Chapter 10
Non financial measures
Water delivered

Covering:
Water delivered – volumes
Water delivered - components

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Guidance

This is a key output table for water delivered. The table has 32 lines consisting of three blocks:

- **Water delivered - volumes**

  This records the total volume of water, in megalitres per day, which is delivered to measured and unmeasured households and non-households.

- **Water delivered - components**

  This records the assumptions which the company has made in determining its water balance. A number of these components, such as per capita consumption, meter under-registration or unmeasured non-household use, are used to estimate water delivered volumes. This block also includes those parameters, which together with water delivered volumes, make up the company's whole water balance.

  The company must include inset appointments, as they are part of the regulated business. Please provide details in your commentary of the amounts included for any inset appointments in the relevant lines.

  The information in this table, with the exception of information for the current year, (see below) will be published annually in NIAUR's Cost and Performance Report on company performance.

  Water balance information submitted in the return is used in conjunction with the Interim Principal Statement submission in the following January. In the Interim Principal Statement this information is used to consider whether there may be any undue preference or undue discrimination in the tariffs the company is proposing for the new charging year. The current report year figures will be fixed, though revisions to return forecast years will be allowed in the information provided with the Interim Principal Statement.

- **Security of supply**

  These two lines record the security of supply index calculated in tables 10a(i) and 10a(ii).

Water delivered

Lines 1 – 30: Water delivered

The company is expected to follow the methodologies for estimating the water balance set out in the Demand Forecasting Methodology report produced by NERA on behalf of UKWIR. The report covers acceptable approaches to determining the various components of the water balance. To ease understanding, a schematic diagram of the water delivered components is given below.

WATER DELIVERED – COMPONENTS

Component analysis as a proportion of distribution input – not to scale

<table>
<tr><td colspan="9">Distribution Input (line 26)</td></tr>
<tr><td colspan="2">Distribution system ◄-------</td><td colspan="7">Customers' installations -------►</td></tr>
<tr><td colspan="2"></td><td>Water Delivered – billed measured households (line 1)</td><td colspan="2">Water Delivered – billed measured non-households (line 2)</td><td>Water Delivered – billed unmeasured households (line 4)</td><td>Water Delivered – billed unmeasured non-households (line 5)</td><td>Water taken legally unbilled (line 17)</td><td>Water taken illegally unbilled (line 18)</td></tr>
<tr><td colspan="2"></td><td colspan="3">Water Delivered – billed measured (line 3)</td><td colspan="2">Water Delivered – billed unmeasured (line 6)</td><td rowspan="2">Water taken unbilled (line 19)</td></tr>
<tr><td colspan="2"></td><td colspan="5">Water Delivered – billed</td></tr>
<tr><td colspan="2">Water not delivered</td><td colspan="7">Water Delivered to customers (line 20)</td></tr>
<tr><td rowspan="2">Distribution system operational use (line 16)</td><td rowspan="2">Distribution Losses (line 24)</td><td rowspan="2">Underground supply pipe losses</td><td colspan="2">Total plumbing losses</td><td rowspan="2" colspan="3">Customer use</td></tr>
<tr><td>Above ground supply pipe losses</td><td>Internal plumbing losses</td></tr>
<tr><td colspan="2">Total leakage (line 25)</td><td colspan="3">Consumption</td></tr>
</table>

Water delivered quantities are those measured or estimated at their "point of delivery". Point of delivery is the point at which water is transferred from mains or pipes which are vested in the company (distribution system), into the supply pipes which are the responsibility of the customers. For the permanently connected customers this is the point on the service pipe, at or close to the external stop-tap (usually the highway curtilage), where the supply pipe commences. For this reason all supply pipe leakage must be included in the water delivered figures. For temporarily connected customers the point of delivery is the hydrant of building water connection.

Water delivered forms the majority of the water balance. The company's approach to table 10 can validate any assumptions used to estimate water delivered components. NIAUR encourages the company to estimate each component of distribution input and compare the sum of these with measured distribution input. Where there is a small discrepancy (less than 5%) this can be allocated to those components with the greatest uncertainty. A large discrepancy suggests that a review of a company's estimating process is required, as it is clearly not satisfactory for a company to be unable to account fully for its major product.

