

Thames Water Access Code

Water Supply and/or Sewerage Licensing Thames
Water's Access Code for the period 2019/20



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1 Overview

Thames Water Utilities (“**Thames Water**”¹) is one of 21² suppliers of water services (‘undertakers’) established under the 1989 Water Act, as modified by subsequent legislation.

The Water Act 2003 has amended the Water Industry Act 1991 to allow new Licensees access to water undertakers’ “**Supply Systems**” to enable supply to specific types of customers’ premises.

1.1 Role of the Access Code

The purpose of the Access Code is to provide a framework for the implementation of Wholesale competition in water.

The Access Code sets out the principles which govern applications for use of, and supply from, the Supply System and provides the basis of arrangements between Thames Water and the Licensee. It explains:

- The parties involved, their roles and responsibilities,
- The application and assessment process,
- Supply System operating principles,
- The authorisations necessary,
- Contracts,
- Business processes for access to the Supply System,
- Measurement,
- Charging,
- Remedies and liabilities.

Access to and use of potable Supply Systems downstream of water treatment works is covered by this Access Code.

Prior completion of an Access Agreement (Combined Access) is a requirement of access to, or supply from, the Supply System.

The Access Code will be reviewed regularly by Thames Water, to take account of changes in legislation, the regulatory framework, technology and the evolving market place. The latest version of the Access Code will be available from the Thames Water website or, alternatively, a free hard copy can be provided.

The Access Code should be read in conjunction with a number of other relevant framework documents. These are outlined in Section 1.2

1.2 Relevant framework documents

This Access Code should be read in conjunction with a number of other relevant framework documents. Table 1 below, whilst not exhaustive, provides a number of key documents which underpin the Water Supply and/or Sewerage Licensing framework:

¹ Terms in bold are defined in the [glossary \(section10\)](#)

² Allowing for various consolidations in the sector of water undertakers.

Table 1: Key Water Supply and/or Sewerage Licensing Framework Document Links

Primary and Secondary Legislation	
Water Act 2014	http://www.legislation.gov.uk/ukpga/2014/21/pdfs/ukpga_20140021_en.pdf
Water Industry Act 1991 (as amended by the Water Act 2003)	http://www.legislation.gov.uk/ukpga/2003/37/contents
The Water Supply (Exceptions from Supply System Prohibitions) Regulations 2005	http://www.opsi.gov.uk/si/si2005/20053075.htm
The Water Supply Licence (New Customer Exception) Regulations 2005	http://www.opsi.gov.uk/si/si2005/20053076.htm
The Water Supply Licence (Application) Regulations 2005	http://www.opsi.gov.uk/si/si2005/20051638.htm
The Water Supply (Water Fittings) Regulations 1999	http://www.opsi.gov.uk/si/si1999/19991148.htm
Competition Act 1998	http://www.opsi.gov.uk/ACTS/acts1998/19980041.htm http://www.legislation.gov.uk/ukpga/1998/41/contents
Statutory and Non-Statutory Guidance	
Ofwat Guidance on Access Codes	Original Template http://www.ofwat.gov.uk/competition/wsl/prs_web_acccodestemp.pdf Updated Guidance September 2011 http://www.ofwat.gov.uk/publication/guidance-on-compliance-codes/
Ofwat Guidance on Eligibility	Ofwat, Eligibility guidance on whether NHH customers in England and Wales are eligible to switch their retailer, July 2016: https://www.ofwat.gov.uk/publication/eligibility-guidance-whether-non-household-customers-england-wales-eligible-switch-retailer/ Ofwat, Supplementary guidance on whether NHH customers in England and Wales are eligible to switch their retailer, July 2016: https://www.ofwat.gov.uk/publication/supplementary-guidance-whether-non-household-customers-england-wales-eligible-switch-retailer/
Ofwat Guidance on Applying for a Water Supply and Sewerage Licence	https://www.ofwat.gov.uk/regulated-companies/ofwat-industry-overview/licences/new-suppliers/becoming-water-supply-sewerage-licensee-wssl/
Wholesale authorisations	Wholesale and supplementary authorisations, and condition S
Ofwat Guidance on Strategic Supplies	http://www.ofwat.gov.uk/competition/wsl/gud_pro_stratsuppguid.pdf
Office of Fair Trading Competition Act 1998 Application in the water and sewerage sectors	https://www.gov.uk/government/publications/water-and-sewerage-sectors-application-and-enforcement-of-competition-law
Conditions of Appointment	

Thames Water's Instrument of Appointment	http://www.ofwat.gov.uk/regulated-companies/licences/
Other Relevant Documents	Letter to Regulatory Directors 18 August 2014 http://www.ofwat.gov.uk/pricereview/pr14/pr14publications/ltr_stk20140818pr14costsengland.pdf
DWI Information Letter 13/04 Common Carriage: Guidance on the Drinking Water Quality Aspects	http://www.dwi.gov.uk/stakeholders/information-letters/2004/13_2004.pdf
DWI Guidance on the Water supply (Water Quality) Regulations 2000	http://dwi.defra.gov.uk/stakeholders/guidance-and-codes-of-practice/WS(WQ)-regs-england2010.pdf http://www.dwi.gov.uk/stakeholders/guidance-and-codes-of-practice/WS(WQ)-regs-england2010.pdf
DWI Guidance on the Notification of Events	http://dwi.defra.gov.uk/stakeholders/guidance-and-codes-of-practice/notification%20of%20events.pdf
DWI Guidance to the Water Undertakers (Information) Direction 2004	http://dwi.defra.gov.uk/stakeholders/guidance-and-codes-of-practice/common%20carriage.pdf

1.3 Role of the Key Industry Players

1.3.1 “Water Undertakers”

Thames Water is the appointed water undertaker covering London and the Thames Valley. It is responsible for the public water supply network in this area. Chapter 2A WIA91 places duties and obligations on water undertakers subject to certain conditions. Thames Water is obliged to provide the following services subject to the conditions detailed below.

1.3.2 Primary Undertaker

1.3.2.1.1 Wholesale Water Supply

Where a Licensee requests Thames Water to provide a supply of water, under section 66A WIA91, and the premises are within Thames Water's area, Thames Water has a duty to take steps necessary to enable provision of the supply, and having taken those steps to provide the supply.

1.3.2.1.2 Introduction of Water into Water Undertaker's Supply System

Where a Licensee requests Thames Water's permission to introduce water into its Supply System, under section 66B WIA91, and in line with the requirements of the retail authorisation aspects of the Wholesale Authorisation, Thames Water has a duty to take steps to enable the Licensee to make the introduction of water into the Supply System and having taken such steps to permit the introduction of water into its Supply System, as requested.

Where a holder of a Wholesale Authorisation requests Thames Water to permit the introduction of water, as supplied by a neighbouring secondary undertaker, into its Supply System for the purposes of supplying its customers within Thames Water's area, Thames Water has a duty to take steps to enable the Licensee to make the introduction of the water into its system. This is in accordance with section 66C WIA91. These steps may include connecting Thames Water's Supply System to the neighbouring secondary undertaker's Supply System. Having taken such steps, Thames Water has a duty to permit the introduction of water into its Supply System, as requested. Where appropriate, the Licensee, primary water undertaker and secondary undertaker may agree bilaterally the terms and conditions of access.

The terms and conditions on which Thames Water carries out these duties are agreed with the Licensee in accordance with Ofwat's guidance.

1.3.2.2 Secondary Undertaker

Where a Combined Licensee requests Thames Water to provide a supply of water to enable it to supply its customers' premises by using a neighbouring primary water undertaker's Supply System, under section 66C and in accordance with its retail authorisation, Thames Water has a duty to take steps to enable the provision of the supply, and having taken those steps to provide that supply.

The terms and conditions on which Thames Water carries out these duties in its capacity as a primary or secondary undertaker are agreed with the Licensee in accordance with Ofwat's guidance. The introduction by a Licensee into Thames Water's water Supply System, of a supply obtained from a secondary undertaker involves two transactions, governed by separate agreements:

1. The secondary undertaker sells water to the Licensee.
2. The Licensee introduces that water into the primary water undertaker's water Supply System.

Where appropriate, the Licensee, primary water undertaker and secondary undertaker may agree bilaterally the terms and conditions of access.

Licensees shall identify and communicate at the earliest stages if a secondary undertaker is likely to be included within an application. This will enable potential secondary undertakers to consult at the earliest opportunity with relevant parties including the primary undertaker, the EA and the DWI, if necessary.

The secondary undertaker will need to understand the demand requirements of the Licensee and an indication of the point to which connection to the primary undertaker's Supply System is required. It will also need to discuss with the primary undertaker details of the transfer, including the design of pipework and any pumping arrangements that may be required, any water quality issues and whether any facilities need to be constructed.

If Thames Water is identified as a secondary undertaker within an access application, Thames Water expects to be involved as necessary in discussions with the Licensee and the primary undertaker. Thames Water expects to receive copies of relevant details during the application stage for comment and to be able to request further details as necessary.

1.3.2.3 Conditions under which duties do not apply

Section 66A WIA91 documents the circumstances under which the wholesale water supply duty by a primary undertaker does not apply.

The duty to provide a supply of water to a Licensee, or to take steps to enable it to provide such a supply do not apply if both the first and second conditions below are satisfied, or if the third condition below is satisfied.

The first condition is that:

- the premises to be supplied by the Licensee consist only of land, they do not include a building or part of a building; or
- the supply to be made by the Licensee to the premises is for Domestic Purposes.

The second condition is that the provision of the supply by Thames Water would:

- require Thames Water to incur unreasonable expenditure in carrying out works, in order to meet all its existing obligations to supply water for domestic or other purposes, together with its probable future obligations to supply water to buildings or parts of buildings for domestic purposes;

or

- otherwise put at risk Thames Water's ability to meet any of those existing or probable obligations.

The third condition is that there is a contravention, as determined in regulations made under section 74 WIA91 and related to section 66A (6) WIA91, in relation to the water fittings used or to be used in connection with:

- the supply of water to the premises to be supplied by the Licensee; or
- the use of water in those premises.

Under sections 66B and 66C WIA91, a primary undertaker has no duty to permit the introduction of water by a holder of a Wholesale Authorisation into its Supply System, and under section 66C WIA91 a secondary undertaker has no obligation to provide a wholesale supply of water, if either the first or second condition below is satisfied:

The first condition is that providing the supply or allowing the introduction of the water into the primary water undertakers Supply System:

- would require Thames Water, in order to meet all its existing obligations to supply water for domestic or other purposes, together with its probable future obligations to supply buildings and parts of buildings with water for domestic purposes, to incur unreasonable expenditure in carrying out works;

or

- would otherwise put at risk its ability to meet any of those existing or probable future obligations.

The second condition is that there is a contravention of the prescribed requirements of regulations made under section 74 WIA91 in relation to the water fittings used or to be used in connection with:

- the supply of water to the premises to be supplied by the Licensee; or
- the use of water in those premises.

Thames Water carries out a random inspections programme on premises classed as high risk (as agreed with Defra) as part of our duty to enforce the Water Supply (Water Fittings) Regulations 1999 to prevent waste, misuse, undue consumption, contamination and the erroneous measurement of water supply.

Thames Water meets the cost of carrying out the inspection. The Retailer is responsible for the costs of any remedial works identified. If the customer refuses to carry out the remedial works, Thames Water can use powers under Section 75 of the WIA91 to carry out the work, recharging the Retailer. Alternatively Thames Water can prosecute the customer.

1.3.3 Licensed Retailers

Licensees are the entrant suppliers under the WSSL regime. Licensees are responsible for obtaining a licence appropriate to the activities to be undertaken and will have undergone an assessment of their financial and technical compliance by the appropriate regulatory bodies (Ofwat/DWI). Licensees must comply with the terms of their licence, relevant legislation and the contractual arrangements as set out in access agreements.

Section 66I WIA91 prohibits unauthorised use of a water undertaker's Supply System for the purpose of supplying water to a customer's premises, unless done so by the water undertaker or by a Licensee under the terms of its licence. Under section 66I (3) WIA91, unauthorised use for the purpose of supplying water to a customer's premises is a criminal offence. Licensees have a duty to assure themselves that the terms of their licence allow for the use of Thames Water's Supply System.

Section 66J WIA91 prohibits unauthorised introduction of water into a water undertaker's Supply

System. Introduction of water is only permitted by the primary water undertaker itself, or by a Licensee under the terms of its licence, or by another water undertaker under an agreement for a bulk water supply. Under 66J WIA91, contravention of this prohibition is a criminal offence. Licensees have a duty to assure themselves that the terms of their licence allow for the introduction of water into Thames Water's Supply System.

Licensees share responsibility with Thames Water for compliance with the Water Quality Regulations for the water they input in the Supply System and for the wholesale supply of water to the customer's tap.

Licensees have a duty to comply with the eligibility requirements as specified in section 17A (3) WIA91 relating to non-household premises, the threshold requirement and supply by only one Licensee.

1.3.4 Ofwat

The Water Services Regulation Authority (Ofwat) is the economic regulator of the water industry in England and Wales.

The Water Industry Act 1991 introduces a new duty to "further the consumer objective". This is "to protect the interests of consumers, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the provision of water and sewerage services."

Ofwat is required to publish guidance on the operation of the WSSL regime.

Ofwat is responsible for granting Water Supply and/or Sewerage Licences for wholesale and combined services. In doing so, Ofwat will assess whether the applicant has the appropriate skills and competencies required.

Ofwat also has powers to determine disputes about the eligibility of premises, the terms and conditions of proposed access agreements and the conditions for refusing supplies. Further information is available on Ofwat's website under Water Supply and/or Sewerage Licensing:

<https://www.ofwat.gov.uk/regulated-companies/ofwat-industry-overview/licences/#wssl>

1.3.5 Drinking Water Inspectorate (DWI)

DWI will need to be satisfied that the Licensee is aware of, and understands its regulatory duties and responsibilities in respect of drinking water quality at the licence application stage. Where a combined Licensee intends to treat a source of water for potable supply, the treated water cannot be introduced into the public Supply System until the DWI is satisfied that the treatment processes meet the relevant regulatory requirements and the works is being operated in a competent manner.

During access negotiations DWI will advise Ofwat as necessary on drinking water quality issues relating to the use of common carriage, particularly in respect of dispute resolution. Overall, Licensees will be subject to the same level of regulation as Undertakers. Further information can be found in the Water Supply and/or Sewerage Licensing section of the DWI's website at:

<http://dwi.defra.gov.uk/stakeholders/competition/>

1.3.6 Environment Agency (EA)

The Environment Agency has a duty to secure the proper use of water resources in England and Wales. They monitor water in the environment and issue 'abstraction licences' to regulate who can take water from the environment and how much they can take.

Water undertakers produce Drought Plans every 3 years, which identify how, during a period of drought, they will continue to meet their duties with as little recourse as possible to drought orders or drought permits. From October 2005 the production and publication of these plans became a legal requirement. The Environment Agency reviews these plans and advises the

Government on their adequacy.

Water undertakers also produce Water Resources Management Plans every 5 years; which identify available resources, forecast demand and set out how future deficits may be addressed through either resource development or demand management options. The Environment Agency also reviews these plans and advises the Government on their adequacy. There is a duty on Water Supply and/or Sewerage Licensees to provide information to water undertakers for both Drought Plans and Water Resources Management Plans.

In most cases, Water Supply and/or Sewerage Licence with a Wholesale Authorisation applicants will require a water abstraction licence from the Environment Agency to take water from surface water or groundwater. Every new proposal to abstract or impound water undergoes extensive scrutiny and investigation before a decision is made to grant or refuse an abstraction licence application. There is a need to ensure that water resources are safeguarded and that abstractions do not damage the environment.

Secondary supplies (under section 66C of the Water Industry Act 1991) are meant to encourage use of 'spare water', but the undertaker and the Licensee may not be able to agree on how much water the undertaker has 'spare'. In the absence of agreement, Ofwat may be asked to determine whether a supply under 66C WIA91 should be made, and if so the terms of that supply.

In these instances, the Environment Agency will also play a role in advising Ofwat on whether the criteria for rejecting a proposal for a secondary supply under sections 66C(5) or (6) WIA91 are satisfied. Ofwat will then make a determination.

Further information is available on the Environment Agency's website.

1.3.7 Department for Environment, Food and Rural Affairs (Defra)

Defra is the government department responsible for WSL legislation.

The Secretary of State has issued statutory instruments which govern the competition regime. The Secretary of State may issue further instruments in the future which may affect the regime. Where this is the case, Thames Water will revise this Access Code to reflect relevant changes.

Further information is available on Defra's website.

1.4 Definition of Services

Thames Water will offer services to a Licensee for the purposes of supplying water to the Licensee's eligible customers, subject to terms and conditions agreed with the Licensee in accordance with Ofwat's guidance. These services are defined in terms of Thames Water being either the primary undertaker (section 66A and 66B WIA91) or a secondary undertaker (section 66C WIA91).

1.4.1 Primary Water Undertaker

1.4.1.1 Wholesale Water Supply

Thames Water will take steps to enable the provision of the supply, and having taken those steps, provide the supply of water in accordance with section 66A of the WIA91 to the Licensee for supply to the Licensee's eligible customers.

1.4.1.2 Introduction of water into the Supply System

Thames Water will take steps to enable the Licensee to make the introduction of water into the Supply System, and having taken such steps permit the introduction of water into its Supply System, in accordance with section 66B WIA91 for the purposes of supply to the Licensee's eligible customers.

Thames Water will take steps, and having taken such steps, permit the introduction of water, as supplied by a secondary undertaker, into its Supply System, in accordance with section 66C of the

WIA91, for the purposes of supply to the Licensee's eligible customers. In some circumstances, steps may include laying such pipes and constructing such other works as are necessary to connect the supply with the pipes in the area of the secondary undertaker.

1.4.2 Secondary Undertaker

Thames Water will make available a supply of water to a Licensee, for supply to the Licensee's eligible customers, within the area of appointment of another water undertaker in accordance with section 66C WIA91. Thames Water will lay such pipes and construct such other works as are necessary to connect the supply with the pipes in the area of the primary undertaker.

1.5 Key Principles

1.5.1 General Principles

- Prior completion of a Wholesale Contract for Wholesale Supply (Retail Licensee) or a Confidentiality Agreement and an Access Agreement for Combined Supply is a requirement of access to the Supply System;
- Parties will take all necessary steps to ensure compliance with such laws and regulations as shall apply from time to time and, for holder of a Wholesale Authorisation to co-operate with each other in the general interests of continuous provisions of wholesome water and the integrity of the Supply System,
- The responsibility for all elements of wastewater service provision remains with Thames Water. Certain non-operational aspects of this service provision (e.g. collection of charges) can be delegated to the Licensee only by agreement with Thames Water.

1.5.2 Supply System Principles

- The Supply System is an essential public facility and remains under the control of Thames Water;
- Thames Water is therefore responsible for all aspects of Supply System operation, management and maintenance;
- The Supply System must be operated in such a way as to preserve system safety and security for customers and the general public;
- Supply System capacity must be developed and maintained to meet reasonable needs and to avoid deterioration;
- Thames Water has a duty to facilitate Supply System access and the provision of Wholesale supplies;
- Thames Water sets the terms and conditions for Supply System access based on technical evaluation;
- Holders of a Wholesale Authorisation input real water, sufficient to balance supply and demand by their customer(s). Water will be supplied to the water supply zone in which the Licensee's customer is located;
- Thames Water has an "Interim Duty to Supply" the customer in the event that a Licensee is unable to meet its supply obligations;
- Thames Water may provide a "Back Up Supplies" facility for the Licensee. The cost to provide this facility will be reflected in the Access Price levied;
- Thames Water will decide all applications without undue discrimination and without compromising the safety and effectiveness of the Supply System;

- As allowed in the legislation and guidance, Thames Water will facilitate Supply System access and use and will charge Licensees in accordance with section 66E (3 WIA91 and guidance issued by Ofwat.

1.5.3 Customer related principles

- No material deterioration in quality or service to any customer must take place as a result of common carriage;
- Customers remaining with their current supplier will not bear any of the cost of new entry;
- The Licensee will be responsible for the management of issues raised by the Consumer Council for Water which relate to elements of the customer's service which the Licensee is providing;
- The responsibility for all elements of wastewater service provision remains with Thames Water. Certain non-operational aspects of this service provision, such as the billing arrangements for wastewater services, can be delegated to the Licensee only by agreement with Thames Water;
- Where the Licensee is responsible for certain non-operational aspects of sewerage service provision (by agreement with Thames Water), provision for the Licensee to provide on-going sewerage abatement information to Thames Water must be in place.

1.5.4 Legal and contractual principles

- All Licensees will be treated equitably;
- Depending on the circumstances Licensees may be required to sign a "Confidentiality Agreement" (see section 2.1.1) at the outset of negotiations;
- Water Undertakers and Licensees will be required to comply with the Operational Code for Wholesale supply;
- Entry is subject to contract. The Licensee will be obliged to sign a Common Contract or Access Agreement. The Access Agreement for holders of a Wholesale Authorisation will embody the principles of this Access Code, but in the event of any conflict, the wording of the Access Agreement will take precedence;
- Any assignment of the Common Contract or Access Agreement to another party will be dependent on the status of the party to which these have been assigned e.g. third party is an existing Licensee or not. Guidance will be sought from Ofwat if there is any doubt regarding the status of any third party involved in such assignments.

1.5.5 Pricing and charging principles

- Indicative Combined and Wholesale prices are set out in section 9.0;
- We have published our Wholesale tariff's in line with Ofwat guidance;
- Connection and Supply System modification charges will be based on actual costs incurred plus a reasonable return.

2 Application for Access to Thames Water's Supply System

2.1 Process requirements

2.1.1 Confidentiality Agreements

Applicants are required to complete a Confidentiality Agreement for a Combined Supply request before any application is made. The purpose of this Confidentiality Agreement is to protect both parties by ensuring that information disclosed by the other party is not disclosed to any third party without consent or is misused. Similar confidentiality provisions will be involved in the Access Agreement.

A draft Confidentiality Agreement is appended to this Access Code ([please see Annex 10](#))

2.1.2 Wholesale Supply Requirements

To improve the efficient supply of water to Retail Licensees Ofwat has introduced the operational code and common contract for wholesale supplies (under section 66A WIA91).

In accordance with Condition of Appointment R (Provision of combined and wholesale water supplies), appointed water companies must include the operational code and common contract set out in this section within their access codes.

Each appointed water company must comply with its access code. It must also provide a wholesale supply of water to a Licensee on the terms set out in the common contract, if requested to do so by the Licensee.

2.1.2.1 Operational Code

[Annex 11](#) contains the details of the Operational Code that Ofwat provide as part of the WSL Guidance process and that all parties are required to follow.

2.1.2.2 Common Contract

[Annex 12](#) contains the details of the Common Contract that Thames Water and the relevant Retail Licensee will sign and follow as part of the Wholesale Supply Process.

2.1.3 Information requirements

The information required from the Licensee for each stage of the Wholesale and Combined supply application process is set out in the Pro-Forma application forms which are appended to this Access Code

[Annex 2: Water Quality](#) Water quality information required to support a Combined Access Agreement

[Annex 11:](#) Operational Code Details

[Annex 12:](#) Wholesale Contract for Wholesale Services Details

[Annex 14: Application form C1b:](#) Detailed Application for Combined Access Agreement

[Annex 15: Application form S1:](#) Initial application for secondary supplies from Thames Water

Thames Water cannot progress an incomplete application. It is the Licensee's responsibility to submit satisfactory information. However Thames Water will highlight any omissions from the Licensee's application and clarify information requirements as necessary.

For some applications, it may be necessary for Thames Water to request further information from a Licensee during the course of the application assessment process. Where this is the case, Thames Water will outline the requirement, together with an explanation of the reasons for requesting further information.

Following the initial applications for combined access and secondary supplies, Thames Water will respond asking for further information as required. There is no detailed application form.

2.1.4 Timescales

Please refer to [Annex 6](#) and [Annex 7](#) for clarification of process which Thames Water will aim to achieve in providing its response to the Licensee at each stage of the application process.

The target timescales are in line with Ofwat's guidance and a summary of the key timescales is set out below.

Relevant eligibility details that Licensees will need to confirm with a potential customer are contained in Ofwat guidance. Ofwat, Eligibility guidance on whether NHH customers in England and Wales are eligible to switch their retailer, July 2016:

<https://www.ofwat.gov.uk/publication/eligibility-guidance-whether-non-household-customers-england-wales-eligible-switch-retailer/>

Ofwat, Supplementary guidance on whether NHH customers in England and Wales are eligible to switch their retailer, July 2016:

<https://www.ofwat.gov.uk/publication/supplementary-guidance-whether-non-household-customers-england-wales-eligible-switch-retailer/>

2.1.4.1 Wholesale Supply – Retail Licensee application timing

The appointed water company shall offer an access price for the Licensee's customer within 10 working days of receiving the Licensee's application, assuming a common contract is already in place between Thames and the Licensee. The access price offered by the appointed water company shall remain valid for six (6) months and shall be based on Thames Water's published Wholesale Tariffs.

Combined supplies application – timings:

Thames Water will offer a meeting **within 10 working days** of receipt of the request by the Licensee.

Thames Water will provide the detailed assessment report within **50 working days** from receipt of information from the Licensee.

Following receipt of this detailed assessment by the Licensee, Ofwat expects detailed contract negotiation to take up to **40 working days**.

These timescales represent limits in 'ordinary' cases. Thames Water expects that some applications may take longer to process, for example where technical information is required from the DWI or the Environment Agency. Ofwat shares this view. In these circumstances, Ofwat suggests that undertakers and Licensees agree to "stop the clock" until relevant information is received from these external groups. Thames Water agrees with Ofwat's proposal and will adopt this procedure as part of the application process.

2.1.5 Application Costs

Thames Water will retain a record of the work involved and the costs incurred during the application process in order to monitor the costs of competition. Thames Water will not charge for providing a copy of its Operational Code / Common Contract or for clarifying policy and information requirements.

Thames Water will not recover from the Licensee the costs relating to discussion, negotiation and agreement of terms and conditions for a Common Contract (Retail Licensee), a Confidentiality Agreement, or the costs related to processing premises-specific applications for both wholesale and combined supplies, including costs of feasibility studies.

2.1.5.1 Initial Application

2.1.5.1.1 Wholesale supply application

Thames Water will provide a draft Common Contract free of charge.

The work carried out by Thames Water to provide the Licensee with a Customer Specific Schedule will include:

- Preparation of the legal agreement
- Co-ordination and liaison with Licensee

2.2 Application Process

2.2.1 Wholesale supply arrangements (Retail Licence)

The application for a Wholesale Supply from Thames Water will require an agreed Common Contract and the customer specific Data Sheet for each premise being considered for transfer.

If any variation to the Common Contract is required by the Licensee, these will need to have been agreed with Thames and the relevant updated contract signed by both parties and the relevant customer specific details provided in the Data Sheet for each premise bring considered for transfer.

2.2.1.1 Data exchange to create contract schedules for wholesale applications

Please refer to [Annex 7](#) for a visual representation of this process.

From the point of providing the relevant Data Sheet(s) regarding the eligible customer's premises that are part of this transfer process (assuming a Common Contract is already in place between Thames and the Licensee), Thames have 10 days to complete the request for prices based on the Data Sheet(s) provided.

If the Licensee considers that the terms set out in Thames Water's response are not acceptable, Thames Water will seek to resolve all points of difference with the Licensee.

