

## Guidance on Disinfection and Sampling of New Mains for Self Lay Providers

In order to protect our customers and reduce the risk of contamination, all new mains will need to be disinfected and satisfactory sample results received before they are connected to our network.

The requirement is explained further in this guide; however below is a summary of key points:

- Self Lay Providers (SLPs) must hold Water Industry Registration Scheme (WIRS) accreditation and all staff working on the potable water network must hold valid EUSR National Water Hygiene cards
- Where testing and disinfection activities are not directly undertaken by the Accredited WIRS provider but are subcontracted to a specialist testing and disinfection contractor, the WIRS provider shall ensure that the work is controlled and managed to the same standards that apply when these activities are completed by labour directly employed by the WIRS provider
- All pipes must be supplied with close-fitting end caps where feasible and these should remain in place until the pipe is laid. Pipes and fittings must be hygienically transported and carefully stored on site, off the ground, to avoid entry of dirt or vermin. All pipes and fittings (and in particular plastic types) are kept clear of fuel oils, and any materials so contaminated must be discarded and indelibly marked as do not use
- If foul water from a fractured sewer or drain or environmental water such as run off is suspected of having entered the main South West Water must be informed as soon as possible to safeguard public health – under no circumstances should a connection be made to the network
- After disinfection the main must be connected within 10 working days
- Please ensure you have given a provisional connection date to the Developer Services team before commencing the disinfection process
- The Developer Service team requires a copy of the disinfection certificate and sample results at least five working days before the connection date
- Please read this guidance document carefully and ensure the correct procedure is followed.

By following the procedure, and subject to satisfactory sample results and other pre connection conditions being met, your new connection can be completed as planned.

If the procedure is not followed your connection will be rejected and you may need to re-disinfect and sample your new main at your own cost, and this may also result in your connection being delayed.

The following pages detail the procedure and a pro-forma is provided which must be completed and returned to the Developer Services team.

## Disinfection and Sampling Guidance

### Prerequisite

The main is isolated from the live network and has been subject to a satisfactory pressure test.

Sufficient sample points are available in accordance with the information provided in the sampling section below.

If required, arrangements are made for samples to be taken from the new main by contacting South West Water's Developer Services team at least five working days before the disinfection process is carried out.

### Preparation

The main is swabbed and flushed before the disinfection process is carried out.

### Disinfection

- The new main is filled with potable water, adding a hypochlorite solution to achieve a minimum chlorine level of 20 mg/l along the length of the main
- The concentration of free chlorine is checked along the main with a high level chlorine comparator test kit and recorded on the pro forma provided below
- If the measured free chlorine at any point along the main is less than 20 mg/l the procedure is repeated, ensuring that chlorinated waste water is disposed of in accordance with Water UK's TGN 14
- The main is allowed to stand for a minimum of 16 hours
- The free chlorine level is checked with a high level chlorine comparator test kit and recorded on the pro forma provided below
- If free chlorine levels are less than 10 mg/l at any point along the main, swab and flush the main again and repeat the disinfection steps detailed above
- The main is flushed ensuring that chlorinated waste water is disposed of in accordance with Water UK's TGN 14
- Continue to flush for a minimum of three pipe volumes and until the chlorine level measured at the outlet of the new main is comparable with the level of the feed water (e.g. the chlorine measurements made on the feed water and water at the end of the new main are within 0.2mg/l of each other)
- The main is left to stand for a minimum of 16 hours and sampled the next working day – **the main must not be flushed prior to sampling.**

### Sampling

- Samples are collected for laboratory analysis for coliforms, *E. coli*, 2 & 3 day TVCs, turbidity, pH and conductivity from each sample point, including the end of each leg of new main. The number of samples per leg is determined in accordance with the following table:

Length of Main	Number of Samples
<50m	1
51m to 1000m	3
>1000m length	3 plus 1 sample per 500m thereafter

