place. Work undertaken to date has indicated that the lowest cost and most sustainable solution is to build a winter storage reservoir on open grazing land between Rowlands Castle and Warren Park, known as Havant Thicket. Further work is being undertaken to review demand management options and this will help clarify the need for and timescales for provision of new water resources.

The reservoir will provide a facility to store surplus winter water from the Havant & Bedhampton Springs to help meet the shortfall in supply during dry years. Once complete it would hold more than 8,000 million litres of water. The reservoir will be approximately 1 mile (1.6km) from east to west and 0.5 miles (0.8km) from north to south. As well as providing a substantial new water resource to meet growing demand, the project offers a number of exciting opportunities for creating new freshwater habitats, education facilities and recreation opportunities, such as walking, cycling, horse riding, birdwatching and fishing.

Work on the project during 2009/10 has been focused on preparing the documents necessary to support a planning application and on consultation with the statutory consultees. A summary of the project activity over the past year is provided below.

A Havant Thicket Winter Storage Reservoir Stakeholder Group was established in 2004 and is chaired by Portsmouth Water. The group is comprised of local community representatives (including councillors), local authorities, the Environment Agency, wildlife organisations, the Consumer Council for Water, Staunton Country Park and the Forestry Commission.

The role of the Stakeholder Group is to ensure that all relevant issues are identified and addressed at each stage of the scheme, provide input and advice on the scope of various studies, give feedback on report outcomes, as well as ensuring that the views of the community and organisations represented are taken into account as far as possible as the scheme evolves.

Two meetings of the group were held during 2009/10.

The Company has continued to promote and consult with the community and has undertaken the following activities to develop this approach:

- Erection of Information Display Boards around the site of the proposed reservoir.
- Creation of enhanced website dedicated to the Havant Thicket Winter Storage Reservoir.
- Promotion of reservoir at local community groups throughout the year.
- Held workshop with local schools.
- Established principle of shared teaching resources for local schools.
- Published news articles in local community magazines.
- Hosted site visits for organisations including Consumer Council for Water, Ofwat Board Members and Natural England.



### 3 capital Works Improvements

#### Planning Strategy

Further meetings have taken place with the Local Planning Authorities (LPA) and statutory consultees to discuss the draft strategy, and in particular issues related to the visibility, landscape and heritage assessment. The Planning Strategy has been updated to reflect the outcome of these meetings.

#### Environmental Impact

Feedback was received from the statutory consultees and a number of other interested parties on the EIA Scoping Report which was submitted to the LPAs in January 2009. An appropriate assessment is required to determine whether there could be any potential indirect impacts from the reservoir on Langstone and Chichester Harbours, because they are European designated sites.

#### Engineering

Work to progress the outline design of the reservoir embankment and other auxiliary structures such as the spillway design are ongoing. Work has also been progressing to identify the preferred route for the pipeline from the Bedhampton Pumping Station site to the reservoir.

#### Traffic studies

Further traffic surveys were completed in order to inform the Traffic Assessments on key roads and at major junctions during June 2009. These assessed the volume of traffic each day over a week, as well as monitoring queue lengths at junctions during the busy evening rush hour and included an analysis of road traffic accident reports.

#### Ecology

A detailed woodland vegetation survey was completed for woodland blocks both on and around the perimeter of the reservoir site. The summer 2009 bat survey work was extended to include woodland blocks within 3km of the reservoir site, following a request from Natural England. This has provided additional valuable information to enable the significance of the bat population in the vicinity of the reservoir to be better understood before submitting a planning application. The findings from the ecological surveys are being used to inform the mitigation strategy for the site. Meetings have taken place with the Forestry Commission who own the adjacent Havant Thicket woodland to discuss partnership working in relation to woodland and habitat mitigation.

#### Water quality

The monthly stream water quality monitoring programme continued throughout 2009/10. This information was used to test and calibrate the water quality model developed to assess any change in water quality which will result from the development of the reservoir. The monitoring has shown that water quality in the streams through Leigh Park is currently quite poor and the modelling has indicated that water from the reservoir will help to improve water quality in the streams.