The Customer Transfer Protocol processes will subsequently be initiated. Arrangements for the settlement of any customer debt must be put in place by the Licensee, since the Customer Transfer Protocol includes a provision that the customer may not transfer until any debt has been settled.

2.2.2 Combined supply arrangements

The following section provides a description of the application process.

Please refer to:

- [Annex 1](#) for an outline of the principle activities contained within Supply System modelling and water quality studies.
- [Annex 6](#) for a visual representation of this process (Thames Water's interpretation in September 2011 Ofwat's Guidance).

2.2.2.1 Stage 1: Introduction stage

The Combined Licensee may contact Thames Water (and the secondary undertaker if appropriate) with an initial expression of interest to negotiate terms for access.

At this stage it is also suggested that the Licensee should contact the sewerage undertaker, (if different). Standard License Condition 5(8) of the holder of a Wholesale Authorisation requires the Licensee to inform any 3rd party sewerage undertaker who provides or will provide services to premises which are connecting to the water undertaker's system for the first time to enable billing arrangements to be set up.

At this stage, the Licensee will be expected to confirm to Thames Water the type of license it holds and full contact details.

If necessary, and at the Licensee's request, Thames Water will arrange an initial meeting where further explanation of the application process and information requirements will be provided.

In line with Ofwat's guidance, Thames Water will provide a suitable date for this meeting, which will be within **10 working days** of receipt of the request from the Licensee.

The Licensee will not be expected to submit customer, consumption or location details in advance of the signing of a Confidentiality Agreement.

In line with Ofwat's guidance, a draft Confidentiality Agreement will be provided to the Licensee by Thames Water within **10 working days** of a request from the Licensee.

2.2.2.2 Stage 2: Detailed application

Step 1

At the Licensee's request, Thames Water will arrange a meeting with the Licensee to clarify issues arising from the initial assessment report, outline the investigations needed to complete the detailed assessment and confirm what further information is required.

Thames Water may request further information from the Licensee provided that such information is material and relevant to determination of the application. The information sought at this stage can relate to reasonable requests for additional data on:

- Water quality, including treatment and storage, (see section 2.4.1);
- Water quantity, including access and pumping and metering arrangements;
- Projected demand, including profile, peaks and growth;
- Operation and management, including incident management standby facilities and contact arrangements;
- Site maps and plans relevant to the application;
- Any other matters relevant to the determination of the application.

Step 2

Where the Licensee wishes to progress the application the Licensee will make a formal detailed application confirming or varying the information previously provided in the initial application.

The Licensee should advise Thames Water of any changes to information submitted or if further relevant information has become available. Changes to the information provided could impact any price and non-price terms previously provided by Thames Water and may trigger the requirement for further investigation.

Pro-Forma application form "C1b" ([see Annex 14](#)) outlines the information which should be provided by a Licensee as part of its detailed application for combined supply arrangements.

Step 3

On receipt of the detailed application, Thames Water will assess the adequacy of information provided and highlight, in writing, any shortfalls to the Licensee.

Thames Water will also set out in writing, at the same time, an estimate of the costs for the detailed assessment, which must be agreed by the Licensee before any work can commence.

Should the Licensee consider that the scope of the intended assessments, their estimated cost or the timescales proposed for completion are unreasonable, it should refer the matter to Ofwat (please see Ofwat's Disputes Determination Guidance for further information).

Step 4

On receipt of the Licensee's written acceptance of the scope and cost of work for the detailed assessment, Thames Water will carry out the detailed assessment. This will include:

- Production of a revised Water Resources Plan for relevant WRZ being considered;
- Assessment of the capacity of the Supply System to accept the proposed input;
- Assessment of the compatibility of the water proposed to be input with the existing water in the Supply System;
- Assessment of the extent to which Supply System modifications are necessary to accommodate the proposed input and an estimate of the costs of such modifications;
- Identification of the likely impact on levels of service and the range of water quality parameters normally experienced by customers in the Supply System;
- Identification of volume, flow rate and pressure constraints imposed by the Supply System;
- Assessment of the adequacy of safety, security and contingency plans.

In line with Ofwat's guidance, Thames Water will compile, and submit to the Licensee, a detailed assessment report within **50 working days** of receipt of full information from the Licensee and other parties such as the DWI and the EA.

The report will set out (amongst others):

- Terms and conditions for access (or reasons for refusal);
- Confirmation of price and non-price terms;
- The water quality parameters determined as relevant to the Supply System in question;
- The allowable range of concentrations for each parameter such that the quality of water supplied does not deteriorate materially from that normally experienced by customers of that Supply System;
- The extent of monitoring required initially to validate input water quality and subsequent monitoring;
- The contingency provisions to be in place for events or incidents;
- Pressure, flow and volumetric limits at the point of entry and the means of measurement;
- Requirements for additional monitoring within the Supply System;
- Requirements for Supply System modifications to accommodate the proposed input.

Thames Water will advise the DWI of any water quality issues and provide a copy of the detailed assessment report to the DWI.

Thames Water will provide a copy of the revised Water Resources Plan to the EA.

2.2.2.3 Stage 4: Detailed contract negotiation

Based on the outputs from the detailed assessment report, both parties shall agree the content of the Access Agreement.

Ofwat expects that detailed contract negotiations will be complete **within 40 working days**.

Ofwat's guidance states that the terms offered by the primary and/or secondary water undertaker should be open to discussion between the parties involved for **up to 15 working days**.

If the Licensee accepts the terms (subject to execution by both parties of a formal written contract), Thames Water will send the Licensee a signed contract, **normally within 10 working days**.

The Licensee should sign the contract and return it **within 10 working days** unless further time is

required for the Licensee to formally accept Thames Water's offer. Upon the Licensee's acceptance of this firm offer, Thames Water will inform the customer of the intended change of supplier and the expected transfer date. Thames Water will generate a unique premises reference number for the customer. The unique premises reference number is a new number that is assigned to an eligible premise for the purpose of transferring within the customer transfer protocol. A transfer date will be included in the contract making due allowance for completion of actions under the customer transfer protocol.

If the Licensee considers that the terms set out in the detailed assessment report are not acceptable, Thames Water will seek to resolve all points of difference with the Licensee during the detailed contract negotiations and any reasonable extension period agreed by both parties.

2.2.3 Provision of information to the sewerage undertaker

The Licensee should notify the sewerage undertaker at this point of the possibility of the customer transferring to another supplier. Standard Licence Condition 6(1) of the Water Supply and/or Sewerage License and the Wholesale-Retail Code requires the Licensee to inform any 3rd party sewerage undertaker who provides or will provide services to premises which are connecting to the water undertaker's system for the first time to enable billing arrangements to be set up.

Where the customer's sewerage undertaker is not the same as the water undertaker, the sewerage undertaker should have the opportunity to comment on aspects of the proposal that could affect its ability to acquire details for billing, or that may impact on its other operational processes.

The Licensee will be expected to make contact with the sewerage undertaker as part of the application process in order that the sewerage undertaker is able to outline its requirements.

Alternatively, Thames Water may request information on the sewerage undertaker's behalf.

Thames Water will normally continue to have a direct relationship for sewerage services with any customers who receive a sewerage service from us. The Licensee will therefore be required to provide accurate and timely meter readings to enable Thames Water to bill the customer in a timely manner.

This information will include initial notification of change in water supplier, the date of the proposed transfer and new water supplier contact details. In some circumstances, the water supply undertaker may request that Thames Water bills the customer for wastewater directly. In these circumstances we will also require the name and location of the customer, meter details and the SIC code. We will also require contact information for the party responsible for collection of meter reading information.

2.2.4 Objections and rejection process

Thames Water, the Licensees (in the case of a customer transferring from one Licensee to another), the DWI, Secondary Undertakers and other relevant parties may discover during any part of the application process that an application for access by the Licensee cannot be progressed. As well as statutory provisions in sections 66A-C WIA91, the list below suggests the types of objection that might arise during an application for access to Thames Water's Supply System:

- The new Licensee has provided insufficient or incorrect details to the relevant parties to allow the customer to transfer;
- Licensee's refusal to supply the necessary information;
- Where Thames Water considers that the customer's premises are not eligible (the Licensee should declare eligibility at the initial application stage);
- An application by another Licensee to supply the eligible customer has been accepted;
- Impractical proposals e.g. unfeasible hydraulic conditions;

- Unacceptable water quality implications;
- Concerns over source risk assessment; or
- National security reasons.

Full reasons for objection will be given in writing to the applicant as soon as possible after we become aware of a problem. Thames Water will, in most circumstances, be prepared to meet to discuss the objections and where appropriate be prepared to seek to negotiate solutions to enable the application to progress to the next stage.

2.2.5 Application process arbitration and disputes resolution

The Licensee and Thames Water will seek to resolve any dispute in the first instance. Where disputes cannot be resolved, in line with Ofwat guidance, they will be removed from WNA negotiations and discussions will proceed to premises-specific application. A link to Ofwat's Disputes Determination guidance document is provided in section 1.2.

The Licensee may refer issues to Ofwat at any time during the application and negotiation process.

2.3 Access criteria to Thames System

2.3.1 Water quality input specification

All water entering the distribution system must comply with the requirements of the Water Supply (Water Quality) Regulations 2000 (the Regulations), DWI guidance and information letters including any subsequent amendments revisions or updates.

The Licensee must demonstrate that the sampling and analysis used in support of a combined Supply application has been carried out in accordance with the requirements of section 16 of the Water Supply (Water Quality) Regulations 2000, and in particular the requirements of Regulation 16 (e) on analytical quality control.

A statistically significant number of treated water sample results should be submitted to Thames Water. As a minimum, the samples must be representative of water quality over 4 seasons in 1 year. However the Licensee should submit all available water quality data. The water should be analysed, as a minimum, for all of the parameters listed in Annex 3, Tables 10 & 11. Where a parameter in Table 10 or 11 is an index, the analyses required to calculate the index must be undertaken.

Treated water samples should be taken at a point where the water is representative of that which the Licensee proposes to introduce into Thames Water's Supply System.

In addition to the water quality sampling data required (as set out in [Annex 3](#), Tables 10 & 11), Thames Water will require the information set out in [Annex 2](#).

2.3.1.1 Data exchange to create contract schedules for wholesale applications

In order to protect the quality of water received by consumers and to maintain the condition of the distribution system it is essential that incoming water sources are compatible with existing supplies.

Water quality of supplies within Thames Water's Supply System varies according to location. Therefore it is not possible to give an exact specification of what would constitute a compatible supply. To overcome this difficulty and to assist Licensees, [Annex 3](#) sets out various screening values and other criteria that Thames Water will use to evaluate the quality of proposed inputs to the existing Supply System. In each case an explanation for the screening value is given. In some cases reference is made to the more detailed processes that Thames Water will use to assess proposed sources.

2.3.1.2 Guidance Values for aspects of water quality relevant to treatment and distribution

The prediction of how new inputs of water to the Supply System will react with existing waters can be very difficult. This can include aesthetic aspects including taste and odour, THM formation, iron, aluminum and nitrite concentrations and microbiological quality.

Similarly effects such as plumbosolvency, cuprosolvency, dissolution of other plumbing metals, release of ferric and non-ferric scales, corrosion of and reaction with water mains, fittings and supply pipes can be difficult to predict.

Such issues will be addressed in part by compatibility studies conducted during the application process. Subsequently, further verification will be achieved by specifying a trial period in the Access Agreement. The anticipated duration of a trial period is 6 months, the resolution measures will depend on the specific circumstances but may require the Licensee to withdraw their input where a problem arises and subsequently to investigate and resolve the problem. In order to assist the Licensee, guidance values for several relevant parameters are presented in Annex 4.

2.3.1.3 Water Treatment Standards

Sources of water used for Combined Supplies must be subject to water treatment processes that are appropriate to the quality and variability of the water source. Treatment processes and practice may also be dictated by the requirement to maintain water quality within the distribution system.

Treatment standards will be agreed on a case specific basis; it is not practical to list all of the relevant anticipated standards in the Access Code. However disinfection standards will form part of all access agreements, therefore the principal standards required are summarised in [Annex 3](#). Treatment standards for *Cryptosporidium*, plumbosolvency and fluoridation are well documented through DWI and government guidance. Thames Water expects Licensees to follow this guidance. A description of this guidance and its likely application to Licensees is included in [Annex 5](#). Thames Water may require Licensees to apply selection criteria in chemical and material specifications consistent with Thames Water's own selection criteria. Specification of materials and chemicals is agreed on a case-by-case basis. For example, Thames Water's specification for sodium hypochlorite is designed to prevent introduction of contamination by bromate, chlorate and other contaminants.

2.3.1.4 Pre-entry Supply System modelling

Thames Water will produce (if required) a calibrated hydraulic model as part of the feasibility studies outlined in the application process ([see Annex 1](#)). In the context of water quality this model will be used to identify any flow reversals, significant velocity change, mixing or long retention times that could cause water quality issues. The model will subsequently be used to indicate how these issues might be avoided.

2.3.1.5 Special circumstances relating to water quality standards

In the event of an emergency, the Licensee must immediately notify Thames Water and undertake investigations. Appropriate action that may include DWI notification, issuing of appropriate warnings to customers and termination of supply must then be carried out.

The detailed water quality requirements for any incoming source of water will be set out, on a case-by-case basis, within the Access Agreement. If the Licensee or Thames Water become aware that water quality does not meet the required specification, immediate action may be necessary. If the change in water quality is due to an unexpected change in raw water quality or a failure in water treatment it will be necessary to notify DWI under the terms of The Water Undertakers (Information) Direction 2004 and any subsequent amendments or revisions. Precise arrangements will be specified in the Access Agreement.

Where a change in the quality of a common carriage supply gives rise to, or is likely to give rise to, a contravention of the Regulations, the Licensee's input may be suspended. As stated in Ofwat's

Guidance on Access Codes:

“If the quality of water in distribution changes significantly after a scheme goes live Licensees must change their input to ensure compatibility. The DWI considers that in most cases it should be possible for the Licensee and the water undertaker to agree a solution to water quality issues without its involvement. The Licensee should bear any associated costs”.

If the supply cannot be suspended immediately e.g. supplies to customers could not be maintained from other sources, it will be the responsibility of Thames Water to approach DWI to determine the appropriate course of action.

2.3.2 Water flow and pressure

Thames Water is responsible for management of pressure within the Supply System. Licensees will be required to maintain pressure within their systems, in accordance with maximum and minimum operating pressure profiles for entry into the Supply System specified by us. We will also specify the profile of rates of pressure change which shall be achievable. Pressure conditions are determined solely by Thames Water and are based on Supply System modeling to determine the maximum allowable pressure consistent with maintaining levels of service and quality in the Supply System.

Monitoring of pressure within the Supply System is the responsibility of Thames Water and included within the Supply System access charges. Any site specific monitoring of pressure related to a specific input is chargeable to Licensees separately, as part of the Access Agreement.

As part of the assessment of the Licensee’s application, if our assessment indicates that capacity is available in the Supply System and that the waters to be mixed are compatible, detailed Supply System modelling may be necessary to calculate the flow and pressure conditions which will be applied and to determine any Supply System modifications required to accommodate the Licensee’s input.

2.3.3 Water quality sampling and monitoring

2.3.3.1 Standard monitoring requirements

The Combined Licensee will be required to monitor water quality in order to satisfy:

- The Water Supply (Water Quality) Regulations 2000 and the associated guidance issued by DWI;
- Any additional monitoring requirements set down in the Access Agreement on a case-by-case basis.

Thames Water’s regulatory sampling regime is based on The Water Supply (Water Quality) Regulations 2000. For certain parameters e.g. pesticides and radioactivity, the detailed requirements are set out in formal guidance issued by the DWI. Additional regulatory monitoring, over and above the statutory minimum requirements, may be carried out where this is considered appropriate e.g. in support of schemes to improve water quality. The results of regulatory monitoring programme are reported to DWI on a regular basis. For further guidance on the Regulations or DWI requirements Licensees should refer directly to the DWI.

In order to protect existing supplies to customers, additional monitoring may be required. The extent and nature of this additional monitoring will depend on the circumstances but may include:

- 1) Monitoring to determine the quality of raw water sources and the performance of treatment processes,
- 2) Monitoring at the point of entry to the Supply System,
- 3) Additional monitoring within the Supply System.

These additional monitoring requirements will be specified on a case-by-case basis and set out explicitly within the Access Agreement.

The level of additional monitoring will depend on a number of factors including:

- 1) The nature of the water source,
- 2) The type of treatment,
- 3) The quality and quantity of any historic monitoring data,
- 4) The conclusions of any risk assessments (see Section 2.4.1).

In addition to monitoring based on laboratory results, the Licensee will be required to undertake continuous monitoring and, where applicable, to “bench test” monitoring to safeguard treated water quality. Details will be outlined on a case by case basis in the Access Agreement.

Licensees must make available to Thames Water at all times, access to a sampling point for water representative of that being input into the Supply System. The sampling point should comply with the requirements of the Water Supply (Water Quality) Regulations 2000. Full site access and access to data and information relevant to water quality must be made available to Thames Water.

Sampling facilities must be provided at the outlet of treatment works and service reservoirs and at the point of entry into the Supply System. These facilities must comply with the requirement of the Water Supply (Water Quality) Regulations 2000 and the associated guidance issued by DWI. Licensees must allow access to these sampling facilities as required.

2.3.3.2 Standard monitoring considerations

The introduction of a new water source into the distribution system could affect the delineation of water supply zones. The type of source or treatment may also change the sampling frequency required for particular parameters. If Thames Water is required to make changes to its statutory or monitoring programme, the additional costs will be reflected in the charging arrangements.

Under the Regulations, Thames Water routinely carries out analysis for certain parameters (currently bromate, cyanide and pesticides) at “Authorised supply points”. This is more efficient than monitoring for these parameters in water supply zones. In order to satisfy regulatory requirements it will be necessary to reach an agreement on how these parameters will be monitored in areas affected by the Access Agreement.

2.3.3.3 Reporting of monitoring data

Where a Licensee operates a water treatment works or a service reservoir, the Licensee must comply with the requirements of the Water Undertakers (Information) Direction 2004 and submit results to DWI on a monthly basis. Further details are given in Information Letters 02/2004 and 6/2003.

Where appropriate, the Licensee must also submit data to DWI on the continuous monitoring for *Cryptosporidium* as set out in relevant DWI Information Letters (10/1999, 4/2000, 10/2000, 13/2000, 28/2000, 8/2001, 12/2002). The Licensee must comply with future revisions and amendments to The Information Direction and/or other DWI guidance and Information Letters.

The arrangements for reporting regulatory and operational monitoring data to Thames Water will be agreed on a case-by-case basis as part of the Access Agreement. In general terms, this data may include but not be limited to, laboratory results, test kit results, instrument readings, SCADA (operator recorded instrument readings and test results. SCADA is the acronym for Supervisory Control and Data Acquisition. SCADA may be called Human-Machine Interface (HMI) in Europe. The term refers to a large-scale, distributed measurement (and control) system. SCADA systems are used to monitor or to control chemical, physical or transport processes. The reporting frequency and format will be agreed on a site-specific and parameter specific basis.

By way of illustration, continuous *Cryptosporidium* monitoring data may be required on a daily basis, treated water general chemistry and microbiological results on a weekly or monthly basis and other forms of data on request. Some data reporting may be specified by exception, i.e. if

results breach a specific trigger.

2.3.3.4 Suspension of Input

Thames Water may also require automatic shutdown of the Licensee's input. This process will be based on specified trigger levels and would be the case for a disinfection failure (see Annex 5).

Licensees must provide details of pollution or suspected pollution, unusual changes in water quality or failures of standards (actual or imminent) of plant or treatment standards to Thames Water immediately.

2.3.3.5 Volume measurement

Input meters may be owned and or operated by the Licensee or Thames Water in accordance with contractual arrangements. Meters designated for charging purposes will be identified and they and their data should be accessible to both parties. Thames Water may require that this data is capable of being communicated back to central control rooms via SCADA. In some circumstances, Thames Water will require that flow and pressure information can also be communicated in this way.

Meters must meet the meter class performance specification for the expected flow range and be maintained in accordance with contractually agreed schedules.

3 Customer Transfer Protocol

For detailed information please refer to the Ofwat Customer Transfer Protocol (CTP) available on MOSL's website <https://www.mosl.co.uk/>. Latest guidance documentation related to this are provided below:

<https://www.mosl.co.uk/market-codes/codes>

3.1 Principles

Condition of appointment S requires Licensees and water undertakers, respectively, to comply with Ofwat's CTP.

Relevant sections of the Water Industry Act 1991 (as amended by the Water Act 2003) and Water Act 2014), and condition of appointment S also place a duty on Licensees and water undertakers to exchange certain information.

3.2 Rules of Behaviour

All Licensees and water undertakers are required to comply with the rules of behaviour of the CTP, as specified in the CTP as issued by Ofwat and as amended from time to time.

3.3 Data transfer

The CTP specifies the data flows, the data items required within each data flow and the timescales that apply for transmission of those data flows. All Licensees and water undertakers must comply with those requirements.

3.4 Registration and operational processes

All water undertakers and Licensees must follow the operational processes in the CTP for effective customer transfer and the resolution of disputes on transfer.

4 Control and Balancing of Supply System

Thames Water, in discharging its duties under the WIA 91, has sole responsibility under License for the operational control of the Supply System. This includes the management and effective balancing of inputs to and outputs from it. Thames Water must maintain the serviceability of the Supply System, extending it to accommodate growth in demand. Thames Water must also meet regulatory and legislative requirements for improvement to the Supply System.

Thames Water will therefore retain responsibility for the running of the Supply System. It is essential that Licensees co-operate with Thames Water to ensure that Supply System operations are not compromised and can be carried out with optimum efficiency.

4.1 Supply System management

4.1.1 Unbilled water

4.1.1.1 Leakage

Licensees will be required to input to the Supply System sufficient water to meet the demand of its customer. Any losses of water which occur in the transportation of this water in the Supply System through leakage are the responsibility of Thames Water, with the exception of losses which occur on the customer's pipe work, which are the responsibility of the customer, and losses upstream of the entry point of connection to the Supply System which are the responsibility of the Licensee.

4.1.1.2 Illegal connections and theft

In accordance with the access price calculation methodology, a Licensee will be required to input to the Supply System, sufficient water to meet the demand of its customer.

Any losses of water which occur in the transportation of this water in the Supply System, from the point of the Licensee's connection, to the customer's connection, through illegal connections and theft are the responsibility of Thames Water. The Licensee will be responsible for such matters upstream of the entry point of connection to the Supply System.

However, Thames Water will endeavour to indicate to the Licensee its experience of the local extent of such problems.

The customer will remain responsible for such matters, which occur on their pipe work.

It would be prudent for the Licensee to have provisions, which deal with this in its agreement with the customer.

4.1.1.3 Water for fire-fighting purposes

Thames Water is responsible for the provision of water for fire-fighting purposes. Thames Water will not charge Licensees for water used for the purpose of firefighting (including the testing of appliances).

Additional special requests for fire hydrants should be dealt with under section 58 WIA91. The cost of installation will be recoverable from the customer in the ordinary way (section 147 WIA91).

The implications of the Licensee's input into the system will be taken into account during Supply System modelling to ensure adequate firefighting provision remains available. Any additional draw on the Licensee's supply will be taken into account in the periodic supply/demand reconciliation.

4.1.2 Security of supply

Thames Water remains solely responsible for drought and water resource planning.

Licensees must comply with reasonable requests for information that is necessary for Thames Water to fulfill its statutory duty to supply. This will normally be on an annual basis in line with the June return timetable. However, the Licensee may be required to provide this information at other times of the year in line with specific regulatory requirements.

The information required for security of supply in terms of source robustness is similar to that required for drought planning and is outlined in section 4.1.2.1 below.

4.1.2.1 Drought Plans

Water undertakers remain solely responsible for the production of drought and water resources plans. To comply with their license conditions and with sections 37C and 39C WIA 91, Licensees must co-operate with Thames Water in the production of these plans. This will be achieved by requiring Licensees to meet all reasonable information requests.

It will be for both parties to agree whether their customers within the same class of customer will be subject to the same risk of interruptions to supply. This is subject to non-discrimination requirements.

Licensees should aim to provide as much of the information set out in 4.1.2.1.1, 4.1.2.1.2 and 4.1.2.1.3, as appropriate to the type of source, as part of their initial application. As part of their detailed applications, Licensees must provide a thorough “**Outage**” risk assessment of any proposed source and the criteria against which this is made, i.e. an assessment of exposure to pollution incidents, vandalism and other risks. We would expect the information requirements for this assessment to be similar to those we use for our own water resources.

4.1.2.1.1 Groundwater sources

For any groundwater source, Thames Water will require evidence of the drought reliability of the source (equivalent to source “**Deployable Output**” for a water undertaker).

This will include technical information relating to how the yield assessment of the groundwater source has been derived, and must be compatible with the industry standard set out by UKWIR.

UKWIR in its “Methodology for the Determination of Outputs of Groundwater Sources” sets out the methodology which Thames Water uses to derive our Deployable Output data. The methodology considers the constraints on Deployable Output during drought conditions and requires, amongst others, consideration of the abstraction licence, the limitations placed on abstraction capability by the abstraction and treatment infrastructure and assessment of pumping water levels under drought conditions. This document is available to purchase from the UKWIR website:

<http://www.ukwir.org/>.

Detailed information relating to the abstraction licence will be required. This will include:

- Licence volumes including annual, daily, hourly and any other time period restrictions, as well as any licence aggregation;
- Limitations on installed pump capacities;
- Conditions of use (i.e. what use of the water is specified on the licence);
- Geographical area over which the water can be supplied;
- Any flow related restrictions such as flow constraints;
- Time limitations;
- Any monitoring requirements;

- Location and construction details of the licensed abstraction points.

Thames Water will also require a copy of the abstraction licence.

Thames Water will require the following operational details for the groundwater source(s):

- Borehole installation details – borehole depth & diameter, pump depth, rising main, water level monitoring & abstraction monitoring;
- Pumping test data and hydrogeological analysis;
- Borehole monitoring (e.g. CCTV survey) and maintenance programme;
- Groundwater quality data;
- Details of Cryptosporidium risk assessment.

Where the Licensee is in the process of applying for an abstraction licence from the EA, Thames Water will require details of the application. We would expect the information outlined above to be provided as and when it becomes available during the licence application and source development process.

4.1.2.1.2 Surface water sources

For any surface water source, Thames Water will require evidence of the drought reliability of the source (equivalent to source Deployable Output for a water undertaker).

This will include technical information relating to how the yield assessment of the surface water source has been derived. Thames Water will require evidence that the hydrology supporting the source can sustain the abstraction during a drought. This may be measured against an historic drought such as the 1975 to 1976 event, or against a sequence of events over as long a period of hydrological record as possible. It is important that two year drought events are examined within these records.

The Licensee should also provide Thames Water with information relating to:

- Process water losses during treatment;
- Turbidity spikes, pesticides and nitrate levels which may mean that the source is unavailable for periods throughout the year;
- Any existing agreement to supply others (e.g. Bulk Supply Agreements).

Detailed information on the abstraction licence will be required. This will include:

- Licence volumes including annual, daily, hourly and any other time period restrictions, as well as any licence aggregation;
- Limitations on installed pump capacities;
- Conditions of use (i.e. what use of the water is specified on the licence);
- Geographical area over which the water can be supplied;
- Any flow related restrictions such as flow constraints;
- Statement of any Section 20 agreements (Water Resources Act 1991), which may limit water resource availability at critical times;
- Time limitations;
- Any monitoring requirements;
- Location and construction details of the licensed abstraction points.