Where there is an imbalance of more than 5% then the company must not redistribute the residual across all water balance components, but use the integrated flow method to calculate leakage. In other words the whole of the residual must be taken as leakage.

The company must give an explicit explanation of any reconciliation adjustments, indicating which water balance components have received the adjustment using the Maximum Likelihood Estimation (MLE) method and the quantity allocated to each component. This must show: the water balance component, the base figure, accuracy, confidence range percentage of total variance, adjustment and the final estimate. Where the company's estimating process has been reviewed the company must provide a full briefing, outlining the degree of the discrepancy, which components were reviewed, what assumptions were altered, and if so why, and which water balance components needed improvement.

To estimate distribution losses (Ml/d), the company should use the Integrated Flow Method. The resultant leakage level should then be checked against monitored night flows. The company should therefore use the Integrated Flow Method and the Minimum Night Flow Method in conjunction, as a means to substantiate its estimation of leakage.

NIAUR would also encourage the company to support estimates with effective data monitoring systems; an example would be a domestic consumption monitor to support an estimate of unmeasured household per capita consumption.

Line 13 asks for an estimate of supply pipe leakage on void properties. The company should explain in the commentary the basis for this estimate and set out its policy to minimise losses from void properties.

NIAUR would also expect to see the impact of metering on some water delivered components:

- **Supply pipe leakage**: Where properties are externally metered, NIAUR would expect supply pipe leakage to be lower than that found on unmeasured or internally metered properties. Internally metered properties should have a similar level of supply pipe losses as found on unmeasured properties. If, however, during the installation of an internal meter the company undertakes a check on the supply pipe, or where it is new properties which are internally metered, the level of supply pipe losses may be lower than on unmeasured households.

- **Per capita consumption**: Measured household per capita consumption would normally be expected to be lower than unmeasured household consumption, assuming similar occupant profiles. This is supported by the findings of the National Metering Trials, where the installation of a meter reduced demand on average by around 10 - 15%. Where the company has undertaken selective metering or where there is a high proportion of meter optants the per capita consumption may be expected to be higher. For non-household water delivered we would also expect metering to reduce consumption. With time the high user properties will increasingly be covered by metering, reducing water delivered notably. We would therefore expect the company to normally have unmeasured non-household water delivered below 1000 litres/property/day.

Changes to reported data

NIAUR also expects the company to explain any significant changes between report years. One example would be that between 1994-95 and 1995-96 many GB companies reported on a significant rise in both reported supply pipe leakage and reported unmeasured household per capita consumption, while at the same time reporting a reduction in distribution losses. For such cases NIAUR would expect the company to make reference to a study which would support such a change, or verify such changes with effective data monitoring systems.

The company should also identify in its commentary any change in methodology that has impacted on reported figures and quantify this impact.

Water used at Wastewater Treatment Works and NIW depots/offices

The treatment for water supplied to NIW offices and depots depends on whether the company bills itself for the water. If the company is going to bill itself for the water used, then this water should be included in billed non-household line 2 (or line 4, depending on whether it has a meter). If the company is not going to bill itself for the water then the volume used should be reported in line 17, water taken legally unbilled.

The treatment for water used at waste water treatment works should be similar. If the water used is taken from the waste water effluent, then it doesn't need to be counted as part of the

water balance. However if the waste water treatment works uses potable water from the system then the reporting of this will depend again on whether the company bills itself for the water. If it bills itself, then the volume used at the waste water treatment works should be included in billed non-household line 2 (or line 4, depending on whether it has a meter). If the company is not going to bill itself for the water then the volume used should be reported in line 17, water taken legally unbilled.

Provision of water service to Billed Customers
Where reference is made in tables to 'billed household and billed non-household', this should be taken as the provision of water services to customers whether they are billed directly (non-domestic customers) or payment is made by DRD on their behalf as a third party consideration (domestic and non-domestic customers).

PPP Reporting
One table has been provided. The data reported should include PPP data. Within its commentary the company should provide details of the distribution input included in line 26 that is associated with each PPP works.