#### Flow monitoring

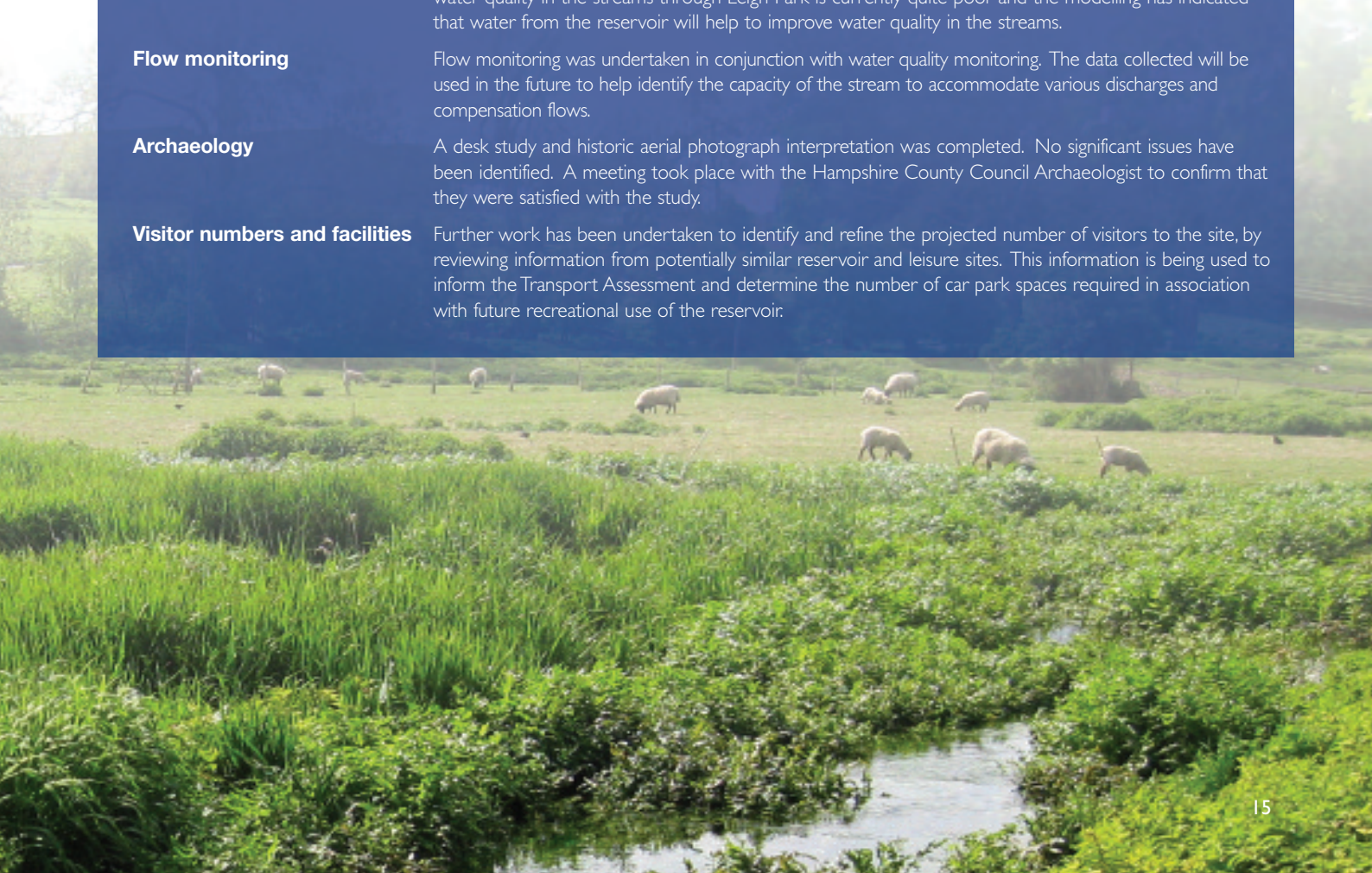
Flow monitoring was undertaken in conjunction with water quality monitoring. The data collected will be used in the future to help identify the capacity of the stream to accommodate various discharges and compensation flows.

#### Archaeology

A desk study and historic aerial photograph interpretation was completed. No significant issues have been identified. A meeting took place with the Hampshire County Council Archaeologist to confirm that they were satisfied with the study.

#### Visitor numbers and facilities

Further work has been undertaken to identify and refine the projected number of visitors to the site, by reviewing information from potentially similar reservoir and leisure sites. This information is being used to inform the Transport Assessment and determine the number of car park spaces required in association with future recreational use of the reservoir.





## 4 Annual Report on Conservation, Recreation and Access

### Conservation and Environmental Policy

The Company's total licensed area of supply covers 868 square kilometres of an attractive part of Southern England between the South Downs and the coastal areas of Hampshire and West Sussex. It includes the historic cities of Portsmouth and Chichester; and the popular holiday resorts of Bognor Regis, Selsey and Hayling Island. The harbours of Portsmouth, Langstone, Chichester and Pagham have a number of important environmental designations under the EU Habitats Directive and are popular water activity venues.

Portsmouth Water is committed to meeting the highest standards of public water supply. As we rely upon the natural water environment to provide our raw resources, our commitment embraces the care of the environment as a prime objective.

Our environmental policy may be summarised as:-

- We are committed to meeting our statutory responsibilities to the environment.
- We aim to foster biodiversity and achieve favourable ecological conditions for all Sites of Special Scientific Interest (SSSIs) on our landholdings on our landholdings.
- We aim to maintain our contribution to greenhouse gas emissions at a practicable minimum.
- We will continue to incorporate social and environmental impacts into our decision making process.
- We will continue to promote and support river basin-wide approaches to improving water quality.
- We will continue to promote and support the efficient use of water;
- We will minimise our impact on the local landscape with careful design of new plant and buildings.



Great Spotted Wood Pecker  
© R.Levett

### Biodiversity at Portsmouth Water Sites

Portsmouth Water owns and manages 44 operational sites including 21 Treatment Works and a number of reservoir sites providing rich habitat for a variety of wildlife. Many of these sites have areas within them that have been identified as Sites of Importance for Nature Conservation (SINCs) and part of the Company's landholdings at the River Itchen Source Works fall within an area notified as a Site of Special Scientific Interest (SSSI). The Company has begun a review of its Biodiversity Action Plan to appraise designations across Company landholdings. This will enable activities to enhance biodiversity to be identified that are most inline with the conservation objective of that area. This builds upon a number of past initiatives to enhance biodiversity at Portsmouth Water's operational sites.

### Carbon Reduction Strategy

The drive to stabilise and reduce global greenhouse gas emissions to ensure the long term viability of our way of living is an issue of national and international importance. Portsmouth Water recognises the need to address carbon emissions within their business and has developed a Carbon Management Plan. During 2009/10 the Company undertook preparations for the CRC Energy Efficiency Scheme, beginning in April 2010, and to make improvements to emissions monitoring and recording across Company activities. The Company also joined the Government's Cycle To Work Scheme and launched the scheme to employees.

### Sustainable Water Resources

During 2009/10 Portsmouth Water agreed a number of licence variations that affect abstraction sources across Hampshire and West Sussex, in order to protect the ecology in the area. These include:

#### • Sussex Sources

The Company has agreed a 15% reduction in the group total for the West Sussex sources, as well as a limit to the weekly abstraction at Fishbourne during the summer months.