Thames Water will also require a copy of the abstraction licence.

Where the Licensee is in the process of applying for an abstraction licence from the EA, Thames

Water will require details of the application. We would expect the information outlined above to be provided as and when it becomes available during the licence application and source development process.

4.1.2.1.3 Bulk supplies from another water undertaker

For a bulk supply from another undertaker, we would require access to the relevant clauses of the Agreement on which the bulk supply was based.

4.1.2.2 Resource Planning

For resource planning purposes, the information specified in section 4.1.2.1 (in terms of drought yield) will be required. This will form part of the supply/demand balance assessment required by Thames Water in order that we can formalise our plans to meet our obligations into the future.

This will require analysis of current and expected demand (at both average and peak) for the planning period with a breakdown of the components of demand such as domestic, and commercial, together with the components of this demand.

As part of this supply/demand analysis Thames Water will require the following information from the Licensee:

Demand side

- Current demand Average (Annual Average) and Peak (Average Day, Peak Week and Peak Day) demand;
- Current monthly demand;
- Current annual demand;
- Forecast demand Average (Annual Average) and Peak (Average Day, Peak Week and Peak Day) demand;
- Domestic/Commercial split;
- Supply side Headroom (including climate change component).

Supply side

- Source Headroom (e.g. potential licence reduction uncertainty);
- Outage (including power failure, pump failure, temporary water quality problems);
- Licence conditions (see section 4.1.2.1 on drought plans);
- Potential for Sustainability Reductions (reduction of licence for environmental reasons);
- Water treatment process;
- Treatment losses.

4.1.3 Telemetry requirements for Supply System control

Licensees will provide appropriate means of control of inputs, (for example pumps, switchgear and balancing tanks) and for means of measurement of volumes and water quality input into the Supply System.

A secure and robust reporting system must be in place to enable the Licensee to monitor performance data, in order that Thames Water can be properly notified in the event of changes to normal operating parameters.

Thames Water and the Licensee will agree alarm trigger levels together with response plans for these alarms.

The Licensee must provide a suitable contact available at all times to respond to any alarms.

In the event of an emergency, the Licensee must have in place processes to enable effective communication with Thames Water's operational control centres. The communication methods and processes will be discussed and formalised during the contract negotiations with the Licensees.

Upstream of the point of input, responsibility and costs lie with the Licensee, downstream of the entry point, including the entry point itself, is the responsibility of Thames Water.

4.1.4 Secondary connections

The only Supply System connections allowed will be those specified in the Access Agreement. Any subsequent connections must not take place unless Thames Water and the Licensee have agreed an appropriate amendment to the Access Agreement.

4.1.5 Network maps and plans

It is important for the Licensee and Thames Water to share relevant maps and plans, normally at the detailed application stage. This is subject to objectively justifiable conditions about security and copyright. Information from Supply System modelling will be shared between the parties, for example, to clarify the negotiation of connection costs, such as mains reinforcement.

4.1.6 Point of entry controls and failure modes

The Licensee is responsible for monitoring the quality and quantity of water put into the Supply System. Thames Water will require a level of operation and monitoring which is at least sufficient to comply with the Water Supply (Water Quality) Regulations 1989 as amended. Thames Water will also require that point of entry controls are designed to be sensitive to the hydraulic nature of the Supply System and to ensure security against the Licensee's source failure to Thames Water's assets.

Licensees must make available to Thames Water at all times, access to a sampling point for water representative of that being input into the Supply System. The sampling point should comply with the requirements of the Water Supply (Water Quality) Regulations as amended.

Full site access and access to data and information relevant to water quality must be made available to Thames Water.

Sampling facilities must be provided at the outlet of treatment works and service reservoirs and at the point of entry into the Supply System. These facilities must comply with the requirement of the Water Supply (Water Quality) Regulations as amended and the associated guidance issued by DWI. Licensees must allow access to these sampling facilities as required.

The arrangements for reporting regulatory and operational monitoring data to Thames Water will be agreed on a case-by-case basis as part of the Access Agreement. In general terms, this data may include but not be limited to, laboratory results, test kit results, instrument readings, SCADA (Site Control and Data Acquisition) data, operator recorded instrument readings and test results. The reporting frequency and format will be agreed on a site-specific and parameter specific basis.

Thames Water may also require automatic shutdown of the Licensee's input. This process will be based on specified trigger levels and would be the case for a disinfection failure (see [Annex 5](#)).

Licensees must provide details of pollution or suspected pollution, unusual changes in water quality or failures of standards (actual or imminent) of plant or treatment standards to Thames Water immediately.

4.2 Metering Services

4.2.1 Meter asset management

Input meters may be owned and/or operated by the Licensee or Thames Water in accordance with contractual arrangements. Meters designated for charging purposes will be identified and

they and their data should be accessible to both parties.

Where the Licensee installs an input meter, this should meet Thames Water's specification. Thames Water and the Licensee will agree the location and ownership of the input meter, which should normally be of magnetic flow type, calibrated for the expected flow range to meet the meter class performance specification and maintained according to an agreed schedule set out in the Access Agreement.

All output revenue meters will remain the property of Thames Water. Thames Water will not be required to sell or lease these meters to the Licensee.

Thames Water will normally install an output revenue meter. Where the installation has been carried out by a third party, Thames Water will only adopt the meter if it complies with all relevant Regulations and standards for location and accessibility. All meters should meet current and future BS and EN standards.

Thames Water will maintain the meter asset.

Thames Water requires access to its meter assets for the purpose of meter reading (as required), proving supplies, checking for leaks, checking for illegal water usage and meter maintenance.

4.2.1.1 Metering solutions available

Thames Water will supply and fit output revenue water meters to all new, and some (outlined in Thames Water's metering policy), existing properties. The meter size will be determined by the diameter of the supply pipe to the property and the peak and low flow rates demanded by the customer.

Thames Water will supply meters from our current framework agreement metering partner. These meters will comply with the relevant ISO 4064 standards.

4.2.1.2 Meter installation

Thames Water will normally install the meter; however, third parties may be instructed to install the meter on behalf of Thames Water, subject to inspection by Thames Water before the meter is adopted.

In all instances, the meter will be installed in a position that will not inhibit the reading of that meter at any time. The standard meter location will be external at the boundary of the premises. Exceptions may be granted on a case by case basis.

4.2.1.3 Meter maintenance

Thames Water will maintain the meter. Currently the replacement schedules for commercial meters are determined by periodic reviews of meter performance of different meter categories.

Thames Water will normally meet the costs of maintaining revenue meters; however charges may be levied where the Licensee has requested an accuracy verification test.

4.2.2 Meter calibration & verification

Meter accuracy tests can be carried out at the Licensee's request. Thames Water will charge for the cost of the meter test and the meter exchange should the meter be found to be inaccurate within the requirements of ISO4064. If the meter is found to be inaccurate, no charge will be levied and appropriate refunds will be made. Meter accuracy tests will be carried out by an independent test house and results will be available to the Licensee.

4.2.3 Meter reading and meter reading verification

4.2.3.1 Point of Entry Meter

The Licensee is responsible for reading the point of entry meter at an appropriate frequency to be agreed with Thames Water on a case-by-case basis. The Licensee is responsible for making the

meter readings available to Thames Water within a timescale and by a mechanism to be agreed and specified within the Access Agreement.

The frequency of meter readings required from the Licensee is likely to be same as the frequency carried out by Thames Water for the customer in question. For the majority of Thames Water's existing large users, meters are normally read on a monthly or quarterly basis.

The Licensee should provide meter reading data in a Microsoft Excel spreadsheet format (or similar) to include, amongst others meter read date, previous reading, current reading and meter serial number. The information should be sent to Thames Water via an agreed e-mail address.

Thames Water may offer the Licensee a chargeable meter reading service to read point of entry meters at an appropriate frequency to be agreed with the Licensee on a case-by-case basis. These meter readings will be made available to the Licensee within a timescale and by a mechanism to be agreed and specified within the Access Agreement.

Thames Water will require access to all point of entry meters.

In the event of disputed meter readings the guidance in The Water (Meters) Regulations 1988 SI No 1048 will be followed. The Licensee must draw a disputed meter reading to Thames Water's attention in writing.

Installation of data loggers, touch pads, digital outreaders or energy management systems by the Licensee can only be carried out in consultation with Thames Water.

4.2.3.2 Customer Revenue Meter

The Licensee is normally responsible for reading the customer revenue meter and providing this information to Thames Water according to timescales and by a mechanism agreed and specified within the Access Agreement.

The Licensee is responsible for informing Thames Water in the event that not all supplies to the eligible premises are effectively metered. Thames Water and the Licensee will subsequently agree the approach to the installation of appropriate meters.

Thames Water will require access to the customer revenue meters for reading and maintenance purposes.

In the event of disputed meter readings the guidance in The Water (Meters) Regulations 1988 SI No 1048 will be followed. The Licensee must draw a disputed meter reading to Thames Water's attention in writing.

The Licensee is normally responsible for the provision of customer revenue meter readings to the sewerage undertaker where this is not Thames Water.

4.3 Supply System Balancing

4.3.1 Strategic Balancing

The price control regime requires Thames Water to operate efficiently as well as effectively. This means ensuring optimum operation of the distribution network through best use of (for example) pumping, energy tariffs and pressure management.

Central to the network balancing process is the prediction of demand and generation of supply to match. In practice this means that the measurement of the average daily demand in a supply zone is compared to the measured actual demand profile over the day. The differences between the average daily and varying customer demand are usually met from balancing service reservoir storage. Some storage is normally required to balance the output from a supply source against a varying customer demand profile.

Metering will be required to ensure the Licensee's daily input meets the daily demand supplied so that existing service reservoir levels are maintained.

Thames Water plans the production and storage programme to make the most efficient use of varying electricity tariffs.

4.3.1.1 Annual Supply Planning

The Licensee is responsible for the provision of information to enable Thames Water to carry out an annual assessment of available resources. This information will include an overall assessment of the robustness of the source to include the reliability of the yield of the source, water quality and planned outages.

Section 4.1.2 provides further information on Thames Water's specific information requirements for its ongoing water resource planning process.

4.3.1.2 Strategic Supplies

Water undertakers have statutory duties (Sections 52 and 55 WIA91) to supply water to existing and new customers for domestic and non-domestic purposes. These duties become relevant where a Licensee ceases to supply a customer.

Sections 66G and 66H WIA91 allow Ofwat to designate as "strategic" one or more introductions of certain water supplies by a Licensee into a water undertaker's Supply System. The trigger for designation as a strategic or collective strategic supply is that, without the introductions being made, there is a substantial risk that the water undertaker would be unable to maintain supplies to its own customers with water for domestic and non-domestic purposes as well as supplying the Licensee's customers with water (for domestic purposes only).

While an application for a strategic supply designation can be made at any time, Thames Water will discuss in the initial stage of each application for access whether (and when) a supply might be strategic as this may affect the access charge.

The Access Agreement will make provision for the discussion of strategic supply status at any time during the life of the agreement.

Designation of the Licensee's water supply as strategic means that the Licensee would become subject to special administration procedures (sections 23-26 WIA91). Standard Licence Condition 14 (Special Administration – Wholesale Authorisation) of the Water Supply and/or Sewerage Licence requires a Licensee at all times to ensure that, if a special administration order were made in relation to it, the Licensee would have available to it sufficient rights and assets to enable the special administrator to manage the affairs, business and property of the Licensee so as to ensure that the purpose of the order could be achieved.

Supplies to eligible customers of a retail Licensee **cannot** be taken into consideration when Ofwat decides whether or not to designate an introduction by a holder of a Wholesale Authorisation in the same water resource zone. Customers of a Licensee supplying only in accordance with its retail authorisation (a 'Retail Licensee') need to be aware that their supplies might not be protected by the strategic supply designation process if a Combined Licensee is unable to introduce water because it has become insolvent. However, if there were a water shortage in a particular zone, the water undertaker would need to comply with its obligation not to discriminate between its own customers and the retail Licensee and its customer(s). If the water undertaker did cut off supplies to the retail Licensee, then the interim duty to supply obligations in section 63AC WIA91 will apply (subject to conditions set down in that section).

Please see Ofwat's non-statutory guidance on how it intends to address the issue of designation of supplies as strategic at:

http://www.ofwat.gov.uk/competition/wsl/gud_pro_stratsuppguid.pdf

4.3.1.3 Back-Up supplies

The Access Price levied will reflect the Licensee's requirement that Thames Water provides Back-Up supplies facility. In order to provide such a facility, Thames Water will need to maintain

sufficient capacity to supply the Licensee's customer in the event of partial or complete failure of the Licensee's supply.

Where Thames Water is to provide Back-Up supplies facility, in the event of partial or complete failure of the Licensee's supply, Thames Water shall supply the Licensees customer.

Any water provided under the Back-Up supplies facility will be charged for at the applicable tariff.

The Back-Up supplies facility exists to provide for infrequent but substantial events (in volume, duration or both). It is separate from Thames Water's obligations around daily balancing of the Supply System.

4.3.1.4 Interim duty to supply

If the Licensee ceases to supply any premises with water, Thames Water will be obliged to continue the supply that had been made by the Licensee for a minimum of three months. However, this obligation will not arise if:

- (a) Thames Water would have to incur unreasonable costs in carrying out works to meet existing obligations to supply water for domestic and other purposes as well as probable future obligations to supply water to buildings for domestic purposes;

or

- (b) Making the supply would otherwise put at risk Thames Water's ability to meet any of the obligations stated in (a).

4.3.1.5 Interruptible customers and interruptions

Thames Water does not operate an interruptible supply tariff option and does not supply any customers on an interruptible supply basis.

4.3.2 Flow balancing and reconciliation processes

4.3.2.1 Supply System usage forecasts for wholesale supplies

The Licensee shall provide to Thames Water the customer's current demand, profiled by day, week, month and year. The Licensee shall also provide the customer's projected demand including profile, peaks and growth.

Demand profiles should be provided for both potable and non-potable supplies where applicable.

4.3.2.2 Supply System usage for combined supplies

The Licensee shall provide to Thames Water the profile of its proposed input to match its customer's current demand profiled by day, week, month and year. The Licensee shall also provide the customer's projected demand including profile, peaks and growth.

Demand profiles should be provided for both potable and non-potable supplies where applicable.

4.3.2.3 Imbalance Accounting

It is the responsibility of Thames Water to ensure that the physical balance of the Supply System is maintained.

Daily balancing of the Supply System is separate from any arrangements put in place by Thames Water and the Licensee for Thames Water to provide Back-Up supplies to the Licensee's customer. This latter arrangement exists to provide for infrequent but substantial events (in volume, duration or both).

Thames Water expects Licensees to use reasonable endeavours to balance the input of water into Thames Water's Supply System with the customer(s) demand over every 24 hour period.

Thames Water and the Licensee will agree sensible upper and lower thresholds around the supply profile to account for normal variations in demand.

Inputs from the Licensee will be assessed for compliance with contractual obligations as specified in the Access Agreement over the agreed balancing period with due account taken for any Supply System related losses or events.

Where the Licensee fails to provide the volume of water required by the contractual obligation, Thames Water will notify the Licensee and the appropriate charges will be levied by Thames Water for water which we have been required to supply to make up this shortfall. These charges are termed “Top Up Supplies” and they will be charged at the applicable published standard tariff.

Where the Licensee inputs a higher volume of water than required by contractual obligations, Thames Water will request that the Licensee reduces its input to match the demand characteristics of its customer (and in line with contractual obligations).

The Licensee should only introduce water into the Supply System sufficient to meet the expected demand of its customer taking no account of leakage.

4.3.2.4 Reconciliation processes

Thames Water and the Licensee will agree and stipulate in the Access Agreement, a suitable reconciliation period over which to assess the volume of water input by the Licensee and the volume of water taken by its customer(s).

When data on consumption is incomplete on the day of reconciliation Thames Water will default to the contractual values. When data does become available and in any event after each 6 month period, formal reconciliation of supply and demand will be made by Thames Water.

Thames Water will reserve the right to restrict the Licensee’s input to the Supply System for operational reasons e.g. to maintain or repair the Supply System. If such a restriction is applied on the Licensees’ input, any shortfall will normally be allowed to be made up in the following month without balancing charges being applied in the month the restriction was actioned by the Licensee.

The detailed process for applying balancing and Top-Up Supplies mechanisms will be agreed and specified in the Access Agreement.

4.3.2.5 Peak season / off peak reconciliation

Thames Water does not differentiate between peak and off peak periods or seasons in the tariffs charged to its customers.

5 Supply System Maintenance and Emergency Procedures

Thames Water and the Licensee will conduct their businesses in such a way as to ensure the compliance with obligations under the Security and Emergency Measures (Water and Sewage Undertakers) Direction, 2005.

Thames Water and the Licensee will establish a set of robust emergency procedures.

Licence Condition 2(3)(b) states that the License must have sufficient product and public liability for the activities authorised by its licence.

5.1 Diagnosis of system issues

5.1.1 Obligations with respect to diagnosis of Supply System problems

5.1.1.1 Responsibility of Thames Water

Subject to the levels of service agreed between Thames Water and the Licensee and stipulated in the Access Agreement, Thames Water will inform the Licensee (in line with communication procedures (including timescales) stipulated in the Access Agreement) where it is aware of an issue that is likely to impact the Licensee's customer. Such information will include low pressure, mains bursts or water quality issues.

5.1.1.2 Responsibility of Licensee

The Licensee must comply with Thames Water's information requirements for its monitoring regime. The Access Agreement will set out the specific information flows and how these will be managed. Such information is likely to relate to planned maintenance and supply interruption, volume, flow rate and pressure outside of agreed parameters, ongoing system balancing, emergencies and incident management, metering information, a mains burst upstream of the Supply System connection, water quality data, levels of service feedback from the customer, notice of changes in operation or water quality at the Licensees plant and any failures or out of specification performance.

5.1.2 Quality issues

Thames Water is responsible for the quality of the water in the Supply System. The Licensee is responsible for maintaining the standard of water quality introduced into the Supply System.

5.1.2.1 Quality issues: maintenance

Licensees must submit an outline of their planned and reactive maintenance procedures and resources for the assets upstream of the point of access to the Supply System. The detailed arrangements will be agreed on a case-by-case basis and set out in the Access Agreement.

Licensees must specify any maintenance work that will require a temporary cessation of the supply into the Supply System.

5.1.2.2 Quality issues: emergency procedures

The Access Agreement will specify:

- i) Criteria that will trigger emergency procedures, e.g. treatment failure, reduction in output, pressure changes (minima and maxima), the quality of raw or treated water and awareness of external events;
- ii) Contact arrangements e.g. telephone numbers, fax numbers and response times;
- iii) Minimum performance standards e.g. speed of notification, response times for shutting off the supply or sending out engineers.

Licensees must comply with The Water Undertakers (Information) Direction 2004, DWI

Information letter 02/2004 and any subsequent revisions.

Thames Water and the Licensee are required to notify relevant bodies as detailed in the Water Undertakers (Information) Direction 2004 and the Water Supply (Water Quality) Regulations for any incident that may affect drinking water quality or sufficiency of supplies.

Licensees must formulate their own emergency plans and procedures and these should be submitted to Thames Water. These plans should be designed to meet all of the water quality provisions contained within the Access Agreement and relevant legislation. The Licensee must, if necessary, be able to deal with water quality emergencies in “real time” and at any time. Thames Water will expect the Licensee to be resourced appropriately.

Thames Water will require that personnel suitably trained and qualified in matters of water quality and water treatment process will be available at all times. Maintenance technicians competent to deal with all aspects of the Licensee’s water treatment plant should also be available at all times.

5.1.3 Hydraulic issues

Thames Water is responsible for maintaining the hydraulics of the Supply System including complying with DG2 (Inadequate Pressure) and DG3 (Supply Interruptions) standards.

5.1.3.1 Inadequate Pressure (DG2)

Ofwat sets DG2 targets which state the maximum number of properties which should be at risk of low pressure.

DG2 issues are normally highlighted by Thames Water’s pressure and flow sensors on the Supply System. Thames Water is responsible for the management of the Supply System and the pressure and flow of the water in it. The Licensee is responsible for maintaining volume, pressure and flow of its input to the Supply System according to the parameters set out in the Access Agreement. The Licensee will be expected to take immediate corrective action on notification by Thames Water, where Thames Water identifies a flow or pressure issue in the Supply System which is caused by the Licensee’s failure to meet the terms of the Access Agreement.

Thames Water expects the Licensee to inform us wherever and as soon as its customer has reported low pressure and/or poor flow so that we may investigate the cause.

Thames Water reserves the right to alter pressure and/or flow in the Supply System at any time in response to (for example), leakage or drought issues. The Licensee will be expected to alter its input accordingly. The specific mechanism for this process will be agreed within the Access Agreement.

5.1.3.2 Supply Interruptions (DG3)

Thames Water does not expect that the Licensee's activity will have an impact on our ability to report the number of properties without water following a mains burst. However, the Access Agreement will stipulate a clear process whereby any interruptions to supply can be reported immediately by the customer to Thames Water.

5.1.4 Real time information capture systems

The Licensee is responsible for the provision of information to Thames Water on key performance parameters, and asset performance as identified by Thames Water during negotiation of the Access Agreement. Reports shall include full disclosure of the data. The mechanism and frequency for reporting data shall be agreed between the Licensee and Thames Water.

The format for data exchange will be agreed as part of the Access Agreement but will usually be in paper or electronic format. Some parameters, such as some water quality and treatment process parameters will require real time electronic data transfer.

Thames Water and the Licensee are required to notify the relevant bodies, as detailed in the

Water Undertakers (Information) Direction 2004, of any incident that may affect drinking water quality or sufficiency of supplies.

5.1.5 Reporting procedures

The Licensee should establish emergency point(s) of contact for the use of both its customers and Thames Water. Such points of contact must be robust and operate 24/7. An effective alternative must be available if the primary system fails.

Thames Water will establish a similar point of contact for the Licensee.

Documented procedures will be established to describe how these emergency contacts will function as part of the Access Agreement.

It is the Licensee's responsibility to ensure that the customer is aware of communication paths, including scenarios where Thames Water is the point of contact. The Licensee must ensure that appropriate provision is in place for passing on of queries between customer and Thames Water if appropriate.

The Licensee is expected to adhere to best practice procedures adopted by water undertakers to provide information to the Consumer Council for Water

Thames Water and the Licensee are required to notify relevant bodies as detailed in Water Undertakers (Information) Direction 2004 and the Water Supply (Water Quality) Regulations for any incident that may affect drinking water quality or sufficiency of supplies.

5.2 Planned System Maintenance

5.2.1 Obligations with respect to planned maintenance

5.2.1.1 Responsibility of Thames Water

Thames Water and the Licensee shall agree the period of notice that Thames Water will give to the Licensee for planned work on the Supply System which may place the Licensee's assets or customers at risk.

Thames Water and the Licensee shall co-operate to implement timely changes to operations in order to meet regulatory, customer and operational requirements at any time during the negotiation or performance of the Access Agreement.

5.2.1.2 Responsibility of the Licensee

Thames Water and the Licensee shall agree the period of notice that the Licensee will give to Thames Water for planned work on the Licensee's supply, which may affect health, safety, the environment, water quality, pressure and/or flow supplied or put the Supply System or Thames Water's customers at risk.

Thames Water will be able to require implementation of appropriate corrective management actions or otherwise to directly manage and control the Licensee's supply, in so far as it affects the operation of the Supply System, or affects the level of service delivered to Thames Water's customers, in the same way as it is able to control its own supplies.

The Licensee is responsible for informing its customer of any disruption in supply as a result of maintenance carried out by either party.

5.2.2 Specification of Assets

The Access Agreement will set out the precise scope of the assets to be included in planned maintenance schedules.

As part of the Access Agreement, Thames Water and the Licensee will agree which of the Licensee's assets Thames Water requires access to. The Access Agreement will also state the performance standards that those assets must meet as well as the arrangements for regular

review of those assets.

Main laying of any assets that connect the Licensee's source to Thames Water's Supply System will comply with Thames Water's design standards (including the Self Lay code), as a minimum.

Related equipment such as water quality monitors, flow meters, pressure transducers (including the required accuracies and approved analytical methods) will comply with Thames Water's design standards as a minimum.

The Licensee will provide such information as reasonably requested by Thames Water in the performance of a risk assessment prior to any planned maintenance.

5.2.3 Maintenance Standards

Thames Water is responsible for the maintenance of the Supply System. Essential works will, from time to time, result in interruptions to the supply. The Licensee will be given notice of all planned interruptions in line with the terms of Thames Water's Customer Guarantee Scheme. No prior notice can be given in respect of emergency interruptions, but the Licensee will be advised as soon as practicable when resumption of the supply is anticipated.

5.2.4 Risk assessment processes

All outages must be risk assessed in line with Thames Water's procedures. Risk assessments are approved by Thames Water's operational control centres prior to commencement of work. At least 7 days' notice must be given of all activity intentions to provide sufficient time to assess and prepare. If the effect is significant (this is defined further in company operating procedures) this will be recorded and monitored centrally to ensure the overall management of the system is appropriate. This work will usually require up to 3 months' prior notification.

Failure by the Licensee to respond to Thames Water's reasonable requests for information as part of the risk assessment process could result in a delay to the commencement of the works (for which the Licensee may be liable) and may constitute a breach of the Access Agreement. In some circumstances such failure on the Licensee's part could constitute a breach of the Licensee's licence conditions and may prompt enforcement action by Ofwat.

Further information on Thames Water's risk assessment procedures will be provided during the Access Agreement negotiation stage. Thames Water will provide examples of risk assessment forms and documents. Thames Water and the Licensee will also agree information exchange schedules as part of the Access Agreement.

5.3 Unplanned System Maintenance

5.3.1 Obligations with respect to unplanned maintenance

Thames Water will require co-operation from the Licensee in the event of any unplanned maintenance where the Licensee's input is likely to impact or be impacted by the unplanned maintenance. Such co-operation may relate to requirements for input to any risk assessment and communications with the Licensee's customer. Thames Water will expect that the Licensee can provide such capability 24 hours a day, 7 days a week.

5.3.2 Risk assessment processes

Thames Water has defined procedures for risk assessing activity prior to unplanned and emergency maintenance work. Thames Water will expect that the Licensee will comply with the risk assessment procedure in place at the time. Thames Water will ensure that the Licensee is kept informed of any relevant changes to the risk assessment procedure that may affect the Licensee's operation.

Failure by the Licensee to respond to Thames Water's reasonable requests for information as part of the risk assessment process could result in a delay to the commencement of the works (for which the Licensee may be liable) and may constitute a breach of the Access Agreement. In some

circumstances such failure on the Licensee's part could constitute a breach of the Licensee's licence conditions and may prompt enforcement action by Ofwat.

Further information on Thames Water's risk assessment procedures will be provided during the Access Agreement negotiation stage. Thames Water will provide examples of risk assessment forms and documents. Thames Water and the Licensee will also agree information exchange schedules as part of the Access Agreement.

5.3.3 Emergency notices

Thames Water will be responsible for issuing emergency notices to all customers in its area of supply including the Licensee's customers. Thames Water's existing four types of warning notice will be issued as appropriate. These are: "Do not Drink", "Do not drink or cook with", "Do not use for any purpose" and "All clear". The notices meet DWI requirements for the message to be given in several languages and have pictorial interpretation of the text.