Guidance to the Reporter

The reporter is required to make informed judgements about the validity of estimates on the basis of both industry documents and the company's water balance as a whole. These judgements should be fully explained and supported by explicit evidence. Reference should also be made to previous annual information return data and any trend noted. There are also a number of specific requirements that the reporter should be aware.

An overall analysis of the water balance should be presented at the beginning of the assessment. This should highlight and explain any water balance adjustment: a discrepancy between the sum of each component of distribution input and measured distribution input. Any such observation should then be referred to as each component of the water balance is addressed. The reporter should comment on any MLE adjustments made. The reporter should also comment on any significant year on year change of the water balance imbalance, positive or negative. Where an imbalance has worsened then an explanation as to why should be offered and any action plan to improve the imbalance by the company should be highlighted.

A water balance adjustment should affect confidence grades attributed to the respective components.

The reporter should strongly encourage the company to implement data monitoring systems that would improve their confidence grading and minimise the need for adjustments. In addition the reporter is required to comment on whether the recommended methodology has been followed, as outlined in the NERA Demand Forecasting Methodology Report.

Within the industry companies frequently try to improve their estimates of the water balance through studies and research. Data that goes into the completion of a water balance such as nightlines, legitimate night use, unmeasured pcc, water taken unbilled etc. are often updated. The reporter should ensure that the impact of any such changes is quantified, i.e. what difference there would have been if previous assumptions had been used.

The reporter should:

- comment on the methodology and assumptions used to convert night flow data into daily flow, noting any changes in the methodology/ assumptions;
- whether the hour/day factor used is appropriate, having regard to changes in diurnal pressure control;

- examine the linkage between properties, population, volumes and the respective output measures, i.e. litres/property/hour or litres/head/day. Any change in output measures should be followed through into the water balance denominators, which will include cross-reference with table 7;
- comment if total leakage forecast is not consistent with the company's economic levels of leakage appraisal; and
- confirm how the company has accounted for void property or underground supply pipe leakage in the water balance.

Confidence grades

NIAUR's main concern is to ensure that the water balance as a whole is robust and that water balance components are consistent with those of the comparator companies in GB. Those components which account for the largest proportion of the water balance are also those in which there is the least confidence within the industry, the emphasis has therefore shifted towards estimated unmeasured components. NIAUR has also focused on parameters that Ofwat have found varied greatly between companies or where unexplained adjustments have been made.

There are five confidence grades for the water delivered components on table 10, relating to unmeasured household per capita consumption, distribution losses, unmeasured non-household water delivered, unmeasured household water delivered and distribution input. There is also an additional confidence grade dealing with the water balance as a whole. This represents varying degrees of confidence in the robustness of the water balance. For example a reliability grading of A would represent a company in control of their water balance, understanding the characteristics of each separately estimated component through comprehensive data monitoring systems.

The confidence grades follow the existing format with reliability and accuracy bands, however reliability bands focus on methodologies. Eachseparate water delivered component has specific requirements for each of the reliability bands A - D. The emphasis is no longer on data quality, that is the soundness and age of records, but concentrates more on methodologies which underpin the component estimates. Accuracy bands remain as before.

Reliability bands

Unmeasured household per capita consumption (l/head/d)

Reliability Grade A Unmeasured household per capita consumption is estimated from the company's own consumption monitor following best practice as identified in the UKWIR report 'Best practice for unmeasured per capita consumption monitors – 1999'. An individual or an area monitor can now obtain grade A reliability. In general, an individual monitor should cover a minimum of 1,000 properties individually monitored and supplying data i.e. it is expected the sample will be greater than 1,000 to allow for missing or unreliable data; or for an area monitor 50% of distribution input into each discrete area should be consumed by unmeasured households, measured households should consume less than 10%, and non-households less than 30%. Both types of monitor should be maintained. In both cases the monitor must contain a statistically representative sample of the type of properties/demographic groups which exist in the company's area, and are used for the extrapolation of the results to a company wide level.