#### • Havant and Bedhampton

A licence amendment was also made at the Havant & Bedhampton Springs which commits the Company to maintaining a minimum "hands off" flow in the Hampshire, Lavant and the Hermitage Stream. This will ensure that freshwater flows are maintained to Langstone Harbour where they may support key species in the mudflats which provide a food source for visiting birds.

## 4 Annual Report on Conservation, Recreation and Access

### • Gaters Mill

Protracted discussions were held in 2009 with Southern Water, Environment Agency, NE and Ofwat as licence variations were also proposed for Southern Water's Otterbourne abstraction. As a result a Memorandum of Understanding was agreed between Portsmouth Water, Southern Water and the Environment Agency which has allowed for further investigation of a solution to be considered during the next five years.

### • Other Hampshire Sources

The Company has approved the preparation of a Scoping Study by consultants which we expect will identify the work needed to conduct the necessary monitoring of the coastal areas which will inform the Environment Agency's long-term decision on these licences. We anticipate dialogue with the Environment Agency and Natural England to confirm the scope of the work.

### Havant Thicket Winter Storage Reservoir

Construction of a winter storage reservoir at Havant Thicket is part of the Company's "twin track" approach of both demand management and resource development measures which over the long term will continue to maintain supplies, whilst minimising costs and charges to customers.

The planning application for a new reservoir will need to be accompanied by an Environmental Impact Assessment. A key part of that assessment will be to identify the impacts on habitats and wildlife. Extensive ecological survey work has been completed on, and adjacent to the site between 2005 and 2009. In 2009 the woodland vegetation survey and bat surveys were completed. Notable species found in and around the proposed site include dormice, many species of bat, adder, slow worms and lizards, together with many birds.

Plans for the reservoir include habitat enhancements to adjacent woodland, creation of a new native woodland corridor between the existing woodland areas to the north and south of the site and seeding the new embankment with wild flowers. The Company plans to create a wetland along the northern shore of the reservoir to ensure that there will be a net increase in biodiversity. A structure will be provided 'offshore' to retain the water in the wetland at times when the reservoir is drawn down.

This will be a very sustainable project as most of the material needed to build the reservoir, will be derived from the site, as the site is underlain by clay. This will minimise the need for importation of materials from elsewhere. No new abstraction licence is required since surplus water from Havant & Bedhampton Springs will be captured before it discharges into the harbours and stored in the reservoir. Climate change is predicted to create wetter winters and drier summers. The reservoir will enable the Company to capture excess winter yield from the springs and store it for use in dry summers. Water from the reservoir will flow by gravity to the existing Bedhampton Pumping Station, minimising the carbon impact as there is no need for pumping.

The project offers a number of exciting opportunities for creating new habitats, education facilities and recreation opportunities, such as walking, cycling, horse riding, bird watching and fishing.

### Sustainable Procurement

In procuring goods and services, the Company's procedures and practices include the following:-

- The environmental impact of new capital schemes are investigated as appropriate and sensitive sites are either avoided or mitigation measures carried out, subject to independent ecological advice.
- New capital schemes are designed and constructed so as to blend with their existing surroundings as far as is economic and practicable.
- Opportunities for environmental enhancement are taken where it is economic and practicable to do so.
- The potential archaeological impact of new capital schemes is investigated prior to commencement of work and monitored during implementation, subject to independent advice.
- Whole life costs are considered when purchasing goods and services including environmental and carbon impact.
- Recycling or re-use of excavated materials is carried out whenever economic and practicable.
- All vehicles used have diesel engines with Euro IV reduced emissions.
- Low sulphur diesel fuel is used which benefits exhaust emissions.
- Material suppliers must demonstrate sustainable practices including environmental carbon impacts.
- Timber used is from replanted forests.
- The Company minimises waste wherever practicable and operates recycling schemes as part of daily operations.



## 4 Annual Report on Conservation, Recreation and Access

### Amenities and Recreation

**Staunton Country Park**, in conjunction with Portsmouth Water, launched a "Water is Life" trail for visitors as part of the education programme. The trail continues to attract large numbers of visitors and is reported to be successful by Staunton Country Park.

The water trail can either be guided or self-guided and is designed to help educate children and parents visiting the Park about the importance of water as a resource and encourage them to be more water efficient. The trail takes the form of a walk within the Park searching for water information boards.

The "Water is Life" education programme gives school children of all ages the opportunity to learn about the world of water by completing practical tasks using resources supplied by Portsmouth Water. The Company provides children at Key Stage 2 and 3 with water "information boxes" containing a number of hands-on experiments and activity sheets to assist the process of learning about the importance of water.

**Havant Thicket (Staunton) and Highwood Reservoir (Itchen Valley)** are both situated in Country Parks which are open to the general public and managed by Local Authorities. At other sites there is limited access by public footpaths and bridleways.

**At the Clanfield Service Reservoirs** site, The Hampshire Astronomical Society has for many years operated a number of observatories for the benefit of its members. Small groups of members of the public are able to visit by prior arrangement with the Society.

Portsmouth Water's **River Itchen Water Treatment Works** is available for educational visits by schools, universities and other organised groups.

View from The Terrace at Staunton Country Park towards the site of the proposed Havant Thicket Winter Storage Reservoir





Marbled White Butterfly © R.Levett



## 5 Annual Water Quality Report 2009

Water quality regulations are in place to ensure that public water supplies are safe to drink.