5.4 Safety aspects of unplanned and emergency work

The Licensee shall comply with Thames Water's Health and Safety Policy and Procedures wherever involved in activities on Thames Water's or jointly accessed assets. Thames Water will ensure that the Licensee is fully aware of the terms of this policy.

5.4.1 Status classification

Thames Water uses a company standard definition for classification of events. The classification provides severity scale; typical example events and management responsibilities (see Annex 8).

It is the Licensee's responsibility to ensure that its own event classification system is able to interact in a seamless manner with Thames Water's event management classification and process.

5.4.2 Standard emergency reporting procedures

Reporting procedures and protocol are dictated by the severity level of the event, (see Annex 8). An event of L2 classification or higher must be notified to the Duty Manager in Operational Control to enable effective risk assessment and management decisions to be validated and acted upon. Appointment of an Event Controller is decided during the initial event reporting call to the Duty Manager. The Event Controller may be the Duty Manager, or a suitably competent operational manager.

For any event which affects the Supply System, Thames Water will determine the need for any post event review and the responsibility for preparing such reports. Thames Water will involve the Licensee as necessary and determine respective responsibilities and action plans for the remedial measures required. The Licensee will be responsible for any costs incurred by Thames Water in this respect which result from a failure of the Licensee to meet contractual agreements set out in the Access Agreement.

The Licensee is responsible for co-operation with Thames Water in the preparation of any post event reviews required by Thames Water. The Licensee will implement any Action Plans as agreed with Thames Water arising out of the reviews as required.

5.4.3 Major emergency reporting procedures

A major emergency is defined as either a L3 or L4 event (see Annex 8) and will follow the process as set out in Section 5.4.2 above. An event is an unplanned or unexpected incident. The example scenarios are key to Thames Water and the Licensee determining this process jointly.

5.5 Emergency procedures for dealing with specific events, issues and incidents

Best practice emergency planning recommends that plans and processes should be sufficiently flexible to enable adjustment to suit each unique event as it occurs. Thames Water's event management arrangements are based on this philosophy.

Thames Water has standard contingency arrangements used in response to water utility events in place. These include:

- Issuing warning notices and communicating with customers (including “Special Consumers”),
- Alternative water supply provision when the piped supply fails to meet standards stipulated by regulators (as laid down in Security & Emergency Measures Direction),

Thames Water will brief the Licensee on its emergency plans before any live connection is made.

Thames Water and the Licensee shall carry out risk assessments to determine the most appropriate range of specific contingency arrangements that are required. Roles and responsibilities, including the provision of manpower and other logistical support will also be jointly agreed by Thames Water and the Licensee.

The Licensee should review the adequacy of this risk assessment, at least annually, and more frequently where required by proposed or actual changes. The Licensee is responsible for conducting further or updated risk assessments and amend contingency plans or risk mitigation measures where necessary. The Licensee is responsible for communicating notification of proposed or actual changes to Thames Water which may reasonably be foreseen to affect Thames Water’s risk exposure.

The Licensee will be responsible for the provision details of its emergency procedures and to demonstrate them.

Jointly agreed plans and procedures will be subject to a routine review every two years or earlier if required by post event learning.

The Licensees emergency plans will be audited each year under the directions of WIA91.

5.6 Customer protection

5.6.1 Special Consumers

The Security & Emergency Measures (Water and Sewage Undertakers) Direction 2005 and Security & Emergency Measures (Licensed Water Suppliers) Direction 2006 requires that ‘due regard’ is given to these customers and a level of support provided above that offered to normal customers. If, as part of the Access Agreement negotiation process, it is agreed that Thames Water will provide support for Special Consumers at the Licensee’s customer’s premises during an event, a remuneration process will be agreed as part of the Access Agreement.

The Licensee will inform Thames Water of relevant details if Special Consumers (as defined in License Condition S and Condition R) occupy or are likely to occupy any premises that the Licensee supplies.

Similarly, Thames Water will inform the Licensee where it is aware that a Special Consumer occupies a premises proposed to be supplied by the Licensee.

5.6.2 Large scale customer warning procedures

Thames Water is responsible for warning customers, including the Licensee’s customers, where an event affecting a large geographical area or population occurs. Thames Water and the Licensee will agree the definition of each level of event with reference to a set of agreed triggers, (for example number of people or properties affected) for such an event.

The procedure used for carrying out large-scale customer warnings varies according to the nature and location of the specific event. In practice the methods used include person-to-person briefings, letters, leaflet drops, radio and television announcements, and the company’s website.

The Licensee may be required to provide manpower and logistical support to assist in this process as determined in the Access Agreement. The level of support required will be determined by the nature and location of the event and the warning methodology employed.

5.6.3 Emergency compensation payments

Licensees are not customers of water undertakers for the purposes of the Government's Guaranteed Standards Scheme (GSS) and customers of Licensees do not have the benefit of the GSS.

Compensation payments will be agreed as part of the Access Agreement. Unless separate compensation payments have been agreed, these will be equivalent to the payments set out in Thames Water's Customer Guarantee Scheme.

Further information on Thames Water's Customer Guarantee scheme can be found on [our website](#).

Any compensation payments will be paid to the Licensee who may pass them on to its customers as appropriate.

5.6.4 Emergency Operational Planning Exercises

The Licensee will be required to take part in the joint exercising of the Emergency Procedures and Contingency Plans with Thames Water. The frequency of such testing will be stipulated in the Access Agreement, but will be no less frequent than once every 2 years. Where appropriate, the Licensee will also support external government agency exercises where they impact upon the Licensee's operational area and responsibilities.

5.7 Support processes

5.7.1 Arrangements for press liaisons

In most emergency situations, press liaison will be handled by the Thames Water press office. In certain circumstances, particularly water quality incidents, this will be via active contact with local media, such as radio and television stations. Burst mains and pressure issues will normally be dealt with by Thames Water's press office on a reactive basis.

Thames Water and the Licensee will agree responsibility for press liaison during an emergency situation as part of the Access Agreement.

Thames Water operates a 24-hour point of contact within its press office. This provides and receives information from media and press spokespeople from other organisations involved in emergency scenarios.

The Licensee will therefore be required to provide a 24-hour contact to Thames Water in the event of liaison between the parties being required to make any statement to the press or related organisations.

5.7.2 Emergency contacts

The Licensee should establish emergency point(s) of contact for the use of both its customers and Thames Water. Such points of contact must be robust and operate 24/7. An effective alternative must be available if the primary system fails.

Thames Water will establish a similar point of contact for the Licensee.

Documented procedures will be established to describe how these emergency contacts will function as part of the Access Agreement.

5.8 Reportable situations

Certain events or incidents must be reported to external parties. Such reporting is required on a statutory basis. For example the DWI must be notified of an Incident under the Water Undertakers (Information) Direction 2004. For Health and Safety incidents, all current Health and Safety legislation must be complied with. Other external bodies include the Consumer Council for

Water (CCW), and Ofwat.

The Licensee will have arrangements in place to notify to reportable external bodies. These arrangements must be compliant with those bodies' requirements. Thames Water will require written assurance from the Licensee that these requirements have, and will continue to, be met

6 Customer Contact Arrangements

It is the Licensee's responsibility to ensure that the customer is aware of communication paths, including scenarios where Thames Water is the point of contact. The Licensee must ensure that appropriate provision is in place for passing on of queries between customer and Thames Water if appropriate.

Thames Water will generally retain its existing relationships with sewerage customers. However, by exception, Thames Water and the Licensee (with the customer's involvement) may agree a commercial arrangement for the Licensee to conduct some or all of the contact on behalf of Thames Water.

Licensees must ensure the safe operation of the Supply System and supply water undertakers with such information as they reasonably require. License Condition S and Condition R, deal with enforcement of customer information flows for operational safety, especially about Special Consumers, diagnosis of arising Supply System issues and information for customers during planned maintenance.

6.1 Customer contact arrangements for operational queries and complaints

The Licensee is responsible for handling all enquiries or complaints relating to billing (and collection of revenues) for its customers. Any queries relating to Thames Water's distribution system (operational issues) received by the Licensee shall be forwarded promptly to Thames Water for resolution.

Should the Licensee's customers contact Thames Water regarding a billing query, they will be referred to the Licensee. In the case of emergencies where there are health and safety issues or risk to Supply System integrity, then Thames Water should be able to contact the Licensees' customers directly. Similarly the Licensees' customers should be able to contact Thames Water directly in these circumstances.

The Licensee should comply with any requests for information made by Thames Water which arise as a result of its duty to comply with the requirements of regulatory bodies. Any disclosure of customer data will be done so in accordance with the Data Protection Act. If the Licensee requests data from Thames Water to comply with regulatory bodies, Thames Water will endeavour to provide such information as requested.

6.1.1 Customer Meter Reading

The Licensee is responsible for reading its customer's meter and subsequently providing this information to Thames Water and to the sewerage undertaker where this is not Thames Water. However, a Licensee may ask Thames Water to provide meter reading services on its behalf. Charges for the provision of this service will be agreed and stipulated in the Access Agreement.

The frequency of meter readings required by Thames Water from the Licensee is likely to be the same as the frequency carried out by Thames Water for the customer in question. For the majority of Thames Water's existing large users meters are normally read on a monthly or quarterly basis.

The Licensee should provide meter reading data in a Microsoft Excel spreadsheet or similar to include (amongst others) read date, previous reading, current reading and serial no. The information should be sent to Thames Water via an agreed e-mail address.

6.1.2 Operational Issues

6.1.2.1 Water Supply Queries

The Licensee is the first point of contact for these types of query. Any queries relating to Thames Water's distribution system (operational issues) received by the Licensee shall be forwarded

promptly to Thames Water for resolution.

6.1.2.2 Sewerage Queries

Thames Water will normally retain its existing relationships with its sewerage customers. However, by exception, Thames Water and the Licensee (with the customer's involvement) may agree a commercial arrangement for the Licensee to conduct some or all of the contact on behalf of Thames Water.

6.1.3 Complaints handling processes

Licensees will normally be responsible for handling complaints from their customers that relate to services provided by the Licensee.

Where the complaint relates to the service provided by Thames Water, this will be handled and investigated according to existing processes and regulatory requirements (such as DG7). DG7 is Ofwat's measure of undertaker's performance in responding to written complaints from customers. Undertakers are measured on the percentage of responses made within 10 working days or receipt of the complaint.

The Consumer Council for Water will investigate complaints on behalf of the customer where the customer is not satisfied with the response provided by its water supplier. Further information can be found on the Consumer Council for Water's website at:

<http://www.ccwater.org.uk/>

The level of service provided by Thames Water in this respect will be agreed with the Licensee as part of the Access Agreement.

6.1.4 Obligations on Thames Water

Thames Water will investigate Supply System issues highlighted by the Licensee in accordance with the terms agreed within the Access Agreement.

Supply system problems reported by the customer will generally be investigated by a Thames Water network technician. The nature of communication with the customer during the investigation and resolution of the problem will be in accordance with the level of service agreed between Thames Water and the Licensee and set out in the Access Agreement.

6.1.5 Obligations on Licensees

The type of customer support provided by Thames Water will be agreed with the Licensee as part of the Access Agreement.

Thames Water manages proactive communications with customers in certain circumstances for example in relation to planned maintenance or emergency supply interruptions.

Again, Thames Water and the Licensee will agree as part of the Access Agreement, the precise mechanism by which these communications will be managed.

6.1.6 Disconnection

Thames Water will continue to supply the Licensee as long as the Access Agreement remains in force. It should be noted that the Access Agreement may be terminated by Thames Water in some circumstances where payments remain outstanding, or where there has been a material breach of the Access Agreement by the Licensee.

6.2 Customer contact arrangements for emergencies and events

Customer protection issues are also considered under section 5, Maintenance and Emergency Procedures.

6.2.1 Customers with particular needs

The term “Special Consumers” embraces all categories of domestic and non-domestic customers required to be separately identified as part of statutory or regulatory requirements.

The Licensee should be responsible for identifying the needs of the customers who require additional services. This might include details of those, living in eligible premises, which require water for medical purposes or need information to be supplied to them in Braille, for example.

The Licensee must inform Thames Water of relevant details if Special Consumers (as defined in Licence Condition S and Condition R) occupy or are likely to occupy any premises that the Licensee supplies.

Similarly, Thames Water will inform the Licensee where it is aware that a Special Consumer occupies a premises proposed to be supplied by the Licensee.

6.2.2 Large scale customer warning procedures

Thames Water is responsible for warning customers, including the Licensee’s customers, where an event affecting a large geographical area or population occurs. Thames Water and the Licensee will agree the definition of each level of event with reference to a set of agreed triggers, (for example number of people or properties affected) for such an event.

The procedure used for carrying out large-scale customer warnings varies according to the nature and location of the specific event. In practice the methods used include person-to-person briefings, letters, leaflet drops, radio and television announcements, and the company website.

The Licensee may be required to provide manpower and logistical support to assist in this process as determined in the Access Agreement. The level of support required will be determined by the nature and location of the event and the warning methodology employed.

6.2.3 Obligations on Thames Water

Thames Water operates a comprehensive, IT based, Special Consumer services database. This database is an integral part of Thames Water's mainframe Customer Information System (CIS). CIS interfaces with a number of separate software packages to enable information relative to Special Consumers (such as circumstance and additional service requests) to be visible to all customer facing staff 24 hours a day.

Thames Water operates a robust reporting system providing up-to-date information about Special Consumers, within specified geographical locations or throughout the Thames Water region as a whole.

In line with Condition R, Thames Water will advise the Licensee of relevant details for Special Consumers where Thames Water is aware that a Special Consumer occupies, or is likely to occupy, any premises which the Licensee is proposing to supply.

Thames Water is responsible for warning customers where an event affecting a large geographical area or population occurs. Thames Water and the Licensee will agree the definition of each level of event with reference to a set of agreed triggers, (for example number of people or properties affected) for such an event. The Licensee may be required to provide manpower and logistical support to assist in this process as determined in the Access Agreement.

Thames Water’s corporate IT systems log every contact from a customer whether written by email or by telephone onto a central database. The system enables identification of the type of customer (e.g. customer of a Licensee) and consequently enables different processes to be followed according to the type of customer and nature of the contact.

The Licensee will be required to take part in the joint exercising of the Emergency Procedures and Contingency Plans with Thames Water. The frequency of such testing will be stipulated in the Access Agreement, but will be no less frequent than once every 2 years. Where appropriate, the Licensee will also support external government agency exercises where they impact upon the

Licensee's operational area and responsibilities.

In addition, from time to time we will review and test systems and process interfaces between Thames Water and the Licensee. The Licensee will be expected to co-operate with all reasonable requests related to this testing process and to demonstrate ongoing compliance and successful interface with Thames' systems and processes.

6.2.4 Obligations on Licensees

The Licensee should establish emergency point(s) of contact for the use of both its customers and Thames Water. Such points of contact must be robust and operate 24/7. An effective alternative must be available if the primary system fails.

Thames Water will establish a similar point of contact for the Licensee.

Documented procedures will be established to describe how these emergency contacts will function as part of the Access Agreement.

It is the Licensee's responsibility to ensure that the customer is aware of communication paths, including scenarios where Thames Water is the point of contact. The Licensee must ensure that appropriate provision is in place for passing on of queries between customer and Thames Water if appropriate.

In line with License Condition R, the Licensee will advise Thames Water of relevant details for Special Consumers where a Special Consumer occupies any premises which the Licensee supplies.

Thames Water is responsible for warning customers where an event affecting a large geographical area or population occurs. Thames Water and the Licensee will agree the definition of each level of event with reference to a set of agreed triggers, (for example number of people or properties affected) for such an event. The Licensee may be required to provide manpower and logistical support to assist in this process as determined in the Access Agreement.

The Licensee will be required to take part in the joint exercising of the Emergency Procedures and Contingency Plans with Thames Water. The frequency of such testing will be stipulated in the Access Agreement, but will be no less frequent than once every 2 years. Where appropriate, the Licensee will also support external government agency exercises where they impact upon the Licensee's operational area and responsibilities.

In addition, from time to time we will review and test systems and process interfaces between Thames Water and the Licensee. The Licensee will be expected to co-operate with all reasonable requests related to this testing process and to demonstrate ongoing compliance and successful interface with Thames' systems and processes.

7 Supply System Connections

7.1 Connection of Licensee's source to Supply System

Thames Water is responsible for live connection to the Supply System and for modifications to the Supply System. Charges are recoverable from Licensees for work directly related to Supply System connection and for any Supply System modification directly necessary to accommodate the Licensee's requirements. Charges are based on recovery of costs, including a reasonable return on assets and details shall be provided to the Licensee by Thames Water in advance of capital work being undertaken. A formal agreement shall be in place between the parties before capital work is undertaken. Subsequently, maintenance costs for the connection are included within access charges.

7.2 Connection of qualifying premises to the Supply System

Details of Thames Water's new mains laying and new connections services together with contact details and application forms for Thames Water's Developer Services business can be found on [our website](#).

Indicative charges for network connection are included in [Annex 9](#).

We expect that in most instances the qualifying premises will already be connected to the Supply System.

Where this is not the case, connection of the qualifying premises to the Supply System will be made in accordance with Thames Water's standard mains laying and new connections procedures.

The Licensee is able to download application forms from the Thames Water website to apply for the connection of its customer's eligible premises to the Supply System.

The application form sets out the information which will be required from the Licensee or customer in order that Thames Water can prepare a quotation and subsequently arrange for the necessary work to be carried out to connect the premises. This information may include:

- Premises consumption and storage information;
- Site plans to show the location of the point of entry, private land and all areas to be adopted;
- A soil report;
- A full Health & Safety Plan where applicable.

Following Thames Water's quotation for the connection of the premises and on receipt of payment for the connection work, Thames Water will liaise with the Licensee and customer to arrange suitable dates for the connection of the premises.

New connections to existing mains will be made within 21 calendar days following confirmation that all pipework water fittings meets with the Water Supply (Water Quality) Regulations.

New water mains installations will commence within 30 calendar days following receipt of payment.

In certain circumstances, it will be possible for the customer or Licensee to arrange for some of the connecting infrastructure to be laid according to Self Lay guidelines.

For more information, please see Thames Water's Self Lay policy document which is available on request from our Developer Services department.

Where Thames Water is not the sewerage undertaker for the customer premises to be connected to the Supply System, the Licensee will be responsible for the provision of information to the

sewerage undertaker to enable the sewerage undertaker to set up new charging arrangements for the customer. This information is likely to include the name and location of the customer, meter details and the SIC code, together with contact information for the party responsible for collection of meter reading information. However, there is only a very limited geographical area in which Thames Water is the water undertaker and not the sewerage undertaker.

7.3 Connection of Secondary Undertaker's Supply System to the Primary Undertaker's Supply System

Where Thames Water is the Primary Undertaker, it will take steps to enable the Licensee to make the introduction of the requested supply of water into Thames Water's Supply System. Such steps may include the connection of Thames Water's Supply System to the Secondary Undertaker's Supply System and connecting the premises to the Supply System.

Thames Water, the Secondary Undertaker and the Licensee will agree responsibility for laying any new pipes required to connect Thames Water's Supply System to the Secondary Undertaker's Supply System as part of the Access Agreement. The Licensee will be responsible for the costs incurred in making this connection.

In some circumstances, it will be possible for the customer or Licensee to arrange for some of the connecting infrastructure to be laid according to the Self Lay guidelines.

For more information, please see Thames Water's Self Lay policy which is available on request from our Developer Services department.

Thames Water is responsible for the live connection to the Supply System and for modifications to the Supply System. Charges are recoverable from Licensees for work directly related to Supply System connection and for any Supply System modification directly necessary to accommodate the Licensee's requirements. Charges are based on recovery of costs, including a reasonable return on assets and details shall be provided to the Licensee by Thames Water in advance of capital work being undertaken. A formal agreement shall be in place between the parties before capital work is undertaken. Subsequently, maintenance costs for the connection are included within access charges.

8 Legal contract, arbitration and disputes resolution

8.1 Contract terms

Contract negotiations for a Common Contract or a Combined Access Agreement may begin at any stage during the application procedure but the final contract terms will only be agreed after the successful completion, by the Licensee, of the detailed application stage.

It is anticipated that the Wholesale Agreement will be facilitated by the Ofwat Common Contract structure, which a Licensee will only need to agree with Thames once, as long as no additional requirements relate to any customer being considered. The Wholesale Agreement will take the form of the provision of a Data Sheet for each customer participating in the application (Assuming a Common Contract is already in place).

It is anticipated that the format of the Agreement that will be used for a Combined Access Agreement will be different from the form used for a Wholesale Agreement. It is proposed that for each Combined Access Agreement a new Agreement will be negotiated for each application.

By signing an Agreement both parties will be bound by the terms of this Access Code.

8.2 Arbitration and disputes resolution processes

The agreement shall include a process for negotiation between the parties with a view to reaching an amicable resolution of any dispute arising during the Agreement term to be utilised as an initial informal resolution process. Other procedures such as reference to an expert or mediator can be followed if agreement cannot be reached. Ultimately reference can be made to Ofwat where it has jurisdiction to resolve disputes or to the courts. Please refer to Ofwat's Licensing Determinations procedure for further information on Ofwat's role in these matters.

<http://www.ofwat.gov.uk/publications/water-supply-licensing-wsl-guidance/>

Conciliation is a form of alternative dispute resolution process in which the parties use a neutral third party to improve communication and explore possible solutions to disputes. It is similar to mediation but can be less formal. It is a non-binding resolution process.

Mediation is a form of alternative dispute resolution process utilising a trained mediator who is a neutral third party. Its aim is to reach a solution that both parties agree on. It is more formal than conciliation but is also non-binding.

Arbitration is a formal method of alternative dispute resolution that allows the parties to settle any dispute without court action. A neutral third party arbitrator is appointed by agreement or on application to a recognised organisation of arbitrators. Decisions should be seen as final as there is very limited scope for appeals.

9 Access Pricing and Additional Charges

9.1 Indicative Access Prices

For access prices to retailers, the prices are based on actual Wholesale charges published as part of our 2019/20 scheme.

Actual charges can be found on the Thames Water external website <https://www.thameswater.co.uk/wholesale/our-charges> or by calling the Wholesale Markets Services Team on 0800 009 3975.

9.1.1 Indicative combined supply prices

Indicative combined supply discounts off the wholesale charge are made up of an access discount. Tables 3 to 8 (below) show indicative prices for Thames Water's six water resource zones.

- London
- Swindon and Oxfordshire
- Slough/Wycombe/Aylesbury
- Kennet Valley
- Guildford
- Henley

Since these prices do not vary depending on the year of entry in the period, only one table is shown for each Water Resource Zone.

For each entrant volume (5MI/yr, 25MI/yr, 50MI/yr and 500MI/yr) and for each year over the period, four basic situations can occur:

Situation 1: No planned investment in the Zone within AMP5

- Thus the zone is already in surplus and so there is no deferred investment.
- The avoided costs are only the current variable opex costs of supply.

Situation 2: Planned investment in the zone but cannot be deferred

- The zone is not in surplus but the investment is already underway so there is no deferment of capex costs.
- The avoided costs are only the current variable opex costs.

Situation 3: Planned investment but zone in deficit until the end of AMP5

- The size of the new entrant is not sufficiently large to address deficit and there is therefore no deferment of investment.
- The size of the entrant is too small to result in an improved security of supply.
- The avoided costs are only the current variable opex costs.

Situation 4: Investment planned but new entrant <0.1yr growth in demand

- No deferment of investment occurs, as the size of the new entrant is small relative to the current demand requirements and so would not practically give any deferment.
- The avoided costs are only the current variable opex costs.

For all of the six Water Resource Zones an entrant of size up to 500MI does not defer investment for the reasons described above. The Arrow costs in each zone are therefore only equivalent to avoided operating costs.

Case-specific prices would also be calculated to reflect changes in tax payable.

Tables 3 to 8 (below) show Thames Water's indicative combined supply prices for each water resource zone for four supply scenarios (5MI/annum, 25MI/annum, 50MI/annum and 500MI/annum) starting in each year from 2019/20 to 2023/24.

Supply/Demand data is based on Thames Water's latest Water Resources Management Plan (2014).

Notes:

- Wholesale Charge is based on 2019/20 published charges in the Wholesale Tariff Document.
- Discounts are based on 2019/20 Wholesale Production Budget Data.
- K factor has been taken from Thames Water's AMP 6 Final Determination document. Draft K factors for AMP 7 will not be known until the PR19 conclusion.
- The Combined Supply Discount shown in Tables 3.0 - 8.0 below includes the wholesale charge, applied in full, and the discount related to common carriage; this relates to costs avoided by Thames Water e.g. chemicals and some power costs.