*Sample points should be located evenly along the length of the main*

- On site tests are undertaken at each sample point to determine:
  - Free and total chlorine
  - Taste and odour
  - Visual appearance
- Samples are collected and analysed by competent and accredited organisations
- Analysis is to be undertaken by a UKAS accredited laboratory – this needs to be detailed on the Certificate of Analysis.
- Results of on-site and laboratory tests must be within the following limits:

Coliforms	Zero
E. coli	Zero
pH	6.5 to <9.5
Chlorine	comparable with the feed water
Conductivity	<100uS/cm difference from feed water
Turbidity	<4NTU
Taste and odour	no unusual taste or odour
Visual appearance	clear and bright

- On-site tests are recorded and submitted using the pro forma provided at the end of this document. Chlorine measurements taken in conjunction with each sample are to be recorded on the sample worksheet
- If any of the on site tests are not satisfactory, or if there is any doubt concerning the quality of water being sampled, advice must be sought from the appropriate Water Quality Scientist via Developer Services

### Authorisation for Connection

- Results are sent to the Developer Services team in the form of a completed pro forma and Certificate(s) of analysis; an assessment will be made by the appropriate Water Quality team
- Approval of satisfactory disinfection and testing can **only** be issued by a Water Quality Scientist

- If the results of analysis and/or onsite tests are not satisfactory then the appropriate Water Quality Scientist will approve the remedial action required, Developer Services will feed this information back to the SLP
- The new main is flushed with a minimum of three pipe volumes of mains water prior to being brought into service
- A new main must be brought into service within a period of 10 working days from the date of sampling. The as built information must be approved in advance.
- If a period of more than 10 working days elapses from the time the main was sampled and the new main has not been brought into service, then the disinfection and sampling process must be repeated.

It is the SLPs responsibility to ensure that the designated disinfection company is aware of our requirements.

If this procedure is not met we have a right to refuse the final connection.

Please note that we cannot connect your new main to our network until we have received the pro forma and sample analysis documents complete with all information.

Please liaise with our Developer Services team so that the connection takes place within the chlorination validity period. **Once you have a connection date you will need to ensure the chlorination is carried out a maximum of 10 working days before the connection date.**

The completed pro forma and sample results should be sent and received a minimum of five working days before the connection date via:

Email: [DeveloperServicesSelfLay@southwestwater.co.uk](mailto:DeveloperServicesSelfLay@southwestwater.co.uk)

Developer Services  
South West Water  
Peninsula House  
Rydon Lane  
Exeter  
EX2 7HR

Telephone: 01392 443436

**Pro-forma containing the information required**

Name and telephone number of Company undertaking the disinfection and clearance sampling	
Site address of new main	
Pipe material, diameter and length installed	
Name of person responsible for disinfection process and their National Water Hygiene card number	
Date the disinfection process was undertaken	

**Pre-disinfection**

Please confirm the pipeline has been flushed before disinfection	Date	Initials
Please record the chlorine level of the source water post flushing and prior to the hypochlorite solution being introduced	mg/l	

**Disinfection**

Please record the chlorine level (mg/l) at each sample point immediately after the hypochlorite solution has been drawn into the main prior to standing	1	2	3	4	5
Please record the contact time	Hours				
Please record the chlorine level (mg/l) immediately after the contact time	1	2	3	4	5

**Post disinfection monitoring/clearance sample(s)**

Please record the chlorine level of the supply at the end of the new main immediately after flushing	mg/l				
Please confirm the appearance of the supply at each sample point is clear and bright (✓) and record along with the free chlorine level on the sample label	1	2	3	4	5
Please confirm the taste and odour of the supply at each sample point is satisfactory (✓) and record along with the free chlorine level on the sample label	1	2	3	4	5
Please confirm representative samples have been collected for laboratory analysis and that the on-site tests have been recorded on the sample label	Date			Time	

**Please submit this information along with a copy of all Certificates of Analysis – authorisation must be given by Water Quality before connection can be made**