- There are 58 standards in the Water Supply (Water Quality) Regulations 2000 covering microbiological, chemical and physical parameters.
- Standards apply at customers' taps.
- Additional standards apply at treatment works and reservoirs.
- Supply areas are divided into zones serving not more than 100,000 people from single or very similar sources.
- Water quality information is recorded by supply zone of which Portsmouth Water has 13.
- Relaxations, temporary or permanent, may be granted by the Secretary of State but not for parameters considered to have implications for health.
- Where it is evident that a standard is infringed regularly, remedial work must be put in hand to rectify the situation, usually by means of an Undertaking.
- Results of compliance analyses must be kept on a public register available to all members of the public.
- The results of all compliance analyses are supplied monthly to the Drinking Water Inspectorate (DWI).
- The Chief Inspector of the DWI produces an Annual Report containing a section on each company.
- Local authorities must be satisfied with the sufficiency and wholesomeness of water supplies.
- Local authorities have an independent public health role.

99.99%

met the prescribed standards



### Water Quality Standards

In 2009 Portsmouth Water carried out a total of 18,107 determinations against the 1998 European Drinking Water Directive parameters and additional UK national parameters in samples taken at our treatment works, service reservoirs and customers' taps in Supply Zones. Of these 99.99% (99.98% in 2008) met the prescribed standards. There was one solitary physical and chemical quality failure which was investigated in order to identify any cause.

| Directive & National Parameters | No. of Tests | No. of Failures | % Meeting the Standards |
|---------------------------------|--------------|-----------------|-------------------------|
| Treatment Works                 | 4565         | 0               | 100                     |
| Service Reservoirs              | 2973         | 0               | 100                     |
| Supply Zones                    | 10569        | 1               | 99.99                   |
| <b>Total</b>                    | <b>18107</b> | <b>1</b>        | <b>99.99</b>            |

The Water Supply (Water Quality) Regulations 2000 require the Company to report against indicator parameters as well as directive and national parameters. Our performance against all parameters is outlined in the Summary of Monitoring Results.



# 5 Annual Water Quality Report 2009

## Microbiological Quality

100%

of samples from treatment works and reservoirs complied with the regulations

The microbiological standards for drinking water are based upon analyses for the presence of coliforms, a highly ubiquitous group of bacteria which are normally not pathogenic and which make excellent indicator organisms. Because they occur so widely in the natural environment and are extremely sensitive to modern detection methods, there are occasional spurious results often due to the difficulty in achieving a thorough sterilisation of some taps used for sampling. All positive results are separately investigated to identify any cause, as well as the need for any remedial works, to ensure the integrity of the supply.

**For all Treatment Works** 100% of the samples were compliant with the microbiological standards with none of them containing coliform bacteria.

**For all the Company's Service Reservoirs** as for treatment works 100% of the samples were clear of coliform bacteria.

**Of the samples taken from customers' taps** in Supply Zones, 99.77% met the coliform standard. There were four exceedences of the coliform indicator value from customers' taps. Each failure was thoroughly investigated with the customers' taps being identified as the source of the contamination in all four cases.



## Cryptosporidium monitoring

During 2009 a total of 353 compliance samples were taken for cryptosporidium analysis. This number is much lower than in previous years as the membrane plants at Soberton and Fishbourne have been commissioned and this reduces the need for daily monitoring at these works.

One sample from Maindell WTW had 0.015 oocysts per 10 litres present; the investigation proved that no follow-up action was necessary.

## Physical and Chemical Quality

In 2009 13,835 analyses were carried out on such samples and of these

99.99%

met the standards or specification

All the samples taken from customers' taps in zones for physical and chemical analysis required by the compliance monitoring programme are randomly selected by a computer programme. Physico-chemical analysis consists of Directive, National and Indicator determinands. In 2009, 13,835 analyses were carried out on such samples and of these 99.99% (one failure) met the standards or specifications.

When a result exceeds the standard, indicator value or specification, a resample is taken as soon as possible after the result is known. All exceedences initiate an investigation into the cause and, where appropriate, action is taken to remedy the situation. In some instances remedial work may be of a longer term nature and will need to be planned and budgeted. In such cases the Company will enter into a formal Undertaking agreed with the Secretary of State by which the remedial work is carried out to an agreed timetable.

Explanation of the physical and chemical quality failure that occurred in 2009 is as follows:

### Lead

There was one exceedence of the standard for lead of 25 µg/l at a level of 231.6 µg/l. An internal inspection of this property revealed no presence of lead plumbing and further samples from the property were well below the lead standard. The cause of the failure remains unexplained.

# 5 Annual Water Quality Report 2009

## Other Quality Issues

### New Water Mains, Repairs and Connections

All new water mains are tested for leaks before being sterilised. Following sterilisation, microbiological samples from each hydrant are examined in the Company's Laboratory and only if these are satisfactory is the new main commissioned. In the event of a failure the main is not assigned to service until a further three samples (taken on separate days) are shown to be clear and receive Laboratory approval.

Whenever the inside of a water main is exposed to the outside elements for any reason, it is disinfected and a water sample is sent to the Laboratory for microbiological analysis. As with new mains, one sample containing coliforms requires a further three consecutive, clear samples before receiving Laboratory approval.

### Public Register

A record of all compliance sample results over the previous five years can be inspected during normal working hours in the public register, which is situated at the Company's Head Office in Havant. Customers can obtain water quality information for their water supply zone from the register, without charge, by contacting the Water Quality Department or by visiting the Company's website.

### Enquiries and Complaints

Enquiries and complaints concerning water quality are handled by the Water Quality Department in the first instance. If a visit or samples are required, an appointment will be made for a staff member to call. If the situation requires immediate action, such as discoloured water, an Inspector will be sent the same day. Staff will take water samples, usually from the kitchen tap. In all cases the Company will provide the customer with written information concerning the laboratory analysis, along with any findings.