Reliability Grade B Unmeasured household per capita consumption has been estimated from the company's own consumption monitor data but

does not generally comply with best practice as detailed in 'Best practice for unmeasured per capita consumption monitors – 1999'. In general, for individual monitors, they cover less than 1,000 properties individually monitored and supplying data; or for an area monitor's discrete area, less than 50% of distribution input is consumed by unmeasured households, more than 10% is consumed by measured households, and more than 30% by non-households. In both cases some demographic/household type groups are under-represented in the monitor's sample.

Reliability Grade C Unmeasured household per capita consumption is estimated not from a consumption monitor, nor is it assumed to be the residual component of the water balance, but is estimated using an alternative method, e.g. from a sample of measured households; or has been derived by using another company's consumption monitor.

Reliability Grade D Unmeasured household per capita consumption is estimated from the residual of the water balance once all other components have been estimated, or has been derived from other companies' estimates.

Unmeasured non-household water delivered (l/prop/d)

Reliability Grade A Unmeasured non-household water delivered is estimated from the company's own consumption monitor of different SIC (Standard Industrial Classifications).

Reliability Grade B Unmeasured non-household water delivered has been derived by using another company's consumption monitor; or from the company's own monitor where the consumption data is over two years old; or is based on the consumption of comparable measured non-household properties.

Reliability Grade C Unmeasured non-household water delivered has been estimated using none of the above methods and is not assumed to be the residual component of the water balance; it is estimated using an alternative method, e.g. derived from the national/regional average of other water companies or has been based on property rateable values.

Reliability Grade D Unmeasured non-household water delivered is either estimated from the residual of the water balance once all other components have been separately estimated.

Total leakage (Ml/d)

Reliability Grade A Total Leakage is estimated using the Minimum Night Flow Method, the resulting leakage level should then reconcile to within 5% of the residual using the Integrated Flow Method. The data should represent the average for the year. The night line data should be estimated with Continual Night Flow Monitoring covering over 80% of properties, recorded more than 20 times a year, in addition to sample surveys on service reservoirs and trunk mains.

Reliability Grade B Total Leakage is estimated using either the Integrated Flow Method or the Minimum Night Flow Method where the data represents the average for the year. The night line data should be estimated from a coverage of either Continual Night Flow Monitoring or waste/district

zone metering covering over 60% of properties, recorded less than 20 times a year.

Reliability Grade C Total Leakage is derived solely from a software package, which uses company own data, national estimates or default input values. The resulting leakage figure should be supported by leakage levels estimated using the Integrated Flow Method or the Night Flow Method. The night line data should be estimated from a coverage of either Continual Night Flow Monitoring or waste/district zone metering covering under 60% properties, recorded less than 20 times a year.

Reliability Grade D Total leakage is assumed to be either the residual of the water balance once all other components have been estimated; or is derived solely from a software package, which uses national estimates or default input values, and the resulting leakage figure is not supported by leakage levels estimated using the Integrated Flow Method or the Night Flow Method; or is estimated on the basis of drop tests alone.

Distribution input (Ml/d)

Reliability Grade A The sum of the separately estimated water balance components reconciles with the measured volume of distribution input to within 2%. There has been no adjustment made to measured distribution input other than as a result of the aforementioned reconciliation; that is, the sum of the water balance components with measured distribution input. Measured distribution input has been estimated from water-into-supply meters which record 95% of the volume of distribution input, and the meters have been used and regularly recalibrated in accordance with the manufacturers' recommendations.

Reliability Grade B The sums of the separately estimated water balance components reconcile with the measured volume of distribution input to within 5% but not to within 2%. There has been no adjustment made to measured distribution input, other than as a result of the aforementioned reconciliation; that is, the sum of the water balance components with measured distribution input. Measured distribution input has been estimated from water-into-supply meters which record 90% of the volume of distribution input, and the meters have been used and regularly recalibrated in accordance with the manufacturers' recommendations.

Reliability Grade C Distribution input is taken from water-into-supply meter readings only and does not reconcile to within 5% of the sum of the separately estimated water balance components. There has been no adjustment made to measured distribution input. Measured distribution input has been estimated from water-into-supply meters which record 85% of the volume of distribution input, and the meters have been used and regularly recalibrated in accordance with the manufacturers' recommendations. The company has identified those water balance components likely to be subject to the largest errors and is reviewing its estimation procedures.