Table 3.0: London – Indicative Combined Supply prices 2019/20 to 2023/24

Base information for Common Carriage Access Code Pricing						
London						
		2019/20	2020/21	2021/22	2022/23	2023/24
K factor applied	%	0.67	0.00	0.00	0.00	0.00
Forecast Supply position without licensee's Water or Water undertakers investment (-ve is a deficit)	MI/d	12.36	-30.81	-48.47	-79.65	-84.61
Forecast Supply position with undertakers investment	MI/d	12.36	22.68	29.95	24.63	45.16
For 5 MI per annum						
Wholesale Charge	£/m ³	1.3562	1.3562	1.3562	1.3562	1.3562
Combined Supply Discount	£/m ³	0.0596	0.0596	0.0596	0.0596	0.0596
Combined Supply Price	£/m ³	1.2966	1.2966	1.2966	1.2966	1.2966
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	12.37	22.69	29.96	24.64	45.17
For 25 MI per annum						
Wholesale Charge	£/m ³	1.3332	1.3332	1.3332	1.3332	1.3332
Combined Supply Discount	£/m ³	0.0596	0.0596	0.0596	0.0596	0.0596
Combined Supply Price	£/m ³	1.2736	1.2736	1.2736	1.2736	1.2736
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	12.43	22.75	30.02	24.70	45.23
For 50 MI per annum						
Wholesale Charge	£/m ³	1.2872	1.2872	1.2872	1.2872	1.2872
Combined Supply Discount	£/m ³	0.0596	0.0596	0.0596	0.0596	0.0596
Combined Supply Price	£/m ³	1.2276	1.2276	1.2276	1.2276	1.2276
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	12.50	22.82	30.09	24.77	45.30
For 500 MI per annum						
Wholesale Charge	£/m ³	0.9436	0.9436	0.9436	0.9436	0.9436
Combined Supply Discount	£/m ³	0.0596	0.0596	0.0596	0.0596	0.0596
Combined Supply Price	£/m ³	0.8840	0.8840	0.8840	0.8840	0.8840
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	13.73	24.05	31.32	26.00	46.53

Table 4.0: Swindon and Oxfordshire- Indicative Combined Supply prices 2019/20 to 2023/24

SWOX (Swindon and Oxfordshire)						
		2019/20	2020/21	2021/22	2022/23	2023/24
K factor applied	%	0.67	0.00	0.00	0.00	0.00
Forecast Supply position without licensee's Water or Water undertakers investment (-ve is a deficit)	MI/d	9.10	5.95	2.17	-0.12	-0.87
Forecast Supply position with undertakers investment	MI/d	9.10	10.41	10.71	12.69	16.01
For 5 MI per annum						
Wholesale Charge	£/m ³	1.3562	1.3562	1.3562	1.3562	1.3562
Combined Supply Discount	£/m ³	0.0910	0.0910	0.0910	0.0910	0.0910
Combined Supply Price	£/m ³	1.2652	1.2652	1.2652	1.2652	1.2652
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	9.12	10.42	10.73	12.70	16.03
For 25 MI per annum						
Wholesale Charge	£/m ³	1.3332	1.3332	1.3332	1.3332	1.3332
Combined Supply Discount	£/m ³	0.0910	0.0910	0.0910	0.0910	0.0910
Combined Supply Price	£/m ³	1.2422	1.2422	1.2422	1.2422	1.2422
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	9.17	10.47	10.78	12.75	16.08
For 50 MI per annum						
Wholesale Charge	£/m ³	1.2872	1.2872	1.2872	1.2872	1.2872
Combined Supply Discount	£/m ³	0.0910	0.0910	0.0910	0.0910	0.0910
Combined Supply Price	£/m ³	1.1962	1.1962	1.1962	1.1962	1.1962
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	9.24	10.54	10.85	12.82	16.15
For 500 MI per annum						
Wholesale Charge	£/m ³	0.9436	0.9436	0.9436	0.9436	0.9436
Combined Supply Discount	£/m ³	0.0910	0.0910	0.0910	0.0910	0.0910
Combined Supply Price	£/m ³	0.8525	0.8525	0.8525	0.8525	0.8525
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	10.47	11.78	12.08	14.06	17.38

Table 5.0: Slough, Wycombe, Aylesbury- Indicative Combined Supply prices 2019/20 to 2023/24

Slough/Wycombe/Aylesbury						
		2019/20	2020/21	2021/22	2022/23	2023/24
K factor applied	%	0.67	0.00	0.00	0.00	0.00
Forecast Supply position without licensee's Water or Water undertakers investment (-ve is a deficit)	MI/d	14.07	12.99	10.88	10.03	9.73
Forecast Supply position with undertakers investment	MI/d	14.07	12.99	10.88	10.03	9.73
For 5 MI per annum						
Wholesale Charge	£/m ³	1.3562	1.3562	1.3562	1.3562	1.3562
Combined Supply Discount	£/m ³	0.0856	0.0856	0.0856	0.0856	0.0856
Combined Supply Price	£/m ³	1.2706	1.2706	1.2706	1.2706	1.2706
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	14.08	13.00	10.89	10.05	9.74
For 25 MI per annum						
Wholesale Charge	£/m ³	1.3332	1.3332	1.3332	1.3332	1.3332
Combined Supply Discount	£/m ³	0.0856	0.0856	0.0856	0.0856	0.0856
Combined Supply Price	£/m ³	1.2476	1.2476	1.2476	1.2476	1.2476
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	14.14	13.05	10.95	10.10	9.80
For 50 MI per annum						
Wholesale Charge	£/m ³	1.2872	1.2872	1.2872	1.2872	1.2872
Combined Supply Discount	£/m ³	0.0856	0.0856	0.0856	0.0856	0.0856
Combined Supply Price	£/m ³	1.2016	1.2016	1.2016	1.2016	1.2016
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	14.20	13.12	11.02	10.17	9.87
For 500 MI per annum						
Wholesale Charge	£/m ³	0.9436	0.9436	0.9436	0.9436	0.9436
Combined Supply Discount	£/m ³	0.0856	0.0856	0.0856	0.0856	0.0856
Combined Supply Price	£/m ³	0.8580	0.8580	0.8580	0.8580	0.8580
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	15.44	14.36	12.25	11.40	11.10

Table 6.0: Kennet Valley- Indicative Combined Supply prices 2019/20 to 2023/24

Kennet Valley						
		2019/20	2020/21	2021/22	2022/23	2023/24
K factor applied	%	0.67	0.00	0.00	0.00	0.00
Forecast Supply position without licensee's Water or Water undertakers investment (-ve is a deficit)	MI/d	23.21	21.84	20.39	19.44	18.99
Forecast Supply position with undertakers investment	MI/d	23.21	21.84	20.39	19.44	18.99
For 5 MI per annum						
Wholesale Charge	£/m³	1.3562	1.3562	1.3562	1.3562	1.3562
Combined Supply Discount	£/m³	0.1148	0.1148	0.1148	0.1148	0.1148
Combined Supply Price	£/m³	1.2414	1.2414	1.2414	1.2414	1.2414
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	23.23	21.86	20.40	19.45	19.00
For 25 MI per annum						
Wholesale Charge	£/m³	1.3332	1.3332	1.3332	1.3332	1.333
Combined Supply Discount	£/m³	0.1148	0.1148	0.1148	0.1148	0.115
Combined Supply Price	£/m³	1.2184	1.2184	1.2184	1.2184	1.218
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	23.28	21.91	20.46	19.51	19.06
For 50 MI per annum						
Wholesale Charge	£/m³	1.2872	1.2872	1.2872	1.2872	1.2872
Combined Supply Discount	£/m³	0.1148	0.1148	0.1148	0.1148	0.1148
Combined Supply Price	£/m³	1.1724	1.1724	1.1724	1.1724	1.1724
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	23.35	21.98	20.53	19.58	19.13
For 500 MI per annum						
Wholesale Charge	£/m³	0.9436	0.9002	0.9063	0.9063	0.9063
Combined Supply Discount	£/m³	0.1148	0.1148	0.1148	0.1148	0.1148
Combined Supply Price	£/m³	0.8287	0.7854	0.7914	0.7914	0.7914
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	24.58	23.21	21.76	20.81	20.36

Table 7.0: Guildford – Indicative Combined Supply prices 2019/20 to 2023/24

Guildford						
		2019/20	2020/21	2021/22	2022/23	2023/24
K factor applied	%	0.67	0.00	0.00	0.00	0.00
Forecast Supply position without licensee's Water or Water undertakers investment (-ve is a deficit)	MI/d	2.73	1.98	1.74	1.15	0.62
Forecast Supply position with undertakers investment	MI/d	2.73	2.81	3.11	3.10	3.18
For 5 MI per annum						
Wholesale Charge	£/m³	1.3562	1.3562	1.3562	1.3562	1.3562
Combined Supply Discount	£/m³	0.1443	0.1443	0.1443	0.1443	0.1443
Combined Supply Price	£/m³	1.2119	1.2119	1.2119	1.2119	1.2119
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	2.74	2.82	3.13	3.12	3.19
For 25 MI per annum						
Wholesale Charge	£/m³	1.3332	1.3332	1.3332	1.3332	1.3332
Combined Supply Discount	£/m³	0.1443	0.1443	0.1443	0.1443	0.1443
Combined Supply Price	£/m³	1.1889	1.1889	1.1889	1.1889	1.1889
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	2.79	2.88	3.18	3.17	3.24
For 50 MI per annum						
Wholesale Charge	£/m³	1.2872	1.2872	1.2872	1.2872	1.2872
Combined Supply Discount	£/m³	0.1443	0.1443	0.1443	0.1443	0.1443
Combined Supply Price	£/m³	1.1429	1.1429	1.1429	1.1429	1.1429
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	2.86	2.95	3.25	3.24	3.31
For 500 MI per annum						
Wholesale Charge	£/m³	0.9436	0.9436	0.9436	0.9436	0.9436
Combined Supply Discount	£/m³	0.1443	0.1443	0.1443	0.1443	0.1443
Combined Supply Price	£/m³	0.7992	0.7992	0.7992	0.7992	0.7992
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	4.10	4.18	4.48	4.47	4.55

Table 8.0: Henley – Indicative Combined Supply prices 2019/20 to 2023/24

Henley						
		2019/20	2020/21	2021/22	2022/23	2023/24
K factor applied	%	0.67	0.00	0.00	0.00	0.00
Forecast Supply position without licensee's Water or Water undertakers investment (-ve is a deficit)	MI/d	5.55	5.42	5.34	5.30	5.32
Forecast Supply position with undertakers investment	MI/d	5.55	5.42	5.34	5.30	5.32
For 5 MI per annum						
Wholesale Charge	£/m³	1.3562	1.3562	1.3562	1.3562	1.3562
Combined Supply Discount	£/m³	0.1001	0.1001	0.1001	0.1001	0.1001
Combined Supply Price	£/m³	1.2561	1.2561	1.2561	1.2561	1.2561
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	5.56	5.44	5.36	5.32	5.33
For 25 MI per annum						
Wholesale Charge	£/m³	1.3332	1.3332	1.3332	1.3332	1.3332
Combined Supply Discount	£/m³	0.1001	0.1001	0.1001	0.1001	0.1001
Combined Supply Price	£/m³	1.2331	1.2331	1.2331	1.2331	1.2331
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	5.62	5.49	5.41	5.37	5.39
For 50 MI per annum						
Wholesale Charge	£/m³	1.2872	1.2872	1.2872	1.2872	1.2872
Combined Supply Discount	£/m³	0.1001	0.1001	0.1001	0.1001	0.1001
Combined Supply Price	£/m³	1.1871	1.1871	1.1871	1.1871	1.1871
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	5.68	5.56	5.48	5.44	5.46
For 500 MI per annum						
Wholesale Charge	£/m³	0.9436	0.9436	0.9436	0.9436	0.9436
Combined Supply Discount	£/m³	0.1001	0.1001	0.1001	0.1001	0.1001
Combined Supply Price	£/m³	0.8434	0.8434	0.8434	0.8434	0.8434
Supply Position with Licensees water and water Undertakers revised investment plan	MI/d	6.92	6.79	6.71	6.67	6.69

9.1.2 Supply Demand Balance Data

In addition to the supply-demand data included in the tables above, and in accordance with the Ofwat guidance, Tables 9.0 and 9.1 below set out Thames Water's supply-demand position for the next 25 years, assuming no resource development, as contained in Draft Thames Water Resource Plan submission, 2019.

Table 9.0: Thames Water supply demand position, assuming no resource development 2018-30

Resource Zone	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
London	-15.8	12.36	-30.81	-48.47	-79.65	-84.61	-105.85	-116.69	-123.72	-133.58	-144.83	-158.46	-165.53
SWOX	13.65	9.1	5.95	2.17	-0.12	-0.87	-2.2	-3.44	-4.58	-4.8	-7.02	-6.62	-9.06
Slough/ Wycombe/ Aylesbury	15.91	14.07	12.99	10.88	10.03	9.73	3.64	2.62	2.26	1.71	1.97	0.87	0.86
Kennet Valley	22.64	23.21	21.84	20.39	19.44	18.99	17.90	17.72	16.89	16.71	16.12	15.66	14.54
Guildford	3.04	2.73	1.98	1.74	1.15	0.62	0.26	-0.36	-0.86	-0.95	-1.28	-2.09	-3.36
Henley	5.53	5.55	5.42	5.34	5.30	5.32	5.31	5.29	5.30	5.24	5.35	5.33	5.34
(all data in MLD)													

Table 9.1: Thames Water supply demand position, assuming no resource development 2031-42

Resource Zone	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	2042-43
London	-183.94	-190.98	-192.9	-199.45	-241.17	-242.18	-253.75	-261.13	-269.06	-285.4	-292.38	-300.82
SWOX	-7.72	-10.52	-8.16	-9.97	-9.62	-10.6	-10.42	-10.24	-11.89	-12.25	-12.47	-11.03
Slough/ Wycombe/ Aylesbury	0.18	0.11	-0.94	-0.61	-1.60	-1.80	-2.45	-2.97	-2.88	-3.80	-3.82	-4.27
Kennet Valley	13.97	13.78	13.51	13.88	13.50	13.11	13.26	12.77	12.69	12.59	12.26	12.30
Guildford	-4.86	-5.83	-6.03	-6.53	-6.73	-6.70	-7.11	-7.27	-7.53	-7.61	-7.65	-7.79
Henley	5.35	5.35	5.37	5.35	5.40	5.47	5.46	5.42	5.46	5.38	5.33	5.51
(all data in MLD)												

All values stated above are consistent with the 2019 draft Water Resources Management Plan. These values will be recalculated for the revised draft Water Resources Management Plan which is likely to be published around August 2019.

9.2 Case Specific Access Prices

On receipt of a formal application for combined supply prices from the Licensee (see section 2.0); Thames Water will prepare a case specific price. This price will relate to the specific circumstances set out by the Licensee in its application and may differ from the indicative prices set out in section 9.1.

The production of case specific prices will be dependent on the Licensee providing full and accurate information as set out in section 2.0 of this Access Code. Where information on which case specific prices are based, changes or is modified by the Licensee subsequent to the calculation, it may be necessary for Thames Water to repeat the case specific pricing exercise.

The combined supply price paid by the Licensee will vary according to a number of factors, for example, the point of entry and exit, the timing of entry, the relevant charge for the Licensee's customer and the level of service provided by Thames Water (including Supplier of Last Resort Facility). Charges to the Licensee will be set on a case specific basis taking the above circumstances into account.

9.3 Non-discrimination

Water undertakers must not unduly discriminate when granting access, which means that like situations, will be treated consistently. Thames Water has a duty to operate the Supply System effectively and without undue discrimination.

9.4 Concurrent or duplicate applications

The nature of the Costs Principle is such that case specific Access Prices produced by Thames Water in response to concurrent or duplicate applications for Combined Supplies in the same Water Resource Zone may vary significantly according to the length of contract, start date and nature of access.

For Combined Supply applications, case specific Access Prices may be affected by similar applications for supplies in the same Water Resource Zone being received by Thames Water. That is to say, an Access Price calculation for a given Water Resource Zone could influence the result of an Access Price calculation for the same zone carried out subsequently because Thames Water must assess the impact of the Licensee's proposals on its resource development plans. These may have been changed by the results of the assessment of the earlier application.

In line with its non-discrimination responsibilities, Thames Water will progress applications from all Licensee's fairly and without prejudice and in line with the application process set out in Section 2.0 of this Access Code. Thames Water will endeavour to highlight to Licensees where it is processing concurrent or duplicate applications which could influence one another.

Where this is the case, it is possible that Thames Water will not be able to adhere to the target timescales set out in Section 2.0. Thames Water will advise the Licensee where timescales are unlikely to be met due to these more complex scenarios arising.

9.5 Connection charges and Supply System modification

Thames Water is responsible for the live connection to the Supply System and for any necessary modifications to the Supply System. Charges will be recoverable from the Licensee for work directly related to Supply System connection and for any Supply System modification necessary to accommodate the Licensee's requirements.

Charges are based on recovery of costs, including a reasonable return on assets and details shall be provided to the Licensee by Thames Water in advance of capital work being undertaken. A

formal agreement shall be in place between the parties before capital work is undertaken. Subsequently, maintenance costs for the connection are included within access charges.

9.6 Other Charges

Access Charges to the Licensee will reflect all direct costs attributable to the use of Thames Water's Supply System by the Licensee and its customer(s).

Other charges will be made to recover the cost of Thames Water's activities that are necessitated by the Licensee's application for and use of Thames Water's Supply System. These will include:

- Supply System connection costs;
- Supply System modification costs;
- Additional water quality sampling and monitoring required prior to, during and following the Day of Change;
- Installation of flow control mechanisms on the Licensee's supply at the Point of Entry;
- Asset modifications required during the life of the agreement, required as a result of the Licensee's activities;
- Any resource provided by Thames Water to assist the Licensee in developing and annually reviewing its business risk assessment, business continuity plans, emergency procedures, contingency plans and management controls;
- Any resource provided by Thames Water in post incident reviews, and any actions arising required by Thames Water;
- Audit of the Licensee's operational procedures and business (or costs of an audit by a third party appointed by Thames Water);
- Resolution by Thames Water of any failures that originate from the Licensee's assets or activities, which put health, safety, the environment, drinking water quality, quantity and/or the Supply System at risk;
- Any costs or losses incurred by Thames Water which can be shown to be due to the actions of or breach of the Access Agreement by the Licensee.

9.7 Other services

Thames Water is able to provide certain customer service facilities on behalf of the Licensee. The Licensee will be charged for such services which will be agreed and stipulated in the Access Agreement.

Other services may be provided by agreement between the Licensee and Thames Water and charged to the Licensee accordingly.

9.8 Back-Up Supplies

The Access Charge levied will reflect any requirement from the Licensee that Thames Water provides a Back-Up facility. In order to provide such a facility, Thames Water will need to maintain sufficient capacity to supply the Licensee's customer in the event of partial or complete failure of the Licensee's supply.

Where Thames Water is to provide a Back-Up Supply facility, in the event of partial or complete failure of the Licensee's supply, Thames Water shall supply the Licensee's customer.

Any water provided under the Back-Up facility will be charged for at the applicable tariff.

The Back-Up facility exists to provide for infrequent but substantial events (in volume, duration or both). It is separate from Thames Water's obligations around daily balancing of the Supply System.

9.9 Accounts & payments

The terms of payment for each specific arrangement will be set out in the Access Agreement or Wholesale Agreement (Common Contract) as appropriate and shall not unduly discriminate between Licensees.

The following payment options are in place for our existing customers:

Payment frequency: Payment is due on receipt of the bill. Bills are issued monthly.

Method of payment: BACs, CHAPS, Cheque, Direct Debit or Cash are accepted as forms of payment.

9.10 Termination of supplies

Thames Water will continue to supply the Licensee as long as the Access Agreement remains in force. It should be noted that the Access Agreement may be terminated by Thames Water in some circumstances where payments remain outstanding or where there has been a material breach of the Access Agreement by the Licensee.

Glossary of Defined Terms

Defined Terms	Description
Access	The wholesale supply of water by a water undertaker to a Licensee for the purpose of making a retail supply of water to the premises of the Licensee's customer; and the introduction of water by the Licensee into a water undertaker's Supply System for that purpose
Access Agreement	An agreement between a water undertaker and a Licensee for access by a Licensee to a water undertaker's Supply System pursuant to the Retail Authorisation and/or Supplementary Authorisation.
Access Code	A water undertaker's document that sets out all principal aspects of access to its Supply System and the terms and conditions on which it will grant access to its Supply System by a Licensee. The access code comprises the standard terms and conditions common to all water undertakers and the terms and conditions specific to that water undertaker.
Access Terms	The terms under which a water undertaker and a Licensee agree access to a water undertaker's Supply System.
Adjoining Supply System	Supply systems of other water undertakers with direct physical connections to the water undertaker's own Supply System.
ARROW costs	Expenses that can be Avoided or Reduced, or any amount that is Recoverable in some Other Way (other than from other customers of the water undertaker) (see section 66E (3) WIA91).
Back Up Supplies	These are supplies that can be called into operation in the event of failure of the 'duty' supply
Back-syphonage	Unwanted siphoning of water into the Supply System
Boil notices	A notice issued by the undertaker as a warning that water should be boiled before drinking as a precautionary measure.
Borehole	A hole for abstracting groundwater constructed by boring
Chemical parameters	Limits for the level of chemicals found in water. Examples are iron, chlorine, sulphates, pesticides, ammonium compounds.
Chlorination	The use of chlorine to disinfect water.
Coliform bacteria	A group of bacteria found in the intestine and faeces of most animals. Coliforms can sometimes be found in untreated water. The treatment process removes them and disinfection prevents their reappearance in the distribution system.
Combined supply	A supply made pursuant to a holder of a Wholesale Authorisation.
Compensation water	Water released to the environment to offset impacts of abstraction or to comply with Appointment Conditions (or both)
Confidentiality Agreement	The Agreement described in Paragraph 2.1.1 of this Access Code.
Costs principle	As defined in section 66E of the WIA91
Customer Specific Schedules	Schedules to be attached to the Master Wholesale Agreement, each of which relates to a specific customer to whom the Licensee supplies water received from Thames Water.
Cryptosporidium	A waterborne micro-organism, single celled protozoan parasite, which causes disease and illness.

Defined Terms	Description
Deployable output	The output of a commissioned water supply source, group of sources or bulk supply under worst historic drought conditions as constrained by: abstraction license, if applicable; environment; treatment; raw water mains and/or aquifers; pumping plant and/or well/aquifer properties; transfer and/or output main; water quality.
Disconnection	Separation of a customer's supply from the water network.
Disinfection	The process of treating water in order to kill harmful organisms.
Diurnal variations	Variations occurring within a daily (24 hrs) cycle.
Drought	A prolonged period of dry weather that reduces rivers flows, reservoir inflows or groundwater levels to unusually low levels;
E.Coli	A bacterium taken as an indicator of faecal contamination.
Eligible premises	<p>Premises that satisfy the eligibility requirements in section 17A(3) WIA91. Each of the following three requirements must be satisfied in relation to each of the premises in order for a customer's premises to be eligible:</p> <ul style="list-style-type: none"> - The customer's premises must not be "household premises" (as defined in section 17C WIA91). - When the Licensee first enters into an undertaking with a customer to give the supply, the total quantity of water estimated to be supplied to the premises annually by the Licensee must be not less than 50 megalitres (the "threshold requirement", section 17D WIA91). - The premises may only be supplied by one Licensee (but may also be supplied by one or more water undertakers).
Fit and proper person	For the purposes of making an access agreement, a person or party will not be deemed fit and proper if there are any relevant convictions, concerns over technical ability, insufficient financial resources available.
Fluoridation	Application of fluoride to drinking water at the request of Strategic Health Authorities as a preventative measure against dental decay.
Groundwater	For the purposes of an access agreement groundwater is defined as water abstracted directly from an aquifer by means of a well, borehole or spring.
Guaranteed Standards Scheme (GSS)	A scheme that lays down the minimum guaranteed standards of service that water companies have to deliver. Water companies have to pay compensation to customers if they fail to meet these standards.
Hardness	Characteristics of waters containing dissolved calcium and magnesium salts.
Household Premises	The meaning of 'household premises' is set out in Section 17C WIA91.
HSE	Health and Safety Executive a government agency responsible for administering all regulations pertaining to health and safety and public security
Instrument of Appointment	The water (and sewerage) companies operate under Instruments of Appointment, granted by the then Secretaries of State for the Environment and for Wales, or by the Director, to provide water and sewerage services in England and Wales. The Instrument of Appointment imposes conditions on the companies, which the Director is required to enforce.
Interim Duty to Supply	This is the duty set out in Section 63AC of the Water Industry Act 1991.
Interruptible supply points	These are supply points where a continuous water supply is not necessary.

Defined Terms	Description
Leakage	The loss of water from the supply network which escapes other than through a controlled action
Liability Insurance	Insurance cover in respect of potential liability.
Licensee	A company holding of a Water Supply and/or Sewerage Licence.
Major Emergency Procedures	The Major Emergency Procedures are evoked when the situation or the number of people affected is in excess of those which can be dealt with by the Standard Emergency Procedures.
Mandatory parameters	Levels of chemical or biological indicators that must be measured by law. Examples for drinking water are E coli, nitrates, chlorides.
Microbiological parameters	Levels of bacteria for example E coli, coliforms, enterococci, whose presence indicate that the water may be polluted and therefore should not be used as drinking water.
Non-potable water	Water which is not intended for domestic or food production purposes.
Operational Code	Common national operational code (the 'operational code'). This will simplify the access codes guidance, reduce barriers to entry for Licensees, and reduce the regulatory burden overall. This only applies for Wholesale applications (Retail Licence only).
Outage	A temporary loss of unusable water output due to planned or unplanned events.
Pathogen	An organism which is capable of producing disease.
Point of Entry	The point at which treated water enters the Supply System as defined by the isolation valve provided by the primary undertaker.
Point of Exit	The point at which treated water leaves the Supply System. In general this will be either to specific premises or to the Supply System of an adjoining water company.
Potable	Water for domestic and food production purposes which is wholesome at the time of supply. This is defined in section 68 of the WIA91 and section 4 of the Water Supply (Water Quality) Regulations.
Primary water undertaker	For the purposes of section 66A WIA91 (wholesale water supply by primary water undertaker) and section 66C WIA91 (wholesale water supply by secondary water undertaker), a water undertaker is the primary water undertaker if the undertaker's Supply System is to be used for the purposes of making the supply to the premises of the Licensee's customer
Priority supply points	Supply points as specified by Defra
Rechlorination	Usually applied to injection of chlorine to drinking water in the distribution system after it has left the treatment works. Often used to boost chlorine levels at a service reservoir.
Reconciliation process	The balancing of actual demand against actual water supplied into the Supply System and the associated financial implications.
Regulatory Compliance Sampling Programme	This is the annual programme of drinking water sampling which the Water Companies must undertake to comply with the requirements of the Water Supply (Water Quality) Regulations 2000 (for England) and 2001 (for Wales) and subsequent amendments.
Retail authorisation	An authorisation in the water supply or sewerage licence that allows the licensee to use the supply system of an appointed water company and the sewerage system of an appointed sewerage company whose area is wholly or mainly in England for the purpose of supplying retail services to eligible premises (Schedules 2A and 2B WIA91).

Defined Terms	Description
Retail Licence	A Water Supply and/or Sewerage Licence with a wholesale authorisation, entitling the holder to purchase wholesale a supply of water from the water undertaker and to supply it retail to a customer's eligible premises (section 17A(4) of the WIA91) primary water undertaker (section 66C(1)(a)(I) WIA91).
Secondary water undertaker	A water undertaker other than the relevant primary water undertaker (section 66C (1)(a)(I)WIA91)
Security of supply	The extent to which water supplies to customers are reliable and not subject to possible restrictions because of a lack of rainfall over a period of time.
Service reservoirs	Any reservoir, statutory or otherwise, which is used to store treated drinking water.
Sewerage undertaker	A company appointed under the WIA91 to provide sewerage services in respect of a geographical area of England and Wales
Special Consumers	As defined in condition of appointment R section (8)(6) and Standard Licence Condition S.
Standard Emergency Procedure	These are a set of procedures for dealing with an emergency. The full or partial implementation of the procedures is dependent on the degree of seriousness of the emergency.
Standby supplies	These are supplied that can be called into operation in the event of failure of the 'duty' supply.
Supplementary Authorisation	An authorisation, given by a water supply licence, to the water supply licensee to introduce water into the Supply System of a water undertaker: (a) by means of which system any particular supply in accordance with the licensee's restricted retail authorisation is to take place, and (b) where that introduction is to be made in connection with that intended supply.
Supply point	The point at which treated water leaves the Supply System. In general this will be either to specific premises or to the Supply System of an adjoining company.
Supply System	Any water mains and other pipes used for the purposes of conveying water from a water undertaker's treatment works to customer's premises and any water mains and other pipes used to convey non-domestic water from any source to premises that are not connected directly or indirectly to any water mains or pipes connected to those treatment works. This term is defined in section 17B(5) of the WIA91
Supply System balancing	The process of matching the 'water in' against the 'water out' from the Supply System.
Telemetry	The technology for automatically measuring and transmitting data by radio or other means from remote sources to receiving stations
Thames Water	Means Thames Water Utilities Limited: a Water Undertaker appointed by the Secretary of State under the Water Act 1989 (now replaced by the Water Industry Act 1991) for a geographically defined area. It has legal responsibility for the Supply System.
Threshold Requirement	See Section 17D WIA91

Defined Terms	Description
Treated water	Water of a suitable quality for input to the treated water distribution system and that which results in satisfactory DWI compliance at the customer's tap.
Treated water quality monitoring	Regular sampling and analysis of untreated and treated water. Examples include daily measurements of free chlorine at treatment works or annual sampling for mercury at customers' taps.
Treatment works	Works where raw water from rivers or reservoirs is treated to produce drinking water. Treatment typically includes coagulation, filtration and disinfection.
Trihalomethanes	A group of chemicals produced by the reaction of chlorine with natural organic chemicals present in the raw water. Current limit is 100 ug/l averaged over three months.
Turbidity	A measure of the optical clarity of water.
UKWIR	UK Water Industry Research Limited
Ultra-violet disinfection	Inactivation of microbiological organisms by ultra-violet radiation.
Untreated water	Raw water not of a suitable quality to put into a Control Group.
Water Fittings Regulations	The Water Supply (Water Fittings) Regulations 1999. These Regulations replaced the Water Bylaws in England and Wales and are largely enforced by the water undertakers.
Water for domestic Purposes	'Domestic purposes' refers to drinking, washing, cooking, central heating and sanitary purposes: see section 218 WIA91.
WIA91	References to WIA91 refer to WIA 91 as amended by Water Act 2003 (WA03) once the relevant provisions have been brought into force.
Water resources management plan (WRMP)	A water undertaker's long term strategic plan for water resource development in its area (see section 37A WIA91).
Water Supply and/or Sewerage Licence	A licence granted under section 17A of the Water Industry Act 1991 giving one or more of the following authorisations and combinations of authorisations: (i) a retail authorisation; (ii) a wholesale authorisation; or (iii) a retail authorisation and a wholesale authorisation; (iv) a restricted retail authorisation; or (v) a restricted retail authorisation and a supplementary authorisation.
Water Supply (Water Fittings) Regulations 1999	These regulations replaced the Water Bylaws in England and Wales and are enforced by the water undertakers.
Water Supply (Water Quality) Regulations	The Water Supply (Water Quality) Regulations, SI 2000 No 3184, amended by SI 2001 No 2885, which apply to water undertakers whose area of supply is wholly or mainly in England; The Water Supply (Water Quality) Regulations 2001, SI 2001 No 3911, which apply to water undertakers whose area of supply is wholly or mainly in Wales. These Regulations specify the standards used to define wholesomeness of drinking water, the level of monitoring required, treatment requirements, reporting requirements and also specify the requirements for using approved substances and products. The DWI enforces these Regulations.