Portsmouth Water also has a policy of providing free analysis with a written report to all customers who are concerned about lead levels.

### Raw Water Monitoring, Drinking Water Safety Plans and Catchment Management

The 2007 Amendment Regulations implemented a Water Safety Plan approach in drinking water law, two principal regulations provide statutory guidance as outlined below:-

#### Regulation 27

- Requirement for the water supplier to complete a comprehensive risk assessment of each of its treatment works and connected supply system used for public water supply
- The water supplier to identify whether there is a significant risk of supplying water that would constitute a potential danger to human health

#### Regulation 28

- Requirement for the water supplier to submit a report of the assessments
- Provisions for regulator to act on adequacy of risk assessment and controls

As a consequence of the Regulations the Company continued in 2009/10 operating a Water Safety Plan covering all identifiable risks from source to tap known as the Drinking Water Safety Plan (DWSP). The Plan has been audited by the Drinking Water Inspectorate.

2009 saw the launch of the Downs & Harbours Clean Water Partnership, a forward thinking initiative formed by Portsmouth Water, Natural England, and the Environment Agency. The unique Partnership has been set up to tackle diffuse water pollution issues affecting the quality of ground, surface and coastal waters within the Portsmouth Water supply area.

The Clean Water Partnership's focus is on reducing inputs of nutrients, particularly nitrates, to the water environment. The project is working to:

- protect and improve the water quality of groundwater sources used for public water supply
- reduce algal growth in Portsmouth, Chichester, Langstone Harbours and River Hamble
- reduce pressures on the ecology of local rivers such as the Hamble, Meon, Wallington, Ems and Lavant.

To help achieve its goal, the Partnership is offering confidential services and support for farmers and landowners. These services include management plans for nutrients, manure and soil as well as workshops, one-to-one consultations and farm demonstrations of best management practices.



# 5 Annual Water Quality Report 2009

## Summary of Monitoring in 2009

There were no authorised departures of any standards during 2009. Columns on the following tables that are headed 1 percentile (representing a minimum) and 99 percentile (representing a maximum) contain figures for the sample results except where less than 100 samples were taken, when the figures are the actual maximum and minimum results.

## ZONES 2009

| Quality of water at consumer's tap (zones) - EUROPEAN STANDARDS |                                   |              |                  |              |               |                            |
|---|-----------------------------------|--------------|------------------|--------------|---------------|----------------------------|
| Parameter   | Prescribed Concentration or Value | No. Tests    | Tests Failed (%) | 1 percentile | 99 percentile | No. of zones with failures |
| 1,2 Dichloroethane  | 3 µg/l                            | 115          | 0                | <0.1         | <0.1          | 0                          |
| Antimony  | 5 µg Sb/l                         | 114          | 0                | <0.1         | 0.4985        | 0                          |
| Arsenic   | 10 µg As/l                        | 114          | 0                | <0.3         | 0.785         | 0                          |
| Benzene   | 1 µg/l                            | 115          | 0                | <0.03        | <0.03         | 0                          |
| Benzo (a) Pyrene  | 0.01 µg/l                         | 112          | 0                | <0.001       | 0.00474       | 0                          |
| Boron   | 1 mg B/l                          | 116          | 0                | <0.06        | <0.0932       | 0                          |
| Bromate   | 10 µg BrO <sub>3</sub> /l         | 115          | 0                | <0.5         | <0.8          | 0                          |
| Cadmium   | 5 µg Cd/l                         | 116          | 0                | <0.2         | <0.2          | 0                          |
| Chromium  | 50 µg Cr/l                        | 116          | 0                | <0.4         | 2.011         | 0                          |
| Copper  | 2 mg Cu/l                         | 116          | 0                | <0.01        | 0.16          | 0                          |
| Cyanide   | 50 µg CN/l                        | 114          | 0                | <0.7         | 2.07          | 0                          |
| E Coli  | 0 number/100 ml                   | 1,748        | 0                | 0            | 0             | 0                          |
| Enterococci   | 0 number/100 ml                   | 118          | 0                | 0            | 0             | 0                          |
| Fluoride  | 1.5 mg F/l                        | 114          | 0                | <0.02        | 0.50905       | 0                          |
| Lead  | 25 µg Pb/l                        | 117          | 1                | <0.2         | 118.768       | 1                          |
| Mercury   | 1 µg Hg/l                         | 115          | 0                | <0.04        | <0.1          | 0                          |
| Nickel  | 20 µg Ni/l                        | 116          | 0                | <0.4         | 14.143        | 0                          |
| Nitrate   | 50 mg NO <sub>3</sub> /l          | 116          | 0                | 19.1191      | 44.6372       | 0                          |
| Nitrate/Nitrite Formula   | 1 mg NO <sub>2</sub> /l           | 116          | 0                | 0.381574     | 0.892657      | 0                          |
| Nitrite (Consumers tap)   | 0.5 mg NO <sub>2</sub> /l         | 117          | 0                | <0.005       | 0.021196      | 0                          |
| Pesticides - Total Substances                                   | 0.5 µg/l                          | 113          | 0                | 0            | 0.11202       | 0                          |
| Pesticides (Individual)   | 0.1 µg/l                          | 3,503        | 0                | <0.01        | <0.024        | 0                          |
| Polycyclic aromatic hydrocarbons                                | 0.1 µg/l                          | 112          | 0                | 0            | 0.02322       | 0                          |
| Selenium  | 10 µg Se/l                        | 114          | 0                | <0.3         | 4.902         | 0                          |
| Tetra/Trichloroethene   | 10 µg/l                           | 115          | 0                | 0            | 0.3924        | 0                          |
| TOTAL Trihalomethanes   | 100 µg/l                          | 115          | 0                | 1.5112       | 58.8464       | 0                          |
| <b>TOTAL</b>  |                                   | <b>8,012</b> | <b>1</b>         |              |               |                            |