Reliability Grade D Distribution input is taken as either the sum of the components of the water balance, or is taken from water-into-supply meters only, where there has been adjustments made to measured distribution

input, which are not as a result of any reconciliation between the sum of components and measured distribution input.

Overall water balance

Reliability Grade A The water balance components reconcile with measured distribution input, to within 2%. An explicit explanation of changes to any water balance component for any reconciliation adjustments is given. Water-into-supply meters have been used and recalibrated in accordance with the manufacturers' recommendation. The water balance components have been separately estimated. 90% of the volume of distribution input (not including distribution input) has been awarded a reliability band of A or B within the separately estimated water balance components.

Reliability Grade B The water balance components reconcile with measured distribution input to within 5%, hence an adjustment has been made to distribution using the Maximum Likelihood Estimation technique. Water-into-supply meters have been used and recalibrated in accordance with the manufacturers' recommendation. The water balance components have been separately estimated. 90% of the volume of distribution input should have been awarded a reliability band of A or B within the separately estimated water balance components.

Reliability Grade C The water balance components have not been reconciled with measured distribution input. The water balance components have been separately estimated. 90% of the volume of distribution input should have been awarded a reliability band of C or better within the separately estimated water balance components.

Reliability Grade D There has been no reconciliation across individual components or between the sum of components and measured distribution input. 90% of the volume of distribution input should have been awarded a reliability band of C or D within the separately estimated water balance components.

Accuracy bands

1: ± 1%	**5**: ± 50%
2: ± 5%	**6**: ± 100%
3: ± 10%	**X**: For very small numbers where accuracy cannot be calculated or the error could be more than ± 100%
4: ± 25%	

Table 10 Line definitions

A WATER DELIVERED - VOLUMES

1	Billed measured household	Ml/d	2dp
Definition	Average volume of water delivered to households which is measured (Ml/d). This is to include supply pipe leakage and meter under-registration. For those households that are internally metered estimates of supply pipe leakage and of meter under-registration must be made for comparative purposes, and included in line 1. The method of estimation must be set out and supported in the commentary. Additional meters fitted to measured households for ancillary supplies (e.g. external hosepipes) which are non-commercial are to be included, as should any fitted to unmeasured households if this is how revenue is allocated. The company should clearly report any amendments to actual metered consumption records to provide the requested water delivered information. Amendments may be necessary to take account of billing periods different to the report year. Under-registration of meters has also been identified as a problem which the company may need to take into account, and adjust records if necessary. If records are adjusted this should be clearly reported in the commentary along with evidence to support the need for any changes. Where under-registration is a problem the company should specify the class of meters involved and the percentage error assumed. Any meter under-registration included in this total should also be reported in line 14 and include volumes associated with leakage allowance rebates. Exclude miscellaneous use (lines 16 - 18).		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

2	Billed measured non-household	Ml/d	2dp
Definition	Average volume of water delivered to non-households which is measured (Ml/d). This is to include supply pipe leakage and meter under-registration. For non-households that are internally metered estimates of supply pipe leakage and of meter under-registration must be made for comparative purposes and included in line 2. The method of estimation must be set out and supported in the commentary. Additional meters fitted to measured non-households for ancillary supplies (e.g. external hosepipes) which are non-commercial are to be included, as should any fitted to unmeasured non-households if this is how revenue is allocated. The company should clearly report any amendments to actual metered consumption records to provide the requested water delivered information. Amendments may be necessary to take account of billing periods different to the report year. Under-registration of meters has also been identified as a problem which the company may need to take into account, and adjust records if necessary. If records are adjusted this should be clearly reported in the commentary along with evidence to support the need for any changes. Where under-registration is a problem the company should specify the class of meters involved and the percentage error assumed. Any meter under-registration included in this total should also be reported in line 15 and include volumes associated with leakage allowance rebates. Exclude miscellaneous use (lines 16 - 18).		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

3	Billed measured	Ml/d	2dp
Definition	Average volume of water delivered which is measured.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Calculated: sum of lines 1 and 2		
Responsibility	Network Regulation Team		