Defined Terms	Description
Water undertaker	A company appointed under the WIA91 to provide water services to a defined geographic area and which owns the Supply System and other infrastructure.
Wholesale Authorisation	An authorisation given by a water supply licence is to the water supply Licensee to introduce water into the supply system of a water undertaker: (a) by means of which system any particular supply in accordance with a retail authorisation (whether the licensee's or another water supply licensee's) is to take place, and (b) where that introduction is to be made in connection with that intended supply.
Wholesale Contract for Wholesale Services	the contract between the Contracting Wholesaler and the Contracting Retailer that constitutes: (i) a Section 66D Agreement; or (ii) a Section 117E Agreement; or (iii) both a Section 66D Agreement and a Section 117E Agreement and which, in each case, is in the form prescribed by the Wholesale-Retail Code.
Wholesale-Retail Code	The code of that name issued by the Authority under sections 66DA and 117F of the Water Industry Act 1991 including, without limitation, the Wholesale Contract, the Business Terms, the Operational Terms and the Market Terms and any Approved Change from time to time.
Wholesale Master Agreement	An Agreement between Thames Water and a Licensee which sets out the terms and conditions upon which Thames Water will provide Wholesale Supplies to the Licensee.
Wholesale supplies	Supply of water to a Licensee by a water undertaker for the purposes of retail by the Licensee to its customer's premises.

Annex 1: Supply system modelling and water quality studies explanation

1) Network Modelling

Application Assessment Stage

The analysis carried out at the detailed application stage will comprise the following activities:

- 1) Update the existing detailed model or new build detailed model based on calibrated field flow and pressure measurements for the area of the Supply System affected by the Licensee's application;
- 2) Use the calibrated detailed Supply System model to indicate Supply System capacity available within stated Supply System flow and pressure constraints and determine any Supply System modifications required (including pumps and balancing storage);
- 3) Use audited corporate demand forecasts and peaking factors to determine the capacity/modifications required to meet agreed future growth;
- 4) Use the calibrated hydraulic model to determine any flow reversals, low velocities, mixing or long retention times that could cause water quality issues. Use the model to indicate how these may be avoided;
- 5) Produce detailed assessment report summarising 1-4.

2) Water Quality and Compatibility Feasibility Studies

Application Assessment Stage

The Water quality and compatibility assessment exercise carried out at the detailed application stage will comprise the following activities:

- 1) Water quality modelling to assess theoretical compatibility of the Licensee's water with the existing supply and the Supply System. This will be based on the parameters detailed in Table 10 & 11. Therefore the Licensee should make this data available before the detailed application stage (see also hydraulic Supply System modelling requirements which include water quality criteria);
- 2) Bench scale blending and boiling experiments to determine changes in the precipitation of lime-scale and other salts and changes to the taste, odour or appearance of different blends;
- 3) Bench scale pipe and coupon test work to determine the corrosion potential of the Licensee's water and blended water. Also to determine the impact on existing "scale" deposits;
- 4) Detailed pipe test rig work will be required to assess impact on existing pipe-work;
- 5) A transition period during which the distribution materials adjust to different water chemistry can be expected. Typically existing scales may be displaced and this may also cause release of the underlying materials. An assessment will be made of the duration and impact of this transition. This assessment is very difficult to make on trial data. It may be necessary to link the assessment to a full-scale trial period.

Assessment of the basic information, risk assessments, water quality data and water treatment process design information will be an on-going and iterative process. Thames Water will aim to assess this information as early in the process as possible, however some assessment during the detailed application stage is also likely.

Annex 2: Water Quality Information Required by Thames Water for Combined Supply Applications

In addition to the water quality sampling data required (see Annex 3) Thames Water will require the following information as part of the application process.

1. A detailed geographic and hydro geological specification of the water abstraction point. To include as appropriate
 - Details of the assets involved in water abstraction, treatment and transfer from source to access point.
 - National grid reference of each individual borehole.
 - Details of the depth and geological description of each borehole.
 - Details of any known interaction with surface water.
 - Details of the age, construction and condition of each borehole including details of CCTV surveys of the boreholes (to be made available on request).
 - Reliable output of each borehole.
 - Location of any surface water abstraction site.
2. Details of the history and use of the water source prior to the application. If a source has not been used in the past two years details must be provided of any operational or quality issues that prevented its use,
3. A risk assessment for *Cryptosporidium* carried out in accordance with The Water Supply (Water Quality) Regulations 2000 (The Regulations), specifically Regulations 27 and 28. A notice of satisfaction from the Drinking Water Inspectorate confirming the results of the risk assessment must be submitted with the risk assessment. The Licensee's risk assessment format must be consistent with the Thames Water format, examples of which can be issued for this purpose,
4. Details of an assessment carried out to ensure that the source complies with Regulation 15 of The Regulations. This regulation applies to "new sources" as defined in Regulation 15 and to sources that have not been used for a period of 6 months,
5. Delineation of source protection zones based on the travel time of potential contaminants to the abstraction point and details of discharges, landfill sites and pollution incidents within these zones. An assessment of water quality risks posed to the source by land usage should be submitted and include the risk from pesticides, nitrate, radioactivity and petrochemicals,
6. Details of any known pollution incidents in the catchment that might jeopardise the quality of the water source,
7. A surface water intake risk assessment. The Licensee's risk assessment format must be consistent with the Thames Water format, examples of which can be issued for this purpose,

Risk Assessments

The Regulations, the Water Supply and/or Sewerage Licence conditions and the Access Agreement terms will require Licensees to demonstrate the following (points 1-6). The outcome of these assessments and the source water, *Cryptosporidium*, pesticide and radioactivity risk assessments will also determine the number and type of samples required.

As much of the following information as possible should be provided as soon as possible by the Licensee.

1. The treatment applied satisfies the minimum requirements of Regulation 26 in terms of disinfection and compliance with Council Directive 75/440/EC (the Surface Water Abstraction

Directive),

2. Treatment is appropriate to the expected variation in raw water quality, including the risk from *Cryptosporidium*,
3. Processes used to produce drinking water must comply with the requirements of Regulation 32 and any notices issued by the Secretary of State prohibiting or restricting the use of particular processes,
4. The substances and products used to produce drinking water, including materials of construction in contact with water, satisfy the requirements of Regulation 31,
5. The works operators are appropriately trained and competent to operate the water treatment works. Operators must comply with DWI guidance on operator competency, currently in preparation,
6. A risk assessment and preventative management based approach to water supply consistent with World Health Organization Guidelines for Drinking-Water Quality – Water Safety Plans,

Raw and Partially Treated Water Quality Data

Where data is not representative of the proposed input because samples have only been taken from untreated or partially treated water the same analysis and interpretation of data is required as is defined for treated water. However the Licensee will additionally be required to make quantitative predictions about the change in each parameter occurring as a result of treatment. This approach is only likely to be acceptable where the treatment required is minimal e.g. disinfection of groundwater that already complies with all the standards unrelated to disinfection. In the case of a surface water full-scale and/or pilot plant data will be required.

In addition to treated water quality data Thames Water is likely to request data on raw and partially treated water. Details will be case specific and outlined during the application process.

Water Treatment Processes Design Information

As much of the following information as possible should be provided as part of the initial application.

Design Standards

The Licensee will need to describe the treatment processes that will be used and state the treatment standards they are designed to achieve. Evidence will be required to demonstrate that the treatment processes can achieve their design standards. This will include commissioning data and may, where appropriate, include full-scale operating data, pilot plant data or references to peer reviewed technical reports, papers and books. Key process design values will need to be submitted e.g. filtration rate and backwash rate for filtration processes, CT values for disinfection, surface loading for clarification. These design parameters are given for example purposes only. The Licensee will be required to submit all relevant measures of hydraulic and process loadings.

Instrumentation Control and Automation

The Licensees proposed control philosophy should be submitted to Thames Water. This must include:

1. The critical control points, alarm levels, shutdown triggers and duration of the shutdown process to ensure inadequately treated water does not enter supply,
2. Level of automation,
3. Parameters measured for control purposes (e.g. flow and/or residual measurement),
4. The methods of measurement including accuracy and range of measurement,

5. The control loop description e.g. feed forward or feedback,
6. The estimated "loop time",
7. The control logic e.g. "PID",
8. Data logging and telemetry details. Including an estimation of frequency of data point logging and length of time data will be stored,
9. Description of where and how data will be viewed/ interrogated and by whom, e.g. on site SCADA system with dedicated operator, or remotely over a telephone line in response to an alarm.

Annex 3: Screening Values for Various Water Quality Parameters

Note – the “scope” of the parameters listed are as specified in the Water Supply (Water Quality) Regulations 2000 – unless stated otherwise

Table 10: Chemical and physical parameters

CHEMICAL PARAMETERS AND INDICIES	SCREENING VALUE (MAXIMA UNLESS OTHERWISE STATED)	COMMENTARY
Aluminium (total)	50 µg/l Notification value – 30 µg/l	At concentrations above 50 µg/l aluminium is likely to accumulate within the distribution system and cause aesthetic problems when deposits are disturbed. At concentrations >30 µg/l it may be necessary to inform the local health authorities to help protect dialysis patients.
Alkalinity	A minimum and maximum will be specified on a case by case basis	Mixing waters of different alkalinity can have detrimental effects on water quality and will need to be considered on a site-specific basis. Most of the supplies in the Thames Water region have an alkalinity > 200 as HCO_3^- . See Annex 2.
Ammonium	0.05 mg/l (as NH_4^+)	The presence of ammonium may indicate inadequate water treatment in terms of break point chlorination or where a chloramine residual is used poor ammoniation control.
Antimony	1.0 µg/l	Concentrations of antimony in Thames Water's existing supplies are generally very low.
Arsenic	2.0 µg/l	Concentrations of arsenic in Thames Water's existing supplies are generally very low.
Barium	200 µg/l	Concentrations in Thames Water's supplies are normally below 200µg/l. Higher concentrations need to be investigated further to identify the source.
Benzene	0.2 µg/l	Benzene is not normally present in Thames Water's supplies. Detectable concentrations may indicate the presence of other contaminants.
Boron	300 µg/l	Concentrations in Thames Water's supplies are normally below 300µg/l. Higher concentrations need to be investigated further to identify the source.
Bromate	1.0 µg/l	Concentrations >1µg/l indicate raw water contamination or formation during the water treatment process. In both cases a control strategy will need to be developed

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CHEMICAL PARAMETERS AND INDICIES	SCREENING VALUE (MAXIMA UNLESS OTHERWISE STATED)	COMMENTARY
Cadmium	0.5 µg/l	Cadmium is not normally present in Thames Water supplies. Detectable concentrations may indicate the presence of other contaminants.
Chloride (mg/l)	100mg/l	Concentrations in Thames Water's supplies are normally below 100mg/l. Elevated chloride concentrations may make water aggressive/ corrosive see Annex 2.
Chlorine Residual	Minima and maxima will be specified on a case-by-case basis. The type and concentration will need to be consistent with that in the receiving zone. The water must have negligible chlorine demand i.e. a stable residual.	The type (monochloramine or chlorine) and concentration of the chlorine residual will be dictated by local circumstances on a site-specific basis.
Chromium	5.0 µg/l	Concentrations in Thames Water's supplies are normally below 5µg/l. Higher concentrations need to be investigated further to identify the source.
Colour	2 mg/l Pt/Co	Thames Water existing supplies have very low colour levels reflecting the nature of the source water.
Conductivity	Maxima and Minima will be specified on a case-by-case basis.	Levels of conductivity need to be considered on a site-specific basis to ensure compatibility with existing supplies. Used as a surrogate for TDS it may influence corrosion indices see Annex 2.
Copper	0.25 mg/l	Copper concentrations in Thames Water supplies are normally below 0.25mg/l. An allowance must be made for copper uptake from service pipes and fittings containing copper.
Cyanide	5 µg/l	The presence of cyanide may indicate the presence of other contaminants. Note: The Regulations specify "total cyanide in all forms"
Dissolved gases and appearance	The water must not be discoloured as a result of dissolved gas. Dissolved gases should be present at concentrations consistent with their partial pressure in clean air at atmospheric pressure and prevailing water temperature.	Entrainment of air into a pressurised system or CO ₂ in the case of a borehole are likely causes of discolouration that can and should be avoided by appropriate design and operation.

CHEMICAL PARAMETERS AND INDICIES	SCREENING VALUE (MAXIMA UNLESS OTHERWISE STATED)	COMMENTARY
Dissolved Oxygen %	A minimum and maximum will be specified on a case-by-case basis. The concentration should be consistent with that already in supply. The water must have a stable concentration of oxygen and a stable redox potential.	The required level of dissolved oxygen will be dictated by local circumstances. See Annex 2
Fluoride	A minimum and maximum will be specified on a case by case basis	The acceptable level of fluoride will, in part, be dictated by existing or proposed fluoridation agreements. Most Thames Water supplies are currently below 400 µg/l.
Hardness	A minimum and maximum will be specified on a case by case basis	Mixing waters of different hardness can have detrimental effects on water quality and will need to be considered on a site-specific basis. Most of the supplies in the TW region are hard (>200mg/l as CaCO ₃). See Annex 2.
Hydrocarbons (dissolved) as measured by GCMS.	At the detection limit (<0.5 µg/l for individual hydrocarbons)	Detectable levels of hydrocarbons may indicate the presence of other contaminants.
Hydrogen ion (pH)	A minimum and maximum will be specified on a case by case basis	Mixing waters of different pH can have detrimental effects on water quality and will need to be considered on a site-specific basis. See Annex 2
Iron	50 µg/l	At concentrations above 50 µg/l iron is likely to accumulate within the distribution system and cause aesthetic problems when deposits are disturbed.
Lead	1 µg/l	Concentrations of lead in Thames Water's water supplies are generally very low/not detectable. An allowance must be made for lead uptake from service pipes and fittings containing lead. See also: Water treatment (plumbosolvency)
Manganese	5 µg/l	Manganese deposits may form in distribution. Where present above 5 µg/l a treatment/ control strategy needs to be identified.
Magnesium	5 mg/l (minimum) 20 mg/l (maximum)	The proposed range reflects current concentrations in TW supplies. The lower limit is based on toxicological advice.

CHEMICAL PARAMETERS AND INDICIES	SCREENING VALUE (MAXIMA UNLESS OTHERWISE STATED)	COMMENTARY
Mercury	0.05 µg/l	Mercury is not normally present in Thames Water's supplies. Detectable concentrations may indicate the presence of other contaminants
Nickel	5 µg/l	Nickel concentrations in Thames Water's sources are normally below 5µg/l. Higher concentrations need to be investigated to identify the source.
Nitrate	45mg/l (as NO ₃) and an analysis of trends on all sources	Sufficient data must be provided to enable an analysis of trends over time. Where chloramination is practiced/necessary compliance with the combined nitrate/nitrite standard must be assessed.
Nitrite	0.1mg/l	0.1mg/l corresponds with the Regulatory standard for nitrite concentrations leaving a treatment works. See nitrate above.
Odour	0 Dilution number	Supplies in the Thames Water area normally have no odour.
Permanganate oxidisability	Maxima will be specified on a case-by-case basis	Requirements will be determined on a site-specific basis.
Pesticides (individual substances)	Aldrin - <0.001 µg/l Dieldrin - <0.001 µg/l Heptachlor - <0.001 µg/l Heptachlor epoxide - <0.001µg/l Other pesticides – 0.05 µg/l	The presence of elevated concentrations of pesticides can indicate the presence of other contaminants. The initial and ongoing monitoring for pesticides will need to be assessed on a site-specific basis.
Pesticides (total)	0.25 µg/l	See above.
Phenols	0.1 µg/l for individual substances	Detectable levels of phenols may give rise to unacceptable taste and odour and will need to be assessed accordingly
Phosphate	Minima and maxima will be specified on a case by case basis	Phosphate is added at many water treatment works in order to reduce the plumbosolvency of the water supply. The amount of phosphate required will depend on the existing concentrations and the plumbosolvency of the incoming water.
Polycyclic aromatic hydrocarbons	0.01 µg/l (total of 4 named substances) 0.002 µg/l (Benzo (a) pyrene)	PAHs should not normally be present in water entering the distribution system.
Potassium	No limit specified but concentration must be measured	Potassium data are needed to calculate levels of potassium-40, a contributor to gross beta activity.

CHEMICAL PARAMETERS AND INDICIES	SCREENING VALUE (MAXIMA UNLESS OTHERWISE STATED)	COMMENTARY
Radioactivity	Gross alpha activity – 0.05 Bq/l Gross beta activity – 0.3 Bq/l Tritium – 10 Bq/l	Levels of radioactivity in Thames Water supplies are normally below the stated screening levels. A reduced monitoring programme for radioactivity may be permitted if it can be demonstrated that the source is not at risk from contamination.
Selenium	1 µg/l	Selenium is not normally present in Thames Water's supplies. Detectable concentrations may indicate the presence of other contaminants
Silica	To be evaluated on a site-specific basis	Increases in Silica may have a significant impact on industrial users particularly power generation and notification of the change may be required.
Silver	1 µg/l	Silver is not normally present in Thames Water's supplies. Detectable concentrations may indicate the presence of other contaminants
Sodium	50 µg/l	Concentrations of sodium are normally less than 50 µg/l. Higher concentrations need to be investigated further to identify the source.
SOLVENTS		
1,1,1 Trichloroethane	1 µg/l	Elevated levels of trichloroethane may indicate the presence of other contaminants
1,2 Dichloroethane	0.3 µg/l	Elevated levels of dichloroethane may indicate the presence of other contaminants
Tetrachloroethene	1 µg/l	Elevated levels of tetrachloroethene may indicate the presence of other contaminants
Tetrachloromethane (Carbon tetrachloride)	0.3 µg/l	Elevated levels of tetrachloromethane may indicate the presence of other contaminants
Trichloroethene	1 µg/l	Elevated levels of trichloroethene may indicate the presence of other contaminants
Strontium	1mg/l	Concentrations of strontium are normally less than 1mg/l. Higher concentrations need to be investigated further to identify the source.
Sulphate	50 mg/l	Concentrations of sulphate are normally less than 50 mg/l in the Thames region. Higher concentrations need to be investigated further to identify the source. Sulphate is also considered in corrosion indices see Annex 2.
Taste	0 Dilution number	Supplies in the Thames Water area normally have no taste.

CHEMICAL PARAMETERS AND INDICIES	SCREENING VALUE (MAXIMA UNLESS OTHERWISE STATED)	COMMENTARY
Temperature	15 °C – winter 20 °C – summer	Elevated temperatures can contribute to various water quality problems in distribution systems
Total organic carbon	Maxima will be specified on a case-by-case basis	Requirements will be determined on a site-specific basis.
Trihalomethanes (sum of 4 substances)	Maxima will be specified on a case-by-case basis	Concentrations of THMs vary from place to place but are normally well below the national standard. Limits will be set on a site-specific basis. THMs are a key indicator of treatment and disinfection control.
Turbidity	0.5 NTU – Screening More specific triggers will be agreed site specifically based on normal operational turbidity ranges because turbidity may indicate contamination by <i>Cryptosporidium</i>	Turbidity is a key indicator of the performance of water treatment plant.
Zinc	100 µg/l	Elevated levels of zinc may indicate the presence of other contaminants

Table 11: Biological Parameters

BIOLOGICAL PARAMETER	SCREENING VALUE (MAXIMA UNLESS OTHERWISE STATED)	COMMENTARY
Algae as measured by Chlorophyll a	0.5 µg/l	
Macro invertebrates i.e. Asellus, Nais, Daphnia and Chironomid larvae	0 per 100 litres	As determine by running 100 l of water through a “net” of approximately 50 µm grade and examining the eluted contents under a microscope. Presence of macro invertebrates may indicate inadequate water treatment.
<i>Clostridium Perfringens</i> (including spores)	0 per 100 ml	Secondary indicator of faecal pollution. Indicator of treatment efficacy in final water. Spores may be resistant to disinfection.
Total Coliforms	0 per 100 ml	Presence of coliform bacteria indicates inadequate water treatment.
E. coli	0 per 100 ml	Indicates both faecal contamination and inadequate water treatment.
<i>Cryptosporidium</i> oocysts	0 per 10 litres	Results given per 10l and 1000l are associated with spot and continuous samples respectively. Presence of these pathogens in treated water necessitates a site-specific review of treatment and monitoring processes in line with legislation and public

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BIOLOGICAL PARAMETER	SCREENING VALUE (MAXIMA UNLESS OTHERWISE STATED)	COMMENTARY
Giardia Lamblia	0 per 10 litres	health standards before it can enter the Thames Water network.
<i>Cryptosporidium</i> oocysts	0 per 1000 l	
Giardia Lamblia	0 per 1000 l	
Enterococci	0 per 100 ml	Secondary indicator of faecal contamination. Presence in treated water implies inadequate treatment.
Colony counts at 22 and 37 °C	5 per ml measured as an average and 10 per ml measured as a 95 – percentile	To ensure no deterioration in existing quality
Enterovirus	0 PFU/ 10 l 0 TCID/ 10 l	Presence of viruses is indicative of inadequate treatment/ disinfection and a direct health risk.
Rotavirus	0 PFU/ 5 l 0 TCID/ 10 l	

Annex 4: Guidance Standards

PARAMETERS ASSOCIATED WITH PLUMBOSOLVENCY, CORROSION, SCALING AND PRECIPITATION	MINIMUM	MAXIMUM	COMMENTARY
pH	7.7	8.3	A pH below 7.7 may cause corrosion/ scale dissolution in water that has the minimum concentrations of alkalinity and calcium as evidenced by a negative Langelier Saturation Index (LSI) value. At pH values of 8.3 and above scale formation may become significant.
Alkalinity as HCO_3 mg/l	150	300	Generally Thames Water has an alkalinity of > 200 mg/l and precipitates CaCO_3 scale. Lower alkalinities may reduce or reverse this and cause water quality problems associated mainly with dissolution of scales, release of plumbing metals and corrosion of pipes and fittings.
Total Hardness as Ca mg/l	80	150	Generally Thames Water has a total hardness in excess of 80 mg/l. Lower hardness may reduce or reverse this and cause water quality problems associated mainly with dissolution of scales, release of plumbing metals and corrosion of pipes and fittings.
Langelier Saturation Index (LSI) (Calculated from the Total Dissolved Solids (TDS), pH, Calcium and alkalinity concentration of the water. The TDS may be approximated from the conductivity typically using ratios of 0.6-0.7 TDS (mg/l)/ Conductivity ($\mu\text{S}/\text{cm}$)	0.3	0.8	Water with a positive LSI can simplistically be described as scaling (CaCO_3). At values of 0.2 and 0.5 this is described as slight and moderate respectively. A value of 0.8 is more typical of waters in the Thames Water region.
Ryznar Index (Calculated in a similar way to the LSI and using the same parameters)	6	7.5	CaCO_3 scaling potential increases with decreasing RSI. Water is described as stable at 6 and a value of 7 corresponds to a slight tendency to dissolve scale. Water in the Thames region is generally less than 7.5.
Calcium Carbonate Precipitation Potential (Calculated in a similar way to the LSI and using the same parameters) as CaCO_3	3	10	The value indicates the concentration of Calcium Carbonate that is likely to precipitate in mg/l. Values less than 3 may dissolve scale, values greater than 10 may exceed the precipitation potential of existing waters in the Thames region leading to consumer complaints

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PARAMETERS ASSOCIATED WITH PLUMBOSOLVENCY, CORROSION, SCALING AND PRECIPITATION	MINIMUM	MAXIMUM	COMMENTARY
Larson-Skold Index (Calculated from the ratio of chloride + sulphate divided by carbonate + bicarbonate all units are meq/l)		0.7	An empirically derived measure of the corrosivity of water towards mild steel. At values of 0.8 and greater accelerated corrosion may occur. Water in the Thames region is relatively low in chloride and sulphate and high in carbonate based alkalinity. Therefore values should be relatively low.
Dissolved oxygen	As existing in receiving supply	As existing in receiving supply	Changes in the dissolved oxygen concentration of a supply can have a significant impact on the distribution and plumbing systems. For example iron release via the “Kuch effect” or increased iron release if the concentration is decreased or increased respectively.

Annex 5: Water Treatment Standards

Water treatment (Disinfection)

All supplies entering the Thames Water Supply System must be treated in a way that complies with Thames Water's primary disinfection policy. Key aspects of the Policy are detailed below. Applications where less stringent standards are in place will be rejected without further consideration.

At the operational stage, non-compliant water may cause the supply to be terminated and damages may be sought. Therefore it is strongly advised that Licensees design into their disinfection process a "margin of safety". Five specific examples are given:

1. The maximum pH and temperature of water entering the disinfection process should be established such that the maximum dissociation of hypochlorous acid can be accounted for and a safety margin considered. Thames Water will evaluate the data set used to ensure it is statistically significant and representative of seasonal and diurnal variations,
2. A significant difference between nominal hydraulic retention time and t₅ should be expected and "rule of thumb" conversion factors between the 2 measures will not be accepted. The t₅ will need to be demonstrated through tracer test studies that may be witnessed by Thames Water personnel. Therefore a conservative approach to specifying contact tank size and flow characteristics is encouraged,
3. Chlorination equipment should be sized to account for minimum and maximum flows and chlorine demand. Requirements for standby kit should be carefully considered,
4. "Triple validation" of key instrument readings may be required,
5. Alarm and shutdown levels should be selected to allow a safety margin due to instrument error and time delays.

All water entering the disinfection process must conform to the following acceptability criteria:

Chemical Criteria

- Turbidity less than 1 NTU (a more stringent final water standard of 0.5 NTU will apply).
- Colour less than 20 Hazen (a more stringent treated water standard will apply).
- Ammonia (ammonium) less than 0.05 mg/L
- Iron less than 0.2 mg/L (a more stringent treated water standard will apply).
- pH 6.5 – 8.5 (a tighter pH range will apply to water entering the Supply System).