| Quality of water at consumer's tap (zones) - NATIONAL STANDARDS |                                   |              |                  |              |               |                            |
|---|-----------------------------------|--------------|------------------|--------------|---------------|----------------------------|
| Parameter   | Prescribed Concentration or Value | No. Tests    | Tests Failed (%) | 1 percentile | 99 percentile | No. of zones with failures |
| Aluminium   | 200 µg Al/l                       | 361          | 0                | <4           | 43.534        | 0                          |
| Colour  | 20 mg/l Pt/Co scale               | 325          | 0                | <1           | 1.9644        | 0                          |
| Iron  | 200 µg Fe/l                       | 319          | 0                | <4           | 71.06         | 0                          |
| Manganese   | 50 µg Mn/l                        | 277          | 0                | <0.2         | 2.088         | 0                          |
| Organoleptic Odour  | 0 Dilution number                 | 284          | 0                | 0            | 0             | 0                          |
| Organoleptic Taste  | 0 Dilution number                 | 350          | 0                | 0            | 0             | 0                          |
| Sodium  | 200 mg Na/l                       | 116          | 0                | 8.0806       | 139.622       | 0                          |
| Tetrachloromethane  | 3 µg/l                            | 115          | 0                | <0.04        | 0.1768        | 0                          |
| Turbidity   | 4 NTU                             | 410          | 0                | <0.1         | 0.5112        | 0                          |
| <b>TOTAL</b>  |                                   | <b>2,557</b> | <b>0</b>         |              |               |                            |

# 5 Annual Water Quality Report 2009

## ZONES 2009 *continued*

| Quality of water at consumer's tap (zones) - ADDITIONAL MONITORING REQUIREMENTS |                                   |              |                      |              |               |
|---|-----------------------------------|--------------|----------------------|--------------|---------------|
| Parameter   | Prescribed Concentration or Value | No. Tests    | Tests exceeding spec | 1 percentile | 99 percentile |
| Ammonium (Indicator)  | 0.5 mg NH <sub>4</sub> /l         | 283          | 0                    | <0.04        | <0.04032      |
| Chloride (Indicator)  | 250 mg Cl/l                       | 117          | 0                    | 17.99        | 32.282        |
| Clostridium Perfringens (Indicator)   | 0 number/100 ml                   | 258          | 0                    | 0            | 0             |
| Coliform Bacteria (Indicator)   | 0 number/100 ml                   | 1,747        | 4                    | 0            | 0             |
| Colony Counts After 3 Days At 22°C (Indicator)                                  | No abnormal change                | 583          | 0                    | 0            | 49.32         |
| Colony Counts After 48 Hours At 37°C (Indicator)                                | No abnormal change                | 578          | 0                    | 0            | 76.18         |
| Conductivity (Indicator)  | 2500 µS/cm                        | 283          | 0                    | 417.36       | 604.84        |
| Gross Alpha Activity  | 0.1 Bq/l                          | 114          | 0                    | <0.027       | 0.0474        |
| Gross Beta Activity   | 1 Bq/l                            | 114          | 0                    | <0.042       | 0.30515       |
| Hydrogen ion (pH)   | 6.5-9.5 pH Value                  | 308          | 0                    | 7.0543       | 7.777         |
| Residual Disinfectant - Free  | No abnormal change                | 1,784        | 0                    | 0.1          | 0.42          |
| Residual Disinfectant - Total   | No abnormal change                | 1,784        | 0                    | 0.12         | 0.443         |
| Sulphate (Indicator)  | 250 mg SO <sub>4</sub> /l         | 117          | 0                    | 10.436       | 37.458        |
| Total organic carbon (indicator)  | No abnormal change                | 114          | 0                    | <0.1         | 2.52          |
| Tritium (Indicator)   | 100 Bq/l                          | 114          | 0                    | <4           | <5.765        |
| <b>TOTAL</b>  |                                   | <b>8,298</b> | <b>4</b>             |              |               |

## SERVICE RESERVOIRS - 2009

| Quality of water leaving service reservoirs - NATIONAL STANDARDS |                                   |              |                  |              |               |                           |
|--|-----------------------------------|--------------|------------------|--------------|---------------|---------------------------|
| Parameter  | Prescribed Concentration or Value | No. Tests    | Tests Failed (%) | 1 percentile | 99 percentile | No. of reservoir failures |
| Coliform Bacteria  | 0 number/100 ml                   | 1,486        | 0                | 0            | 0             | 0                         |
| E Coli   | 0 number/100 ml                   | 1,487        | 0                | 0            | 0             | 0                         |
| <b>TOTAL</b>   |                                   | <b>2,973</b> | <b>0</b>         |              |               |                           |

| Quality of water leaving service reservoirs - ADDITIONAL MONITORING REQUIREMENTS |                                   |              |                      |              |               |
|--|-----------------------------------|--------------|----------------------|--------------|---------------|
| Parameter  | Prescribed Concentration or Value | No. Tests    | Tests exceeding spec | 1 percentile | 99 percentile |
| Colony Counts After 3 Days At 22°C(Indicator)                                    | No abnormal change                | 1,488        | 0                    | 0            | 20.44         |
| Colony Counts After 48 Hours At 37°C (Indicator)                                 | No abnormal change                | 1,487        | 0                    | 0            | 4             |
| Residual Disinfectant - Free   | No abnormal change                | 1,588        | 0                    | 0.12         | 0.55          |
| Residual Disinfectant - Total  | No abnormal change                | 1,588        | 0                    | 0.15         | 0.61          |
| <b>TOTAL</b>   |                                   | <b>6,151</b> | <b>0</b>             |              |               |