4	Billed unmeasured household	Ml/d	2dp
Definition	Estimated average volume of water delivered to unmeasured households. This is to include supply pipe leakage. If the company's estimate of the per capita consumption of unmeasured households excludes supply pipe leakage, an estimate of this leakage must be made and included in line 4 for comparative purposes. The method of estimation must be set out and supported in the commentary. If any meters are fitted to unmeasured properties for ancillary supplies (e.g. external hosepipes) which are non-commercial, these should be included in the consumption category, corresponding with the revenue allocation as used for the Principal Statement (or Interim Principal Statement). Exclude miscellaneous use (lines 16 - 18).		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

5	Billed unmeasured non-household	Ml/d	2dp
Definition	Estimated average volume of water delivered to unmeasured non-households. This is to include supply pipe leakage. If the company's estimate of the per property consumption of unmeasured non-households excludes supply pipe leakage, an estimate of this leakage must be made and included in line 5 for comparative purposes. The method of estimation must be set out and supported in the commentary. If any meters are fitted to unmeasured properties for ancillary supplies (e.g. external hosepipes) which are non-commercial, these should be included in the consumption category, corresponding with the revenue allocation as used for the Principal Statement (or Interim Principal Statement). Exclude miscellaneous use (lines 16 - 18).		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

6	Billed unmeasured	Ml/d	2dp
Definition	Estimated average volume of water delivered which is unmeasured.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Calculated: sum of lines 4 and 5		
Responsibility	Network Regulation Team		

B WATER DELIVERED - COMPONENTS

7	Estimated water delivered per unmeasured non-household	l/prop/d	2dp
Definition	Estimated water delivered per unmeasured non-households. This figure applies to premises which are billed and includes supply pipe leakage.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Calculated: the product of 1000 multiplied by table 10 line 5, divided by table 7 line 8.		
Responsibility	Network Regulation Team		

7a	Estimated water delivered per unmeasured household	l/prop/d	2dp
Definition	Estimated water delivered per unmeasured households. This figure applies to premises which are billed and includes supply pipe leakage.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Calculated: the product of 1000 multiplied by table 10 line 4, divided by table 7 line 3.		
Responsibility	Network Regulation Team		

8	Per capita consumption (unmeas'd h'hold – excl s/pipe leakage)	l/h/d	2dp
Definition	Estimated per capita consumption of households that are supplied with unmeasured water. This figure applies to billed unmeasured households and excludes underground supply pipe leakage. Underground supply pipe leakage is any loss of water from the underground supply pipe.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Calculated: the product of 1000 times (table 10 line 4 divided by table 7 line 13) minus ((table 10 line 10 times table 7 line 3) divided by table 7 line 13).		
Responsibility	Network Regulation Team		

9	Per capita consumption (meas'd h'hold - excl s/pipe leakage)	l/h/d	2dp
Definition	Estimated per capita consumption of measured households. This figure applies to billed measured households and excludes underground supply pipe leakage.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Calculated: the product of ((1000 times table 10 line 1) minus (table 7 line 4 times table 10 line 11) minus (table 7 line 5 times table 10 line 12) divided by table 7, line 14). It is included to highlight to the company any inconsistencies in the above input values.		
Responsibility	Network Regulation Team		

10	Underground supply pipe leakage (unmeas'd households)	l/prop/d	2dp
Definition	Estimated underground supply pipe leakage per unmeasured household. This estimate is made for households billed, (table 7, line 3) and is included in the water delivered total (table 10 line 4). Underground supply pipe leakage is any loss of water from the underground supply pipe.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

11	Underground supply pipe leakage (ext. metered households)	l/prop/d	2dp
Definition	Estimated supply pipe leakage from externally metered households. This estimate should reflect the reduced supply pipe leakage on externally metered properties (table 7, line 4) due to the identification of such leaks from meter readings. For simplicity, the company should ignore the effect of any initial reductions in supply pipe leakage following meter installation.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

12	Underground supply pipe leakage (other metered h'holds)	l/prop/d	2dp
Definition	Estimated supply pipe leakage from other metered households. This refers to metered households with internal meters or where the external meter is not located close to the boundary of the street (table 7, line 5). Where company specific information is not available; the company should assume a similar figure to unmeasured household supply pipe leakage.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

13	Underground supply pipe leakage (void properties)	l/prop/d	2dp
Definition	Estimated supply pipe leakage from void properties. This refers to properties which are connected to the distribution system but do not receive a charge as there are no occupants.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

14	Meter under-registration (measured households)	Ml/d	2dp
Definition	Average volume of meter under-registration included in the water delivered to billed measured households. Any report against this item should be supported by evidence in the commentary. The company should also specify the class of meter involved and the percentage error assumed.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

15	Meter under-registration (measured non-households)	Ml/d	2dp
Definition	Average volume of meter under-registration included in the water delivered to billed measured non-households. Any report against this item should be supported by evidence in the commentary. The company should also specify the class of meter involved and the percentage error assumed.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

16	Distribution system operational use	Ml/d	2dp
Definition	Distribution system operational use; water knowingly used by company to meet its statutory obligations, particularly those relating to water quality. This includes, amongst other things, service reservoir cleaning, mains flushing/air scouring, swabbing, draining networks, discharges to control pH or other chemical parameters.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

17	Water taken legally unbilled	Ml/d	2dp
Definition	Water taken legally unbilled: this should include all water supplied to customers for legitimate purposes which is unbilled. None of this should have been included in the breakdown of water delivered to billed customers (lines 1-6 inclusive). It can include public supplies for which no charge is made (some sewer flushing etc), uncharged church supplies, fire training and fire-fighting supplies where these are not charged irrespective of whether or not they are metered. Do not include volumes associated with leakage allowance rebates to metered customers.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

18	Water taken illegally unbilled	Ml/d	2dp
Definition	Water taken illegally unbilled. Illegally taken water should only be reported here and included in the water delivered total if it is based on actual occurrences using sound and auditable identification and recording procedures. These procedures must be set out in the commentary. If it is not based on these it should be classified as distribution losses (line 24).		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

19	Water taken unbilled	Ml/d	2dp
Definition	Total water taken unbilled. Water used by the company for mains tests, flushing, washouts, running to waste, or incurred through burst mains or other leakage will be excluded. These should be reported against Distribution system operational use (line 16) and Distribution losses (line 24).		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Calculated: sum of lines 17 and 18		
Responsibility	Network Regulation Team		

20	Water delivered (potable)	Ml/d	2dp
Definition	All potable water supplied as part of the appointed business. Include all potable water charged at standard and non-standard rates as in line 22.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Calculated: sum of lines 3, 6 and 19.		
Responsibility	Network Regulation Team		

21	Water delivered (non-potable)	Ml/d	2dp
Definition	All non-potable water supplied as part of the appointed business. Include all non-potable water charged at standard and non-standard rates as in line 23.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

22	Water delivered (non-standard rates: potable)	Ml/d	2dp
Definition	The total quantity of potable water received by billed customers charged at non-standard rates, including supply pipe leakage. This is included in line 20. Non-standard rate charges are collected separately at the time of the Principal Statement (or Interim Principal Statement) as special agreements.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

23	Water delivered (non-standard rates: non-potable)	Ml/d	2dp
Definition	The total quantity of non-potable water received by billed customers charged at non-standard rates, including supply pipe leakage. This is included in line 21. Non-standard rate charges are collected separately at the time of the Principal Statement (or Interim Principal Statement) as special agreements.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

24	Distribution losses	Ml/d	2dp
Definition	Distribution losses represent the losses on the company's potable water distribution system, i.e. excluding supply pipe leakage, which is the customer's responsibility.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Calculated: the sum of line 26 minus lines 16, 20.		
Responsibility	Network Regulation Team		