Microbiological Criteria

- Total Coliforms less than 100 per 100 mL
- E. coli less than 10 per 100 mL.

If the water to be disinfected is from a groundwater source the minimum contact time for 95% (t₅) of the water at maximum flow is 20 minutes. If the water to be disinfected is from a surface water source the minimum contact time for 95% (t₅) of the water at maximum flow is 30 minutes. The amount of chlorine applied to the treated water will vary according to the quality of the water and will be decided on a site-by-site basis. However, the minimum amount of chlorine that shall be dosed, irrespective of the quality, is that which gives a minimum of 5 milligram.minutes of hypochlorous acid per litre over the required contact time. A total disinfection failure will be

recorded if this level is not achieved.

The chlorine concentration shall be continuously monitored and linked to alarms, which will be set and operated to allow appropriate action to prevent inadequately disinfected water entering supply. All unmanned sites will have an automatic fail-safe system, which will shut down the plant to prevent inadequately disinfected water leaving the works.

All supplies entering the Thames Water Supply System must be treated in a way that complies with Thames Water's residual disinfection policy. Key aspects of the Policy are detailed below. Applications where less stringent standards are in place will be rejected without further consideration.

All water supplied for drinking, washing, cooking and food production purposes will contain a chlorine residual at the outlet of the treatment works. The concentration and type of chlorine residual, whether monochloramine or free chlorine, shall be set on a site-specific basis, as determined by Thames Water and may be varied to take account of changing circumstances, such as seasonal variation in temperature. However, the concentration shall be within the range 0.1 to 1.0 mg/L total chlorine with the exception that the minimum monochloramine residual shall be 0.3 mg/l where a monochloramine residual is used.

The objective of a residual disinfectant is to prevent a deterioration of water quality within the distribution system and provide instant information on water quality in distribution. Thames Water shall review the efficacy of the residual concentration in each water supply area in light of compliance and customer response.

The chlorine residual concentration leaving the treatment works shall be continuously monitored and controlled. The monitoring system will be linked to alarms, which will be set and operated to ensure that the water contains a consistent concentration. Any significant deviation shall be reported to Thames Water and remedial action taken.

The chlorine concentration entering the distribution Supply System shall as a minimum be measured at a frequency to fulfil regulatory requirements.

The permanent mixing of waters with incompatible levels or types of residual disinfectants shall be avoided unless a risk assessment, completed to the satisfaction of Thames Water demonstrates there will be no decline in water quality. Specifically it is unlikely to be acceptable for water containing free chlorine residual to be mixed with water containing a monochloramine residual. Where the incumbent water contains a monochloramine residual the Licensee is likely to be required to chloramine its supply, specific process standards will apply.

It may be mutually beneficial for Thames Water to disclose full details of its disinfection policies procedures, design criteria and operating standards on agreement that the Licensee complies with them.

Water treatment (*Cryptosporidium*)

Thames Water will require Licensees to comply with all the relevant recommendations of the following 3 reports:

1. Badenoch, John. (1990). *Cryptosporidium* in water supplies: report of the group of experts. HMSO, London.
2. Badenoch, John. (1995). *Cryptosporidium* in water supplies: second report of the group of experts. HMSO, London.
3. Bouchier, Ian. (1998). *Cryptosporidium* in water supplies: third report of the group of experts. HMSO, London.

Licensees must also comply with all relevant DWI guidance and information letters whether existing

or issued in the future.

Water treatment (Plumbosolvency)

In large parts of the Thames Water supply area it is necessary to treat the water entering the distribution system in order to minimise the risk of exceeding a lead concentration of 10ug/l at customers' taps.

The requirement for plumbosolvency treatment will be based on the point of introduction of water into the distribution system and the extent to which the water penetrates into the wider Supply System.

The exact requirements of any plumbosolvency treatment will also depend on the location but in general terms the water treatment plant will need to be capable of adding orthophosphoric acid at concentrations up to 2mg/l as phosphorus. The exact phosphate dose and the performance of the plant will be specified as part of the Supply System Access agreement. It should be noted that this initial dose might need to be varied in light of changes that Thames Water makes in its plumbosolvency regime and/or recommendations from the Drinking Water Inspectorate.

In some circumstances additional water treatment may be needed to maintain or reduce lead concentrations at customers' taps. The need for these treatments will depend on the quality of the incoming supply and its compatibility with the existing supply. In some circumstances it may be necessary to carry out technical assessments of the plumbosolvency of the incoming water. Details will be set out in the Supply System Access agreement.

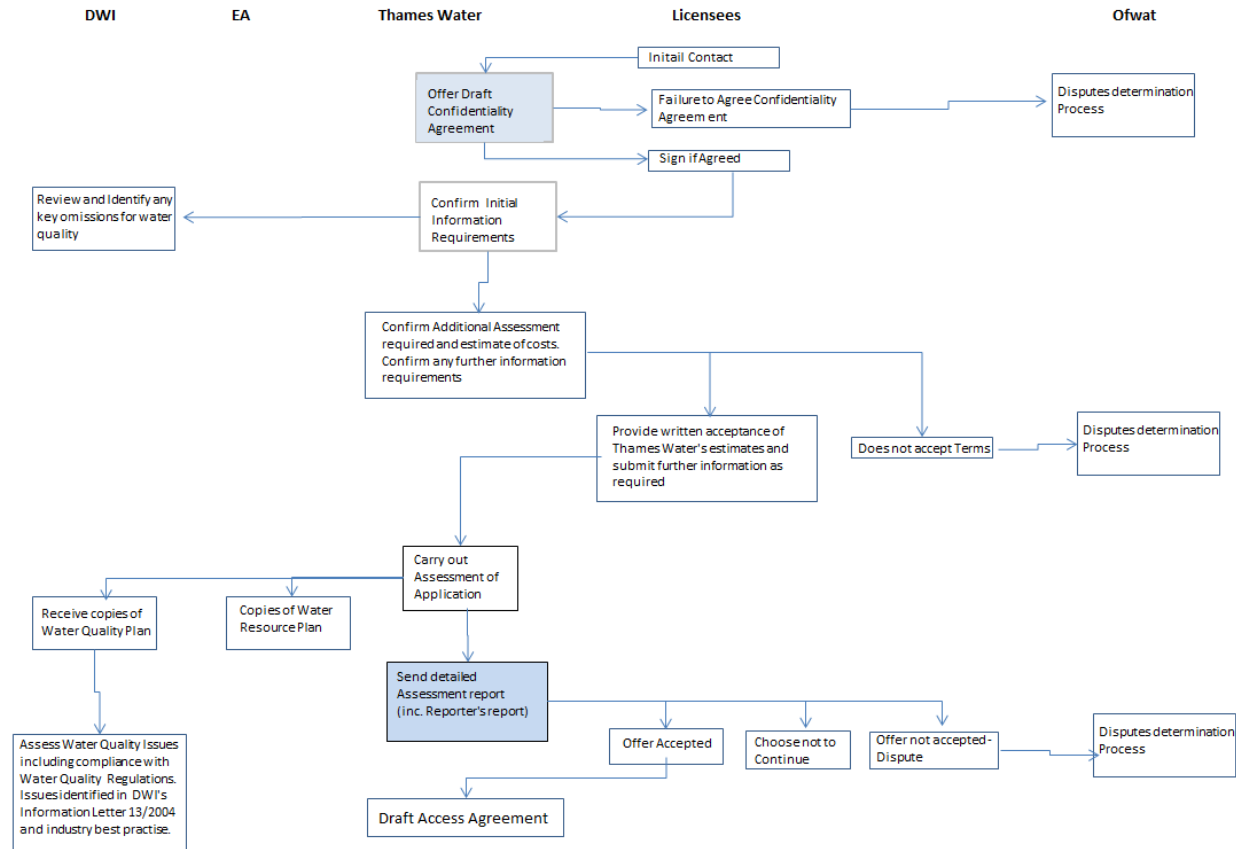
Water treatment (Fluoridation)

Currently Thames Water does not artificially fluoridate any of its water supplies. On that basis incoming supplies do not currently need to be fluoridated.

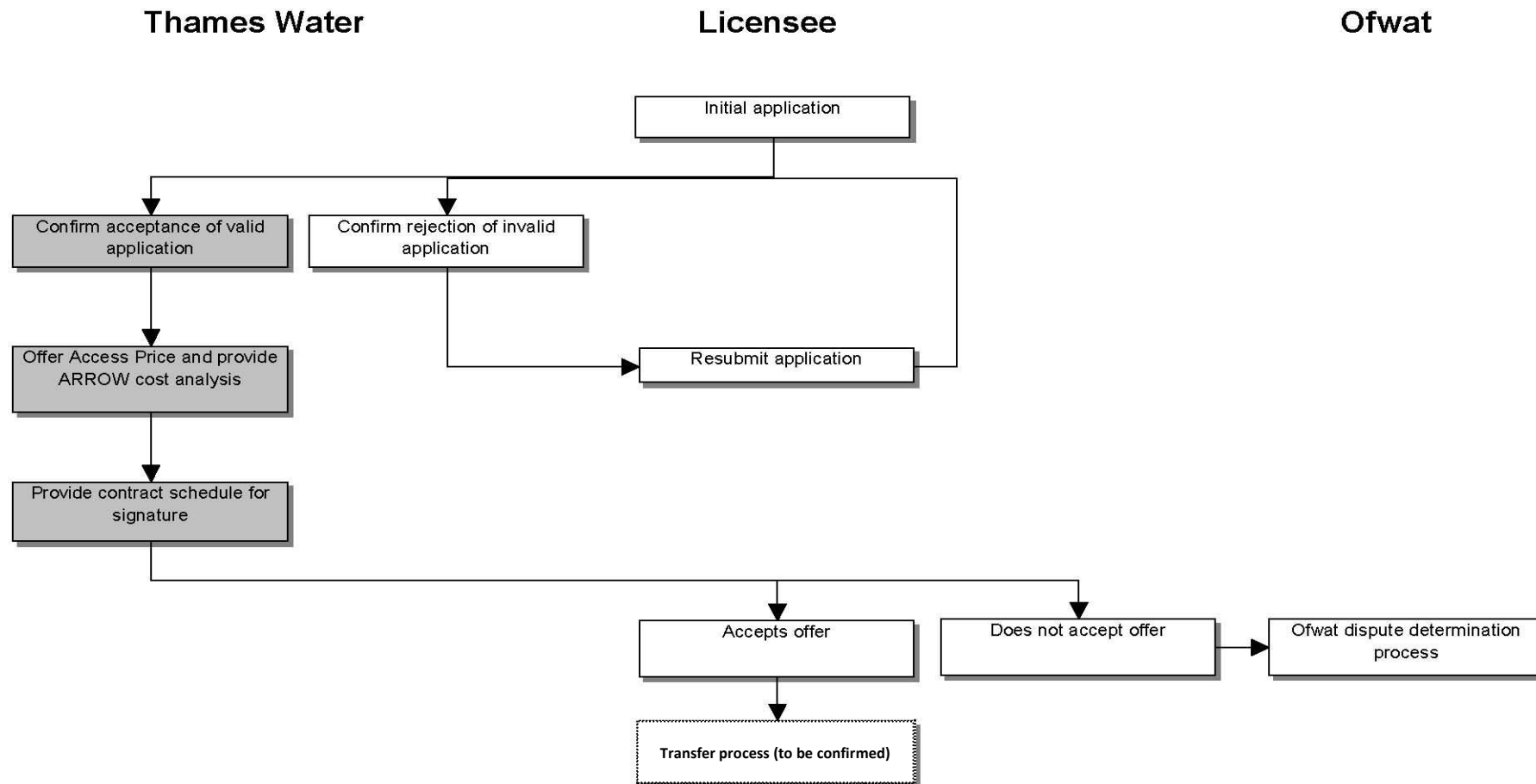
If Thames is asked to fluoridate parts or all of its supply area it may be necessary to add fluoride to the incoming supply. The holder of a Wholesale Authorisation is required to cooperate with Thames Water and the relevant Strategic Health Authority in order to evaluate the feasibility and costs of any proposed fluoridation scheme.


The holder of a Wholesale Authorisation may be required to add fluoride to the incoming water supply. It is anticipated that the costs for this work would be recoverable from the relevant Health Authorities.

Annex 6: Combined Supplies: Application Process (Draft constructed by Thames)



Annex 7: Wholesale Supplies: Application Process



 Denotes Thames Water activity governed by an Ofwat target timescale

Annex 8: Thames Water Event Classification Table

LEVEL	EVENT DESCRIPTION	EXAMPLE	TYPICAL EVENT MGT RESPONSIBILITIES
L1	An operational occurrence <ul style="list-style-type: none"> Alert status event threatening or directly affecting an important system or process Manager supervision is appropriate Early action indicated but: <ul style="list-style-type: none"> No regulatory, customer service or media issues Situation contained and stable Risk is Low but risk of escalation present 	<ul style="list-style-type: none"> Failure of small critical duty plant but standby operating Process showing signs of stress e.g. site monitoring outside normal limits Sewer collapse / blockage or burst rising main - no immediate effect to customers or environment Potentially unacceptable influent, effluent or biosolids diverted & contained A risk is forecast that may escalate to L2 e.g. delayed repair or heavy rain EA Pollution Category 3 	<ul style="list-style-type: none"> Technical staff take remedial actions and inform manager Manager ensures that: <ul style="list-style-type: none"> Remedial work is prioritised Progress is monitored view Event risk is kept under re Duty Manager is informed Manager informed when remedial work complete
L2	An event limited in scope and contained <ul style="list-style-type: none"> A local event but risk of escalation present No external agencies involved Customers affected to a limited extent, but: <ul style="list-style-type: none"> No significant regulatory, customer or media issues No strategic operational or business issues Situation relatively stable and contained Risk is Medium 	<ul style="list-style-type: none"> The L2 band covers a wide spectrum Significant delay repairing critical plant Inhibition or overload of process Sewer collapse/blockage or burst rising main - minimal impact to customers or environment Process output standards breached but no significant environmental impact At upper end - service reservoir at critical level with tankering in progress, significant burst main affecting customers etc EA Pollution Category 2 	<ul style="list-style-type: none"> Duty Manager / Ops Middle Manager acts as Event Controller and: <ul style="list-style-type: none"> Prepares event strategy Sets critical success factors and tracks progress Prepares for possible escalation Keeps key people informed Maintains liaison with Operational Control Room Inform Corporate Affairs (via Operational Control Room) Prepares draft briefing for external agencies Keeps event under review
L3	An unstable, severe or uncontained event <ul style="list-style-type: none"> Major event, key activities under severe stress External, regulatory or environment agencies involved Service continuity significantly affected Important business, customer or media issues Situation changing rapidly, could impact significantly upon the company 	<ul style="list-style-type: none"> The L3 band may include: <ul style="list-style-type: none"> Key account affected Prolonged loss of process capability with output standards significantly breached Significant environmental impact or water abstraction implications Sewer collapse/blockage or burst rising main - significant 	<ul style="list-style-type: none"> Duty Manager / Senior Manager acts as Event Controller Responsibilities as above and: <ul style="list-style-type: none"> Event Controller supported by event team Consultation/co-ordination with external agencies Proactive contact with customers, media etc

Thames Water Access Code

	<ul style="list-style-type: none"> • Risk is High 	<p>environmental pollution or internal property/flooding damage</p> <ul style="list-style-type: none"> • Major trunk main burst • EA Pollution category 1 	<ul style="list-style-type: none"> • Inform senior line manager • Consider informing Operations Director and Managing Director TWUL
L4	<ul style="list-style-type: none"> • Emergency • Presents a significant risk to the business • Countermeasures failing or perceived as failing • High risk of widespread service continuity failure, serious environmental or property damage • Event strategy significantly influenced by external factors • Risk Intolerable; possible crisis risk 	<ul style="list-style-type: none"> • Executive management judgement • The event is of such severity that Director level supervision is necessary e.g. widespread failure • Decision to declare an emergency may only be made by Senior Manager or above 	<ul style="list-style-type: none"> • Director acts as Event Controller • Responsibilities as above and: • Review risk factors and their impact on event progression • Consider strategic business impact of event • Inform Managing Director TWUL and TW Chief Executive or Chief Operating Officer

Annex 9: Indicative Connection Costs

The following indicative costs are based on connection to Thames Water's assets under straightforward conditions. We have assumed there is no requirement for barrier pipe and all excavations are in a road. Please refer to our published charging arrangements for new connection services for more information.

It is assumed that water flows will be constant 24 hours per day, 365 days per year.

Scenario 1:

Licensee inputs 50 MI/year through a new 125mm water main connecting into Thames Water's existing 300mm main. Assuming a further 10m of main is required the indicative charge would be £10,350 plus VAT if applicable.

Scenario 2:

Licensee inputs 150 MI/year through a new 180mm water main connecting into Thames Water's existing 450mm main. Assuming a further 10m of main is required the indicative charge would be £12,320 plus VAT if applicable.

Scenario 3:

Licensee inputs 250 MI/year through a new 250mm water main connecting into Thames Water's existing 600mm main. Assuming a further 10m of main is required the indicative charge would be £13,680 plus VAT if applicable.

The above indicative charges are before the application of any income offset. In the event that the supply is considered to be a service connection, different charges apply and there is no income offset.

Annex 10: Confidentiality Agreement

DRAFT CONFIDENTIALITY AGREEMENT

THIS AGREEMENT is made this day of 20[]

BETWEEN THAMES WATER UTILITIES LIMITED ("Thames") whose Registered Office is Clearwater Court, Vastern Road, Reading, Berkshire RG1 8DB and [*Proposed Licenced Water Supplier/Primary/Secondary Undertaker*] of/ whose Registered Office is []

WHEREAS Thames and [*Proposed Licenced Water Supplier/Primary/Secondary Undertaker*] ("the Parties" and individually "a Party") for their mutual benefit may have exchanged and wish further to exchange certain information of a confidential nature and wish to protect such information in the manner set out in this Agreement.

IT IS HEREBY AGREED AS FOLLOWS:

1 Definitions

For the purposes of this Agreement the following expressions shall have the following meanings:-

- (a) **"Authorised Representative"** shall mean any employee, director, officer or professional and financial advisor of the receiving Party;
- b) **"Confidential Information"** shall mean any and all confidential, commercial, financial, marketing, technical, environmental information governed by the EIR or other information or data of whatever nature relating to the disclosing Party or to the disclosing Party's business or affairs (including but not limited to this Agreement, data, records, reports, agreements, software, programmes, specifications, know-how, trade secrets, either Party's or any associated company's organisational structure, contractual arrangements or agreements, technical documentation, finances, properties, costs, methods of doing business, personnel, legal affairs, plans, customers, products or processes, and other information concerning the Project, information regarding [the water undertaker's] actual or proposed network access code or any charges for any network access or, in the case of [the Licensee], information relating to its actual or proposed customers and borehole or other resource locations, whether or not identified as confidential) in any form or medium whether disclosed in writing, orally or by any other means to one Party by the disclosing Party or by a

- third party on behalf of the disclosing Party whether before or after the date of this Agreement together with any reproductions of such information in any form or medium or any part(s) of such information);
- (c) **“Exempted Information”** shall mean any information or category of information, document, report, contract or other material containing information relevant to this Agreement that has been designated by the mutual agreement of the Parties as potentially falling within a EIR Exemption;
- (d) **“EIR”** shall mean the Environmental Information Regulations 2004 which shall include any amendment, modification, consolidation, re-enactment or replacement of the same;
- (e) **“EIR Exemption”** shall mean any applicable exemption to the EIR;
- (f) **“Project”** shall mean any discussions and negotiations between or within the Parties concerning or in connection with the proposal set out in the Schedule attached hereto.

2 CONFIDENTIALITY OBLIGATIONS

2.1 Subject to clause 2.2 in consideration of the mutual exchange and disclosure of Confidential Information each Party undertakes in relation to the Confidential Information disclosed to it by the other Party either

2.1.1 For [7] years from the date of this Agreement, or

2.1.2 Until such time as the Parties agree that this Agreement shall be superseded by other confidentiality obligations contained in a separate written agreement terminating this Agreement :-

- (a) to treat all and any of such Confidential Information as confidential and secret and not use any of such Confidential Information for any purpose other than the purpose of evaluating such Confidential Information in connection with the Project;
- (b) to take all reasonable steps to protect the confidentiality of such Confidential Information and to prevent disclosure of same to unauthorised persons;
- (c) not to disclose any of such Confidential Information in whole or in part to any third party without the prior written consent of the other Party save to its Authorised Representatives who need to know the same for the purpose of evaluating such Confidential Information in connection with the Project;
- (d) to take all reasonable steps to ensure that each Authorised Representative to whom it discloses such Confidential Information is made aware of the provisions of this Agreement and observes the obligations contained herein.

2.2 The obligations of confidentiality and the prohibitions against use undertaken in this

Agreement by the receiving Party shall not apply to any Confidential Information which:-

- (a) is or subsequently comes into the public domain otherwise than as a result of any breach of this Agreement by the receiving Party or any of its Authorised Representatives;
- (b) is already known to the receiving Party prior to disclosure which prior knowledge the receiving Party can clearly demonstrate with written material;
- (c) becomes known to the receiving Party by disclosure from a third party who has a lawful right to receive and disclose the Confidential Information;
- (d) is required to be disclosed by law or by any regulatory authority provided that the receiving Party informs the disclosing Party in advance of the circumstances of the disclosure and exactly what is to be disclosed and uses all reasonable endeavours to obtain confidentiality undertakings from the recipients in respect of the Confidential Information disclosed; or
- (e) the disclosing Party agrees in writing may be disclosed.

3 EIR

3.1 The Parties recognise that they are subject to legal duties, which may require the release of information under the EIR and may be under an obligation to provide information on request. Such information may include matters relating to, arising out of or under this Agreement in any way.

3.2 The Parties recognise that each request for information must be considered individually.

3.3 Notwithstanding anything in this Agreement to the contrary including, but without limitation, the general obligation of confidentiality imposed on the Parties pursuant to Clause 2, in the event that either Party ("the Relevant Party") receives a request for information under the EIR, the Relevant Party shall be entitled to disclose all information and documentation (in whatever form) as necessary to respond to that request in accordance with the EIR PROVIDED ALWAYS that where the information requested is information that has been given to the Relevant Party by the other Party ("the Other Party"), the Relevant Party:

3.3.1 shall use reasonable endeavours to consult the Other Party as soon as reasonably practicable and the Other Party agrees to respond to such consultation within 7 days of receiving the consultation notice;

3.3.2 shall not disclose any information that the Parties have agreed is Exempted Information and shall rely on the EIR Exemption, at the Other Party's request and cost, and use reasonable endeavours to ensure that the Exempted Information remains withheld, including the lodging of any appeal against a decision by the Information Commissioner in relation to the request;

- 3.4 In the event that the Relevant Party incurs any costs, including but not limited to external legal costs, in seeking to maintain the withholding of the information, including but not limited to responding to information notices or lodging appeals against a decision of the Information Commissioner in relation to disclosure, the Other Party shall indemnify the Relevant Party, save that the Relevant Party shall use reasonable endeavours to consult the Other Party before incurring any such costs and comply with all reasonable requirements of the Other Party before incurring such costs and shall permit the Other Party to take over the sole conduct of the matter if it so chooses.

4 INTELLECTUAL PROPERTY

Nothing in this Agreement shall be construed to grant either Party any right or licence any patent, know-how, trademark, copyright or other intellectual property right of the other Party.

5 RETURN OF INFORMATION

- 5.1 Each Party shall within one week of a request from the other Party in writing give to the other Party or (at the other Party's discretion) itself destroy all the Confidential Information of the other Party and all copies thereof in its possession, custody or control including for the avoidance of doubt Confidential Information contained within computers, word processors or other devices (including computer discs or other information storage equipment).

- 5.2 The return of Confidential Information shall not release either Party from its other obligations under this Agreement.

6 NO REPRESENTATION, WARRANTY OR LICENCE

- 6.1 No representation or warranty is made or given by either Party to the other as to the accuracy or completeness of the Confidential Information disclosed by it to the other or as the reasonableness of any assumptions on which the same is based and each of the Parties agrees that neither the disclosing Party nor its Authorised Representatives shall have any liability to it (or its Authorised Representatives) resulting from the use of such Confidential Information save as expressly agreed in writing.

- 6.2 This Agreement only governs the rights and obligations of the Parties with respect to the Confidential Information disclosed and does not purport to be a licence to use such Information for any purpose except for the Project. Should the Parties enter into any licence or other similar agreements in the future such agreements shall supersede this Agreement and shall contain similar provisions for the protection of the Parties' Confidential Information.

7 REFERENCE TO THE PARTIES

Save as required by law or any regulatory body, neither of the Parties shall make any announcement, public statements or press releases of any kind in relation to the Confidential Information disclosed to it by the other of the Project nor shall they mention the name of the other Party in connection with the Project or disclose the existence of the Project or the existence of this Agreement without the prior written

consent of the other Party.

8 NO CONTRACT

No documents or information made available to the one Party or its Authorised Representatives by the other will constitute an offer or invitation or form the basis of any contract.

9 NOTICES

All notices under this Agreement shall be in writing, sent by facsimile or first class registered or recorded delivery post to the Party being served to its facsimile number mentioned below or at its address specified above or at such other facsimile number or address of which such Party shall have given notice as aforesaid, and marked for the attention of the person holding the position of that Party's signatory to this Agreement. The date of service shall be deemed to be the next business day following the day on which the notice was posted or immediately upon receipt of the fax confirmation if sent by facsimile.

10 CONSEQUENCES OF BREACH

10.1 In consideration of either Party disclosing the Confidential Information to the other the receiving Party further agrees to indemnify the disclosing Party against any breach of its obligations under any clause of this Agreement.

10.2 Each Party recognises that in addition to all other remedies that the disclosing Party may be entitled to as a matter of law the disclosing Party shall be entitled to seek specific performance and any other form of equitable relief to enforce this Agreement. The receiving Party acknowledges that damages may be insufficient remedy for any breach of this Agreement.

10.3 No proof of special damages shall be necessary for the enforcement of this Agreement.

11 NO WAIVER

No failure or delay by either Party in exercising any right, power or privilege under this Agreement shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any further exercise thereof or the exercise of any right, power or privilege hereunder or otherwise.

12 VARIATION

No variation or amendment to this Agreement shall be effective unless in writing and signed by authorised signatories for the Parties.

13 NON-ASSIGNMENT

This Agreement is personal to the Parties and shall not be assigned or otherwise transferred in whole or in part by either Party without prior written consent of the other Party.

14 ENTIRE AGREEMENT

This Agreement sets out the entire agreement between the Parties in respect of the

Confidential Information disclosed by either Party to the other and supersedes all previous understandings and undertakings in such respect whether oral or in writing, and no representation, undertaking or promise shall be taken to have been given or be implied from anything said or written in negotiations between the Parties prior to this Agreement except as set out in this Agreement.

15 COSTS

Each Party shall bear its own legal and other costs incurred in relation to the preparation and completion of this Agreement.

16 SEVERANCE

Each provision of this Agreement is severable and distinct from the others. The Parties intend that every such provision shall be and remain valid and enforceable to the fullest extent permitted by law. If any such provision is or at any time becomes to any extent invalid, illegal or unenforceable under any enactment or rule of law it shall to that extent be deemed not to form part of this Agreement but it and all the other provisions of this Agreement shall continue in full force and effect and their validity, legality and enforceability shall not therefore be affected or impaired.