# 5 Annual Water Quality Report 2009

## TREATMENT WORKS – 2009

| Quality of water leaving service treatment works - EUROPEAN STANDARDS                 |                                   |              |                      |              |               |                       |
|---|-----------------------------------|--------------|----------------------|--------------|---------------|-----------------------|
| Parameter   | Prescribed Concentration or Value | No. Tests    | Tests Failed (%)     | 1 percentile | 99 percentile | No. of works failures |
| Nitrite (Works)   | 0.1 mg NO <sub>2</sub> /l         | 215          | 0                    | <0.005       | 0.0536        | 0                     |
| <b>TOTAL</b>  |                                   | <b>215</b>   | <b>0</b>             |              |               |                       |
| Quality of water leaving service treatment works - NATIONAL STANDARDS                 |                                   |              |                      |              |               |                       |
| Parameter   | Prescribed Concentration or Value | No. Tests    | Tests Failed (%)     | 1 percentile | 99 percentile | No. of works failures |
| Coliform Bacteria   | 0 number/100 ml                   | 1,998        | 0                    | 0            | 0             | 0                     |
| Cryptosporidium   | -(n/a)                            | 353          |                      |              |               |                       |
| E Coli  | 0 number/100 ml                   | 1,999        | 0                    | 0            | 0             | 0                     |
| <b>TOTAL</b>  |                                   | <b>4,350</b> | <b>0</b>             |              |               |                       |
| Quality of water leaving service treatment works - ADDITIONAL MONITORING REQUIREMENTS |                                   |              |                      |              |               |                       |
| Parameter   | Prescribed Concentration or Value | No. Tests    | Tests exceeding spec | 1 percentile | 99 percentile |                       |
| Colony Counts After 3 Days At 22°C (Indicator)  | No abnormal change                | 1,438        | 0                    | 0            | 2             |                       |
| Colony Counts After 48 Hours At 37°C (Indicator)                                      | No abnormal change                | 1,435        | 0                    | 0            | 6             |                       |
| Residual Disinfectant - Free  | No abnormal change                | 2,109        | 0                    | 0.2          | 0.78          |                       |
| Residual Disinfectant - Total   | No abnormal change                | 2,109        | 0                    | 0.22         | 0.87          |                       |
| Turbidity (Indicator)   | 1 NTU                             | 1,432        | 0                    | <0.1         | 0.4767        |                       |
| <b>TOTAL</b>  |                                   | <b>8,523</b> | <b>0</b>             |              |               |                       |



## 6 Work in the Community, Personnel & Training, Health & Safety

### Employees

The Company employs 220 people and believes it recruits and retains suitably competent staff to meet our Regulator and customers' needs.

The Company is committed to developing its employees and provides opportunities and encouragement for them to fulfil their potential. A number of staff have undertaken Degrees, HNCs and NVQs during the year. The Company fully supports the principle of Modern Apprenticeships. All new employees within the Customer Services Department aged under 25 are employed through the Modern Apprenticeship Scheme, which leads to a minimum NVQ level 2 qualification with many going on to achieve level 3.

A key part of staff development is the Company's involvement with the Institute of Water. The Institute of Water is a professional body whose purpose is to promote the advancement of knowledge within the water industry. To this end, Area and National Committees organise meetings, seminars, technical visits and conferences, as well as a variety of social events. These activities provide a shop window for the latest technological developments in the industry and a forum for the discussion of important topics. The Company encourages its staff to belong to the Institute of Water as part of their development programme.

Staff turnover, excluding retirees was 6.8% in 2009 (2008: 8.1%), which compares favourably with the national average of 7.7% in 2009 (Source: CIPD: Annual Survey Report 2009).

### Work in the Community

#### Education

In September 2004 Portsmouth Water entered into an Educational Partnership with Staunton Country Park. This was initially for three years but was extended by a further three years ending in August 2010. It is likely a further three year extension will be agreed.

This partnership has seen the creation of a curriculum linked water themed education programme. The "Water is Life" programme covers many aspects involving water; its role in the planet, the water cycle and the treatment and supply process. A key element of water conservation underpins the whole programme. This is supported by water boxes (an educational source full of simple water related experiments), information sheets and activity instructions for teachers to use as a resource at school. The programmes are available by pre-arranged school trips and are guided with the help of the Park's education officer:

Since its launch, nearly 8,000 children have received either the complete "Water is Life" programme or elements of the programme contained within their visit.



#### Festivals and Fairs

The Company, once again, sponsored the Primary Schools Science Fair promoted by the Portsmouth and South East Hampshire Business and Education Partnership. The three-day event held within the historic Dockyard, utilising the HMS Warrior and Action Stations to house the exhibitors' stands, saw over 1,200 children from local schools visiting the exhibits. This year the Company's demonstration included an explanation of the water treatment processes and the importance of water efficiency and conservation.

#### Hampshire Water Festival

Portsmouth Water took part in the Hampshire Water Festival in July 2009 at Staunton Country Park, Hampshire, which saw over 15,000 visitors.

The Company played a large part in the overall success of the event including involvement in the organisation, production of high quality publicity materials and the use of customer bills to promote the event and activities over the weekend. The festival became a Company-wide event with employees from the whole Company displaying a commitment to ensure Portsmouth Water was promoted to its customers whilst delivering an important water efficiency message.

The Company's stand was designed to engage families and in particular young children with the objective of stressing the importance of protecting water resources and improving water efficiency.



## 6 Work in the Community, Personnel & Training, Health & Safety

### Water Bottles for Schools

#### "Be Cool, Stay Cool, Drink Tap Water at School"

The Company has continued to promote the benefits to children of drinking water and as part of our "Water for Health" initiative offered a drinking water bottle at the subsidised cost of 30p per bottle for every child in a local primary, infant and junior school.

The Water Bottles for Schools offer has gone from strength to strength with 30,000 delivered last year which has seen nearly 230,000 water bottles being delivered to local school children.

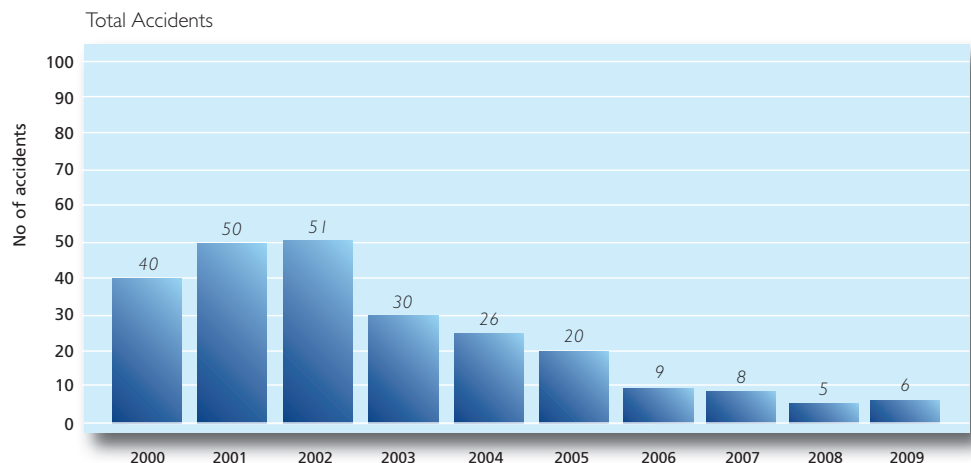
### Community Talks

Employees continue to give community talks to local schools, colleges, clubs and groups such as Age Concern, Rotary and the Women's Institute. To cope with the increasing demand a community talk team has been set up with volunteers from the Company.

### Health and Safety

The health and safety of employees is fundamental to the continued success of the business. The Company is committed to achieving high standards across its organisation. It has been a number of years since the Company embarked on a mission to improve its health and safety culture. The Company has put health and safety at the top of the agenda and from the Board down made it the highest priority. One of the key measures of success will be whether health and safety initiatives were mainly driven from the Safety Department with departments responding and supporting these initiatives. 2009 saw, via the departmental action plans, departments take on a more pro-active approach towards health and safety.

The Company has exerted considerable effort and resources into improving the awareness of health and safety. The graph of total accidents indicates a long term and continued fall in accidents providing evidence that safety improvements have been effective forming part of a "business as usual" approach and justifies the original commitment and ongoing effect by the Company managers and staff.



It is pleasing that in recent years our efforts in respect of Health & Safety have been recognised externally through the RoSPA Health & Safety Award Scheme. This year we have received a Gold Award, the fifth consecutive year recognising the initiatives and commitments of the management and staff in all areas of our business.

## 7 Company Supply Area



Portsmouth Water has been supplying water to Portsmouth and the surrounding area since 1857. The area supplied by the Company extends through South East Hampshire and West Sussex from the River Meon in the West, to the River Arun in the East, encompassing 868 square kilometres.

The Company provides high quality public water supplies to a domestic population of 655,000, as well as many important industries, large defence establishments and varied commercial businesses.

Our promise to all of our customers is "We aim to supply drinking water of the highest quality, combining high levels of customer service with excellent value for money".







## Advice and Information

### Helpful Advice

Visits to treatment works, talks and film shows can be arranged for school parties and local organisations. Our helpful staff are always available to give advice by contacting the address and telephone numbers given below:



**Portsmouth Water Ltd**  
**PO Box 8**  
**West Street**  
**Havant, Hampshire PO9 1LG**

#### Telephone Nos.

##### General Enquiries

**023 9249 9888** (8.30 am to 4.30 pm, Monday – Friday)

##### Emergency Service

**023 9247 7999** (24 hours)

##### Unmeasured Account Enquiries

**023 9249 9666** (8.30 am to 4.30 pm, Monday – Friday)

##### Measured Account Enquiries

**023 9244 9090** (8.30 am to 4.30 pm, Monday – Friday)

##### Water Quality Enquiries

**023 9244 9083** (8.30 am to 4.30 pm, Monday – Friday)

##### Freephone Leakline

**0800 434 6104** (24 hours)

#### Facsimile

**023 9245 3632**

#### Website

**[www.portsmouthwater.co.uk](http://www.portsmouthwater.co.uk)**

#### E-mail

**[head.office@portsmouthwater.co.uk](mailto:head.office@portsmouthwater.co.uk)**

### Information about your water supply



#### • Our Water Sources

Our water, of high quality, is derived from the chalk of the South Downs and is abstracted from wells, boreholes, springs and the River Itchen.

The springs at Havant & Bedhampton are thought to be the largest group of springs used for public supplies in Europe.

#### • Statistics

We serve 300,000 homes and businesses in an area covering 868 square kilometres (335 square miles) from the River Meon in Hampshire to the River Arun in West Sussex.

Every day we supply around 180 million litres (40 million gallons) of water to a population of more than 655,000 people at the lowest cost in England and Wales.

#### • Our Distribution Network

Water is supplied to our customers through a network of over 3,300km of underground water mains and more than 302,000 individual service connections, all of which are continuously maintained by our distribution staff.



**Portsmouth Water Ltd**