25	Total leakage	Ml/d	2dp
Definition	This calculated figure sums distribution losses and underground supply pipe leakage. It is included to ensure that the company's estimates for these volumes are consistent with its estimates of leakage delivered from night flow measurements and reservoir and trunk main tests after deducting allowances for plumbing losses and customer night use for the measured night flows.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Calculated: the sum of the following lines: Distribution losses + Supply pipe leakage: table 10, line 24 Externally measured households: table 10, line 11 x table 7 line 4 divided by 1000 Other measured households: table 10, line 12 x table 7 line 5 divided by 1000 Unmeasured households: table 10, line 10 x table 7 line 3 divided by 1000 Measured non-households: table 10 line 11 x table 7 line 9 divided by 1000 Unmeasured non-households: table 10, line 10 x table 7 line 8 divided by 1000 Void households: table 10, line 13 x (table 7 line 7 minus table 7 line 6) divided by 1000 Void non-households: table 10, line 13 x (table 7 line 11 minus table 7, line 10) divided by 1000 This calculation contains a number of simplifying assumptions in order to avoid more onerous data requests. The company should explain in its commentary should these simplifying assumptions result in a significantly different estimate of total leakage to its own estimate.		
Responsibility	Network Regulation Team		

26	Distribution input	Ml/d	2dp
Definition	Distribution input is the average amount of potable water entering the distribution system and supplied to customers within the company's area of supply. It is expected to be equal to metered distribution input. The volume of water supplied by the PPP concessionaire **should be** included in the figure reported on this line. Details of the distribution input for each PPP WTW should be provided in the company commentary.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		

Processing rule	Input
Responsibility	Network Regulation Team

27	Bulk supply imports	Ml/d	2dp
Definition	Volume of water imported from other companies in bulk supplies by the appointed business. Include treated and untreated. The volume of water supplied by the PPP concessionaire should be included in line 26 and **should not be** reported in this line.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

28	Bulk supply exports	Ml/d	2dp
Definition	Volume of water exported to other companies in bulk supplies by the appointed business. Include treated and untreated.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

29	Water treated at own works to own customers	Ml/d	2dp
Definition	The volume of water treated by the company at its own water treatment works for its own customers. Includes treatment of bulk supply imports, excludes treated bulk supply exports. Include water treated at PPP works when reporting information on this line.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Input		
Responsibility	Network Regulation Team		

30	Overall water balance	cg
Definition	Confidence Grade marking for overall Water Balance. See guidance on confidence grades.	
Primary Purpose	Checking compliance with statutory and Licence requirements.	
Processing rule	Input	
Responsibility	Network Regulation Team	

C SECURITY OF SUPPLY

31	Security of supply index – company's planned levels of service	nr	0 dp
Definition	Security of supply index calculated using the levels of service the company uses to plan its supply/demand balance. Guidance on the calculation of the security of supply index can be found in Ofwat's RD 03/02. For your calculation, bulk imports and exports should be the agreed or contractual maximum amounts, dry year DI should represent the reporting year DI adjusted to represent dry year demand, and WAFU should be reported in column 1 according to the EA Water Resource Planning Guidelines definition (excluding imports and exports). A score of 100 will indicate that the actual level of service provided to all customers meets or betters the planned level of service.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Copied: table 10a (i) column 14		
Responsibility	Network Regulation Team		

32	Security of supply index – reference levels of service	nr	0dp
Definition	Security of supply index calculated under the common reference levels of service Guidance on the calculation of the security of supply index can be found in Ofwat's RD 03/02. For your calculation, bulk imports and exports should be the agreed or contractual maximum amounts, dry year DI should represent the reporting year DI adjusted to represent dry year demand, and WAFU should be reported in column 1 according to the EA Water Resource Planning Guidelines definition (excluding imports and exports). A score of 100 will indicate that the actual level of service provided to all customers meets or betters the planned level of service.		
Primary Purpose	Checking compliance with statutory and Licence requirements.		
Processing rule	Copied: table 10a (ii) column 14		
Responsibility	Network Regulation Team		

CHANGE CONTROL SHEET

CHAPTER 10

2008/1.0	First issue of chapter for the SBP period
2009/1.0	Second issue of chapter for the SBP period - Guidance added in relation to water used at Wastewater Treatment Works and NIW depots/offices - PPP reporting amended to provide separate PPP and NIW+PPP tables
2010/1.0	Third issue of chapter for the SBP period - Accuracy bands added - Separate PPP table removed. - Requirement to report DI input associated with PPP works in commentary added. - Requirement for reporting scheduling year on year changes in data and assumptions added.