17 GOVERNING LAW

The construction, validity and performance of this Agreement shall be governed all times by English Law and the English Courts shall have non-exclusive jurisdiction in respect thereof.

AS WITNESS the hands of the Parties hereto and their duly authorised representatives the day and year first before written

SIGNED on behalf of Thames Water Utilities Limited

(Signature)

(Position)

(Date)

SIGNED on behalf of [*Proposed Licenced Water Supplier/Primary/Secondary Undertaker*]

(Signature)

(Position)

(Date)

The Schedule

[Define the Project]

Annex 11: Operational Code

1. Overview

1.1 Order of precedence

If there is any conflict between the following, the order of precedence shall be:

- (a) Any law;
- (b) The Access Codes Guidance, incorporating the operational code and common contract.

1.2 Definitions

- (a) References to 'the Act' are to the Water Industry Act 1991 (as amended) unless otherwise specified.
- (b) References to an 'appointed water company' are to an undertaker appointed under the Act to provide water services to a defined geographic area.
- (c) References to a 'Licensee' are to a company holding a Water Supply and/or Sewerage Licence under the Act.
- (d) References to 'the parties' are to the Licensee and appointed water company that have an agreement, or are seeking to enter into an agreement, for the wholesale supply of water under section 66A of the Act, unless the context requires otherwise.
- (e) References to 'the operational code' are to this document as amended from time to time.
- (f) References to 'the common contract' are to the common contract for wholesale supplies under section 66A of the Act as amended from time to time.

1.3 Objectives and purpose

The operational code establishes rules for the wholesale supply of water under section 66A of the Act and the entry into an agreement for such supply.

1.4 Status and enforceability

- (a) Under section 66D(4) of the Act, Ofwat is required to issue guidance in accordance with which the terms and conditions of agreements under sections 66A-66C of the Act must be made.
- (b) The operational code forms part of Ofwat's guidance and applies to wholesale supplies of water by an appointed water company to a Licensee under section 66A of the Act.

- (c) Each appointed water company is required by Condition of Appointment R (Provision of combined and wholesale water supplies) to publish an access code which conforms to Ofwat's guidance, and to comply with it.
- (d) In accordance with these requirements, the operational code must be included in an appointed water company's access code, and the appointed water company must comply with its provisions.

1.5 Ofwat's role

- (a) Ofwat shall ensure the effective implementation and operation of the operational code.
- (b) In so doing, Ofwat shall:
 - (i) Act independently of the interests of any market participant or group of market participants;
 - (ii) Act impartially and show no undue preference in its relationship with market participants; and
 - (iii) Act with appropriate speed in taking any necessary action.
- (c) Ofwat has the power under section 18 of the Act to issue enforcement orders to secure compliance with appointed water companies' Conditions of Appointment (for example, Condition of Appointment R (Provision of combined and wholesale water supplies) and Condition of Appointment S (Customer transfer protocol)) and Licensees' standard licence conditions.
- (d) Ofwat has the power under sections 66D, 66G and 66H of the Act to make determinations on aspects of the water supply and/or Sewerage licensing framework.
- (e) Ofwat shall chair an industry forum established under the terms set out in the Customer Transfer Protocol to discuss any proposed changes to the operational code and common contract.
- (f) Ofwat may from time to time revise its guidance under section 66D of the Act, in accordance with section 66F of the Act.

1.6 Duties of appointed water companies and Licensees to other bodies

Appointed water companies and Licensees shall respond promptly to any requests for information and comply with any relevant guidance from:

- (a) Consumer Council for Water;
- (b) Environment Agency (including Environment Agency Wales); and
- (c) Drinking Water Inspectorate.

1.7 England and Wales

Appointed water companies and Licensees shall have regard to any differences in the relevant laws in England and Wales.

2. Applying for access

2.1 This section sets out the process which shall be followed when an eligible customer wishes to be supplied by a Licensee and the Licensee wishes to purchase a wholesale supply of water from an appointed water company under section 66A of the Act in order to supply that customer. For a wholesale supply, the Licensee is entitled to use the common contract as the access agreement between the parties unless it wishes to negotiate a supply on different terms.

2.2 If a Licensee wishes to use the common contract as the access agreement between the parties, the application process is as follows:

- (a) Licensee submits its application to the appointed water company. That application shall comprise:
 - (i) a copy of the customer's consent to switch supplier (see further sections 2.4 and 2.5 below); and
 - (ii) a completed copy of the common contract (see further section 2.6 below).
- (b) The appointed water company shall offer an access price for the Licensee's customer and provide a signed copy of the common contract within 10 working days of receiving the Licensee's application. The access price offered by the appointed water company shall remain valid for six (6) months and shall specify the discount in p/m³ from the standard retail tariff. The offer shall also explain:
 - (i) the basis of the discount from the standard retail tariff; and
 - (ii) any difference between the indicative discount for such a customer and the discount in the customer-specific offer.
- (c) If the Licensee accepts the access price offered by the appointed water company, the Customer Transfer Protocol process will switch the customer to the Licensee. If the Licensee is unable to agree an access price with the appointed water company, the parties shall follow the dispute resolution procedure set out in section 4 below.

2.3 If a Licensee has chosen not to use the common contract as the access agreement between the parties, the application process is as follows:

- (a) Licensee submits its application to the appointed water company. That application shall comprise:
 - (i) a copy of the customer's consent to switch supplier (see further sections 2.4 and 2.5 below); and

- (ii) any contract or terms that is/are proposed or agreed between the parties.
 - (b) The appointed water company shall contact the Licensee within two (2) working days of receiving the Licensee's application to discuss that application and commence any negotiation.
 - (c) The appointed water company shall offer an access price for the Licensee's customer and provide a signed copy of an agreed contract within 10 working days of receiving the Licensee's application (or such longer period as the parties may agree). The access price offered by the appointed water company shall remain valid for six (6) months and shall specify the discount in p/m³ from the standard retail tariff. The offer shall also explain:
 - (i) the basis of the discount from the standard retail tariff;
 - (ii) any difference between the indicative discount for such a customer and the discount in the customer-specific offer; and
 - (iii) any specific terms agreed by the parties.
 - (d) If the Licensee accepts the access price offered by the appointed water company, the Customer Transfer Protocol process will switch the customer to the Licensee. If the Licensee is unable to agree an access price with the appointed water company, the parties shall follow the dispute resolution procedure set out in section 4 below.
- 2.4 The customer's consent to switch supplier shall include the following information:
- (a) Contact name(s) for the customer;
 - (b) Full contact details for the customer;
 - (c) Any customer reference number provided by the existing supplier;
 - (d) Meter serial number(s), if known; and
 - (e) Previous three (3) years' water consumption, if available.
- 2.5 The customer's consent to switch supplier shall be dated no more than two (2) months before the Licensee submits its application to the appointed water company, or otherwise verified by the customer as being in force as at the date of the Licensee's application.
- 2.6 If the Licensee has chosen to use the common contract as the access agreement between the parties and provided all of the information required of it by that contract, the appointed water company shall not reject the Licensee's application on the grounds of insufficient information.
- 2.7 An appointed water company shall not recover from a Licensee any costs of processing an access application.

- 2.8 An appointed water company shall not charge the Licensee for providing copies of any documents relating to the transfer of a customer or for clarifying its policy and information requirements.
- 2.9 A Licensee shall not charge the appointed water company for providing any information which is necessary for the carrying out of the appointed water company's functions.
- 2.10 The parties shall comply with any reasonable request for information received from each other.

3. Access pricing

- 3.1 This section provides guidance with respect to the fixing of access charges, in accordance with section 66D(6) of the Act.
- 3.2 Appointed water companies shall publish indicative charges for the wholesale supply of water. These charges shall be published in such manner as may be specified by Ofwat.
- 3.3 Appointed water companies operating wholly or mainly in England shall, as a minimum, publish indicative wholesale supply charges for customers consuming 5MI, 25MI, 50MI and 500MI per year. If an appointed water company has a tariff with a threshold between 5MI and 50MI per year, it may publish indicative wholesale supply charges relevant to that tariff instead of for customers consuming 25MI per year. An appointed water company must publish indicative wholesale supply charges for at least one consumption point between 5MI and 50MI per year.
- 3.4 Appointed water companies operating wholly or mainly in Wales shall, as a minimum, publish indicative wholesale supply charges for customers consuming 50MI and 500MI per year.
- 3.5 The indicative charging information published by an appointed water company shall clearly show the difference between its standard retail charge and the wholesale supply charge it has calculated.
- 3.6 The indicative charging information published by an appointed water company shall include:
 - (a) Charging data for a period of five (5) years, starting with the current charging year;
 - (b) The difference in wholesale supply charge where:
 - (i) the Licensee pays its charges in arrears; and
 - (ii) the Licensee pays its charges in advance.Charges at (b)(ii) shall be calculated in accordance with paragraph 4 of schedule 2 to the common contract; and
 - (c) The discounts for the first and second customer of a specific Licensee.

- 3.7 Indicative wholesale supply charges published by an appointed water company shall be for the service defined in clause 2 of the common contract.
- 3.8 When publishing or amending any indicative charging information, an appointed water company shall explain any assumptions it has made for the purpose of calculating that information.
- 3.9 Indicative charging information shall be reviewed by an appointed water company every year by 15 October. This information may also be reviewed at any other time. An appointed water company shall notify Ofwat and publish updated information on its website within seven (7) days of making any modifications to its indicative charging information.
- 3.10 If requested, an appointed water company shall provide Ofwat with information to explain how it has calculated its indicative wholesale supply charges. Such information shall be provided in such manner, and by such time, as Ofwat may specify.
- 3.11 Nothing in this operational code limits an appointed water company's ability to publish indicative charging information for supplies and in respect of circumstances which are not specified in this section.
- 3.12 If a Licensee has made an application to an appointed water company in respect of the supply to a particular customer, the appointed water company may offer its published indicative wholesale charge for such supply if it considers that charge to be appropriate.

4. Dispute resolution procedure

- 4.1 This section sets out the dispute resolution procedure applicable to all disputes and differences arising out of or in connection with this operational code.
- 4.2 The parties shall, in the first instance, attempt to resolve any dispute or difference using the following procedure:
 - (a) Either party may serve a notice on the other party which expressly refers to this section and provides sufficient information to enable the other party to understand the nature of the dispute or difference. Following service of such a notice, the parties shall each use reasonable endeavours to resolve the dispute or difference by prompt discussion in good faith at a level appropriate to the dispute or difference in question.
 - (b) If the dispute or difference remains unresolved after 10 working days (or such other period as agreed by the parties) of the notice being served, an appropriate representative of each party's senior management shall attempt to resolve the dispute or difference by prompt discussion in good faith.
 - (c) If the dispute or difference remains unresolved after 10 working days (or such other period as agreed by the parties) of such referral to senior

management then, unless the parties agree otherwise, this initial procedure shall be treated as having been exhausted.

- 4.3 For any dispute or difference which has not been resolved through the initial procedure in section 4.2, either party may:
- (a) refer it to such alternative dispute resolution process as agreed by the parties; or
 - (b) refer it to a competent authority, provided that such authority has specific powers to resolve the dispute or difference.

Annex 12: Wholesale-Retail Code: Wholesale Contract for Wholesale Services

ANNEX

Wholesale-Retail Code:

Wholesale Contract for Wholesale Services

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This Wholesale Contract is made on Between

- (1) _____, a company incorporated in
(No. _____) in whose registered office is at _____
(the Contracting Wholesaler); and
- (2) _____, a company incorporated in
(No. _____) whose registered office is at _____
(the Contracting Retailer).

Whereas

- (A) The Contracting Wholesaler holds an Appointment under the Water Industry Act 1991 and the Contracting Retailer holds a Licence under the Water Industry Act 1991.
- (B) The Contracting Retailer has requested that the Contracting Wholesaler supply it with Wholesale Services under sections 66A and 66AA and/or sections 117A and 117B of the Water Industry Act 1991 and the Contracting Wholesaler is required by the Water Industry Act 1991 to make such supply.
- (C) This Wholesale Contract is a section 66D agreement and/or a section 117E agreement (as those terms are defined in sections 66D(9) and 117E(9) of the Water Industry Act 1991).
- (D) The Authority has issued a code called the Wholesale-Retail Code, pursuant to sections 66DA and 117F of the Water Industry Act 1991, which makes provision in relation to the terms and conditions of a section 66D agreement and/or section 117E agreement.
- (E) This Wholesale Contract (together with its Schedules) is in the form prescribed by the Authority in the Wholesale-Retail Code and applies to all of the Wholesale Services required by the Contracting Retailer from the Contracting Wholesaler.

It is agreed

1 Definitions and interpretation

- 1.1 In this Wholesale Contract the definitions and rules of interpretation in Part B of Part 1 of Schedule 1 of this Wholesale Contract shall apply.

2 Term and termination

- 2.1 This Wholesale Contract shall commence or be deemed to commence on (the "Effective Date") and continue with full force and effect unless and until terminated in accordance with Clause 2.2.

- 2.2** This Wholesale Contract may be terminated in accordance with Section 11 of the Business Terms.

3 Wholesale Services commencement and supply

- 3.1** Under this Wholesale Contract the Contracting Retailer hereby confirms that it requires the Contracting Wholesaler to supply the following Wholesale Services:

3.1.1 Water Services OR

3.1.2 Sewerage Services OR

3.1.3 Water Services and Sewerage Services. [DELETE AS APPROPRIATE]

3.1.4 Where the Contracting Wholesaler operates an accreditation scheme, the Contracting Retailer may use such Accredited Entities to provide, or, where the Contracting Retailer is itself an Accredited Entity it may provide, Metering Activity, Connection Activity and/or Trade Effluent Sampling and Analytical Activity.

- 3.2** The commencement of the provision of the Wholesale Services by the Contracting Wholesaler shall begin on or after the Effective Date and be conditional on the fulfilment of the following conditions precedent:

3.2.1 the Contracting Retailer holding a Water Supply Licence and/or a Sewerage Licence (as appropriate) and such Licence not having been the subject of any successful appeal notified within fourteen (14) days of the date of its grant;

3.2.2 the Contracting Retailer being entitled to Register Supply Points;

3.2.3 the Contracting Retailer having provided the information specified in Schedule 2 of this Wholesale Contract to the Contracting Wholesaler;

3.2.4 the Contracting Wholesaler having provided the information specified in Schedule 3 of this Wholesale Contract to the Contracting Retailer;

3.2.5 where applicable pursuant to Section 9.11.4(a) of the Business Terms, the Cash Security Account Agreement having been fully executed by all parties thereto and in accordance with Schedule 2A of the Business Terms; and/or

3.2.6 where applicable pursuant to Section 9.11.4(b) of the Business Terms, the Guarantee having been provided to the Contracting Wholesaler on behalf of the Contracting Retailer in accordance with Schedule 2B of the Business Terms;

3.2.7 where applicable pursuant to Section 9.11.4(c) of the Business Terms, the Letter of Credit having been provided to the Contracting Wholesaler on behalf of the Contracting Retailer in accordance with Schedule 2C of the Business Terms; and/or

3.2.8 where applicable pursuant to Section 9.11.4(d) of the Business Terms, a Surety Bond having been provided to the Contracting Wholesaler on behalf of the Contracting Retailer in accordance with Schedule 2D of the Business Terms.

3.3 During the Supply Period, the Contracting Wholesaler shall provide the Wholesale Services specified in Clause 3.1 above in accordance with and subject to the terms of this Wholesale Contract.

3.4 If the Contracting Retailer provides Metering Activity, Connection Activity and/or Trade Effluent Sampling and Analytical Activity itself or through Accredited Entities then it shall do so in accordance with Schedule 1 Parts A and B of the Business Terms.

3.5 If the Contracting Retailer provides Metering Activity, Connection Activity and/or Trade Effluent Sampling and Analytical Activity itself or through Accredited Entities then those services shall not be Wholesale Services provided by the Contracting Wholesaler pursuant to the Wholesale Contract.

4 Wholesale-Retail Code

4.1 The Contracting Wholesaler and the Contracting Retailer agree and undertake to comply with their respective obligations and duties to each other and to the Market Operator (the rights of the Market Operator being provided to it for the purpose of securing the orderly participation of Trading Parties in the market) pursuant to and in accordance with this Wholesale Contract.

4.2 Each Party and the Market Operator (the rights of the Market Operator being provided to it for the purpose of securing the orderly participation of Trading Parties in the market) shall have the rights accorded to it under the Wholesale-Retail Code.

5 Charges and payment

5.1 In consideration of the provision of the Wholesale Services under this Wholesale Contract, the Contracting Retailer shall pay the Contracting Wholesaler the Wholesale Charges, all as calculated and payable in accordance with the Wholesale-Retail Code and the Wholesale Tariff Document.

5.2 Where applicable, the Contracting Wholesaler shall make payments to the Contracting Retailer as calculated and payable in accordance with the Wholesale-Retail Code and the Wholesale Tariff Document.

6 Change Control process

6.1 The Parties acknowledge and agree that the following changes to the Wholesale Contract may be made by the Parties acting without reference to the Authority:

6.1.1 the insertion of the parties' details,

- 6.1.2 the insertion of the Effective Date in Clause 2,
- 6.1.3 the selection of the Appropriate Wholesale Services in Clause 3.1, and
- 6.1.4 the insertion of signing particulars.
- 6.2 The Parties acknowledge and agree that other changes to the Wholesale Contract may only be made by the Authority, and that:
 - 6.2.1 if the Authority makes any Approved Change to the Wholesale-Retail Code then the provisions of this Wholesale Contract shall be deemed to be varied in the same manner with immediate effect from the date on which the Approved Change to the Wholesale-Retail Code becomes effective; and
 - 6.2.2 with effect from that date and without any requirement for the Parties to document any change to this Wholesale Contract resulting from such Approved Change, the Wholesale-Retail Code as amended shall apply to this Wholesale Contract and shall be incorporated into and form part of this Wholesale Contract as if its terms were set out in full in this Wholesale Contract.

7 Dispute resolution

- 7.1 All disputes and differences arising out of or in connection with this Wholesale Contract (including the formation of this Wholesale Contract) shall be dealt with and resolved in accordance with Sections 17, 18 and 19 of the Business Terms and Schedule 9 of the Market Arrangements Code.

8 Limitation of liability

- 8.1 The liability of each Party to the other Party in contract, tort (including negligence and breach of statutory duty) or otherwise howsoever arising in connection with this Wholesale Contract shall be as set out in Section 14 of the Business Terms.

9 Assignment/transfer

- 9.1 Neither Party may assign or transfer (whether outright or in security) any rights or obligations under this Wholesale Contract save that:
 - 9.1.1 with the prior written consent of the Contracting Wholesaler (such consent not to be unreasonably withheld, delayed or caveated), a Contracting Retailer that is a Water Retailer may assign its rights and obligations under this Wholesale Contract to a third party that holds a Water Supply Licence and has, where required pursuant to Section 9.11.2 of the Business Terms, entered into: one or more forms of Eligible Credit Support referred to in Section 9.11.4 and set out in Schedules 2A to 2D of the Business Terms, substantially in accordance with the terms set out in those Schedules; and/or Alternative Eligible Credit Support referred to in Section 9.11.5 of the Business Terms subject to compliance with the requirements specified in Schedule 3 of the Business Terms;

- 9.1.2** with the prior written consent of the Contracting Wholesaler (such consent not to be unreasonably withheld, delayed or caveated), a Contracting Retailer that is a Sewerage Retailer may assign its rights and obligations under this Wholesale Contract to a third party that holds a Sewerage Licence and has, where required pursuant to Section 9.11.2 of the Business Terms, entered into: one or more forms of Eligible Credit Support referred to in Section 9.11.4 and set out in Schedules 2A to 2D of the Business Terms, substantially in accordance with the terms of those Schedules; and/or Alternative Eligible Credit Support referred to in Section 9.11.5 of the Business Terms subject to compliance with the requirements specified in Schedule 3 of the Business Terms.
- 9.1.3** with the prior written consent of the Contracting Retailer (such consent not to be unreasonably withheld, delayed or caveated), the Contracting Wholesaler may assign its rights and/or obligations under this Wholesale Contract to a third party that holds an Appointment; and
- 9.1.4** a Party may appoint sub-contractors subject to and in accordance with Section 24 and Schedule 1 of the Business Terms.

10 Notices

All notices to be given to a Party under this Wholesale Contract shall be given in accordance with Section 20 of the Business Terms. The parties shall provide to each other the information set out in Schedule 2 and Schedule 3 to this Wholesale Contract. The address and email for each Party and the job title of the persons to whom such notices must be sent shall be as set out in that information.

11 Relationship of the Contracting Wholesaler and the Contracting Retailer

Otherwise than expressly provided herein, nothing contained in this Wholesale Contract shall be construed as giving rise to the relationship of principal and agent or partnership or joint venture between the Contracting Wholesaler and the Contracting Retailer.

12 Third party rights

- 12.1** Except as provided for at Clause 4 and Clause 12.2 and where a right of enforcement is expressly provided for in this Wholesale Contract, it is not intended that a third party shall have the right to enforce any term of this Wholesale Contract under the Contracts (Rights of Third Parties) Act 1999.
- 12.2** It is intended that each of the Market Operator and the Authority shall be entitled to enforce their rights under this Wholesale Contract as a third party under the Contracts (Rights of Third Parties) Act 1999 for the purposes of securing the orderly participation of Trading Parties in the market.

- 12.3** The Contracting Wholesaler and the Contracting Retailer may terminate or vary this Wholesale Contract, acting in accordance with Clause 2.2 and Clause 6 respectively, without the need for consent from the Market Operator.

13 Entire agreement

- 13.1** This Wholesale Contract together with the Cash Security Account Agreement, the Guarantee, the Letter of Credit, Surety Bond and/or any other Alternative Eligible Credit Support arrangement entered into in accordance with Schedule 3 of the Business Terms (as applicable) sets out the entire agreement between the Contracting Wholesaler and the Contracting Retailer and supersedes all prior representations, arrangements, understandings and agreements between the Contracting Wholesaler and the Contracting Retailer relating to the subject matter hereof.

- 13.2** Each Party acknowledges that in entering into this Wholesale Contract it does not rely on any representation, warranty, collateral agreement or other assurance of any person (whether a Party to this Wholesale Contract or not) that is not set out in this Wholesale Contract (including, for the avoidance of doubt, the Wholesale Retail Code), the Cash Security Account Agreement, the Guarantee, the Letter of Credit, the Surety Bond and/or any Alternative Eligible Credit Support arrangement entered into in accordance with Schedule 3 of the Business Terms. Nothing in this Wholesale Contract shall limit or exclude any liability for fraud or fraudulent misrepresentation.

- 13.3** In the event of any conflict among any of this Wholesale Contract, the Cash Security Account Agreement, the Guarantee, the Letter of Credit, Surety Bond and/or any other Alternative Eligible Credit Support arrangement entered into in accordance with Schedule 3 to the Business Terms (as applicable), and any other Law, the following order of precedence shall apply in descending order:

13.3.1 any Law; then

13.3.2 this Wholesale Contract; then

13.3.3 the Cash Security Account Agreement, the Guarantee and/or the Letter of Credit and/or the Surety Bond (as applicable), and/or any Alternative Eligible Credit Support arrangement entered into in accordance with Schedule 3 of the Business Terms.

14 Survival of rights

- 14.1** Termination of this Wholesale Contract for any reason shall not affect any rights or liabilities that have accrued prior to termination or the coming into force of any provision that is expressly or by implication intended to come into force or continue in force on or after termination. Without limitation, the Contracting Wholesaler and the Contracting Retailer intend that the following shall survive termination: Clauses 1, 5, 7, 8, 11 to 16 (inclusive) and 18 of this Wholesale Contract and Sections 9, 11, 14, 16, 17 to 20 (inclusive) and 26 of the Business Terms.

15 Waiver

- 15.1** Delay in exercising, or failure to exercise, any right or remedy in connection with this Wholesale Contract shall not operate as a waiver of that right or remedy. The waiver of a right to require compliance with any provision of this Wholesale Contract in any instance shall not operate as a waiver of any further exercise or enforcement of that right and the waiver of any breach shall not operate as a waiver of any subsequent breach. No waiver in connection with this Wholesale Contract shall, in any event, be effective unless it is in writing, refers expressly to this clause, is duly signed by or on behalf of the Party granting it, and is communicated to the other Party in accordance with Section 20 of the Business Terms.

16 Severance

- 16.1** If any clause, sub-clause, schedule, paragraph, part, section, sub-section, annex or other provision of this Wholesale Contract is held to be illegal or unenforceable in whole or in part under any enactment or rule of law, such provision or part shall to that extent be deemed not to form part of this Wholesale Contract but the validity and enforceability of the remainder of this Wholesale Contract shall not be affected.

17 Counterparts

- 17.1** Each Party shall do and execute, or arrange and procure for the doing and executing of, any act and/or document reasonably requested of it by the other Party to implement and give full effect to the terms of this Wholesale Contract.
- 17.2** This Wholesale Contract may be entered into in any number of counterparts and by the Contracting Wholesaler and the Contracting Retailer on separate counterparts, all of which taken together shall constitute one and the same instrument.

18 Governing Law

- 18.1** This Wholesale Contract shall be governed by and construed in accordance with the laws of England and Wales.
- 18.2** Subject to Sections 17, 18 and 19 of the Business Terms and Schedule 9 of the Market Arrangements Code, the Parties agree that the courts of England and Wales shall have exclusive jurisdiction to hear and settle any action, suit, proceeding or dispute in connection with this Wholesale Contract and irrevocably submit to the jurisdiction of these courts.

Schedule 1 - Terms and Conditions of a Wholesale Contract

Part 1: Objectives, Definitions and Principles

Part 2: Business Terms

Part 3: Operational Terms

Part 4: Market Terms

Part 5: Code Subsidiary Documents

Part 6: Forms associated with the Operational Terms

Schedule 2 - Contracting Retailer information

1. Contact details (individual names, postal address, telephone number, mobile number, e-mail address) and authorised signatories;
2. Bank account and account number;
3. Postal address and email address for sending invoices and notices;
4. Address in the United Kingdom for the purpose of serving legal documents and formal legal notices;
5. Job title of person for whose attention notices should be marked;
6. Twenty four hour contact details;
7. Business SIC code under the United Kingdom Standard Industrial Classification of Economic Activities, and corresponding VAT status; and
8. Licence Reference or Number where applicable.

Schedule 3 - Contracting Wholesaler information

1. Contact details (individual names, postal address, telephone number, mobile number, e-mail address) and authorised signatories;
2. Bank account and account number;
3. Postal address and email address for sending invoices and notices;
4. Address in the United Kingdom for the purpose of serving legal documents and formal legal notices;
5. Job title of person for whose attention notices should be marked;
6. Twenty four hour contact details; and
7. Business SIC code under the United Kingdom Standard Industrial Classification of Economic Activities, and corresponding VAT status.

This Wholesale Contract has been entered into on the date stated at the beginning of this Wholesale Contract.

Signed by

for and on behalf of

Name of contracting Director/Authorised signatory - Wholesaler

Date:

in the presence of:

Witness Signature:

Print Name:

Address:

Date:

Signed by

for and on behalf of

Name of contracting Director/Authorised signatory - Contracting retailer:

Date:

In the presence of:

Witness signature:

Print name:

Address:

Date: