



**Scottish
Water**
Always serving Scotland

**SCOTTISH WATER
WIC ANNUAL RETURN
COMMENTARIES
September 2011**

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A Tables - Base Information

Table A1 Connected and Billed Properties

General Comments

Property numbers are for the report year as at 30 September 2010.

In general, a confidence grade of A2 has been applied to the figures reported in Table A1 for household properties in the report year, and B3 for non-household properties. The drop in confidence grade for non-household properties from B2 reported in June 2010 reflects the fact that a significant number of gap sites have been identified but are not yet in charge at the CMA and therefore are not included in the reported figures. Further details are set out below. There has been a corresponding drop in confidence grade for 2011/12 forecast data from B3 to B4 for the same reason. The lower confidence in 2011/12 data than 2010/11 reflects the uncertainty associated with forward-looking projections.

Data Sources

The Non-Household figures have been sourced from settlement reports supplied by the Central Market Agency (CMA), consistent with the Annual Returns for the last two years.

Since the retail market opened to competition in April 2008, the CMA has calculated all wholesale primary charges due to Scottish Water from Licensed Providers via a series of settlement runs in respect of each month. For each settlement run, the CMA provides an aggregated settlement report which is used by Scottish Water for billing purposes and a disaggregated settlement report to enable reconciliation of wholesale charges by market participants. These disaggregated settlement reports have been used to populate the Annual Return A Tables, consistent with last year.

There are four reconciliation runs undertaken for each month, P1, R1, R2 and R3. The required frequency of runs is set out in the Market Code and supporting Code Subsidiary Documents. These are undertaken according to a timetable published by the CMA. The September 2010 2nd Reconciliation (R2), the latest available at the end of March 2011, was used to populate the A Tables.

The A Tables are populated based on reports from Scottish Water's Reconciliation datamart which contains the disaggregated settlement reports issued by the CMA.

The disaggregated settlement reports include all properties which are in settlement at the CMA. When new Supply Points are created, either via the New Connection or Gap Site processes, under the market arrangements there are a number of steps to be followed, starting with the Supply Point being requested by Scottish Water and finishing with it being accepted into charge by the Licensed Provider. Between these two points, the Supply Point is created in the CMA's systems but is not included in settlement and therefore cannot generate wholesale charges. Such Supply Points are designated as being 'New' or 'Partial' in the CMA systems and, because they are not in settlement, they are not included in the Annual Return.

As of 31 March 2011, there were 11,915 water and 13,759 sewerage 'New' and 'Partial' Supply Points registered at the CMA. Based on previous experience, we estimate that around 10% of this number may have been created erroneously, for example they may be duplicates of existing Supply Points in the market. These will be identified during the completion of the gap site process and it is the intention that these will be removed from the Central Systems at a later stage. The remainder will be considered tradable and will enter

settlement following acceptance by the Licensed Provider, resulting in a corresponding increase in reported non-household properties in next year's Annual Return.

Forecast data for 2011/12

Forecast non-household data for the 2011/12 financial year has been derived using the growth factors from the Final Determination applied to the actual data for 2010/11. The growth factor of 2.2% has been applied to all property numbers. It should be noted that the 2011/12 forecast will differ from the data in the Final Determination as the starting position in 2010/11 has been revised to reflect actual data.

Non-household connected properties

The number of connected non-household properties taking water services has decreased by 11,649 to 154,878. Non-household properties taking sewerage services have similarly decreased by 8,651 to 126,919.

Line ref.	Non-household connected properties	2009/10 Annual Return	2010/11 Annual Return	Variance
A1.8	Unmeasured non-household connected properties - water	74,196	65,759	-8,437
A1.9	Measured non-household connected properties - water	92,331	89,119	-3,212
	Total connected non-household connected properties - water	166,527	154,878	-11,649
A1.19	Unmeasured non-household connected properties – sewerage services	66,646	59,312	-7,334
A1.20	Measured non-household connected properties – sewerage services	68,924	67,607	-1,317
	Total connected non-household connected properties – sewerage services	135,570	126,919	-8,651

This is primarily due to the project which has been run over the last eighteen months to review all Supply Points flagged as vacant at the CMA. The initial phase of the project was based on CMA data at the end of November 2009 with a second phase based on CMA data in August 2010. As set out in the commentary to the 2008 and 2009 Annual Returns, the previously reported void properties included a group which, prior to market opening, had not been either billed or flagged as void in Business Stream's Hi-Affinity billing system. These properties were migrated to both the CMA and Scottish Water at market opening. The purpose of the project was to identify the correct status of all Supply Points flagged as vacant at the CMA in order that records could be updated accordingly.

The survey of the properties was undertaken by a third party contractor and included a comparison with other data sources and an extensive programme of field visits to confirm the current status. Where a property was found either to be occupied or otherwise found not to be an eligible non-household premises, the data was updated accordingly at the CMA by the owner of the relevant data. These updates could include amending the occupancy status from 'vacant' to 'occupied' by the Licensed Provider or de-registration of the Supply Point from the market by Scottish Water in the event that it had been identified as duplicate, domestic, demolished, not receiving services or merged with another property. These de-registrations account for the drop in connected non-household properties since last year.

At the time that the September 2010 2nd Reconciliation took place, the necessary changes to data at the CMA had been partially processed. The final reconciliation has not as yet been

undertaken as yet but a summary of the current designation of all properties reviewed by phases 1 and 2 of the project is shown below. Regarding de-registrations, 18,247 properties previously considered to be taking water services and 17,285 properties taking sewerage services have been de-registered from the market to date with a further 6,366 properties taking water services and 6,756 properties taking sewerage services still to be processed.

Final Categorisation	Water SPIDs
Occupied	8,404
Vacant	21,310
To be removed from Market	24,613
Total	54,327

Non-household void properties

The number of void non-household properties taking water services in the table below has been derived by subtracting the reported billed properties from the connected properties. The number of void properties taking water services has dropped by 12,785 in the report year which is the sum of a number of separate underlying movements.

As noted above, the vacancy review project identified a significant number of properties previously flagged as 'vacant' at the CMA which were actually occupied or were not non-household properties. At the time that the September 2010 2nd Reconciliation took place, the corresponding data updates at the CMA were partially complete, accounting for a significant reduction in the number of vacant properties. Finally, there have been routine changes in occupancy status from 'vacant' to 'occupied' and vice versa by the registered Licensed Provider as a result of normal business activity.

There has been a corresponding decrease of 10,125 in the number of void properties having sewerage services over the period for the same reasons.

Void properties	2009/10 Annual Return	2010/11 Annual Return	Variance 2009/10 vs 2010/11
Void unmeasured properties – water	27,239	18,296	-8,943
Void measured properties – water	16,493	12,651	-3,842
Total void properties – water	43,732	30,947	-12,785
Void unmeasured properties – sewerage	24,522	16,611	-7,911
Void measured properties - sewerage	13,074	10,860	-2,214
Total void properties - sewerage	37,596	27,471	-10,125

Non-Household billed properties and wholesale revenue

As shown in the table below, there has been a slight increase in billed properties since last year's Annual Return of 1,136 for water and 1,474 for sewerage. As set out above, there were 8,404 occupied properties identified by the vacancy review project as being wrongly flagged as 'vacant' at the CMA which might have been expected to result in a large increase in billed properties over the period. However, at the time that the September 2010 R2 settlement run was issued, data updates at the CMA were only partially complete. In addition, this increase in billed properties was offset by routine changes in occupancy status by the registered Licensed Provider which have been predominantly from 'occupied' to 'vacant'. This has significantly reduced the net increase in billed properties.

Wholesale primary revenue for the 2010/11 financial year is well below budgeted levels which is a significant cause of concern for Scottish Water. The budget had assumed that routine changes in occupancy status by the registered Licensed Provider would cause the number of billed properties to vary in line with GDP as forecast at the time and that the vacancy review project mentioned above would result in an incremental increase in billed properties and revenue.

One of the contributing factors to the deficit against budget was that the volumes of properties being updated from 'occupied' to 'vacant' by the registered Licensed Provider was higher than expected at the time that the budget was set. Other contributing factors included issues with Scottish Water's New Connections processes which resulted in properties not entering charge correctly and incorrect Scottish Water and Licensed Provider data in the CMA's systems as identified by the CMA Market Audit. Both of these issues are currently being addressed.

Line ref.	Water services - billed	2009/10 Annual Return	2010/11 Annual Return	Variance 2009/10 vs 2010/11
A1.3	Unmeasured non-household billed properties – water	46,957	47,463	506
A1.4	Measured non-household billed properties - water	75,838	76,468	630
	Total billed Non-household properties – water	122,795	123,931	1,136
A1.14	Unmeasured non-household billed properties – sewerage	42,124	42,701	577
A1.15	Measured non-household billed properties - sewerage	55,850	56,747	897
	Total billed Non-household properties - sewerage	97,974	99,448	1,474

Non-household unmeasured properties

The unmeasured properties reported in lines A1.3, A1.8, A1.14, A1.19, A1.25 and A1.32 reflect those properties which remain on partial or fully unmeasured charges. This includes those properties which have been metered under Scottish Water's meter installation programme, in addition to those which remain unmetered. Where a meter has been installed under the meter installation programme, wholesale charges at the property for the reporting period were subject to transitional phasing from unmeasured to measured charges as set out in section 4.1 of the Wholesale Charges Scheme. These properties were therefore still subject to partially unmeasured wholesale charges in 2010/11.

Transitional phasing came to an end on 1 April 2011 from which point the affected properties have moved onto fully measured charges. For the 2011/12 forecast data, such properties have therefore been moved from the unmeasured lines to the equivalent measured line. This leaves only properties which are unmetered, and therefore subject to fully unmeasured charges, in lines A1.3, A1.8, A1.14, A1.19, A1.25 and A1.32.

Household properties (connected and billed)

The data for these lines has been sourced directly from the WIC4 reports of September 2010 for report year. Report year +1 household growth is obtained directly from the Final Determination.

Outturn Growth

The growth in billed properties (including exempt) was 14,969. The growth in connected properties of 11,855 differs to the growth in billed properties as we are now billing properties which were, in the past, connected but not billed.

Line ref.		2009/10 Annual Return	2010/11 Annual Return	Variance
A1.1	Unmeasured household billed properties - potable water (including exempt)	2,354,891	2,369,860	14,969
	Number of void properties	48,896	45,782	-3,114
A1.6	Unmeasured household connected properties	2,403,787	2,415,642	11,855

A1.1-5 Billed Properties - Water

A1.1 Unmeasured Household Billed Properties

The number of billed and exempt unmeasured household properties is sourced from the WIC4 and has increased by 14,969 as shown below:

Line ref.	Annual return (households)	Report Yr -1	Report Yr	Growth	Report Yr +1	Growth
	Total number of billed properties	2,295,503	2,306,419	10,916	2,318,526	12,107
	Number of exempt properties	59,388	63,442	4,054	63,441	-1
A1.1	Total billed unmeasured households	2,354,891	2,369,860	14,969	2,381,967	12,107

From the above table, the total number of billed properties has increased by 14,969 which is higher than forecasted in 2009/10. There has been an increase in the number of exempt properties of 4,054 and a reduction in the number of void properties of 3,114 which partially accounts for this higher than expected increase in billed properties. The number of exempt properties is expected to remain the same going forward.

As this information is sourced directly from the WIC4 reports, it has a confidence grade of A2 which reflects the quality of this external data.

A1.2 Measured household billed properties

The number of measured households has decreased by 45 customers compared with a 31 reduction in the previous year. This reduction is principally due to customers determining that Council Tax based charging is more cost effective. The confidence grade of A2 is consistent with previous year. The forecast for 2011-12 is based on the average movement over the last 2 years.

A1.3-4 Unmeasured and Measured non-household billed properties

The recorded number of billed non-household properties has increased by 1,136 to 123,931 compared with the 2009/10 Annual Return.

This movement was due to the combined effect of changes in occupancy status at Supply Points (either associated with the vacancy review project or routine updates by the registered Licensed Provider), new connections, gap sites, physical disconnections and de-registrations.

Line ref.	Water services - (connected and billed)	2009/10 Annual Return	2010/11 Annual Return	Variance 2009/10 vs 2010/11
A1.3	Unmeasured non-household billed properties – potable water (including exempt)	46,957	47,463	506
A1.4	Measured non-household billed properties - potable water	75,838	76,468	630
	Total billed Non-household properties	122,795	123,931	1,136

A1.6-11 Connected Properties – Water

A1.6 Unmeasured Household Connected Properties

This figure is the cumulative total of billed properties, exempt properties and void properties which is sourced directly from the WIC4 reports and therefore given a confidence grade of A2. For the current report year, the void property total is 45,782.

A1.7 Measured household connected properties

The number of measured household connected properties is described in the commentary to line A1.2.

A1.8-9 Unmeasured and Measured non-household connected properties

The recorded number of connected non-household properties receiving water services has decreased by 11,649 to 154,878 compared with the 2009/10 Annual Return. As set out earlier, this is primarily due to the de-registration of Supply Points following the vacancy review project, including duplicates, domestic properties, demolitions and properties receiving no services.

Line ref.	Connected Properties	2009/10 Annual Return	2010/11 Annual Return	Variance 2009/10 vs 2010/11
A1.8	Unmeasured non-household connected properties	74,196	65,759	-8,437
A1.9	Measured non-household connected properties	92,331	89,119	-3,212
	Total connected Non-household properties	166,527	154,878	-11,649

A1.11 Number of properties connected during the report year

The number of properties connected in the report year was 12,773. The number of properties connected in this report year is a reduction to the previous year of 682. This continues to reflect the change in the economy over the last two years. The forecast for

2011/12 shows an upward trend reflecting the expectation of a slight improvement in the economy.

The confidence grade of A2 reflects the same systems and processes in place as the previous report year.

A1.12-16 Billed Properties – Foul Sewerage

A1.12 Unmeasured household billed properties

There has been growth of 13,646 unmeasured household billed properties for sewerage in the report year.

The confidence grade remains unchanged at A2.

A1.13 Measured household billed properties

There is a reduction of 24 measured household properties which reflects the reduction in Measured Household properties having a measured water service.

The confidence grade of A2 has not altered.

A1.14-15 Unmeasured and Measured non-household billed properties

The recorded number of billed non-household properties receiving sewerage services has increased by 1,474 to 99,448 compared with the 2009/10 Annual Return. This movement was due to the combined effect of changes in occupancy status at Supply Points (either associated with the vacancy review project or routine updates by the registered Licensed Provider), new connections, gap sites, physical disconnections and de-registrations.

Line ref.	Billed Properties	2009/10 Annual Return	2010/11 Annual Return	Variance 2009/10 vs 2010/11
A1.14	Unmeasured non-household billed properties – sewerage	42,124	42,701	577
A1.15	Measured non-household billed properties – sewerage	55,850	56,747	897
	Total billed Non-household properties	97,974	99,448	1,474

A1.17-22 Connected Properties – Foul Sewerage

A1.17 Unmeasured Household Connected Properties

This figure is the cumulative total of billed properties, exempt properties and void properties which is sourced directly from the WIC4 reports and therefore given a confidence grade of A2. For the current report year, the void property total is 44,130. The number of voids is calculated by subtracting A1.12 from line A1.17.

A1.18 Measured Household Connected Properties

Please refer to the commentary for line A1.13.

The confidence grade of A2 has not altered.

A1.19-20 Unmeasured and Measured Non-household connected properties

The recorded number of connected non-household properties taking sewerage services has decreased by 8,651 to 126,919 compared with the 2009/10 Annual Return. As set out earlier, this is primarily due to the de-registration of Supply Points by the vacancy review project, including duplicates, domestic properties, demolitions and properties receiving no services.

Line ref.	Connected Properties	2009/10 Annual Return	2010/11 Annual Return	Variance 2009/10 vs 2010/11
A1.19	Unmeasured non-household connected properties	66,646	59,312	-7,334
A1.20	Measured non-household connected properties	68,924	67,607	-1,317
	Total connected Non-household properties	135,570	126,919	-8,651

A1.22 Number of properties connected during the report year

New properties connected have remained at a consistent level at 11,751; a description is provided in the commentary to A1.11.

A1.23-29 Billed Properties – Surface Drainage

A1.23 Unmeasured Household Billed Properties (including exemptions) not billed for Property Drainage

Due to our tariff structure, there are zero unmeasured billed properties not billed for property drainage.

A1.24-26 Measured and Unmeasured Billed Properties not billed for Property Drainage

There has been a small increase in properties not billed for Property Drainage since 2009/10. Under the Market Code, the application of property drainage to non-household properties is controlled by the Licensed Provider in the Central Market Agency's Central Systems.

Line ref.	Properties not billed for Property Drainage	2009/10 Annual Return	2010/11 Annual Return	Variance
A1.24	Measured household billed properties not billed for property drainage	20	18	-2
A1.25	Unmeasured non-household billed properties not billed for property drainage	85	100	15
A1.26	Measured non-household billed properties not billed for property drainage	1,298	1,344	46

A1.27 Household Billed Properties billed for Surface Drainage only

Due to our tariff structure, there are zero unmeasured household billed properties not billed for surface drainage.

A1.28 Non-household properties billed for surface drainage only

The number of non-household properties billed for surface drainage only has decreased by 1,227 to 10,294 since 2009/10. This movement was primarily due to changes in occupancy status at Supply Points from 'occupied' to 'vacant by the registered Licensed Provider.

A1.30-35 Connected Properties – Surface Drainage

A slight change in line A1.31 highlights a decrease from 729 to 693 properties. This reflects the reduction in Metered Household properties as explained in A1.2. The forecast for 2011/12 reflects a reduction of 266 properties which are Part Residential Properties and as at 1st April 2011 are to be billed by a Licensed Provider.

A1.32-33 Non-household Connected Properties – Surface Drainage

The recorded number of connected non-household properties connected for surface drainage has decreased by 5,633 to 137,560 compared with the 2009/10 Annual Return. As set out earlier, this is primarily due to the de-registration of Supply Points by the vacancy review project, including duplicates, domestic properties, demolitions and properties receiving no services.

There has also been a movement from A1.33 to A1.32 of 17,111 properties due to correction of an issue with the categorisation between the measured and unmeasured lines in 2009/10. The table below shows the 2009/10 figures reported and calculated on a consistent basis with 2010/11.

Line ref.	Properties connected for Surface Drainage	2009/10 Annual Return	2009/10 on consistent basis with AR11	2010/11 Annual Return	Variance 2010/11 vs 2009/10 reported	Variance 2010/11 vs 2009/10 restated
A1.32	Unmeasured non-household connected properties	60,108	78,610	72,807	12,699	-5,803
A1.33	Measured non-household connected properties	83,085	64,585	64,753	-18,332	168
	Total connected Non-household properties	143,193	143,195	137,560	-5,633	-5,635

There were also 1,906 properties which had been previously identified as having been erroneously migrated to the CMA at market opening without roads and property drainage services. These were corrected in March 2010 and the resulting increase in reported properties with roads and property drainage services offset the downward effect of the de-registrations from the market via the vacancy project. Of the 1,906 properties, 1,448 were measured and 458 unmeasured.

A1.35 Number of properties connected during the report year

The number of properties connected during the year is 11,751. This line matches line A1.22, the new properties connected are described in the commentary to A1.11.

The confidence grade remains at A2.

A1.36-39 Trade Effluent

A1.36 Number of Billed Properties

The number of billed properties has reduced from 1,526 reported in 2009/10 to 1,477. This is, in part, due to the disconnection in error of 18 Supply Point Identifiers (SPIDs) to which active discharge points (DPIDs) are attached. The actual number of active DPIDs is 1,495. The reduction in billed DPIDs is a combination of Scottish Water moving smaller discharges onto Letters of Authorisation and there being more closures than new premises opening in the reporting period.

The forecast number of billed properties 1,465 is the number of properties that should have been billed at the end of P12 – 1465. The number of DPIDs that have bills calculated for them in P12 by the CMA was 1464. Of these, 1,455 were also billed in P06. Taking into account known closures and working on the assumption that the DPIDs affected by the discontinued SPIDs issue will eventually be brought back into charge, the correct number of DPIDs for the forecast year is 1,465.

The confidence grade for the report period and forecast has increased from B3 and B4 to A2 and A3 for the current year and forecast year respectively due to improvements made in data flows and reconciliation between SW and the CMA.

A1.37 Connected Properties

The number of billed and connected properties has increased from 2,575 to 2,708. Whilst this is at variance with the reduction in the number of billed properties, it reflects the fact that Scottish Water has issued an increasing proportion of “Letters of Authorisation” to small dischargers, rather than full consents.

The forecast number of billed and connected properties 2,733 is the number that should be billed and connected at the end of P12 when known closures and assuming that the DPIDs not on the P12 report due to the discontinued SPIDs issue are all brought back into charge.

Note, this figure is not affected by the disconnection in error of SPIDs as the number is sourced from Scottish Water’s trade effluent system ICMS, which holds up to date information on all discharge points, regardless of whether they are billable or not.

A1.38 Trade Effluent load receiving secondary treatment (BOD/y)

The total BOD load receiving secondary treatment reported has increased from 20,268T to 22,592T, excluding the 18 disconnected SPIDs. Including the discontinued SPIDs gives an actual BOD load discharged of 22,628T.

The confidence grade remains at B2 and B4 for the current and forecast years, as calculation of volumes is now done by LPs and not Scottish Water.

A1.39 Trade Effluent load receiving secondary treatment (COD/y)

The reported total COD load receiving secondary treatment has reduced from 47,663T to 45,069T, excluding the 18 disconnected SPIDs. Including the 18 SPIDs gives a total figure of 45,180T.

The confidence grades have been reduced from A3 to B2 and B4 for the current and forecast years, as the volumetric data on which the loads are based is sourced from the CMA.

Table A2 Population, Volumes and Loads (Water)

A2.1-2 Summary – Population - Winter

A2.1 Population Water & Wastewater – Winter

Population data is based on General Register Office for Scotland (GROS) population projections for this year. There is an increase in winter population of 21,447 compared against the 2010 Annual Return reported position. Populations are derived from the published GROS 2008 based population projections.

A2.2 Population Water – Summer

To determine the increment of the summer population (above the winter population), a data set from Yell.com was used to identify properties which offer accommodation to visitors and to which was applied the average bed space supplied by Visit Scotland. In this way, a derived number for summer visitors of 171,921 was reached.

No change in the confidence grade has occurred in the year.

A2.3-5 Household – Population - Water

A2.3 Population of unmeasured household properties

The population of unmeasured household properties connected to our networks has increased by 14,533 for water, reflecting an increase in the total population and a proportion of households with water.

The confidence grade remains the same at A2.

A2.4 Population of measured household properties

The population of measured household properties taking water services has decreased by 93, reflecting the decrease by 45 in the number of measured household properties reported in line A1.2.

The confidence grade remains the same at A2

A2.6-21 Water Balance

A2.6 - 7 Water treated at own works to own customers & Distribution input treated water

Distribution Input treated water'. These are both reported identically because Scottish Water does not supply treated water to any party other than direct customers of Scottish Water through the water distribution networks.

Distribution Input (DI) has reduced from 2,044.4 MI/d to 2000.1 MI/d principally due to reduced total leakage.

A number of improvement projects undertaken in 2009/10 have now been embedded within the day to day running and reporting of DI to the business. These processes include:

- Completion of the Bulk Telemetry Signal Download script.
- Daily reporting of DI to the business at month end.

In addition to the above, a number of other improvements to DI reporting have been undertaken in 2010/11:

- Development of a new DI Estimation Model
- Development of a Confidence Grade dashboard
- Development of uncertainty analysis in terms of meter accuracy
- Development of DI reporting to WOA level of granularity
- Development of DI reporting down to site instrument level
- 2010 – 2015 Investment Programme for improvement including identification of meters for replacement, verification chamber installations and new metering installations
- 2010/11 Meter verification programme

Recorded DI data is passed from our loggers, telemetry and manual collection process to a data warehouse (Z-one) which stores flow data and asset information in conjunction with maintenance, verification and survey reports. This enables visibility of detailed flow information and thus confidence in the data provided.

DI is being reported with a B3 confidence grade, consistent with last year. The availability of the measured flow data is similar to last year, decreasing by only 1% from 98% in 2009/10 to 97% during the 2010/11 reporting year.

A2.8 & A2.9 Bulk supply imports/exports

There are no bulk supply imports or bulk supply exports so these are again reported as 0 MI/d with a confidence grade of N.

A2.10 Net Distribution input treated water (water put into supply)

The net DI is the same as the DI (line A2.7) as there are no bulk supply imports or exports.

A2.11 Unmeasured household volume of water delivered (including losses)

Unmeasured household volume of water delivered has decreased from 843.8 MI/d to 841.9 MI/d. There has been a reduction in PCC of *circa* 1.8 l/head/day (line A2.27) but this is in part counterbalanced by an increase in underground supply pipe losses of 1.9 l/prop/day. The confidence grade for this line remains B2 reflecting the confidence associated with the unmeasured household PCC, which continues being exclusively reported from Scottish Water's Continuous Area PCC Monitor (line A2.27).

A2.12 Measured household volume of water delivered (including losses)

Measured household volume of water delivered has increased slightly compared to the previous year. The percentage meter under-registration has increased from 4.0% to 4.2%. The meter under-registration is taken from the 2009/10 supporting information documents for the OFWAT Service and Delivery report.

The confidence grade reported for this line remains at B2.

A2.13 & 14 Unmeasured & Measured non-household volume of water delivered (including Losses)

The calculation of non-household consumption follows the same method as used for the 2009/10 Annual Return. Consumption data calculated by the Central Market Agency (CMA) has been used to populate lines A2.13 and A2.14.

When the retail market opened to competition in April 2008, responsibility for reading the meters of non-household customers transferred from Scottish Water to Licensed Providers. Meter readings are supplied by Licensed Providers to the CMA to enable the derivation of consumption at each Supply Point. The algorithms used to calculate consumption, along with the requirements for meter reading frequency, are defined in the Market Code and Code Subsidiary Documents (CSDs). The consumption is used in the calculation of wholesale primary charges due to Scottish Water from Licensed Providers via a series of settlement runs in respect of each month.

For each settlement run, the CMA provides an aggregated settlement report which is used by Scottish Water for billing purposes and a disaggregated settlement report to enable reconciliation of wholesale charges by market participants. The data reported in lines A2.13 and A2.14 has been derived from these disaggregated settlement reports.

A2.13 Unmeasured Non-Household Consumption

The reported unmeasured non-household volume of water delivered has reduced very slightly from 17.42 MI/d in 2009/10 to 17.05 MI/d in the report year.

The consumption in line A2.13 relates to Supply Points which are unmetered and reflects assessed consumption derived from the Rateable Value.

	AR09	AR10	AR11
<i>Occupied and exempt properties</i>	53,920	46,957	47,451
<i>Underground supply pipe leakage</i>	48.43 l/prop/d	34.39l/prop/d	29.67 l/prop/d
Underground supply pipe leakage	2.61 MI/d	1.61MI/d	1.41 MI/d
Water delivered	33.61 MI/d	16.03 MI/d	16.21 MI/d
<i>Void properties (vacant)</i>	25,925	27,239	18,282
<i>Internal plumbing losses (voids)</i>	11.93 l/prop/d	11.40l/prop/d	11.05 l/prop/d
<i>Underground supply pipe leakage (voids)</i>	51.83 l/prop/d	39.72l/prop/d	34.94 l/prop/d
Internal plumbing losses (voids)	0.31 MI/d	0.31 MI/d	0.20 MI/d
Underground supply pipe leakage (voids)	1.34 MI/d	1.08 MI/d	0.64 MI/d
Water delivered to void (vacant) properties	1.65 MI/d	1.39 MI/d	0.84 MI/d
Total line A2.13 unmeasured non-household volume	35.26 MI/d	17.42 MI/d	17.05 MI/d

A2.14 Measured Non-Household Consumption

The consumption in line A2.14 reflects the actual consumption recorded at metered Supply Points. The volume has decreased slightly from 427.91 MI/d in 2009/10 to 419.79 MI/d in the current reporting year.

Derivation of Consumption from CMA Settlement Reports

Volumetric wholesale charges are applied at the CMA via the calculation of an Estimated Weighted Average (EWA) unit rate for each Supply Point at each settlement run. This is replaced with an Actual Weighted Average unit rate at Final Reconciliation.

In certain circumstances, generally as a result of issues with a meter reading or technical data, negative consumption can be calculated at meters. A related issue is the calculation of a EWA value of zero in certain circumstances relating to large negative historical consumption.

Consumption has been included in the A Tables wherever it is a positive value at a Supply Point which is occupied. Where the calculated consumption is negative, this is substituted with an estimated consumption using the same methodology as is applied by the CMA in the absence of meter readings at a Supply Point. In the first instance, the Licensed Provider's Yearly Volume Estimate (YVE) is used if available. In the absence of an YVE value, the industry standard consumption for that meter size is used.

Other Adjustments to Billed Consumption

A number of additional adjustments are also applied to convert billed consumption into delivered potable water.

There are 9 non-household customers receiving non-potable supplies. Consumption at these Supply Points is reported separately in line A2.26 and is therefore excluded from line A2.14.

The supply of shipping water at Queen's Dock in Aberdeen is not supplied via Licensed Providers and not included in the CMA's settlement reports. The water supplied is potable and is therefore included in line A2.14.

Additional adjustments have been made at a small number of Supply Points where consumption errors have been identified, usually due to either a faulty meter or erroneous meter readings. In both cases, the adjustment reflects the expected consumption following correction of the issue which will include amendment of data at the CMA and, in some cases, repair or replacement of the meter. These adjustments are consistent with provisions and accruals made for revenue forecasting purposes.

A2.15 Water taken unbilled – legally

The volume reported as water taken legally unbilled (WTLU) has decreased from 55.7 MI/d in 2009/10 to 50.7 MI/d in this report year. The confidence grading remains at C4 due to the nature and estimation of the volume reported. The methodology has remained the same for the majority of components. The main reasons for the changes in volumes are as follows:

- Decrease in fire service use (from 14.5 MI/d to 13.4 MI/d); the same methodology has been used as the previous year, the change is due to changes in the number of fires, fire crews and fire service vehicles reported by the Fire Service.

- Increase in licensed standpipe use (from 12.4 MI/d to 14.2 MI/d); there has been an increase in the number of standpipe licences issued which has increased the total volume associated with this component.
- Decrease in WWTW use (from 14.6 MI/d to 9.1 MI/d); this year the business has used logger data for some sites in addition to meter reads. Those works for which meter readings or logger data have been obtained are representative of the various types and sizes of WWTW and account for 45% of PE throughout the reporting year. In addition, where meter reads or logger data is available the daily average volume specific to the works has been used (in previous years the average volume per PE for the treatment type was used).
- A decrease in Scottish Water Offices and Depots use (0.16 MI/d to 0.14 MI/d); the same methodology has been used as last year. The decrease in volume is due to the number of staff at Scottish Water offices reducing; the usage volume per member of staff has remained the same.
- A decrease in unbilled field trough usage (from 11.7 MI/d to 11.6 MI/d); the number of fixed charge field troughs has reduced from 11,616 in 2009/10 to 11,455 in 2010/11. This has resulted in a reduction in the overall volume of water used by unbilled field troughs.
- Decrease in building water use (from 1.3 MI/d to 1.2 MI/d); the methodology applied is the same as the previous reporting year. The figure is included as WTLU because developers are billed for a construction licence rather than for a volume of water.

A2.16 Water taken unbilled – illegally

The volume of water reported as water taken illegally unbilled (WTIU) has fallen from 2.9 MI/d in 2009/10 to 2.2 MI/d in the reporting year.

The confidence grade has remained at C4 due to the nature and estimation of the volume reported. The data sources and methodology used to calculate this component have remained the same.

- Void property use – the volume has decreased very slightly from 0.76 MI/d to 0.70 MI/d.
- Hydrant misuse - the number of events was lower in 2010/11 compared to AR010 which has resulted in a 0.3 MI/d reduction in volume to 1.0 MI/d. The estimated volume per hydrant misuse event is the same as that used in 2009/10.
- Illegal standpipes - the volume has decreased from 0.8 MI/d to 0.5 MI/d due to a reduction in the number of illegal standpipes reported. The campaign initiated in AR08 aimed at minimising unlicensed standpipe use has continued.

A2.17 Water take unbilled – Distribution System Operational Use (DSOU)

The volume of water reported as Distribution system operational use (DSOU) has increased from 3.8 MI/d in 2009/10 to 6.0 MI/d in this reporting year. The confidence grade remains at C3 due to the nature and estimation of the volume reported. The changes in volumes can be explained as follows:

- Reservoir Cleaning – the volume has decreased from 0.4 MI/d to 0.3 MI/d. The methodology used is the same as the previous year. The list of service reservoirs cleaned and the volume of water discharged continues to be provided by the regional Leakage Delivery teams.
- Mains Rehabilitation & New Mains - the volume used has decreased from 1.2 MI/d to 0.7 MI/d; this is due to a reduction in the length of mains rehabilitation compared to the previous reporting year.
- Programmed Flushing & Swabbing - the volume of water has increased from 0.4 MI/d to 3.5 MI/d in this reporting year; the methodology is the same as the previous year. The increase in volume is due to a couple of significant flushing events, one relating to management of a service reservoir inlet main and the second in relation to a water quality incident at Burncrooks WTW.
- Burst Repairs / Other Network Interruptions – the methodology applied is the same as the previous year; the volume has remained constant at 0.5 MI/d.
- Reactive Water Quality Incidents – there has been a reduction in the number of incidents resulting in a decrease in volume from 1.2 MI/d to 1.0 MI/d; the methodology applied is the same as the previous year.
- Planned Water Quality Sampling – the volume reported remains constant at 0.1 MI/d; there has been no change in methodology.

A2.18 Net Consumption (including supply pipe losses)

This is a new line for 2010/11 and is reported as 1338.0 MI/d with a confidence grade of B3 (net consumption in 2009/10 was 1351.8 MI/d). The reduction in volume is mainly due to a reduction in volume of lines A2.11 (water delivered to unmeasured households), A2.14 (water delivered to measured non-households) and line A2.15 (water taken unbilled - legally).

A2.19 Distribution losses (including trunk mains and reservoirs)

Distribution losses have reduced from 692.7 MI/d in 2009/10 to 662.1 MI/d in 2010/11 due to continuing leakage reduction activity.

The confidence grade for this line remains B3.

A2.20 Customer supply pipe losses

Customer supply pipe losses have risen slightly from 90.8 MI/d in 2009/10 to 94.8 MI/d in 2010/11 due to a slight increase in the ALC supply pipe burst rate. The confidence grade for the average rate of loss through supply pipes remains at C3 and applies the same methodology, to data from Scotland wide, as the previous year.

A2.21 Overall water balance

The confidence grade for the overall water balance remains at B3 as there have been no significant changes in methodology compared to the previous year.

A2.22-25 Leakage

A2.22 Total Leakage (pre-MLE Adjustment)

The 'Total Leakage' includes the DMA reported leakage, Service Reservoir leakage and Trunk Main leakage. The coverage of reportable DMAs has increased from 85.7% to 85.9% by property coverage. DMA leakage has reduced from 664.4 MI/d in 2009/10 to 653.4 in the current reporting year. Service reservoir leakage has remained at 9.2 MI/d where as trunk mains leakage has reduced very slightly from 31.5 MI/d to 30.7 MI/d. Overall there is a reduction in total leakage from 705.1 MI/d in 2009/10 to 693.4 MI/d in 2010/11. The confidence grade for this line has changed from B4 to B3.

A2.23 Water Balance Closing Error

The water balance closing error is the difference between the top down and bottom up leakage figures expressed as a percentage of net DI. The closing error has reduced from 3.8% in 2009/10 to 3.2% for 2010/11.

A2.24 MLE Adjustment

The MLE adjustment for 2010/11 is 5.8 MI/d. The overall 2009/10 MLE calculation is associated with the appropriate MLE confidence grades (mid point of WICS CGs), being assigned to water balance components in line with WICS own CGs. The MLE methodology has changed slightly compared to the previous reporting year.

The confidence grade for this line is B3.

The reduction in the MLE adjustment is in part due to an increase in the confidence of the DMA leakage which has increased from 17.5% to 7.5% (mid-points of confidence bands). The accuracy of the four key components of the DMA MNF weekly leakage estimate (Flow meter accuracy, Domestic LNU, Non-domestic LNU and Hourday factor.) were each reviewed/confirmed against the English PLCs; in relation to best practice industry standards and their relative impact on the DMA leakage estimate.

In addition; SW has in place; robust business processes for ongoing DMA data validation & operability management; and an established business process for 6 monthly updates of key DMA component data from corporate systems.

A2.25 Total Leakage (post-MLE Adjustment)

For 2010/11 & 2010/11 OPA Leakage reporting, and for future years' reporting, it has been agreed between SW and WICS, to report MLE Leakage and move away from the previous 'like for like' methodology adopted in recent years.

Where the water balance reconciliation error between top down and bottom up leakage is < 5% of DI, this is accepted as an indicator of a robust water balance. In such circumstances, a MLE statistical calculation is then undertaken to determine the leakage figure to be reported. If the reconciliation error is > 5% of DI, then the top down leakage figure will be reported.

In recent years the trend in leakage reduction is:

Report Year	Top Down Leakage (MI/d)	Bottom Up Leakage (MI/d)	MLE Leakage (MI/d)
AR05	1,139		
AR06	1,104		
AR07	1,004		
AR08	924	898	909
AR09	868	776	816
AR10	783	705	738
AR11	757	693	699

The 2010/11 Maximum Likelihood Estimation (MLE) leakage is 699.1 MI/d and is reported with confidence grade B3. This is a reduction of 39.1 MI/d from the 2009/10 MLE leakage figure of 738.2 MI/d.

A2.26 Water Delivered – Non-potable

A2.26 Volume of non-potable water delivered

Nine non-household customers receive non-potable water supplies. Most of these Supply Points are subject to Schedule 3 charging arrangements.

The volume reported in line A2.26 reflects the consumption calculated by the CMA for the following Supply Points which receive non-potable supplies; some of these supply points have multiple meters.

Supply Point ID	Meter Serial Number
101119750150	98W00006
101122290109	90M000404
101122290109	97W021741
101143770105	V20752/7/1
101797540101	06W302847
101797540101	94W024603
101797540101	K99A816211
200003570104	V/20784/8/7
101202540150	K02A246800
101202540150	K03W022848
101653530150	03M362847
101653530150	04H000160
200000400101	08AQUAMASTG/16297/2/5
101199770101	05H300704
101199770101	05M120383

A further volume of 4.5 ML/day is added to the above consumption which is the estimated volume for Howiestoun Fisheries and is consistent with 2009/10.

A2.27-30 Water Delivered – Components

A2.27 Per capita consumption (unmeasured household – excluding supply pipe leakage)

As for last year, the Unmeasured Household Per Capita Consumption has been derived using data gathered exclusively from Scottish Water's Continuous Area PCC Monitor. The Monitor provides an accurate assessment of household demand in accordance with UKWIR best practice for unmeasured per capita consumption monitors. The Monitor was established during 2007/08 & 2008/09 providing national coverage on a representative Scottish ACORN basis.

The PCC reported using the Monitor for 2010/11 is 151.4 litres/head/day (l/hd/d) which is lower than the 2009/10 reported figure of 153.8 l/hd/d. This year on average 93 PCC Zones reported each month for 2010/11, in comparison to last year when, 95 PCC Zones reported.

During Q&S3b it is planned to continually review and implement PCC best practice as appropriate to SW. For AR12, consideration is being given to using a Per Household Consumption (PHC) estimate, rather than PCC to generate Unmeasured Household Consumption volume within the Water Balance Calculation.

A2.28 Per capita consumption (measured household – excluding supply pipe leakage)

The calculation remains unchanged from the previous reporting year. There is an increase in volume from 176.1 l/head/day in 2009/10 to 241.2 l/head/day in 2010/11. This is due to an increase in the billed measured household volume and a reduction in the number of billed household properties.

The confidence grade remains at B3.

A2.29 Meter under-registration (measured households) (included in water delivered)

Scottish Water has derived meter under-registration from the average reported in the 2009/10 OFWAT 'Security and Delivery' supporting information document. Meter under-registration has increased slightly from 4.0% to 4.2%. When applied to the domestic metered volume the total measured household meter under-registration is 0.011 Ml/d.

A2.30 Meter under-registration (measured non-households) (included in water delivered)

The 2009/10 OFWAT 'Security and Delivery' supporting information document has been used to derive a figure for non-household meter under-registration. Meter error remains at 4.6%. The slight decrease in the meter under-registration volume from 18.8 Ml/d to 18.4 Ml/d is due to a decrease in the volume of water delivered to measured non-households.

Scottish Water does not undertake routine meter calibration and therefore does not have company specific meter under-registration figures. The current approach is that meters are only changed or replaced when customer contacts indicate that bills are incorrect or problems with meters have caused disruption to water supplies.

Table A3 Population, Volumes and Loads (Wastewater)

A3.1-A3.4 Summary – Population

A3.1 Population Water & Waste – Winter

Population data is based on General Register Office for Scotland (GROS) population projections for this year. There is an increase in winter population of 21,447 compared against the 2010 Annual Return reported position.

A3.2 Population Waste – Summer

To determine the increment of the summer population (above the winter population), a data set from Yell.com was used to identify properties which offer accommodation to visitors and to which was applied the average bed space supplied by Visit Scotland. A total of 107,568 of the 171,921 water population also appeared in the sewer area.

The confidence grade remains the same at A2.

A3.3 Household Population connected to the wastewater service

The population of unmeasured household properties connected to our networks has increased by 13,641 for wastewater.

A3.5-A3.11 Sewage - Volumes

A3.5 Unmeasured household volume (including exempt)

The unmeasured household volume has decreased from 694.30 MI/d to 685.47 MI/d. The slight decrease in the waste volume is a result of the decrease in pcc reported in the year.

The confidence grade has remained at B3.

A3.6 Measured household volume

The measured household volume has increased slightly to 0.036 MI/d in the report year.

The confidence grade remains at A2.

A3.7 Unmeasured non-household foul volume (including exempt)

The slight reduction of 0.019 MI/d in the foul volume reported is a consequence of analysis carried out as part of the impact of the full business metering (FBM) project. It has identified, as expected, that the remaining unmeasured customers will draw less water than was previously estimated. This estimate is now based on use of actual data from the installed FBM meters to establish the volumes.

For this reason the confidence grade remains at B3.

A3.8 Measured non-household foul volume

The total volume of foul waste from measured non-households has decreased from 155.35 MI/d to 140.83 MI/d. This may be indicative of the current economic climate.

The confidence grade remains at B3.

A3.9 Trade Effluent Volume

The volume of trade effluent discharge has reduced from 92.472 MI/d to 89.529MI/d. The figure of 88.843MI/d reported at A3.9 is the volume associated with the SPIDs billed at P06 and doesn't take into account the disconnected SPIDs issue. Scottish Water is no longer in control of the calculation of volumes as this is done by Licensed Providers and passed to SW by the CMA. Volumes reported this year are taken from the latest available reconciliation run from the CMA for the reporting period.

A reduction in the confidence grade from A3 to B2 for the reporting year reflects the change in the source calculation being undertaken by LPs and not SW.

A3.10 Total Volume

The confidence grade remains at B3.

A3.11 Volume septic tank waste

The volume of septic tank waste decreased from 30.635MI to 30.422MI over the reporting period.

As there has been no change to the methodology used the A3 confidence grade is unchanged from last year.

A3.12-A3.26 Sewage Load (BOD/yr)

A3.12- A3.13 Unmeasured and measured household load

The household load reported is based on household occupancy multiplied by 60g per head per day.

No significant change has occurred from the prior year and the confidence grade remains the same.

A3.14-A3.15 Unmeasured and measured non-household load

The non-household load is derived as 300g/m³ applied to the volumes of sewage reported in lines A3.7 and A3.8.

No significant change in the process has occurred and the confidence grades remain the same as the prior year.

A3.16 Trade effluent load

The total BOD load discharged to the network has increased to 25,680T from 24,911T. 25,654T is reported in the table due to the disconnected SPIDs issue.

The confidence grade is B2 for the reporting year, as the calculation of volumes from which the loads are derived is now done by LPs and not SW.

A3.18-A3.21 Septic tank loads

A decrease from 133.199t to 122.494t is reported in line A3.18 this reflects a decrease in the overall number of private septic tanks emptied during 2010/11. This was largely due to the demand profile being lower this year. A higher volume of septic tank waste is being discharged to works inlets as an alternative to sludge treatment centres when compared to 2010/11.

The reported septic tank loads (lines A3.18 and A3.19) are derived by applying an assumed load of 6,543g/m³ to the volumes removed from private and public septic tanks respectively.

No significant change has occurred from the prior year and the confidence grade remains at B3.

A3.22 Average COD concentration

The average settled COD concentration used to calculate Trade Effluent charges continues to be 350mg/l.

No significant change has occurred and the confidence grade remains the same as the prior year.

A3.23 Average suspended solids concentration

The average suspended solids concentration used to calculate Trade Effluent charges continues to be 250mg/l.

No significant change has occurred and the confidence grade remains the same as the prior year.

A3.24 Equivalent population served (resident)

The figure in A3.24 is the total load divided by 60g, which equates to the equivalent population and has not significantly changed from the prior year.

No significant change has occurred and the confidence grade remains the same as the prior year.

A3.25 Equivalent population served (resident) (numerical consents)

The figure in A3.25 is the total load divided by 60g which equates to the equivalent population (representing works that have a numerical consent).

No significant change has occurred and the confidence grade remains the same as the prior year.

A3.26 Total load receiving treatment through PPP treatment works

In the report year a slight reduction from 67,659t to 67,448t was observed.

No significant change has occurred and the confidence grade remains the same as the prior year.

A3.27-A3.29 Sewage Sludge Treatment and Disposal

The reported mass of sewage sludge recycled was 125.058 ttds in the report year, of which the majority came from the PPP/PFI works (105.367 ttds). As with 2009/10 all the SW figures reported were taken direct from the Gemini system. We have reassessed the confidence grade and have reduced it to reflect the uncertainty in the PFI figures.

For the SW sludge an overall increase in the volume of enhanced treated sludge was noted, 0.734ttds, largely attributable to an increased volume of sludge from Fife being lime treated. Kinneil Kerse and Dunfermline also recorded an increase, 0.838ttds with Perth conversely showing a decrease. Conventional sludge production was reduced by 1.376ttds from the previous year. This reflects reductions in imports and operational issues at some sites, Stirling and Dalderse, as well as a reduced volume treated at Cumnock.

No sludge was recycled to land restoration over the reporting period. Enhanced treatment options for a number of sites are being used instead.

A marginal increase, 0.024ttds was recorded in sludge taken to landfill in 2010/11.

No significant change has occurred and the confidence grade remains the same as the prior year.

E Tables – Operating Costs and Efficiency

General Comments

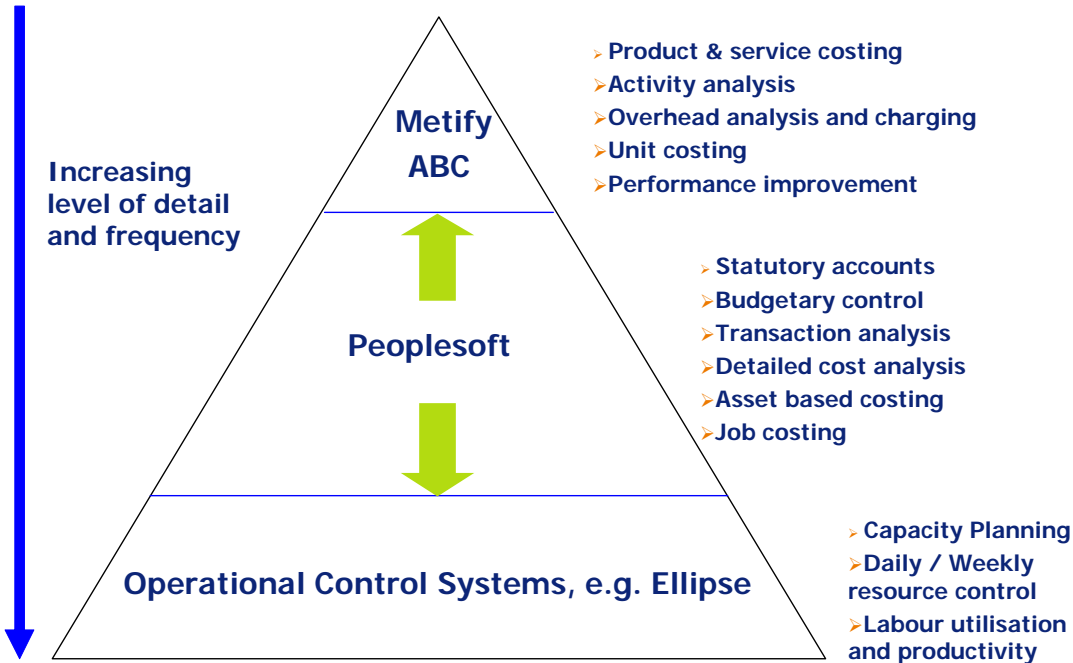
Methodology & Cost Allocation

Cost analysis in E Tables (E4, 6-10) was prepared using reports from Scottish Water’s Activity Based Management (ABM) systems.

ABM provides analysis of the costs of key activities and processes, and links these to the factors that cause or drive our level of cost. This allows us to develop an understanding of the full cost of providing services, either internally within Scottish Water, or to our external customers.

Scottish Water has built an ABM toolkit founded upon consistent principles which apply across some key core systems and processes.

Activity Based Management data (financial and non financial) is captured in various corporate systems. The key systems which provide ABM analysis for E Tables are:

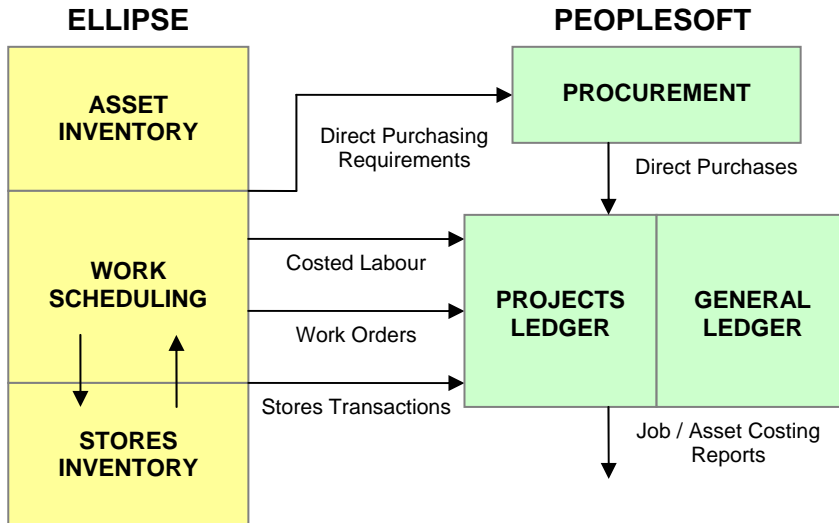


System	ABM Process Overview
Ellipse Works & Asset Management System	<p>Ellipse is used to hold Scottish Water’s Asset Inventory and to manage operational activity by individual job (work order), activity and asset.</p> <p>Time spent working on work orders is captured in Ellipse via timesheets, integrated mobile devices or laptops. Material issued to jobs from Stock is also captured by work order.</p>

	<p>Time and materials are then costed and interfaced to the Peoplesoft Financial System on a daily basis.</p> <p>See Overview diagram below.</p>
<p>Peoplesoft Financial & Procurement System</p>	<p>Peoplesoft is Scottish Water's primary financial and procurement system. The key modules utilised by Scottish Water are Procurement, Accounts payable, Projects, Timesheets, Billing, Accounts Receivable, General Ledger & Fixed Assets.</p> <p>Accounting separation within the Scottish Water Group has been enabled within Peoplesoft.</p> <p>Business Units are the highest level entity in Peoplesoft and are used to securely separate data and access to data and processes. Separate Business Units have been used to separate Scottish Water Horizons from Scottish Water, and in turn from Scottish Water Solutions. Cross-business unit transactions can only be made via inter-company invoicing.</p> <p>Within Scottish Water capture of activity based information within Peoplesoft has been maximised through the set up of our coding structure, systems and processes.</p> <p>Cost codes have been set up within Peoplesoft to capture and sub-analyse costs by:</p> <ul style="list-style-type: none"> ○ Individual work order; ○ Individual asset; ○ Each capital or non regulated project; ○ Each support department; and ○ Expense subjective (account). <p>All costs are held in Peoplesoft, and costed either directly through Peoplesoft Procurement or operational costing through the Ellipse-Peoplesoft interface.</p> <p>Peoplesoft, therefore, provides comprehensive costing analysis, on a monthly basis, of the costs directly attributable (including some key support activity recharges) to each team, asset, zone, project, service and job.</p>
<p>Metify Activity Based Costing (ABC) System</p>	<p>Metify is an ABC system structured around Scottish Water's key (c.300) activities. ABC is run periodically (typically half-yearly) to cover all profit and loss expenditure.</p> <p>Peoplesoft feeds total expenditure directly into Metify.</p> <p>Where activity splits have already been captured, e.g.</p>

	<p>Ellipse effort by activity / asset, these are also fed directly into Metify.</p> <p>Costs are analysed by activity and for each activity a non financial driver is captured. The non financial driver is the measurable factor which drives activity cost, or the level of resource consumption. In Metify these drivers are used to allocate costs to services.</p> <p>Output from Metify provides analysis of the full cost of services. These services have been structured to match E & M Table activity classifications, and therefore Metify output directly feeds these tables.</p> <p>Non financial driver data is collected from a variety of corporate systems and input to Metify.</p>
Driver Data Systems	<p>Examples of systems and drivers are:</p> <ul style="list-style-type: none"> ○ LIMS – Lab tests processed and Samples taken; ○ Oracle CRM – Customer calls and written contacts; ○ Gemini – Waste movements; ○ Ellipse – Number of jobs, man hours, stores issues, etc; and ○ Peoplesoft – Number of invoices, purchase orders, customer bills, man hours.

Ellipse / Peoplesoft Integration



Cost Allocation

Costs are captured or allocated in line with Regulatory Accounting Rules.

Transfers between Separate Entity Associates

Transfers between our separate legal entities are invoiced in accordance with specified Service Agreement prices or Contracts. The prices in these agreements are in accordance with Regulatory Accounting Rules on Transfer Pricing, and prices reflect the full cost of providing the service to the entity. Activity Based Management output has been used extensively in determining the costs which should be included in transfer prices.

Transfers to Non Regulated Activities

Scottish Water Horizons Limited (SWH) is responsible for the majority of the Scottish Water Group's Non Regulated activities. Transfers to Non Regulated activities are undertaken as described in the section above "Transfers between Separate Entity Associates".

A residual number of Non Regulated activities were not taken over by Scottish Water Horizons, and remain within Scottish Water. These are activities which are incidental or integral to the regulated business activities. For example, rechargeable works on core assets, and use of laboratory services for third party sampling and analysis.

Within Scottish Water, Non Regulated activity is separately reported in a Non Regulated ledger tree within Peoplesoft. Non regulated costs are either directly captured and reported in the Non Regulated ledger tree, or are charged to Non Regulated through cost recharges.

Operational Staff working on Non Regulated activities, e.g. rechargeable works, charge costs to Non Regulated through Ellipse work orders as described in the methodology section.

Support cost recharges for Fleet, IT and Property are transferred on a regular basis, to reflect actual consumption of support costs. A further cost recharge is made on top of this, to cover areas, which are not regularly recharged. These recharges are made on the basis of half-yearly ABC analysis.

Capitalisation Policy

Scottish Water has applied a consistent policy to capitalisation and ensures compliance with UK Generally Accepted Accounting Practices (UKGAAP). The main points of the policy are:

Fixed assets are tangible items for the delivery of services and the provision of support activities. Assets are utilised by Scottish Water for a number of years and are not for resale.

Tangible fixed assets have physical substance and are held for use in the production or supply of goods and services. Capital assets are expected to generate future revenue for the company or are used in the business and are not for resale.

Tangible fixed assets, whether purchased or constructed, are recorded at cost. Cost comprises all directly attributable costs, including internal costs, such as the cost of time spent on the construction of the asset by project engineers/ planners, which are incremental to the delivery of the Scottish Water capital expenditure programme. Cost does not include any allocation of administrative or general overheads and specifically excludes abnormal

costs relating to, for example, inefficiencies, wastage and costs associated with operational problems encountered after asset commissioning.

Costs associated with a start-up or commissioning period are capitalised but *only* where the asset is available for use but *incapable* of operating at normal levels without such a period of commissioning. Costs associated with operating assets which are running at below normal operating levels after start-up/ commissioning are not capitalised.

The capitalisation policy provides guidance notes and examples on distinguishing between operational and capital expenditure. With specific reference to expenditure relating to reactive and leakage activities, specific definitions and examples are included in the capitalisation policy. In addition, specific controls are in place to review expenditure relating to reactive and leakage activities.

Reactive Capital Expenditure

In general terms, infrastructure reactive activities can be capitalised where there is replacement of discrete lengths of mains or sewers, usually no less than 3 metres. The work must represent a permanent solution to a fault or deficiency in the network. Costs associated with clearing blockages or the use of a collar on a burst main are not capitalised but are charged to opex.

Reactive non infrastructure capital expenditure includes the replacement of an asset at the end of its useful life such as pumps, filters, screen. In addition, costs associated with a complete asset overhaul, the results of which extend the asset life for a number of years can be capitalised under either reactive or planned capital expenditure. Expenditure relating to the repair or replacement of a component of an asset, e.g. the replacement of a bearing, are not capitalised but charged to opex.

Expenditure on Leakage

Expenditure on leakage is predominantly allocated to operational expenditure since much of the activity relates to either operational intervention or investigative work. However, the replacement of discrete lengths of mains, usually no less than 3 metres, installation of valves and meters are capitalised.

Wholesale Cost Allocation by WICS Activity

Scottish Water's coding structure follows Regulatory Activity classifications, i.e. Water Treatment, Water Distribution, etc. by individual asset.

The majority of operational costs are directly captured against the individual assets, either by direct charging, e.g. Power, Chemicals, or through Ellipse work orders as described in the Methodology section, e.g. labour costs. In 2010/11 84% of costs, directly attributable to wholesale assets, were charged to assets. The shortfall against 100% was due to some gaps in labour costing. These gaps are addressed, for the purposes of regulatory reporting, via activity analysis undertaken with team leaders.

Fleet inventory costs are recharged to teams on a regular basis, and ABC then calculates the fully allocated costs of wholesale activities, including all support activity costs based on actual activity costs and driver volumes.

Trading Results & Reconciliation

Scottish Water Business Stream Limited (Business Stream) is a fully owned subsidiary of Scottish Water. Scottish Water produces consolidated accounts incorporating the results of Business Stream. However E & M18 table financials are produced for Scottish Water Regulated and Non Regulated activity, excluding Business Stream.

To aid comparison, the table below summarises Scottish Water consolidated results, Scottish Water company and Scottish Water Horizons results.

SW Group Statutory Accounts

	£m	£m
Cost of Sales	674.4	
Admin Expenses	<u>114.7</u>	
SW Group Expenditure		789.1
Less Business Stream		(28.1)
IFRS adjustments		<u>37.7</u>
Total Expenditure (excluding Business Stream and FRS 17)		<u>798.7</u>
Represented by		
SW Regulated		779.6
SW Non Regulated		2.0
Horizons		17.1

E Tables include the costs of Scottish Water (Regulated) activities only. Table E1 and E2 have been removed from this year's Annual Return. However, reconciliation and commentary include reference to equivalent E1 & E2 table results for ease of understanding.

To aid year-on-year comparison M18 W & M18 WW tables include the costs of Scottish Water (Regulated & Non Regulated) and Scottish Water Horizons activities.

Scottish Water company and Scottish Water Horizons combined results are summarised and reconciled below, to E tables and the regulatory account tables M18 (W & WW).

(£m)	SW	Diff	M18W/WW	Diff	E Tables			
	& SWH*	Board - M18	Tables Total	M18 - E1/2/3a	Total	E1	E2	E3a
Employment	144.2							
Other	202.7		344.7		326.4	191.2	135.1	0.0
Opex	346.9	2.2	344.7	18.3	326.4	191.2	135.1	0.0
PFI	138.8	(3.4)	142.2	0.0	142.2	0.0	0.0	142.2
IMC	104.6	0.3	104.3	0.0	104.3	66.4	37.9	0.0
Depreciation	213.3		209.8		208.9	100.9	108.0	0.0
Grant Amortisation	(1.1)	(0.4)	(1.1)	0.8	(0.9)	(0.6)	(0.2)	0.0
Amort PFI	1.9		0.0		0.0			
Gain on assets	(5.8)		0.0		0.0			
Expenditure	798.7	(1.3)	800.0	19.1	780.8	357.8	280.8	142.2
Explained by								
Charges to SWBS for support		1.3						

* Excludes Business Stream, IFRS & IAS19

The line differences are table presentation differences explained as follows:

- £3.4m difference between our Board report and M18 Tables re PFI costs, is due to transfer of costs from Customer Operations for Intersite Sludge Tankering from Scottish Water wastewater treatment works to PFI works (£2.7m), terminal pumping station costs pumping to PFI works (£0.5m) and support costs for the PFI team (£0.3m).
- £1.3m of Scottish Water expenditure has been charged to Business Stream under Service Agreements. This cost has been netted off Scottish Water's expenditure in line with group inter-company transaction reporting. However, for the purposes of regulatory reporting this expenditure has been added back to report the full costs of providing these third party services.
- £19.1m Non Regulated expenditure is included in M18 Tables but is excluded from E Tables.

E Table Commentary

Total Operating Costs

Total operating expenditure increased by £25.0m to £326.4m (as detailed below).

	2010/11 £m	2009/10 £m	Variance £m
Total operating costs – Water	191.224	171.890	(19.334)
Total operating costs – Waste	135.143	129.448	(5.695)
Exceptional costs – Water	0.000	0.000	+0.000
Exceptional costs – Waste	0.000	0.000	+0.000
	326.367	301.338	(25.029)

Scottish Water's reported regulated operating costs of £327.8m reconcile to the E Table total operating costs of £326.4m as detailed below:

Operating Expenditure	326.4
Add SW Opex allocated to PFI (Table E3a)	3.4
Less SWBS Support charges	(1.3)
Less Depreciation in Service Charges to Horizons	(0.6)
Regulated SW Operating Expenditure	327.8

The £25.0m increase in operating costs includes two significant atypical items:

- £6.9m extra costs of dealing with the severe winter weather, including overtime and additional contractors to handle extraordinary customer call volumes and bursts, and dealing with frozen or inaccessible works, compared to £3.1m in 2009/10 – an increase of £3.8m; and
- £7.4m one off credit on local authority rates from 2005-10.

Excluding atypical costs, the following increases have been absorbed:

- impact of inflation (4.96%; £11.8m);
- new operating costs resulting from capital investment (£2.0m);
- £21.4m local authority rates revaluation;
- £14.4m costs of voluntary redundancy and restructuring, compared to £10.4m in 2009/10 – an increase of £4.0m.

Underlying, controllable costs have therefore reduced in real terms by £8.1m (3.2%) reflecting reduced headcount, improved leakage reduction, more efficient operations, and improved contractor management.

Functional Expenditure

Total functional expenditure increased by £11.9m (5.9%) from 2009/10 (as detailed below).

Analysis of functional expenditure –

	2010/11	2009/10	Variance
	£m	£m	£m
Total functional costs – Water	119.172	110.879	(8.293)
Total functional costs – Waste	93.643	90.108	(3.535)
	212.815	200.987	(11.828)

Direct employment costs increased by £2.2m (3.3%) from 2009/10 to £68.2m. Increases have been generated by the full year effect of prior year pay increases, pension increase, and an average 1% pay increase in 2010/11, totalling £1.3m; additional overtime due to extreme weather of £0.3m; and specialised agency staff in place to manage contractors of £0.5m; partly offset by efficiencies generated by the PACE (Performance and Customer Excellence) project. The average headcount employed during the year was 3,356, compared to 3,534 in 2009/10. The number of employees in total at March 2011 was 3,259, a reduction of 213 full time equivalents from the March 2010 figure (3,472), mainly in direct operational and employees supporting the capital programme.

Direct power costs increased by £1.3m (3.6%) to £36.6m. The main reasons for the increase were: a meter reading programme in 2009/10 which generated £1.3m worth of refunds in that year; new operating costs resulting from capital investment of £0.9m; extreme weather costs of £0.1m and a decrease in renewable energy credits of £0.1m. These were offset by reduced consumption from 441 GWh in 2009/10 to 439 GWh, saving £0.1m in power costs. The main operational reason for the consumption reduction of £0.3m was due to leakage volume reductions.

Hired and contracted costs have increased by £2.6m (9.4%) to £29.8m. Water Service costs increased by £0.8m: due to additional operating costs as a result of capital investment of £0.2m; extreme weather costs of £1.1m; and increased restructuring costs (PACE project) of £1.0m; partly offset by efficiencies associated with reinstatements of £1.3m. Sewerage service costs have increased by £1.8m: due to additional operating costs as a result of capital investment of £0.3m; increased restructuring costs of £0.9m; and extreme weather costs of £0.4m. Furthermore, there has been an activity shift from water to sewage as a result of improved direct cost capture following the operational restructure to functional teams.

Materials and consumables expenditure decreased by £0.1m (0.3%) to £14.8m. This was driven by leakage volume reductions and operational efficiency improvements of £0.6m, partly offset by chemical price increases and increased operating costs resulting from new investment of £0.5m.

SEPA costs increased by £0.1m (0.8%) to £10.5m due mainly to full year effect of 2009/10 inflationary increases.

Other direct costs increased by £0.4m (6.5%) to £5.8m mainly due to extreme weather costs of £0.7m offset by decrease in insurance claim costs of £0.6m.

General and Support costs increased by £5.5m (13.1%) to £47.2m. The main increases were inflationary and performance pay increases of £0.8m; increased VR and restructuring costs of £2.7m; increase due to the first full year of the management trainee programme of

£0.7m; additional fleet hire costs due to extreme weather of £0.3m; and increased Research and Development costs of £0.9m, including £0.3m payment to UKWIR and various innovation trials.

Business activities

Total business activities expenditure has increased by £1.7m (4.7%) from 2009/10 (as detailed below).

	2010/11	2009/10	Variance
	£m	£m	£m
Customer services	18.046	18.015	(0.031)
Scientific services	12.109	11.709	(0.400)
Other business activities	7.693	6.425	(1.268)
Total business activities	37.848	36.149	(1.699)

Customer services costs have remained unchanged at £18.0m with increases due to billing data cleansing offset by a decrease in council billing and collection service costs.

Scientific services regulated operating expenditure increased by £0.4m (3.4%) due to an increase in direct costs driven by inflation and a slight shift from capital to operational samples.

Other Business Activities costs increased by £1.3m (19.7%) due to an increase in internal regulatory activity; a one off review of historic vacant non household premises of £0.6m; increase in CMA costs of £0.1m; partly offset by a decrease in WICS fees of £0.9m.

Rates

Local authority rates increased by a net £14.0m (42.3%) to £47.4m from 2009/10, due to business rates revaluations. The full increase of £21.4m was offset by a one-off, atypical refund of £7.4m for the 2005-10 period, following the successful appeal of the Water Undertaking 2005 revaluation.

Doubtful debts

Total doubtful debt costs decreased by £2.2m to £24.0m (8.4%), as detailed below.

	2010/11	2009/10	Variance
	£m	£m	
	Charge	Charge	
Regulated	23.992	25.899	+1.907
Non Regulated	0.434	0.759	+0.325
	24.426	26.658	+2.232

The regulated household bad debt charge decreased by £2.0m reflecting the better than expected collection rates of prior year debt. The Non Regulated bad debt charge in 2009/10 included the write-off on a rechargeable job following liquidation of a contractor.

Third party costs

Third party costs have been allocated between core and non core in accordance with Regulatory Accounting definitions. Core Third Party services costs decreased by £0.7m (13.3%) as detailed below, mainly due to reduced support services provided to Scottish Water Business Stream £0.7m.

	2010/11	2009/10	Variance
	£m	£m	£m
Core third party services	4.339	5.006	+0.667
	4.339	5.006	+0.667

Water/Wastewater Split of Costs

The proportion of functional expenditure to water activities has increased to 56% in 2010/11 from 55% in 2009/10, as detailed in the table below.

	2010/11	2010/11	2009/10	2009/10
	£m	%	£m	%
Water	119.172	56.0%	110.879	55.2%
Wastewater	93.643	44.0%	90.108	44.8%
	212.815	100.0%	200.987	100.0%

Water functional expenditure increased by £8.3m (7.5%) from 2009/10 to £119.2m. These increases occurred as detailed below:

- £1.7m (4.3%) increase in employment costs from 2009/10 reflecting pay and pension increases of £0.8m; and extreme weather impact of £0.3m;
- £1.5m (9.4%) increase in power costs is primarily due to refunds received in 2009/10 of £0.9m; extreme weather related costs of £0.1m; additional costs resulting from capital investment of £0.4m; and a decrease in renewable energy credits of £0.1m. These increases were partly offset by reductions in consumption enabled by improved efficiency and leakage volume reduction of £0.3m;
- £0.8m (4.8%) increase in hired and contracted costs is mainly due to additional operating costs as a result of capital investment of £0.2m; extreme weather costs of £1.1m, mainly burst repairs; and increased restructuring costs of £1.0m; partly offset by efficiencies particularly in reinstatements of £1.3m;
- £0.3m (2.9%) increase in materials and consumables is due to new operating costs of £0.3m and extreme weather costs of £0.5m; partly offset by leakage volume reductions of £0.3m;
- £0.6m (17.0%) increase in other direct costs is primarily due to extreme weather costs of £0.7m; partly offset by decrease in insurance claim costs £0.4m; and
- £3.6m (15.3%) increase in general and support costs was due to: inflationary and performance pay increases of £0.5m; increased VR and restructuring costs of £1.6m; increase due to the first full year of the management trainee programme of £0.5m; extreme weather related costs of £0.3m; and an increase in Research and Development costs of £0.5m, including £0.2m payment to UKWIR and various innovation trials; partly offset by efficiencies.

Wastewater functional expenditure increased by £3.5m (3.9%) from 2009/10 to £93.6m. Increases occurred in wastewater are detailed below:

- £0.5m (1.8%) increase in employment costs from 2009/10 reflecting pay and pension increases of £0.5m;
- £0.2m (1.1%) decrease in power costs due to £0.7m credits received; partly offset by new operating costs of £0.5m;
- £1.8m (15.7%) increase in hired and contracted costs, due to additional operating costs as a result of capital investment of £0.3m; increased restructuring costs of £0.9m; and extreme weather costs of £0.4m, mainly blockages and sewer collapses;
- £0.4m (11.3%) decrease in materials and consumables mainly due to reduced E&M expenditure of £0.6m; partly offset by new operating costs of £0.2m;
- £0.2m (2.0%) increase in SEPA Charges due mainly to full year effect of 2009/10 inflationary increases;
- £0.2m (9.0%) decrease in other direct costs due to a decrease in insurance claim costs £0.2m; and
- £1.9m (10.3%) increase in general and support costs was due to: inflationary and performance pay increases of £0.3m; increased VR and restructuring costs of £1.1m; increase due to the first full year of the management trainee programme £0.2m; and an increase in Research and Development costs of £0.4m, including £0.1m payment to UKWIR and various innovation trials; partly offset by efficiencies.

Confidence Grades – Confidence grades on the tables remain consistent with 2009/10.

Direct costs are predominantly captured in the core corporate financial system, with labour costing feeds from the core corporate works management system. A high proportion of direct costs are captured by asset, hence the A2 confidence grade.

In order to achieve A1 accuracy, Scottish Water will need to increase the level of direct cost capture further and build in more accurate and tested allocations of cost where direct cost capture does not provide splits by regulatory classification, e.g. single power meter at a dual function asset.

General & Support costs and Operating expenditure are generally allocated to regulatory activities on the basis of underlying activity and cost driver analysis. Accuracy depends primarily on the quality of cost driver data. Most key drivers are of good quality from reliable system sources and therefore A2 confidence grade is appropriate.

The Reactive and Planned Maintenance analysis remains at A3 reflecting the use of ABM, fed directly from Works Management analysis, for this activity analysis.

Capital Maintenance costs are generated directly from the Fixed Asset Register. Confidence grades remain at A2 reflecting the significant proportion of depreciation captured directly by asset. The only element of capital maintenance which requires significant cost allocation is support asset depreciation, e.g. IT, Fleet, Property. Support asset depreciation is allocated to regulatory activities on the basis of underlying activities and cost driver data. IT depreciation forms the majority of support asset depreciation.

Table E3 and E3a PPP project analysis

Table Overview

Table E3 provides details of the 21 PPP wastewater treatment works that are managed under 9 separate PPP Concession agreements.

The following works form part of each scheme:

PPP Scheme	Wastewater Treatment Works *
Highland	Fort William, Inverness
Tay	Hatton
Aberdeen	Fraserburgh, Peterhead, Nigg, Persley
Moray Coast	Lossiemouth, Buckie, Banff/Macduff
AVSE	Seafield, Newbridge, East Calder, Blackburn, Whitburn
Levenmouth	Levenmouth
Dalmuir	Dalmuir
Daldowie	Daldowie sludge treatment centre
MSI	Meadowhead, Stevenston, Inverclyde

* Daldowie is a sludge treatment centre only.

Table E3 PPP project analysis

E3.0-3 Project data

E3.1 Annual average resident connected population

The annual average resident connected population increased by 9,104 to 2,107,973. This reflects the increase in population reported in Table A3. The confidence grade remains at B3.

E3.2 Annual average non-resident connected population

The annual average non-resident connected population decreased by 6,163 to 23,371. The confidence grade remains at B3 which is unchanged from the Annual Return 2009/10.

E3.3 Population equivalent of total load received

The population equivalent of total load received decreased by 39,192 to 3,079,802. This drop is due to a reduction in the non-domestic load reported as being received at these WWTW.

The population equivalent of total load received consists of the following constituents:

- Population
- Tourist
- Non-domestic load
- Trade effluent
- Imported private septic tanks
- Imported public septic tanks
- Imported other loads
- Imported WWTW sludge
- Imported WTW sludge
- Sludge return liquors

Population (68.45% of total load)

The population load increased by 9,104 p.e.

Tourist (0.76% of total load)

The tourist load decreased by 6,163 p.e.

Non-domestic load (12.95% of total load)

The non-domestic load decreased by 39,823 p.e.

Trade effluent (17.59% of total load)

The trade effluent load increased by 402 p.e. Due to the opening of the retail market to competition in April 2008, the source of this data is now the Central Marketing Agency.

Imported private septic tanks (0.02% of total load)

The imported private septic tanks load increased by 18 p.e.

Imported public septic tanks (<0.01% of total load)

The imported public septic tanks load increased by 61 p.e.

Imported other

No imported other loads were treated at PPP treatment works.

Imported WWTW sludge (0.18% of total load)

The imported WWTW sludge load decreased by 2,707 p.e. More sludge was taken to Sludge Treatment Centres this year leading to a reduction in the load calculated at PPP works.

Imported WTW sludge

No imported WTW sludge was treated at PPP treatment works.

Sludge return liquors (0.06% of total load)

The sludge return liquor load increased by 171 p.e. The confidence grade remains at B3 which is unchanged from 2009/10.

E3.4-8 Scope of works

E3.4 Sewerage

Fort William	includes incoming sewer and four pumping stations.
Inverness	includes a major pumping station and associated pumping mains/gravity sewer.
Hatton	includes extensive pumping mains and pumping stations.
Nigg	includes incoming sewer and 14 pumping stations.
Persley	includes short section of incoming sewer
Peterhead	includes short section of incoming sewer
Fraserburgh	includes short section of incoming sewer and one terminal pumping station.
Moray Coast	includes extensive pumping mains and pumping stations.
Seafield	includes the Esk valley trunk sewerage network, a number of storm water works with overflow and seven sewage pumping stations.
Newbridge	includes short section of incoming sewer, a storm water works with overflow and two pumping stations.
Whitburn	includes one terminal pumping station
Levenmouth	includes eight pumping stations and associated rising mains and sewers.
Daldowie	Includes one pumping station and pumping main
Inverclyde	Includes one outfall

E3.5 Sewage Treatment

Only Daldowie does not include sewage treatment – it is exclusively a sludge treatment centre.

E3.6 Sludge Treatment

Permanent sludge treatment facilities

Inverness	Indigenous sludge, imports from Fort William, plus Scottish Water imports
Hatton	Indigenous sludge plus Scottish Water imports
Nigg	Indigenous sludge, imports from Persley, Peterhead, Fraserburgh, plus Scottish Water imports
Lossiemouth	Indigenous sludge, imports from Buckie, Banff MacDuff, plus Scottish Water imports
Seafield	Indigenous sludge, occasional imports from Newbridge, East Calder, Blackburn, Whitburn, plus Scottish Water imports
Newbridge	Indigenous sludge, imports from East Calder, Blackburn, Whitburn, plus Scottish Water imports
Daldowie	receives sludge from Dalmuir and Scottish Water wastewater treatment works (Shieldhall, Paisley, Dalarnock and Erskine) by sludge pipeline, and from SW tankered imports
Meadowhead	Indigenous sludge, plus imports from Stevenston and Inverclyde
Levenmouth	Indigenous sludge, plus Scottish Water imports*

Temporary sludge treatment facilities

The following sites do not have a permanent sludge treatment centre but temporary sludge treatment facilities were deployed on site for a limited period.

Dalmuir	Temporary centrifuging deployed to limit the pass forward sludge to Daldowie STC to a maximum ferric content of 2 tonne/day
Daldowie (Shieldhall)	Temporary centrifuging deployed to alleviate storage constraints at Daldowie STC

E3.7 Terminal Pumping Station

This means a pumping station that is the final point on the forward flow path from a sewerage network into a wastewater treatment works and may include both pumping of all/partial 'FFT' flows or stormwater flows to storm tanks and/or storm outfalls. The Terminal Pumping Station may form part of the sewerage network (i.e. be remote from the WTP) or may be associated with a wastewater treatment works depending on actual location and power supply source. It is not a Combined Pumping Station or a Stormwater Pumping Station.

The following works include incoming terminal pumping stations as part of the PPP scheme. Maximum capacity (l/s) of terminal pumping station, excluding standby capacity, is given in brackets:

Fort William	Caol Transfer (118 l/s), Fort William WwTW(590 l/s).
Inverness	Allanfearn WwTW(50 l/s).
Hatton	South Balmossie (1,406 l/s), West Haven (110 l/s), Inchcape Park(241 l/s).
Fraserburgh	Fraserburgh Inlet (195 l/s).
Lossiemouth	Duffus Junction (33 l/s), Moycroft (300 l/s).
Buckie	Nook (84 l/s), Shipyard (70l/s), Buckie WwTW (13 l/s).
Banff MacDuff	Craigfauld (552l/s), Banff MacDuff WwTW (222 l/s).
Seafield	A proportion of total flow is delivered via Marine Esplanade Terminal PS (1420 l/s).
Newbridge	A proportion of total flow is delivered via the Ratho Sewer Terminal PS (196 l/s).
Whitburn	A proportion of total flow is delivered via the Harrison Sewer Terminal PS (45 l/s).
Levenmouth	All flow delivered via terminal pumping stations; Methil M2 (125 l/s), Leven (212 l/s), Buckhaven (133 l/s), Levenmouth WwTW inlet FFT flows (1,650 l/s), Levenmouth WwTW inlet storm flows (2,347 l/s).

E3.8 Other

No plants in this category.

E3.9-14 Sewage treatment - effluent consent standard

E3.9-13 Effluent consent standards

Data obtained from the current SEPA consents.

Where effluent consent standard includes both CAR and UWWTD elements the tighter standard is given in the return.

At Meadowhead the CAR license has still not been issued. License is based on COPA consent.

E3.9 Suspended solids consent

All CAR.

Consent at Meadowhead and Inverclyde (both UT only) was not included prior to 10/11.

E3.10 BOD consent

All UWWTD except Newbridge, East Calder, Blackburn and Whitburn.

E3.11 COD consent

All UWWTD.

E3.12 Ammonia consent

All CAR.

E3.13 Phosphate consent

All CAR.

At Newbridge, East Calder, Blackburn and Whitburn consent is expressed as; 'Mean concentration of total phosphorous of any series of composite samples taken at regular but randomised intervals in any period of 12 months.

E3.14 Compliance with effluent consent standards

Compliance for BOD, COD, SS, Ammonia, and Phosphate is reported for each works, based on the total number of sample results and exceedances (upper and lower tier) for sanitary determinands (to the exclusion of other parameters that may be included in the SEPA consent). Where effluent consent standard includes both CAR and UWWTD standards both sets of samples are used for the calculation of compliance.

Percentage compliance is calculated as:

$$(1 - (\text{total number of failures} / \text{total number of samples})) \times 100$$

The SEPA Annual Compliance Report for period ending 31 December 2010 has been taken as the definitive data source, provided by our Regulator, and as such a Confidence Grade of A1 has been assigned. Compliance calculated under this methodology may cause conflicts with Table C4 (C4.19) "Number of discharges confirmed as failing", which considers all SEPA consent parameters.

Failures

Site		Parameter	Date of Failure	Comment
Allanfearn	UWWTD	COD	9/11/10 E	Problems with sludge removal and treatment on site led to a built up of solids within the water treatment stream and a carry over of solids into the final effluent
Persley	CAR	BOD	17/3/10 E	Failure occurred due to a reduced level of treatment (lack of oxygen to bacteria) following the failure of the surface aerators in the second stage aeration process. Aerators had tripped out due to the backing up of flow from a downstream blockage.
	CAR	BOD	14/4/10 E	Failure also due to above (17/3/10) source. Actual source of the failure was not identified until second failure occurred.
Lossiemouth	UWWTD	BOD/COD	22/11/10 E	Failure thought to be due to poor sampling procedures or contamination of final SEPA sample. PFI Co sample was easily within compliance.
	CAR	SS/BOD	30/3/10 F 24/11/10 F REMOVED	Failures removed from sample record following successful appeal to SEPA, who accepted that spot BOD/SS samples should not be used for compliance purposes at this and similar WWTW.
Dalmuir	CAR	Ammonia	16/6/10 E	Low influent flow increased ammonia concentration which Dalmuir is not designed to treat
Inverclyde	UWWTD	BOD	21/6/10 E	The plant has three air blowers normally operating as duty/duty assist/standby. However, from 2nd June until 2nd July 2010 only one of the blowers was available. The WwTW struggled at times as a result of the reduced aeration capacity. Then on 18th June 2010 a DO probe failed and this exacerbated the problems, the combination of which ultimately led to the SEPA BOD sample failure.

E3.15-21 Treatment works category

Information contained in these lines is extracted from the project agreements and is given a confidence grade of A1.

E3.15 Primary.

E3.16 Secondary activated sludge

Includes all plants except Blackburn.

E3.17 Secondary biological

Blackburn.

E3.18 Tertiary A1

East Calder	Nitrifying filters.
Whitburn	Nitrifying filters.

E3.19 Tertiary A2

Inverness	UV disinfection.
Persley	UV disinfection.
Fraserburgh	UV disinfection.
Banff MacDuff	UV disinfection.
Seafield	UV disinfection, plus chemical (peracetic acid) contact tank used on an intermittent basis depending on flow.
Levenmouth	Chemically enhanced settlement process plus UV disinfection.
Newbridge	Low head loss sand filters
East Calder	Low head loss sand filters
Whitburn	Low head loss sand filters
Meadowhead	Biofors tertiary filter

E3.20 Tertiary B1

No plants in this category.

E3.21 Tertiary B2

Blackburn	Low head loss sand filters
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E3.22-32 Sewerage Data

Includes all sewerage (sewers, pumping stations, rising mains, outfalls and long sea outfalls).

Data sources: Concessions Agreements, Operators O&M manuals, Operators asset inventories, SW GIS system, as built drawings, SEPA consents.

Pump capacity (kW) obtained from motor drive rating, not the pump duty point.

SW GIS will be updated to include as built records of new sewer constructed by PFI Co.

E3.22 Total length of sewer

Length of outfalls included in data unless noted otherwise in commentary. Where terminal pumping stations are located remote from a wastewater treatment works, the length of rising main connecting the terminal pumping station and wastewater treatment works is included.

At Hatton there was small change to total length of sewer following investigations (Pell Frischman, Metoc, etc) and sale of westernmost outfall (of twin outfall) at Riverside to Dundee Cold Stores in 2010.

At Levenmouth a new short outfall was constructed as "contingency" to allow repairs to be undertaken to main outfall. It was retained for future use under temporary licence to be granted by SEPA.

E3.23 Total length of critical sewer

Unless stated otherwise, all PPP sewers (including relief sewers, rising mains and CSO outfalls) are deemed to be critical.

Leven PS rising main to storm tank and return drain not deemed to be a 'critical sewer'.

E3.24 Number of pumping stations

Includes stormwater, combined and terminal pumping stations. Interstage and final effluent pumping stations forming part of a wastewater treatment plant are not included.

E3.25 Capacity of pumping stations (m³/d)

Includes stormwater, combined and terminal pumping stations. Maximum flow pumped forward per day. This excludes capacity of standby pumps.

At Hatton there was a change to capacity of the stormwater pumping station at Riverside following investigations (Pell Frischman, Metoc, etc) in 2010.

E3.26 Capacity of pumping stations (kw)

Includes stormwater and combined pumping stations, but not terminal pumping stations. Includes capacity of standby pumps.

At Hatton there was a change to capacity of the stormwater pumping station at Riverside following an investigations (Pell Frischman, Metoc, etc) in 2010.

E3.27 Number of combined pumping stations

Combined pumping station means a network wastewater pumping station containing a pump or pumps transferring wastewater forward within the downstream sewerage network. The transferred wastewater flow rate from the combined pumping station is the "FFT" rate, the generally accepted term used in design and SEPA consents. For the sake of clarity, where stormwater storage tank returns are pumped back into the sewerage system for onward flow, this shall be classed as a combined pumping station (as such flows become part of 'FFT'). Terminal pumping stations are not included.

The following combined pumping stations are included:

Fort William	Blar Mhor, Caol No1
Inverness	Longman
Hatton	Riverside, KGV, Stannergate, West Ferry, Broughty Castle, Fort Street, Gray Street
Nigg	Downies, Portlethen Village, Newtonhill Clifftop, Portlethen South, Backies, Cowie (3), Slughead, Bridge of Muchalls, Cammachmore, Portlethen North
Lossiemouth	Burghead, Cummington, Hopeman, Moycroft
Buckie	Portgordon West, Portgordon East, Seatown, Cluny, Cullen East, Portknockie, Findochty, Portessie
Banff/MacDuff	Whitehills, Whitehills Harbour, Inverboyndie, Scotstown, Castlehill Park, Union Road, Bankhead
Seafield	Wallyford Transfer, Wallyford SWW, Portobello SWW, Harelaw SWW, Dalkeith SWW, Mayshade SWW,
Newbridge	Broxburn SWW.
Levenmouth	Methil M1.

Mayshade: pumping station comprises a separate duty/standby pump set in two separate storm tanks. As only one duty pump operates at any one time (i.e. storm tank 1 emptied before commencing emptying of storm tank 2) these four pumps have been entered as a single combined pumping station on a 1 duty/3 standby basis.

E3.28 Capacity of combined pumping stations (m3/d)

Maximum flow pumped forward per day. This excludes capacity of standby pumps.

E3.29 Number of stormwater pumping stations

Stormwater pumping station means a network wastewater pumping station containing a pump or pumps transferring wastewater, containing stormwater, to a stormwater storage tank or storm overflow. The stormwater pumping station transfers wastewater in excess of "FFT", the generally accepted term used in design and SEPA consents. For the sake of clarity, the function of the stormwater pumping station is to prevent and/or limit surcharging of the upstream sewerage system.

The following stormwater pumping stations are included:

Inverness	Longman (2)
Hatton	Riverside, KGV, Stannergate, Westhaven, Broughty Castle, Inchcape Park
Nigg	Backies (2)
Lossiemouth	Moycroft
Buckie	Portessie
Banff MacDuff	Bankhead
Levenmouth	Leven, Roundall

E3.30 Capacity of stormwater pumping stations (m3/d)

Maximum flow pumped forward per day. This excludes capacity of standby pumps.

At Hatton there was a change to capacity of the stormwater pumping station at Riverside following investigations (Pell Frischman, Metoc, etc) in 2010.

E3.31 Number of combined sewer overflows & E3.32 Number of combined sewer overflows (screened)

CSOs that overflow within the sewerage system rather than to an outfall discharging direct to the environment are not included.

The following CSOs are included:

Fort William	Caol No1, Caol Transfer
Inverness	Longman
Hatton	Riverside, KGV, Stannergate, South Balmossie, Westhaven, Broughty Castle, Inchcape Park, Panmurefield/Balmossie Mill (2)
Nigg	Downies, Portlethen Village, Newtonhill Clifftop, Backies (2), Cowie, Portlethen North, Nigg
Fraserburgh	Fraserburgh Inlet
Lossiemouth	Burghead, Cummington, Hopeman, Moycroft
Buckie	Portgordon West, Portgordon East, Seatown, Cluny, Nook, Cullen East, Portknockie, Findochty, Portessie, Shipyard
Banff MacDuff	Whitehills, Whitehills Harbour, Inverboyndie, Scotstown, Castlehill Park, Union Road, Bankhead, Craigfauld
Seafield	Wallyford, Dalkeith, Hardengreen, Harelaw, Haveral Wood, Middlemills, Newbattle, Newtongrange, Suttieslea
Newbridge	Broxburn
Levenmouth	Buckhaven, Methil M2 CSO2, Methil CSO1, Leven, Roundall

Seafield - Dalkeith SWW consists of two separate screen overflows on two separate legs of the sewer which combine at the SWW. As each screened overflow is located on the same site and feeds one common storm water tank and outfall, this overflow has been recorded as a single CSO. Suttieslea: 'Copa Sac', (equivalent to 6 mm screen), provided on outfall from storm tank.

Levenmouth - Methil CSO1 and Methil M2 CSO2 discharge into a common outfall.

E3.33-40 Sludge Treatment and Disposal Data

The quantities reported are the total sludge treated at the sludge treatment facilities (both from permanent and temporary) including the sludge destroyed through the treatment process. This is in accordance with the methodology used in England & Wales.

The information is based on PPP Company records of sludge disposed to the appropriate route.

Allanfearn sludge quantities disposed and the corresponding costs are included in Table E3 (costs in E3a) to be consistent with the rest of the PPP works.

Table E3a PPP Cost Analysis

This table provides operating costs for each scheme. As actual data is not available, all costs have been extracted from the financial model. Where the financial model does not split costs the following has been assumed:

- Works with a Sludge Centre: 72 % Treatment Costs, 28% Sludge Costs
- All other works: 80% Treatment, 20% Sludge Costs. These sludge costs have been taken forward to the appropriate sludge centre, e.g. Fort William sludge costs appear against Inverness sludge centre.

E3a.1, 8, 16 Estimated Direct Operating Cost

Estimated annual direct operating costs are based on the Concessionaire's financial model adjusted for actual inflation. Major maintenance costs for Aberdeen, AVSE, Dalmuir and Daldowie were omitted in previous years. These have now been included.

Where the model identified Rates and SEPA charges these have been deducted otherwise actual charges were deducted.

No adjustments were made at AVSE (for Rates), Daldowie (for Rates), and MSI (SEPA and Rates) as charges are paid by Scottish Water and are not included in the financial model. At Dalmuir Scottish Water pays the charges but amounts are also included in the model, therefore an adjustment to the model costs was made (Rates and SEPA charges included in the model are refunded to Scottish Water).

Actual costs are not known and could vary considerably from the financial model. A confidence grade of D6 has therefore been used. A confidence grade of A3 was allocated to the Dalmuir sludge treatment and disposal costs as these costs are available.

E3a.2, 9, 17 Rates paid by the PPP Contractor

These are based on the rateable value and poundage published on the government website (www.saa.gov.uk). Rates paid by Scottish Water are also included and are based on actual charges for the year (Dalmuir, Daldowie, MSI, AVSE).

Confidence grade for total rates paid for each site is A2, but because rates have to be split to take account of the sewerage, treatment and sludge elements a lower confidence grade has been applied.

Site	E3a.2 N	E3a.9 T	E3a.17 S	Comment
Fort William	N	B3	N	No sludge centre at works, sludge cost moved to Inverness
Inverness	N	B3	B3	Cost distribution is estimated
Hatton	N	B3	B3	Cost distribution is estimated, based on the Financial Model
Nigg	N	B3	B3	Cost distribution is estimated, based on the Financial Model
Persley	N	B3	N	No sludge centre at works, sludge cost moved to Nigg
Peterhead	N	B3	N	No sludge centre at works, sludge cost moved to Nigg
Fraserburgh	N	B3	N	No sludge centre at works, sludge cost moved to Nigg
Lossiemouth	N	B3	B3	Cost distribution is estimated, based on the Financial Model
Buckie	N	B3	N	No sludge centre at works, sludge cost moved to Lossiemouth
Banff MacDuff	N	B3	N	No sludge centre at works, sludge cost moved to Lossiemouth
Seafield	N	B3	B3	Cost distribution is estimated, based on the Financial Model
Newbridge	N	B3	B3	Cost distribution is estimated, based on the Financial Model
East Calder	N	B3	N	No sewerage and no sludge centre at works, sludge cost moved to Newbridge
Blackburn	N	B3	N	No sewerage and no sludge centre at works, sludge cost moved to Newbridge
Whitburn	N	B3	N	No sludge centre at works, sludge cost moved to Newbridge
Levenmouth	N	B3	B3	Cost distribution is estimated,
Dalmuir	N	B3	N	No sewerage and no permanent sludge centre at works
Daldowie	N	N	A2	No sewage treatment at works
Meadowhead	N	B3	B3	Cost distribution is estimated
Stevenston	N	B3	N	No sewerage and no sludge centre at works, sludge cost moved to Meadowhead
Inverclyde	N	B3	N	No sludge centre at works, sludge cost moved to Meadowhead

E3a.3, 10, 18 SEPA charges paid by the PPP Contractor

Cost allocation is as per the SEPA invoices for 2010/11.

The following confidence grades have been assigned:

Site	E3a.3	E3a.10	E3a.18	Comment
Fort William	A2	A2	N	No sludge centre at works
Inverness	N	A2	A2	No separate cost for sewerage, no sludge centre at works
Hatton	A2	A2	A2	
Nigg	A3	A2	B2	
Persley	N	A2	N	No separate cost for sewerage, no sludge centre at works
Peterhead	N	A2	N	Split provided by PFI Co, no sludge centre at works
Fraserburgh	N	A2	N	No separate cost for sewerage, no sludge centre at works
Lossiemouth	A2	A2	N	No subsistence charge included in invoices
Buckie	A2	A2	N	No sludge centre at works
Banff MacDuff	A2	A2	N	No sludge centre at works
Seafield	A2	A2	A2	
Newbridge	A2	A2	A2	
East Calder	N	A2	N	No sewerage and no sludge centre at works
Blackburn	N	A2	N	No sewerage and no sludge centre at works
Whitburn	N	A2	N	No sewerage and no sludge centre at works
Levenmouth	A2	A2	A2	
Dalmuir	N	N	N	SEPA fees paid by SW
Daldowie	N	N	A2	Sludge treatment only
Meadowhead	N	N	A2	Only PPC fees paid by the PFI Co
Stevenston	N	N	N	SEPA fees paid by SW
Inverclyde	N	N	N	SEPA fees paid by SW

E3a.4, 11, 19, 23 Total Direct Cost

Total of E3a.1-3, 8-11 and 16-18. Confidence grade for Total direct cost is D6 as per E3a.1, 8 and 16 (Estimated direct operating cost) as this is the most significant element of Total direct cost. A confidence grade of A3 was allocated to the Dalmuir sludge treatment and disposal costs as these costs are available.

E3a.5, 12, 20 Scottish Water General and Support Expenditure

This includes advisors and legal costs, power, rent and insurance etc. and the cost of the Scottish Water PPP department that deals with PPP schemes which have been allocated to projects based on opex. Costs are as per the P&L. In addition, Scottish Water costs of inter-site tankering and terminal pumping costs, have been included where tankering or pumping has taken place between a Scottish Water works and a PFI site.

Confidence grade for total charges is A1, but because Scottish Water PPP department costs have to be split across all sites and all charges have to be split to take account of the sewerage, treatment and sludge elements the following confidence grades have been assigned:

A confidence grade of A3 was allocated to the Dalmuir sludge treatment and disposal costs as these costs are available.

	E3a.5	E3a.12	E3a.20	Comment
Site	N	T	S	
Fort William	CX	C4	N	Network cost very small, no sludge centre at works
Inverness	C4	C4	C4	
Hatton	C4	C4	C4	
Nigg	C4	C4	C4	
Persley	CX	C4	N	Network cost very small, no sludge centre at works
Peterhead	CX	C4	N	Network cost very small, no sludge centre at works
Fraserburgh	CX	C4	N	Network cost very small, no sludge centre at works
Lossiemouth	C4	C4	C4	
Buckie	C4	C4	N	No sludge centre at works
Banff MacDuff	C4	C4	N	No sludge centre at works
Seafield	C4	C4	C4	
Newbridge	CX	C4	C4	Network cost very small
East Calder	N	C4	N	No sewerage and no sludge centre at works
Blackburn	N	C4	N	No sewerage and no sludge centre at works
Whitburn	CX	C4	N	Network cost very small, no sludge centre at works
Levenmouth	C4	C4	C4	
Dalmuir	N	C4	A3	No sewerage
Daldowie	C4	N	C4	No sewage treatment at works
Meadowhead	N	C4	C4	No sewerage
Stevenston	N	C4	N	No sewerage and no sludge centre at works
Inverclyde	CX	C4	N	Network cost very small, no sludge centre at works

E3a.6, 13, 21 Scottish Water SEPA Charges

With the exception of Dalmuir and MSI, all standard SEPA charges are met by the Concessionaire and are included in the tariff rates. At Nigg Scottish Water meet the additional SEPA charges associated with 2 parameters as detailed in the contract. Costs are as per the P&L and reflect charges as invoiced by SEPA.

Site	E3a.6	E3a.13	E3a.21	Comment
Fort William	N	N	N	SEPA charges paid by PFI Co
Inverness	N	N	N	SEPA charges paid by PFI Co
Hatton	N	N	N	SEPA charges paid by PFI Co
Nigg	N	A2	N	Treatment cost only (exotics)
Persley	N	N	N	SEPA charges paid by PFI Co
Peterhead	N	N	N	SEPA charges paid by PFI Co
Fraserburgh	N	N	N	SEPA charges paid by PFI Co
Lossiemouth	N	N	N	SEPA charges paid by PFI Co
Buckie	N	N	N	SEPA charges paid by PFI Co
Banff				
MacDuff	N	N	N	SEPA charges paid by PFI Co
Seafield	N	N	N	SEPA charges paid by PFI Co
Newbridge	N	N	N	SEPA charges paid by PFI Co
East Calder	N	N	N	SEPA charges paid by PFI Co
Blackburn	N	N	N	SEPA charges paid by PFI Co
Whitburn	N	N	N	SEPA charges paid by PFI Co
Levenmouth	N	N	N	SEPA charges paid by PFI Co
Dalmuir	N	A2	N	No sewerage, no charge for temporary sludge centre at works
Daldowie	N	N	N	SEPA charges paid by PFI Co
Meadowhead	N	A2	N	Treatment cost only, sludge costs are paid by the PFI Co
Stevenston	N	A2	N	No sewerage and no sludge centre at works
Inverclyde	BX	A2	N	No sludge centre at works

E3a.7, 14,22 Total sewerage cost, total sewage treatment cost, total sludge treatment costs and disposal cost

Confidence grade is D6 as per E3a.1, 8 and 16 (estimated direct operating Cost) as this is the most significant element of the cost.

A confidence grade of A3 was allocated to the Dalmuir sludge treatment and disposal costs as these costs are available.

E3a.15 Estimated terminal pumping cost

Reported costs are as per the costs incurred for the SW operated terminal pumping stations.

Where the terminal pumping station is part of the PPP scheme the costs are met by the Concessionaire and are included in the tariff rates and not reported as part of E3a.15.

E3a.24 Total Scottish Water cost

Total of Scottish Water General and Support Expenditure, and Scottish Water SEPA Charges (E3a.5-6, 12-13 and 20-21).

Confidence grade for total charges is A1, but because Scottish Water PPP department costs and internal recharges have to be split across all sites a confidence grade of C4 has been allocated.

Site	2010/11 £m	2009/10 £m	Variance £m	Comment
Ft William	0.011	0.014	-0.003	
Inverness	0.606	0.577	0.029	2010/11 includes lower Scottish Water operating costs -£0.003m, higher sludge tankering and disposal costs +£0.04m, higher terminal pumping costs +£0.011m, and lower ABM support costs -£0.019
Hatton	0.386	0.332	0.054	2010/11 includes higher Scottish Water operating costs +£0.01m, higher sludge tankering costs +£0.057m, higher terminal pumping costs +£0.006m, and lower ABM support costs -£0.019m
Nigg	1.087	1.032	0.055	2010/11 includes higher legal/consultants fees +£0.007m, higher SEPA fees +£0.014m, and other Scottish Water operating costs +£0.107m, lower sludge tankering costs -£0.055m, and lower ABM support costs -£0.018m
Persley	0.015	0.017	-0.002	
Peterhead	0.012	0.006	0.006	2010/11 includes higher Scottish Water operating costs +£0.006m
Fraserburgh	0.009	0.011	-0.002	
Lossiemouth	0.157	0.071	0.086	2010/11 includes higher Scottish Water operating costs +£0.072m, and higher ABM support costs +£0.014m
Buckie	0.009	0.012	-0.003	
Banff/ Macduff	0.014	0.018	-0.004	
Seafield	0.134	0.025	0.109	2010/11 includes higher Scottish Water operating costs +£0.097m, higher ABM support costs +£0.012m
Newbridge	0.023	0.027	-0.004	
East Calder	0.009	0.011	-0.002	
Blackburn	0.005	0.006	-0.001	
Whitburn	0.005	0.007	-0.002	
Levenmouth	0.140	0.197	-0.057	2010/11 includes lower legal/consultants fees -£0.052m, higher Scottish Water operating costs +£0.032m, lower sludge tankering costs -£0.002, and lower ABM support costs -£0.035m

Site	2010/11 £m	2009/10 £m	Variance £m	Comment
Dalmuir	0.734	0.475	0.259	2010/11 includes sludge disposal costs +£0.23m, increased SEPA fess +£0.021m, other Scottish Water operating costs +£0.016m, and lower ABM support costs -£0.008m
Daldowie	3.329	1.485	1.844	2010/11 includes Shieldhall centrifuging costs and associated tanker diversion costs +£1.767m, higher Scottish Water operating costs +£0.01m, lower sludge tankering costs -£0.037m, and higher ABM support costs +£0.104m
Meadowhead	0.763	0.829	-0.066	2010/11 includes higher Scottish Water operating costs +£0.016m, lower terminal pumping costs -£0.07m, and lower ABM costs -£0.012m
Stevenston	0.315	0.138	0.177	2010/11 includes higher legal/consultants fees +£0.034m, higher SEPA fees +£0.010m, higher terminal pumping costs +£0.117m, and higher ABM costs +£0.016m
Inverclyde	0.076	0.107	-0.031	2010/11 includes lower terminal pumping costs -£0.026m, and lower ABM costs -£0.005m
Total	7.839	5.397	2.442	

E3a.25 Total operating cost

Confidence grade for Total operating cost is D6 as per E3a.23 Total direct cost, as this is the most significant element of Total operating cost.

E3a.26 Annual charge

The Annual charge is based on the service fees for the year, provisions and business rates (including rebates). Expenditure is taken from the P&L.

Confidence grades for each of the AVSE schemes is B3 as the charges are based on the total AVSE flows as there is no separate tariff for each scheme.

Site	2010/11 £m	2009/10 £m	Variance £m	Comment
Ft William	2.910	3.291	- 0.381	2010/11 penalties -£83k, lower flows/loads plus inflation -£0.298m
Inverness	5.475	5.971	- 0.496	2010/11 penalties -£0.75m, lower flows/loads plus inflation +£0.254m
Hatton	20.366	19.963	0.403	2010/11 higher flows plus inflation +£0.531m, Authority Variation -£0.108m, 2009/10 included costs incurred during the pea processing season +£0.02m

Site	2010/11 £m	2009/10 £m	Variance £m	Comment
Nigg	12.943	13.625	- 0.682	2010/11 lower flows/loads, plus inflation -£0.165m, lower business rates rebate +£0.085m, accrual reversals -£0.117m, 2009/10 included Stonehaven claims and variations +£0.539m and accrual reversal -£0.054m
Persley	2.242	2.245	- 0.003	
Peterhead	1.601	1.643	- 0.042	2010/11 lower flows/loads, plus inflation -£0.074m, lower business rates rebate +£0.032m
Fraserburgh	1.950	1.868	0.082	2010/11 slightly lower flows/loads, plus inflation +£0.062m, lower business rates rebate +£0.011m, accrual reversals +£0.034m, 2009/10 included chemical dosing +£0.025m
Lossiemouth	4.665	4.533	0.132	2010/11 higher flow payment, plus inflation +£0.136m, accrual reversals -£0.048m, 2009/10 included recharge of electricity costs to operating company -£0.064m, pump damage +£0.02m
Buckie	2.974	3.003	- 0.029	2010/11 lower flows, plus inflation -£0.029m
Banff/ Macduff	3.450	3.405	0.045	10/11 lower flows, plus inflation +£0.045m
Seafield	17.097	16.486	0.611	2010/11 better compliance with the contract +£0.143m, plus inflation +£0.663m, higher sludge rebate -£0.152m, higher business rates +£0.190m, 2009/10 included Variation cost +£0.067m, release of accruals -£0.048m and additional 2008/09 service fee costs +£0.055m (AVSE total)
Newbridge	2.475	2.345	0.130	
East Calder	1.350	1.350	-	
Blackburn	0.675	0.683	- 0.008	
Whitburn	0.900	0.863	0.037	
Levenmouth	11.521	5.374	6.147	2010/11 higher fees due to high inflation (gas price) +£1.509m, flows in 2010/11 higher than 09/10 +£0.215m, release of accruals -£0.01m, 2009/10 included reduced sludge tankering £0.012m, reversal of claims provision -£4.45m, and land purchase +£0.005m
Dalmuir	10.240	10.389	- 0.149	2010/11 inflation lower than 2009/10 -£0.012, business rates +£0.101m, Annual operations compensation payment -£0.075m, centrifuge project +£1.016m, additional works +£0.044m, accrual reversals -£0.045m, 2009/10 included costs associated with compliance improvement +£1.325m and accrual reversal -£0.147m

Site	2010/11 £m	2009/10 £m	Variance £m	Comment
Daldowie	18.007	22.223	- 4.216	2010/11 higher sludge volumes plus inflation +£2.356m, necessary change costs -£0.998m, higher business rates +£0.086m, claim excess ragging +£0.24m, accrual reversals -£0.28m, 09/10 included Daldowie incident costs (impact of Dalmuir ferric dosing) +£6.238m (£5.11m of which were for the centrifuge operation at Shieldhall and associated tanker diversions), IPPC annual service costs +£0.044m, accrual reversals -£0.663m,
Meadowhead	6.940	7.213	- 0.273	2010/11 service fee inflation +£0.168m, Landfill Tax & Gas cost -£0.143m, higher rates +£0.084m, additional works +£0.75m, accrual reversals -£0.303m, 2009/10 included screenings removal program +£0.392m, accrual reversals -£0.238m
Stevenston	3.325	3.355	- 0.030	2010/11 lower flows, plus inflation -£0.046m, trader necessary change -£0.162m, higher business rates +£0.046m, accrual reversals -£0.241m, 2009/10 included accrual reversals -£0.373m
Inverclyde	3.291	3.234	0.057	2010/11 lower flows, plus inflation +£0.62m, accrual reversals -£0.005m
Total	134.397	133.062	1.335	

E3a.27 Public sector capital equivalent values

Values were derived from the base model incorporated in a report to the Transport and Environment Committee on 21 June 2001 adjusted for inflation. At Daldowie the PPP cost was used in the absence of a PSCE value, similarly for Levenmouth and AVSE the values have been taken from the 2001/02 WIC return.

E3a.28 Contract period

The period quoted is the Contract Period as defined in the Contract.

E3a.29 Contract end date

Contract end date is as defined in the Contract.

Table E4 Water Explanatory Factors - Resources and Treatment

E4.1-12 Source Types

E4.1-5 Source Types

The number of sources has decreased by 6 to 312. This reduction has arisen principally because a number of previously reported sources supplying water treatment works (WTW) were closed during 2010/11. A further 3 sources have been removed where the WTW has been re-classified as being Out of Service and where DI data confirms that they have not been used during 2010/11. In contrast 2 sources have been added which were not included in 2009/10. These are emergency sources for Barclye WTW which were re-instated for 2 months during summer 2010. Details are provided in the table below:

	<i>2009/10 No. of sources</i>	318
Reductions	WTW closures	-6
	Out of service	-3
Additions	New sources	+1
	Emergency sources	+2
	2010/11 No. of sources	312

Distribution input (DI) reduced by 44.3 MI/d to 2000.1 MI/d.

Changes to DI this year are detailed in the table below:

Source Type	2009/10	2010/11	Net Change
	<i>MI/d</i>		
Impounding reservoirs	1496.6	1436.1	-60.5
Lochs	31.9	33.1	+1.2
River and burn abstractions	449.7	460.9	+11.2
Boreholes	66.2	69.9	+3.7
Total	2044.4	2000.1	-44.3

As in previous years, we have completed columns 110–140 by assuming that, where multiple sources feed a WTW, the total average daily output comes only from the primary source. The primary source is therefore allocated 100% of the DI and all other sources are allocated 0%.

The confidence grade for the number of sources is B3. While the number is extracted from our asset inventory, it requires adjustment based on additional information that is not currently held in the asset inventory, namely which sources feed to a particular WTW and whether they are a direct or indirect supply. The confidence grade for columns 110-140 (the average daily output of these sources) remains at B3.

E4.6-7 Bulk water exports and imports

We do not have any raw water exports or imports. Accordingly, a confidence grade of A1 has been entered for these lines.

E4.8-12 Proportion of own source output

There were only minor changes to the source type proportions of total distribution input (DI) this year.

E4.13 Peak demand - peak to average ratio

This line reports the ratio A:B where –

A = the average daily volume into supply in the peak seven day period in the peak year of the preceding five years

B = the average daily volume into supply in the peak year of the preceding five years

The peak year of the last five years was 2006/2007. In that year, A was 2,367.4 MI/d and B was 2,295.9 MI/d. The peak to average ratio is therefore 1.031.

No changes were made to the process or methodology used to report this line. As the figure is based on weekly reported distribution input (DI), the confidence grade assigned to it is based on the confidence grade of the DI in the peak year. The confidence grade therefore remains at C4.

E4.14 Average pumping head – resources and treatment

The reported Average Pumping head this year is 27m, an increase of 0.6m from the previous year.

11 new pumping stations were brought into operational status this year, which is reflected in the change reported.

Although the definitions include a requirement to report on interstage pumping for this line, we have again not included any such information due to insufficient data in this area.

Pumping head data

We note that due to data limitations our confidence grade has decreased in 2010/11. We currently have a limited dataset from which we extrapolate an overall pumping head value across the whole of Scottish Water. We acknowledge that further work is required to improve the quality of this data.

E4.20-26 Water Treatment Works by Process Type

The number of water treatment works (WTW) increased by 4 to 284; the total distribution input (DI) reduced by 44.3 MI/d to 2,000.1 MI/d.

The process for completing Table E is the same as for previous years. Changes to the numbers of WTW by process type have arisen as a result of operational changes this year.

Note: Table E reports all WTW that provided water into supply at any time during the year.

The confidence grade for the number of WTW remains at B2. The confidence grade for total DI remains at B3.

E4.28-39 Water Treatment Works by Size Band

Changes to the number of water treatment works (WTW) in use and proportions (%) of total distribution input (DI) this year are broken down by WTW size band in the table below:

Size Band	2009/10		2010/11		Net Change	
	No.	% ⁽¹⁾	No.	% ⁽¹⁾	No.	% ⁽²⁾
<= 1 MI/d	159	1.1	163	1.1	+4	0
>1, <= 2.5 MI/d	25	1.2	26	1.3	+1	+0.1
>2.5, <= 5 MI/d	31	3.6	30	3.6	-1	0
>5, <= 10 MI/d	16	3.9	16	4.3	0	+0.4
>10, <= 25 MI/d	21	11.4	21	11.7	0	+0.3
>25, <= 50 MI/d	12	13.9	12	14.3	0	+0.4
>50, <= 100 MI/d	10	24.2	10	24.6	0	+0.4
>100, <= 175 MI/d	4	17.7	4	16.3	0	-1.4
>175 MI/d	2	22.8	2	22.8	0	0
Total	280		284		+4	

Notes: (1) Does not tally to 100% due to rounding; (2) Does not balance due to aforementioned rounding.

The confidence grade for proportion of total DI remains at C3.

E4.15-39 Functional costs by operational area, process and size band

Water Resources & Treatment E4.19

	Total
Functional expenditure:	£m
2010/11	49.103
2009/10	47.679
	<u>(1.424)</u>

Water resources and treatment costs increased by £1.4m (3.0%) from 2009/10. This is analysed as follows:

- £0.2m (1.5%) increase in employment costs due in the main to pay and pension increases;
- £1.0m (11.7%) increase in power costs is primarily due to refunds received in 2009/10 of £0.5m; new operating costs of £0.4m; reduction in renewable energy credits of £0.1m; partly offset by improved supply management and leakage reduction costs of £0.2m;
- £0.1m (2.2%) decrease in hired and contracted costs is mainly due to operational efficiencies partly offset by new operating costs of £0.2m;

- Materials and consumables remained stable at £10.1m due to: new operating costs of £0.3m; offset by the impact of leakage volume reductions of £0.3m;
- £0.1m (2.2%) decrease in SEPA charges;
- Other direct costs remained stable at £1.5m; and
- £0.3m (3.0%) increase in general and support costs due to inflationary and performance pay increases £0.1m; increased VR and restructuring costs £0.5m; an increase in Research and Development costs of £0.1m; partly offset by better identification of hires and fuel costs against water distribution due to functional restructuring of £0.2m.

Water resources and treatment costs analysed by region:

	North	East	South	West	Total
	£m	£m	£m	£m	£m
Functional expenditure: 2010/11	11.376	12.742	10.190	14.795	49.103

Analysis of water resources and treatment costs by process type:

Process Type	2010/11	2009/10	
	£m	£m	£m
SD : Simple Disinfection	2.258	2.398	+0.140
W1 : SD plus simple physical or chemical treatment	0.212	0.249	+0.037
W2 : Single stage complex physical or chemical treatment	8.260	8.121	(0.139)
W3 : Multiple stage complex treatment, excluding W4	33.450	30.103	(3.347)
W4 : Very high cost treatment Process	4.923	6.808	+1.885
	49.103	47.679	(1.424)

Changes to the numbers of WTW by process type have arisen as a result of operational changes and process re-classifications in WTW during 2010/11. Re-stating 2009/10 figures on like-for-like basis shows the following variations:

Process Type	2010/11	2009/10	
	£m	£m	£m
SD : Simple Disinfection	2.258	2.326	+0.068
W1 : SD plus simple physical or chemical treatment	0.212	0.206	(0.006)
W2 : Single stage complex physical or chemical treatment	8.260	8.052	(0.208)
W3 : Multiple stage complex treatment, excluding W4	33.450	32.423	(1.027)
W4 : Very high cost treatment Process	4.923	4.672	(0.251)
	49.103	47.679	(1.424)

Movements in individual works explain the increases and decreases by category. Some of the larger movements, which do not follow the profile of overall movements, are explained as follows:

- 8 new/replacement works in process type W3 leading to increased opex costs of £0.7m;
- Turret WTW [West, 50-100 MI/d, W3] increased by £0.3m, due to a drop in renewable energy credits of £0.1m, and SEPA credit in 2009/10 costs of £0.1m; and
- Ullapool WTW [North, 1-2.5 MI/d, SD] was closed during the year £0.1m.

Analysis of water resources and treatment costs by size band:

Size band	2010/11	2009/10	
	£m	£m	£m
<=1 MI/d	7.374	6.466	(0.908)
>1 to <=2.5 MI/d	2.959	2.467	(0.492)
>2.5 to <=5 MI/d	4.839	4.783	(0.056)
>5 to <=10 MI/d	4.520	4.433	(0.087)
>10 to <=25 MI/d	9.173	8.863	(0.310)
>25 to <=50 MI/d	6.927	6.711	(0.216)
>50 to <=100 MI/d	5.572	5.644	+0.072
>100 to <=175 MI/d	3.720	4.346	+0.626
>175 MI/d	4.019	3.966	(0.053)
	49.103	47.679	(1.424)

Movements in individual works explain the increases and decreases by size band. Some of the larger movements, which do not follow the profile of overall movements, are explained as follows:

- 6 new/replacement works in the 0-1 MI/d band leading to increased costs of £0.4m;
- Burncrooks WTW [West, 10-25 MI/d, W3] increased £0.3m due to water quality incident;
- Invercannie WTW [East, 25-50 MI/d, W3] increased £0.2m due to major filter upgrade in 2009/10;
- Muirdykes WTW [West, 50-100 MI/d, W3] decreased £0.2m due to more robust identification of distribution pumping costs; Blairlinnans WTW [West, 50-100 MI/d, W2] decreased £0.2m due to additional expenditure in 2009/10 when sludge press was not operational; and Turret WTW [West, 50-100 MI/d, W3] increased £0.3m; and
- Carron Valley WTW [West, 100-175 MI/d, W3] decreased £0.5m due to additional expenditure in 2009/10 when sludge press was not operational.

Costs which are directly attributable to abstraction and treatment are charged to the specific asset cost code in Peoplesoft, either via direct charging, Ellipse timesheets or work orders. Of the £49.1m total resource and treatment costs, £40.3m of costs or 82.0% (£44.3m less £4.0m distribution costs) have been directly charged to assets in our corporate costing system.

Other costs have been allocated to Water Resources and Treatment through ABM support activity allocation, e.g. stores based on number of issues, IT applications based on number of users, etc. Therefore, support costs are allocated on a resource consumed basis. However, many of these costs are not specific to an asset; they are generally attributable to an employee. It follows that the majority of these support costs should be allocated to the activities the employees have been completing.

Confidence Grades

Confidence grades on Table E4 are consistent with grades in the general E table commentary.

Direct costs are predominantly captured in the core corporate financial system, with labour costing feeds from the core corporate works management system. A high proportion of direct costs are captured by asset, hence the A2 confidence grade. A smaller proportion of costs – mainly general and support costs – remains to be allocated to works by means other than direct capture.

Table E6 Water Distribution

E6.1 Annual average resident connected population

The annual average resident connected population increased by 21,447 to 5,056,507. This figure is consistent with the figure reported in A2.1.

Our methodology for allocating the population to the four operational regions is slightly different to previous years as the new operational boundaries are no longer based on council boundaries. This year they are based on water operational area boundaries. This has resulted in the population figures, provided by the Local Authorities, being apportioned across the regions based on the split of address points (see line E6.2).

A data extract from the corporate GIS system in the form of a matrix of water operational area by unitary authority is obtained. A similar matrix is obtained of non-household property counts. The number of household properties is obtained by subtracting the number of non-household properties from the total number of address points. The property numbers are then adjusted to match the local authority totals.

The unmeasured household population by operational region is calculated by multiplying the number of unmeasured household properties by the occupancy rate of the associated Local Authority.

The number of measured household properties within each water operational area is multiplied by the SW average occupancy rate to give the measured household population.

The non-household population is allocated based on the number of hospitals and prisons.

The unmeasured household, measured household and non-household populations are summed together for each water operational area. The populations by water operational area are then summed to the four operational regions.

The confidence grade remains at A2.

E6.2 Total connected properties

The total number of connected properties increased by 161 to 2,571,048. This figure is consistent with the figure reported in A1.10.

Please refer to the commentary for A1.9 for details of the changes to the number of connected properties.

For unmeasured household properties, we used the methodology described in the commentary for E6.1 to allocate households from local authorities to water operational areas.

Measured household properties were assigned to water operational areas based upon their postcode.

For non-household properties, data from the corporate system (Wholesale datamart), which lists all supply points related to the retail market, was allocated a spatial reference and then assigned to water operational areas.

The properties, by type, were summed together for each water operational area then the appropriate operational areas were added to provide the figures for each of the four operational regions.

The confidence grade remains at B2.

E6.3 Volume of water delivered to households

The volume of water delivered to households decreased by 1.9 MI/d to 842.2 MI/d. This figure is consistent with the sum of the figures reported in A2.11 and A2.12.

The volume was calculated by operational region using the population and property figures calculated for lines E6.1 and E6.2 respectively.

The confidence grade remains at B3 at Regional level and at B2 for the Scottish total due to uncertainty of the regional allocation of customers.

E6.4 Volume of water delivered to non-households

The volume of water reported as delivered to non-households decreased by 8.5 MI/d to 436.8 MI/d. This figure is consistent with the sum of the figures reported in A2.13 and A2.14.

The measured non-household volume was allocated to water operational areas. Within the corporate systems it is possible to assign each supply point to a water operational area and hence an operational region using the address information. There were a number of supply points for which the address information was insufficient to enable allocation in this way and for the majority of these supply points the meter location was used to assign the volume to a water operational area. Any remaining volume was proportionally allocated across the water operational areas based on the allocated volume.

The volume of water delivered to unmeasured non-household properties was also allocated to water operational areas using the address information of each supply point. Any volume that could not be allocated using address information was allocated across the water operational areas based on the allocated volume.

The total non-household volume was then summed for each water operational area and these totals were summed to operational regions.

The confidence grade remains unchanged at B4.

E6.5 Area

Due to slight differences in the digitisation of the new operational regions the area has increased slightly to 79,796km².

The confidence grade remains at A1, reflecting the fact that the operational region boundaries are taken directly from the corporate GIS.

E6.6 Number of supply zones

The number of supply zones decreased by 8 to 315.

Although 315 zones are reported, Scottish Water are only sampling in 314 of them. One zone, Backwater, was created based on a belief that the works serving this zone was public. After further investigation this was found to be incorrect but as the zone had already been

reported to the DWQR we were unable to remove it from our corporate systems. The DWQR has been made aware of this.

Changes in zones topology are tracked and recorded by the Water Quality Regulation Zone procedure and have a full audit trail.

The confidence grade remains at A1.

E6.12-16 Potable mains

There were no significant changes in the figures of Bands 1-4 or total length of mains.

The inventory is reported from our corporate GIS, where the diameter field is populated to 99.4% leaving only 291km of mains not populated with diameter. The default value used to infill is DN150, falling into Band 1, which is the largest band.

Bands coincide with nominal size bands for newer materials, which are based on external diameter and use size bands from previous returns.

The confidence grades remains at B2.

E6.17 Total length of unlined iron mains

The total length of unlined iron mains decreased by 124.4km to 13,351.1km.

The report relies on population of the material and lining attributes in the inventory.

191km of GIS potable main was populated by the Infill material model and is defaulted to unlined spun iron, constituting less than 1.4% of reported value. 148 km (1.1%) of potable main was been identified as lined, rather than unlined, and an adjustment has been made for this although the GIS Inventory has not yet been updated.

The information available for pipe lining is not fully complete, with 41% of ferrous inventory having null or unknown lining attribute. GIS lining attribute signified as bitumen and unknown for cast, grey and spun iron is included as unlined iron main. Ductile iron is assumed to be cement lined where the lining material is unknown and totals 1,852km.

The confidence grade remains at B2.

E6.18 Total length of mains >300mm diameter

The total length of mains greater than 300mm diameter increased by 58.3km to 3,856.7km.

The inventory is reported from our corporate GIS, where the diameter field is populated to 99.4% leaving only 291km of mains not populated with diameter. As the default value used to infill is DN150, with no adjustment for statistical spread, the length of mains greater than 300mm diameter may be marginally under-reported, but still safely remains inside the reported confidence grade banding.

The confidence grade remains at B2.

E6.19 Water mains bursts

The number of water mains bursts decreased by 428 to 9,851.

Temperatures across the whole of Scotland fell well below average over the months of December and January. A series of heavy snowfalls caused massive disruption resulting in a similar high trend of bursts as seen during the same period last year. Although similar high burst intensity is evident, the total mains bursts peak of 1,690 in January last year dropped by 18% to a peak of 1,383 in December of this year.

An overall increasing trend in the number of bursts was evident over the first eight months of the report year. Burst rates during December increased 18% on last December however there was an equal percentage drop on burst rates during January compared with last year.

The trend over the last two years has generally been of an increase in the number of reported bursts with a 7% increase during 2008/09 and a further 12.3% increase during 2009/10; however this report year saw a decrease of 4.2%. In 2009/10 there was an 11.8% decrease in the number of unreported bursts and a further 4% decrease in 2010/11.

The annual unreported number of bursts for the reporting year is 19% of the total number of bursts, leaving 81% being reported bursts. This split is equivalent to last year.

The confidence grade remains at B3.

E6.20 Leakage level

The reported top-down leakage level decreased by 26.6 MI/d from 783.5 MI/d in 2009/10 to 756.9 MI/d in 2010/11.

The confidence grade remains at B3.

We also report leakage in terms of Maximum Likelihood Estimation (MLE) leakage in A and G tables. Our MLE reported leakage for 2010/11 is 699.1 MI/d which is a 39.1 MI/d reduction on our reported MLE leakage of 738.2 MI/d for 2009/10.

E6.21 Properties reported for low pressure

The overall number of low pressure properties has reduced from 2,496 to 1,962. Targeted investment and operational changes have improved pressure to 518 properties during 2010/11. No properties have been recorded as being added to the register due to investigation work, through customer complaints, or due to better information. Further investigation work has also resulted in 18 properties being removed through better information. 2 properties were added as a result of asset deterioration and no properties have been added due to operational changes.

The confidence grade remains at B2.

<i>2009/10 Properties reported for low pressure</i>	<i>2,496</i>
Removed due to operational improvements	-446
Removed due to asset improvements	-72
Removed due to better information	-18
Added due to asset deterioration	+2
2010/11 Properties reported for low pressure	1,962

E6.22-25 Pumping Stations

E6.22 Total number of pumping stations

The total number of pumping stations increased by 8 to 564. The table below shows the change in the number of stations recorded in the corporate asset inventory as being operational during this year:

<i>2009/10 No. of pumping stations</i>	<i>556</i>
Stations removed	-10
Stations added	18
2010/11 No. of pumping stations	564

The confidence grade remains at B2.

E6.23 Total capacity of pumping stations

The total capacity of pumping stations is 2,318,190 m³/d.

The change recorded this year is partly attributed to the increase in asset numbers and a change in methodology. However, the majority of the increase in recorded results comes from improved data quality. There is now recorded capacity in terms of Power Rating available for nearly all pumping stations. A ratio is calculated on the relationship between power rating and hydraulic capacity for sites where both parameters were known. We discount those stations which statistically were outwith of the normal range. This calculated ratio was then applied to the pumping stations where hydraulic capacity is not recorded. The increase in data available has resulted in an increase in the capacity reported.

The confidence grade has remained at C4, reflecting the level of extrapolation used to derive the reported figures.

E6.24 Total capacity of booster pumping stations

The total capacity of booster pumping stations decreased by 409.6 kW to 41,310.6 kW.

Our methodology for determining the design capacity (in kW) of stations remains unchanged. The decrease is partly as a result of removal of large capacity sites, e.g Buchley TWP and improved asset data.

The confidence grade remains at C3.

E6.25 Average pumping head

Average pumping head is reported as 30.43m this year. This reflects an increase of 0.59m on the previous year.

18 new pumping stations were brought into operational status this year, which is reflected in the change reported.

Pumping head data

We note that due to data limitations our confidence grade has decreased in 2010/11. We currently have a limited dataset from which we extrapolate an overall pumping head value across the whole of Scottish Water. We acknowledge that further work is required to improve the quality of this data.

E6.26-27 Service Reservoirs

The total number of service reservoirs decreased by 18 to 1,411. 10 new service reservoirs were commissioned during the year. The changes are generally the result of operational revisions across the network.

The total capacity of service reservoirs decreased by 14.47 MI to 3,826 MI.

The confidence grades remain at B2.

E6.28-29 Water Towers

The total number of water towers decreased by one to 20.

This reduction was due to the closure of one tower. This resulted in a reduction in the total capacity of water towers, which decreased by 0.11 MI to 38.7 MI.

The confidence grades remain at B2.

E6.7-11 Functional Cost

Water Distribution E6.11

	Total
Functional expenditure:	£m
2010/11	70.069
2009/10	63.200
	<u>(6.869)</u>

Water distribution costs increased by £6.9m (10.9%), from 2009/10. This is analysed as follows:

- £1.5m (5.8%) increase in employment costs due to: pay and pension increases of £0.5m; and extreme weather related costs of £0.3m;
- £0.5m (6.5%) increase in power costs mainly due to refunds received in 2009/10 of £0.4m; more robust identification of distribution pumping costs at treatment works of £0.3m; partly offset by improved supply management and leakage reduction costs of £0.2m;
- £0.8m (6.2%) increase in hired and contracted services due mainly to extreme weather related costs of £1.1m, mainly burst repairs; and increased restructuring costs of £1.0m; partly offset by efficiencies particularly in reinstatements of £1.3m;
- £0.3m (22.8%) increase in materials and consumables due mainly to extreme weather related costs of £0.5m; partly offset by operational efficiencies;
- £0.5m (28.2%) increase in other direct costs due to extreme weather related costs of £0.7m; partly offset by decrease in insurance claims costs of £0.3m; and
- £3.3m (22.5%) increase in general and support costs was due to inflationary and performance pay increases of £0.2m; increased VR and restructuring costs of £1.2m; an increase in Research and Development costs of £0.3m; extreme weather related costs of £0.3m; and increase in hires and fuel costs of £1.0m; partly offset by efficiencies.

Water distribution costs are analysed by region:

	North	East	South	West	Total
	£m	£m	£m	£m	£m
Functional expenditure:					
2010/11	10.125	19.091	19.962	20.891	70.069

Some of the larger (power) movements are:

- Changes in the allocation to Distribution Pumping costs following reviews, based on pump ratings and run times, give increases at Balmore of £0.2m, Hoy and Calder of £0.1m, Turriff of £0.1m, and a decrease at Lock Eck of £0.1m.

Confidence Grades

Confidence grades on Table E6 are consistent with grades in the general E table commentary.

Direct costs are predominantly captured in the core corporate financial system, with labour costing feeds from the core corporate works management system. A high proportion of direct costs are captured by asset or zone, hence the A2 confidence grade.

Scottish Water has slightly lower confidence levels on Network cost analysis than treatment cost analysis. This is due to lower levels of direct labour capture on Networks.

Table E7 Wastewater Explanatory Factors - Sewerage & Sewage treatment

E7.1 Annual average resident connected population

The annual average resident connected population increased by 13,640 to 4,767,150.

The confidence grade remains at B2.

E7.2 Annual average non-resident connected population

The annual average non-resident connected population decreased by 16,239 to 69,931.

Tourist population this year has been determined on the basis of average bed spaces multiplied by an average occupancy factor in line with the methodology used in 2009/10. Monthly average occupancy rates are no longer available from VisitScotland. This year we used the 2010 average occupancy rate from VisitScotland for eleven months of the year and the peak monthly occupancy rate as recommended by WICS for the remaining one month of the reporting year.

The confidence grade remains at C4.

E7.3 Volume of sewage collected (daily average)

The daily average volume of sewage collected increased by 28.2 MI/d to 3,049.0 MI/d. This increase was as the result of slightly more rainfall during the reporting year.

The average daily volume collected has been calculated as the flow which arrives in a public sewer (of any type) from any source e.g. rainfall, infiltration, domestic use, industrial use, tidal flows and connected watercourses. The approach used is the same as that in previous years and has been applied consistently across the country. It uses data sets for rainfall, connected properties and sewered areas consistent with the wastewater element of the Annual Return.

The flow has been calculated in two parts; the dry weather flow and the storm flow.

Dry Weather Flow: A factor has been established that relates the number of connected properties to the amount of sewer flow in periods without rainfall. To establish this figure a number of recordings of flows with a known connected population were analysed to establish a range of flow per connected population. These factors were averaged and applied to all sewered areas to establish a total dry weather flow contribution per sewered area.

Storm Flow: The storm flow element was calculated by using existing sewer models to establish a relationship between rainfall depth, area of the sewered area and the amount of run-off generated. A selection of models was used and an average value of run-off per millimetre rainfall per hectare of sewered area was established. This was then applied to each sewered area to establish a total storm flow contribution per sewered area.

The total sewage collected was calculated (dry weather plus storm flows) for each sewered area and a total for each operational region calculated.

This figure includes all flows that are collected by the wastewater network but does not necessarily relate to the flows that arrive at treatment sites as a proportion of flows will be discharged via overflows and other flows collected by storm sewers will be discharged without treatment.

The confidence grade remains at C4.

E7.4 Total connected properties

The total number of connected properties figure increased by 2,122 to 2,449,066.

This rise reflects the increase in properties connected to the wastewater network as reported in A1.21.

The confidence grade remains at B2.

E7.5 Area of sewerage district

The area of sewerage district has increased slightly to 79,796km².

The boundaries were redrawn in our corporate GIS to reflect the change from eight to four operational areas. This has led to a slight change in the overall total. The confidence grade remains at A1, reflecting the fact that the operational region boundaries are taken directly from the corporate GIS.

E7.6 Drained area

The drained area decreased slightly by 1km² to 1,895km². This fall is as a result of ongoing verification of the sewered areas in our corporate GIS.

The confidence grade remains at B2.

E7.7 Annual precipitation

During 2010/11 annual precipitation was 1,194mm, which is 24 mm higher than in 2009/10.

We have again used radar rainfall data from the Met Office as the source data for this line. This gives rainfall intensities at five minute intervals using a 1km grid spacing.

The confidence grade remains at A2.

E7.8 Total length of sewer

The total length of sewer increased by 326km to 50,412km. This increase is comprised of: an increase of 274km of main sewer; an increase of 52km of rising main.

The information comprises our GIS inventory (33,372km), an off-inventory addition of missing sewers (585km) and a statistical calculation of lateral sewer length from unit length connections by dwelling (16,455km).

The confidence grade remains at C4.

E7.9 Total length of lateral sewer

The total length of lateral sewer has increased by 112km to 16,455km. The calculation used is based on the number of properties connected to the wastewater network (connected properties). These are supported by a proximity calculation which allocates the Ordnance Survey Address Point References (OSAPRs) located within 70m of the wastewater network. This is the same methodology as used in previous returns. CACI house type proportions in each operational region are also used as part of this calculation.

The number of connected properties reported has increased by 0.09%. New data from our corporate GIS, on properties having sewers within 3 metres, has refined the lateral sewer calculation, increasing the rise in inventory due to the refinement of the number of properties connected to the wastewater network.

Unit lengths of lateral sewer are derived from a 2004 survey and checked for validity in 2006 by a GIS desktop study. The figures use dwellings/premises numbers rather than Ordnance Survey property seed points. The statistical sample size is not, however, large enough for the allocation of a high confidence grade.

The confidence grade remains at C4.

E7.10 Length of combined sewer

The length of combined sewer increased by 35km to 17,462km.

As modern sewerage systems are constructed with separate foul and storm sewers for new builds, any rise in length of combined sewer results from legacy record data being added to the corporate system and any outfall pipe construction.

The figure is derived from a record inventory with known gaps in asset stock, however sewer usage is populated to high levels. No off-inventory allowance is made for combined sewers.

The confidence grade remains at B2.

E7.11 Length of separate stormwater sewer

The length of separate storm sewer decreased by 43km to 8,092km. This fall is mainly due to a reduction in off-inventory adjustment this year, which fell from 325km to 260km. The figure is derived from a record inventory with known gaps in asset stock, however sewer usage is populated to high levels.

The confidence grade remains at B2.

E7.12 Length of sewer >1000mm diameter

The length of sewer greater than 1000mm diameter increased by 13km to 858km. Continuing asset recording activity from our capital investment programme is resulting in a consistent rise in this figure.

The figure is derived from a record inventory with known gaps in asset size attribute. Infill rule bases or missing inventory adjustments do not influence this size band.

The confidence grade remains at B2.

E7.13 Length of critical sewer

The length of critical sewer increased by 20km to 11,492km. This increase is mainly due to the movement of non-critical sewers to Critical Sewers.

The figure is derived from analysis of a record inventory with known gaps in asset stock.

The classification of critical sewers uses the WRc methodology for asset size, material, depth and proximity to particular features.

The confidence grade remains at B3.

E7.14 Sewer Collapses

The number of sewer collapses increased by 680 to 5,132.

The number of collapses that occurred in the period from 2006 to 2008 was in the region of 2,400 to 2,700; however each year since then has seen significant rises in the reported figure. An increase in the number of repairs undertaken may also account for a proportion of the rise.

The confidence grade is reported as B4.

E7.20-29 Pumping Stations

E7.20 Total number of pumping stations

The total number of pumping stations increased by 21 to 2,032.

A pumping station is defined as an individual site (i.e. not an individual pump). It includes foul, combined and stormwater pumping stations situated at treatment works but excludes inter-stage pumping.

The confidence grade remains at B3.

E7.21 Total capacity of pumping stations (m³/d)

The total capacity of pumping stations increased by 45,981 m³/d to 12,172,930 m³/d.

This figure is based on extrapolated corporate data as not all stations have a design capacity in m³/d recorded in the corporate asset inventory.

The confidence grade remains at C4, reflecting the level of extrapolation used to derive the figure.

E7.22 Total capacity of pumping stations (kW)

The total capacity of pumping stations increased by 333 kW to 74,696 kW.

Our methodology for determining the design capacity (in kW) of stations is the same as last year, therefore the increase is due to revisions to the assets.

The confidence grade remains at C4.

E7.23 Average pumping head

The average pumping head is reported at 30.0m this year an increase of 0.2m compared with the previous year.

Pumping head data

We note that due to data limitations our confidence grade has decreased in 2010/11. We currently have a limited dataset from which we extrapolate an overall pumping head value across the whole of Scottish Water. We acknowledge that further work is required to improve the quality of this data.

The confidence grade remains at C5.

E7.24 Total number of combined pumping stations

The total number of combined pumping stations increased by 231 to 1,295.

The increase reflects the result of a review of current corporate data, which has re-classified a number of pumping stations from Foul to Combined, and the inclusion of 21 pumping stations moving to operational status during the year.

The confidence grade remains at B3.

E7.25 Total capacity of combined pumping stations

The total capacity of combined pumping stations is 9,974,071 m³/d.

The change recorded this year is partly attributed to the change in asset numbers. However, the majority of the movement recorded results from improved data quality. The increase in data available has improved our reported capacity.

The confidence grade has remained at C4, reflecting the level of extrapolation used to derive the reported figures.

E7.26 Total number of stormwater pumping stations

The total number of stormwater pumping stations decreased by 3 to 35. The decrease reflects the result of a review of current corporate data.

The confidence grade remains at B3.

E7.27 Total capacity of stormwater pumping stations

The total capacity of stormwater pumping stations decreased by 278,322 m³/d to 270,608 m³/d.

We have explained the factors behind our capacity at pumping stations in commentary line E7.25.

The confidence grade remains at C4.

E7.28 Number of combined sewer overflows

The number of combined sewer overflows (CSOs) decreased by 69 to 3,172.

Work on unsatisfactory intermittent discharge initiatives continued this year, leading to assets, which had previously been incorrectly recorded as CSOs, being reclassified as bifurcation chambers (i.e. sewer to sewer overflows). This has led to a drop in the inventory reported.

This is a consistently improving inventory record, though the confidence grade remains at A3.

E7.29 Number of combined sewer overflows (screened)

The reported number of combined sewer overflows (CSOs) with screening in place increased by 131 to 895. Screened CSOs constitute 28.2% of the total number of CSOs reported in E7.28.

The confidence grade remains at A3.

E7.30 Number of sewage treatment works

The number of sewage treatment works (WWTW) decreased by 33 to 1,905.

There is a continuing decreasing trend in the number of WWTW (from 1,963 reported in 2006/07), which is a reflection of the investment in WWTW rationalisation during the previous investment period.

We have increased the confidence to A3 to reflect the fact that this data is taken directly out of our corporate inventory database.

E7.31 Total load

The total load decreased by 731 kg BOD/day to 227,884 kg BOD/day. This reduction reflects the net change in the constituent components of the works loads. Due to rounding the individual differences may not add up to the total difference.

The load consists of the following constituents:

- Population
- Tourist
- Non-domestic load
- Trade effluent
- Imported private septic tanks
- Imported public septic tanks
- Imported other loads
- Imported WWTW sludge
- Imported WTW sludge
- Sludge return liquors

Population (70.01% of total load)

The population load increased by 294 kg BOD/day. The increase in population load is a reflection of the increase in population reported in line E7.1.

Tourist (1.23% of total load)

The tourist load decreased by 605 kg BOD/day. This reduction is connected to the change in the source data as described in the commentary for line E7.2.

Non-domestic load (9.84% of total load)

The non-domestic load decreased by 607 kg BOD/day. Due to the opening of the water industry retail market to competition in April 2008, the source of this data is now the Central Market Agency.

Trade effluent (16.61% of total load)

The trade effluent load increased by 2,085 kg BOD/day. Due to the opening of the water industry retail market to competition in April 2008, the source of this data is now the Central Market Agency.

Imported private septic tanks (0.06% of total load)

The imported private septic tanks load decreased by 182 kg BOD/day. Although the number of private septic tanks emptied has shown an increase over 2009/10, the majority of septic tank waste was discharged directly to Sludge Treatment Centres.

Imported public septic tanks (0.09% of total load)

The imported public septic tanks load increased by 18 kg BOD/day.

Imported other loads (0.20% of total load)

The imported other load increased by 69 kg BOD/day. There was a significant increase in the amount of Waste Recycling Sludge being introduced to works inlets.

Imported WWTW sludge (1.18% of total load)

The imported WWTW sludge load decreased by 1,549 kg BOD/day. More sludge was discharged directly to Sludge Treatment Centres this year.

Imported WTW sludge (0.66% of total load)

The imported WTW sludge load decreased by 378 kg BOD/day. More sludge was discharged directly to Sludge Treatment Centres this year.

Sludge return liquors (0.12% of total load)

The sludge return liquor load increased by 123 kg BOD/day. The increase in this figure reflects the increase in wastes directly discharge to Sludge Treatment Centres.

The confidence grade remains at B3.

E7.15-19 Sewerage Costs

Sewerage E7.19

	Total
Functional expenditure:	£m
2010/11	39.200
2009/10	<u>37.009</u>
	<u>(2.191)</u>

Sewerage costs increased by £2.2m (5.9%) from 2009/10. This is analysed as follows:

- £0.7m (5.1%) increase in employment costs due mainly to pay and pension increases £0.3m;
- £0.9m (13.8%) decrease in power costs was due mainly to credits received of £0.7m in 2009/10;
- £1.7m (31.0%) increase in hired and contracted costs due to increased restructuring costs of £0.9m; and extreme weather related costs of £0.5m, mainly blockages and sewer collapses;
- £0.1m (13.4%) decrease in materials and consumables on network maintenance activity;
- SEPA charges remained stable at £1.0m;
- £0.3m (26.0%) decrease in other direct costs due to decrease in insurance claim costs of £0.2m; and
- £1.2m (14.0%) increase in general and support costs due to: inflationary and performance pay increases of £0.2m; increased VR and restructuring costs of £0.6m; and an increase in Research and Development costs of £0.2m; partly offset by efficiencies.

Sewerage costs are analysed by region:

	North	East	South	West	Total
	£m	£m	£m	£m	£m
Functional expenditure:					
2010/11	6.443	12.542	10.756	9.459	39.200

E7.32-36 Sewage Treatment Costs

Sewage Treatment E7.36

	Total
Functional expenditure:	£m
2010/11	41.677
2009/10	40.732
	<u>(0.945)</u>

Sewage treatment costs increased by £0.9m (2.3%) from 2009/10. This is analysed as follows:

- £0.5m (4.2%) increase in employment costs due to pay and pension increases of £0.2m;
- £0.2m (2.1%) increase in power costs due to new operating costs of £0.5m; and refunds received in 2009/10 of £0.2m partly offset by increased identification of sludge power costs at shared sewage/sludge sites of £0.4m;
- £0.2m (14.5%) decrease in hired and contracted costs due to more robust identification of sludge maintenance costs at shared sewage/sludge sites of £0.2m; offset by new operating costs of £0.2m;
- £0.5m (25.6%) decrease in materials and consumables mainly due to increased identification of sludge chemical costs at shared sewage/sludge sites of £0.3m and reduced mechanical breakdown and repair costs partly offset by new operating costs of £0.2m;
- £0.2m (3.6%) increase in SEPA costs due mainly to full year effect of 2009/10 inflationary increases;
- Other Direct Costs remained stable at £0.9m; and
- £0.7m (10.2%) increase in general and support costs mainly due to inflationary and performance pay increases of £0.1m; increased VR and restructuring costs of £0.4m; and an increase in Research and Development costs of £0.2m; partly offset by efficiencies.

Sewage treatment costs are analysed by region:

	North	East	South	West	Total
	£m	£m	£m	£m	£m
Functional expenditure:					
2010/11	7.016	10.345	12.941	11.375	41.677

Confidence Grades

Confidence grades on Table E7 are consistent with grades in the general E table commentary.

Direct costs are predominantly captured in the core corporate financial system, with labour costing feeds from the core corporate works management system. A high proportion of direct costs are captured by asset or zone, hence the A2 confidence grade.

Scottish Water has slightly lower confidence levels on Network cost analysis than treatment cost analysis. This is due to lower levels of direct labour capture on Networks.

Table E8 Wastewater Explanatory Factors - Sewage Treatment Works

E8.1-8 Sewage treatment works size bands

The total number of sewage treatment works (WWTW) decreased by 33 to 1,905. Changes to the number of WWTW this year are broken down by size band and treatment category in the tables below:

Size Band	2009/10	2010/11	Net Change
0	1,168	1,156	-12
1	236	225	-11
2	161	157	-4
3	186	181	-5
4	130	126	-4
5	36	38	+2
6	21	22	+1
Total	1,938	1,905	-33

Treatment Category	2009/10	2010/11	Net Change
Septic Tanks	1,209	1,191	-18
Primary	54	55	+1
Sec Activated Sludge	175	182	+7
Sec Biological	284	284	No change
Tertiary A1	29	28	-1
Tertiary A2	15	16	+1
Tertiary B1	61	60	-1
Tertiary B2	15	14	-1
Sea Preliminary	13	14	+1
Sea Screened	2	2	No change
Sea Unscreened	81	59	-22
Total	1,938	1,905	-33

The confidence grade remains at B3.

E8.9 Small sewage treatment works with ammonia consent 5-10 mg/l

The number of small sewage treatment works with ammonia consent 5-10 mg/l has remained the same at 55. The confidence grade remains at A1.

E8.10 Small sewage treatment works with ammonia consent <= 5 mg/l

The number of small sewage treatment works with ammonia consent <= 5 mg/l has increased by 2 to 51. The confidence grade remains at A1.

E8.11-18

The total average daily load, excluding septic tanks, decreased by 482 kg BOD/day to 222,365 kg BOD/day.

Changes to the total average daily load received this year are broken down by size band and treatment category in the below tables:

Size Band	2009/10	2010/11	Net Change
<i>Excluding septic tanks</i>			
0	521	486	-35
1	1,187	1,154	-33
2	2,371	2,236	-135
3	10,876	10,650	-226
4	37,403	35,788	-1,615
5	33,304	33,795	+491
6	137,185	138,255	+1,070
Total	222,847	222,365	-482

Treatment Category	2009/10	2010/11	Net Change
Septic Tanks	5,769	5,519	-250
Primary	4,438	4,131	-307
Sec Activated Sludge	145,006	144,959	-47
Sec Biological	21,984	22,187	+203
Tertiary A1	24,002	24,827	+825
Tertiary A2	4,332	5,061	+729
Tertiary B1	8,509	8,441	-68
Tertiary B2	1,625	1,571	-54
Sea Preliminary	2,472	1,907	-565
Sea Screened	474	442	-32
Sea Unscreened	10,005	8,838	-1,167
Total	228,616	227,883	-733

The confidence grade remains at B3.

E8.19 Small sewage treatment works with ammonia consent 5-10 mg/l

The total average daily load at small sewage treatment works with ammonia consent 5-10 mg/l decreased by 119 kg BOD/day to 8,183 kg BOD/day.

The confidence grade remains at B3.

E8.20 Small sewage treatment works with ammonia consent <= 5 mg/l

The total average daily load at small sewage treatment works with ammonia consent <= 5 mg/l decreased by 64 kg BOD/day to 11,719 kg BOD/day.

The confidence grade remains at B3.

E8.21-30 Compliance

The percentage compliance has been calculated on the basis of SEPA results. Our methodology for calculating compliance is the same as last year and, in the case of two-tier consents, all failures have been counted, not just upper-tier failures. WWTW that are not sampled are not included in the averaging process for individual treatment categories and size bands. The sampling period is the financial year 2010/11.

Three works (Dyke, Westfield and Bothwellbank) are the subject of an appeal with SEPA but have been included as failing works in this table.

Where the cells in this section are listed as 0 and AX confidence grade, this means that there was no WWTW in that treatment category and size band thus there has been no sampling.

The average compliance has been maintained or improved at all WWTW treatment categories with the exception of Tertiary B2 although there has been some movement within the individual size bands.

The confidence grade remains at B2.

E8.29 Small sewage treatment works with ammonia consent 5-10 mg/l

The compliance at small sewage treatment works with ammonia consent 5-10 mg/l has been maintained or improved at all treatment categories with the exception of Secondary Activated Sludge and Tertiary A1.

The confidence grade remains at B2.

E8.30 Small sewage treatment works with ammonia consent <= 5 mg/l

The compliance at small sewage treatment works with ammonia consent <= 5 mg/l has been maintained or improved at all treatment categories that underwent sampling this year with the exception of Secondary Activated Sludge.

The confidence grade remains at B2.

E8.31-42 Costs

Overall movements are explained in table Sewage Treatment E7.36 earlier in this commentary. The costs of treating and disposing of sludge are contained within Table E10 Sludge Treatment and Disposal.

Analysis of sewage treatment costs by size band:

Changes to the numbers of STW by process type have arisen as a result of operational changes and process re-classifications in STW during 2010/11. Re-stating 2009/10 figures on like-for-like basis shows the following variations:

	Septic tanks	Primary	Secondary	Tertiary	Sea Outfalls	Total
	£m	£m	£m	£m	£m	£m
Total treatment works 2010/11	3.068	1.280	28.682	8.220	0.427	41.677
2009/10	3.188	1.227	27.435	8.414	0.468	40.732
	+0.120	(0.053)	(1.247)	+0.194	+0.041	(0.945)

Movements in individual works and switches between process types explain the increases and decreases by category. Some of the larger movements, which do not follow the profile of overall movements, are explained as follows:

- 7 new/replacement secondary works leading to increased opex costs of £0.2m;
- Aviemore STW [North, Band 4, Secondary Activated Sludge] increased £0.2m; Dalmarnock STW [West, Band 6, Secondary Activated Sludge] increased £0.2m; Laighpark (Paisley) STW [West, Band 6, Secondary Activated Sludge] increased £0.2m and Stornoway STW [North, Band 4, Secondary Activated Sludge] increased £0.2m due to operational repairs; and
- Daldowie STW [South, Band 6, Tertiary A1] decreased £0.2m.

Costs which are directly attributable to treatment are charged to the specific asset cost code in Peoplesoft, either via direct charging, Ellipse timesheets or work orders. Of the £41.7m (E2.9) total wastewater treatment costs, £36.8m of costs or 88.3% (£40.9m less £5.5m sludge costs plus £1.4m terminal pumping) have been directly charged to assets in our corporate costing system.

Other costs have been allocated to wastewater Treatment through ABM support activity allocation, e.g. stores based on number of issues, IT applications based on number of users, etc. Therefore, support costs are allocated on a resource consumed basis. However, many of these costs are not specific to an asset; they are generally attributable to an employee. It follows that the majority of these support costs should be allocated to the activities the employees have been doing.

Confidence Grades

Confidence grades on Table E8 are consistent with grades in the general E table commentary.

Direct costs are predominantly captured in the core corporate financial system, with labour costing feeds from the core corporate works management system. A high proportion of direct costs are captured by asset, hence the A2 confidence grade. A smaller proportion of costs – mainly general and support costs – remains to be allocated to works by means other than direct capture.

Table E9 Large Sewage Treatment Works Information Database

E9.0a Name of operational area

The number of large non-PPP WWTW has increased by 1 to 21.

Due to an increase in Trade effluent received, Dunbar is now classified as a large works.

Large WWTW are defined as those that receive an average loading in excess of 1,500 kg BOD/day and is approximately equivalent to a population of 25,000.

E9.1 Population equivalent of total load received

The overall population equivalent of the total load received increased by 28,802 to 2,169,688.

Changes to the population equivalent of each large WWTW are detailed in the below table (due to rounding the total may not equal the sum of the individual values):

WWTW	2009/10	2010/11	Net Change
Allers	47,158	42,981	-4,177
Alloa	42,340	43,493	+1,153
Ardoch	68,997	62,081	-6,916
Bo'ness	28,630	30,895	+2,265
Carbarns	47,377	47,077	-300
Dalderse	97,568	110,504	+12,936
Daldowie	271,979	290,897	+18,918
Dalmarnock	263,178	216,033	-47,145
Dunbar	N/A	33,467	+33,467
Dunfermline	78,013	78,297	+284
Dunnswood	31,702	30,952	-750
Erskine	78,556	86,536	+7,980
Hamilton	63,972	63,106	-866
Kinneil Kerse	49,471	50,937	+1,466
Kirkcaldy	62,153	62,448	+295
Laighpark (Paisley)	136,596	137,568	+972
Perth	101,370	97,441	-3,929
Philipshill	56,932	58,835	+1,903
Shieldhall	498,898	517,577	+18,679
Stirling	68,786	69,026	+240
Troqueer	47,209	39,536	-7,673
Total	2,140,886	2,169,688	+28,802¹

The large changes seen at Allers, Ardoch, Dalderse, Dalmarnock, Dunbar, Daldowie and Shieldhall are due to changes in the trade effluent received at these works. The increase at Erskine is made up of a change in domestic population and Trade Effluent. The reduction in load seen at Troqueer is due to a reduction in WWTW sludge imports.

¹ Includes Dunbar

As was stated earlier in the commentary, we now receive trade effluent data from the Central Market Agency.

The table shown on page 126 of the final 2009/10 Annual Return commentary incorrectly totalled to 2,144,074. We note that it should have totalled to 2,140,886 (as illustrated above).

The confidence grade remains at B3.

E9.2-7 Compliance

Consent data was taken from our corporate consents database. The most onerous of CAR or UWWT parameter was reported.

Confidence grades remain at A1, reflecting the fact that the data is obtained directly from our corporate consents database.

E9.2 Suspended solids content

All consent standards remained the same.

E9.3 BOD consent

There have been no changes to the BOD consent standards.

E9.4 COD consent

There have been no changes to the COD consent standards.

E9.5 Ammonia consent

There have been no changes to the ammonia consent standards.

E9.6 Phosphate consent

No phosphate consent standards have been set for any of the WWTWs.

E9.7 Compliance with effluent consent standard

We have used SEPA data from March 2010 to February 2011 for this line. For WWTW with a two tier consent we have taken exceeding the lower tier as being a non-compliant sample.

Allers, Ardoch, Daldowie, Dunnswood and Erskine WWTWs marginally increased their compliance.

Compliance at Dalmarnock, Hamilton, Laighpark (Paisley) and Shieldhall WWTWs show a marginal decrease.

E9.8-14 Treatment Works Category

This information is held in the corporate asset inventory. We are reporting 21 large WWTWs in Table E9, though 22 large WWTW are reported in E8.7. The WWTW that is reported in E8.7, but not in Table E9, is the Meadowhead outfall, which takes a trade effluent flow from a pharmaceuticals factory. This is consistent with previous reporting.

E9.15-21 Works cost

Analysis of functional costs for large sewage treatment works:

	2010/11	2009/10	Variance
	£m	£m	£m
Daldowie	0.795	1.006	+0.211
Dunbar	0.322	n/a	(0.322)
Tertiary treatment	1.117	1.006	(0.111)
Allers	0.213	0.295	+0.082
Alloa	0.316	0.318	+0.002
Ardoch	0.465	0.507	+0.042
Bo'ness	0.253	0.228	(0.025)
Carbarns	0.371	0.349	(0.022)
Dalderse	0.425	0.487	+0.062
Dalmarnock	1.236	1.045	(0.191)
Dunfermline	0.182	0.195	+0.013
Dunnswood	0.279	0.325	+0.046
Erskine	0.498	0.415	(0.083)
Hamilton	0.403	0.422	+0.019
Kinneil Kerse	0.478	0.366	(0.112)
Kirkcaldy	0.516	0.541	+0.025
Laighpark (Paisley)	1.053	0.818	(0.235)
Perth	0.298	0.236	(0.062)
Philipshall	0.461	0.439	(0.022)
Shieldhall	2.043	2.232	+0.189
Stirling	0.512	0.409	(0.103)
Troqueer	0.079	0.106	+0.027
Secondary treatment	10.081	9.733	(0.348)
Total large treatment works	11.198	10.739	(0.459)

The number of treatment plants classified as large works has increased by 1 from 2009/10, with Dunbar being classified from small back to large.

- Dunbar STW [South, Band 6, Tertiary A2] has moved from small tertiary to large tertiary £0.3m;
- Daldowie STW [South, Band 6, Tertiary A1] decrease £0.2m due to more labour identified as sludge treatment;
- Shieldhall STW [West, Band 6, Secondary Activated Sludge] decrease £0.2m due to labour operational efficiencies;
- Dalmarnock STW [West, Band 6, Secondary Activated Sludge] increased £0.2m due to less power identified as sludge treatment;
- Laighpark (Paisley) STW [West, Band 6, Secondary Activated Sludge] increased £0.2m due to tank cleaning costs not undertaken every year.

Confidence Grades

Confidence grades on Table E9 are consistent with grades in the general E table commentary.

Direct costs are predominantly captured in the core corporate financial system, with labour costing feeds from the core corporate works management system. A high proportion of direct costs are captured by asset, hence the A2 confidence grade. A smaller proportion of costs – mainly general and support costs – remains to be allocated to works by means other than direct capture. Following analysis of these residual general and support costs, Scottish Water feels that it now has a more appropriate allocation basis to asset.

Estimated terminal pumping station costs are graded slightly lower in confidence than treatment costs, as terminal pumps (as defined) sit in networks or are costed as part of the treatment works.

Table E10 Wastewater Explanatory Factors - Sludge Treatment and Disposal

E10.1-2 Sludge Volumes

E10.1 Resident population served

The total resident population served increased by 8,301 to 2,607,448. This change is consistent with the rise in population reported elsewhere in this submission.

We again report the population treated at Scottish Water operated WWTW that have their sludge treated at PPP sludge treatment centres. This accounts for the anomaly in reporting a population reported against the 'incineration' and 'other' routes but no Scottish Water sludge volumes being recycled through these routes. Some of this was used to carry out trials of recycling of hydrolysed sludge in England and the rest was used for industrial crop.

The confidence grade remains at C3.

E10.2 Amount of sewage sludge

The total amount of sewage sludge decreased slightly to 19.7 ttds. Gemini was used again this year as the source of all the sludge data. Land reclamation is no longer used as a recycling route for some of the sludge from Cupar, Kirkcaldy and St Andrews. An enhanced treatment option is being utilised for these Sludge Treatment Centres.

An overall increase in the volume of enhanced treated sludge, 0.734ttds, is largely attributable to an increased volume of sludge from Fife being lime treated. Kinneil Kerse and Dunfermline also recorded an increase (0.838ttds) with Perth showing a decrease. Conventional sludge production was reduced by 1.376ttds from the previous year. This reflects reductions in imports at some sites, Stirling and Dalderse, as well as a reduced volume treated at Cumnock.

The confidence grade remains at B3.

E10.3-11 Sludge Treatment and Disposal Costs

Sludge Treatment E10.11

	Total
Functional expenditure:	£m
2010/11	12.766
2009/10	12.367
	(0.399)

Sludge treatment costs have increased by £0.4m (3.2%) from 2009/10. This is analysed as follows:

- £0.7m (21.8%) decrease in employment costs due to a reduction in tanker drivers due to increased efficiency £0.6m; partly offset by pay and pension cost increases £0.1m;
- £0.4m (33.6%) increase in power mainly due to more robust identification of sludge power costs at shared sewage/sludge sites;

- £0.4m (8.8%) increase in hired and contracted costs due to new operating costs £0.1m; and more robust identification of sludge maintenance costs at shared sewage/sludge sites £0.2m;
- £0.2m (32.9%) increase in materials and consumables due to more robust identification of sludge chemical costs at shared sewage/sludge sites;
- £0.1m (49.5%) decrease in SEPA charges due to more systematic approach to identification of sludge related charges at shared sewage/sludge sites;
- £0.1m (162%) increase in other direct costs due to more robust capture of other sludge costs at shared sewage/sludge sites; and
- General and Support costs remained stable at £2.6m with increased VR and restructuring costs £0.1m, offset by efficiencies.

Scottish Water incurs costs associated with the transportation of sludge from its own sewage treatment works to PPP sludge treatment centres (£2.6m). These costs have been reported within E3a.20 with the corresponding sludge loads in reported in E3.

The allocation of sludge treatment and disposal costs by disposal route relies on robust sludge movement data linked to financial data. Scottish Water links sludge movement data from the Gemini waste management system to ABM costs to produce E10 cost analysis.

Analysis of sludge treatment costs by disposal route:

	2010/11	2009/10	Variance
	£m	£m	£m
Farmland:			
Untreated	0.000	0.000	+0.000
Conventional	3.498	3.319	(0.179)
Advanced	6.913	6.373	(0.540)
Incineration	0.000	0.000	+0.000
Landfill	1.495	0.752	(0.743)
Composted	0.860	1.559	+0.699
Land reclamation	0.000	0.364	+0.364
Other	0.000	0.000	+0.000
Total	12.766	12.367	(0.399)

The change in costs by disposal route has been affected by the following main factors:

- Land reclamation is no longer used as a disposal route for Fife sites (Cupar, Kirkcaldy and St Andrews) which went to Farmland Advanced with decreased costs of £0.2m and Cumnock which went to Farmland Conventional with increased costs of £0.4m;
- Decrease in Composted route due to refurbishment works at Troqueer £0.7m; and
- Increase in Landfill costs due to repairs at Lerwick £0.2m and identification of sludge costs at Kilmory £0.2m.

Confidence Grades

Sludge cost analysis by ultimate disposal route requires analysis of all sludge treatment, tankering and disposal costs by works, linked to intermediate works (where applicable) and ultimate disposal route. Certain costs are clearly captured by works with identified disposal route. However, certain costs are not fully captured directly against sludge. The main areas of difficulty are inter-site sludge tankering and sludge treatment / conditioning at dual function works (sludge / wastewater treatment). Table E10 is completed on the basis of a combination of: ABM analysis, direct cost capture by asset, and Scottish Water sludge model analysis. Confidence grades on Table E10 are lower (B2) than other E Table cost analysis due to these reasons.

Additional E Table Commentary

Pension Contributions

Scottish Water is a participating employer in three Local Government Pension Schemes (LGPS) - Strathclyde Pension Fund, the North East Scotland Pension Fund (previously called the Aberdeen Pension Fund) and the Lothian Pension Fund. These funds are administered by Glasgow City Council, Aberdeen City Council and Edinburgh City Council respectively.

The administering authority for each scheme is required to conduct a triennial valuation of the assets and liabilities of each scheme in line with LGPS regulations. The purpose of the valuation is to review the financial position of the fund and specify the employer contribution rates for the next 3 years. A valuation was carried out as at 31 March 2008 and Scottish Water has been advised of the contribution rate for the three years from financial year 2009/10.

The contribution rate for each fund is based on the current service cost and the funding position of each fund at the valuation date. The average funding level of the 3 schemes at 31/3/08 was 92%. Therefore, the Employer contribution rates shown below include an element to reduce the deficit on each fund.

	2008/09	2009/10	2010/11
Contribution %			
North East Scotland	17.85	19.10	19.20
Edinburgh	21.50	22.30	23.20
Glasgow	18.20	18.50	18.50
Average Number of Members			
North East Scotland	949	931	865
Edinburgh	1,094	1,076	1,021
Glasgow	1,312	1,313	1,216

The average contribution rate has increased from 19.90% in 2009/10 to 20.24% in 2010/11.

G Tables – Investment Monitoring

Tables G1 – 2: General Comments

Tables G1 – G2 present a summary of Scottish Water’s Q&SIIIb investment programmes for Q&SIIIb, Q&SII & 3a (completion programme) and Q&S IV early start. The investment costs and outputs reported in these tables reflect the position as reported to the Commission in the quarterly Capital Investment Returns (CIR).

Shown is the pre 2010 expenditure, the actual expenditure in the report year and forecasts to Post March 2015. Scottish Water successfully delivered £443.5 million of investment in 2010/11. This comprised £108.9m of investment in the completion programme, and £334.6m in the Q&SIIIb programme.

The total forecast investment reported in G1 is £2,512.5m, comprising £230.5m for the completion programme, £2,247m for Q&SIIIb, £34.7m for Q&SIV early start. Net capital investment, excluding grants and contributions, is £2,508.5m. Items such as unpromoted capital maintenance and programme risk and contingencies have been allocated across appropriate lines in G1.

Over the year, we have progressed 46 Q&SII projects to signoff representing 75% of the total outstanding at the start of the year, and 205 Q&SIIIa projects to regulatory signoff representing 82% of the total outstanding at the start of the year.

Investment in 2010/11 delivered a number of Growth and Drinking water quality projects in line with our Delivery Plan forecasts. Capital maintenance investment accounts for 47% of the investment in 2010/11.

The table below reflects the inflation assumptions used within the CIR which are a more cautious estimate of CoPI than is used in the March 2011 Delivery Plan.

Inflation Assumptions

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Total Expenditure	£617.9	£681.6	£605.2	£443.5	£500.0	£506.0	£506.0	£510.5	£2.7
Inflation Assumptions		-0.69%	-5.8%	-3.2%	2.5%	2.5%	2.5%	2.5%	2.5%

Table G1 Summary - Investment

G1.1-1.6 Q&SIIIb Capital Maintenance

Projects containing Capital Maintenance drivers are captured in these lines. In 2010/11 expenditure of £198.8 was made against Q&S3b Capital Maintenance; the total forecast to complete the programme is currently predicted to be £972.1m.

G1.7–1.11 Q&SIIIb Growth Investment

Projects containing Growth drivers are captured in these lines. In 2010/11 expenditure of £41.3m was made against Q&S3b Growth; the total forecast to complete the growth element of the programme is currently predicted to be £255.1m.

G1.12-1.17 Q&SIIIb Enhancement Expenditure

Projects containing Enhancement drivers are captured in these lines. In 2010/11 expenditure of £93.8m was made against Q&S3b Enhancements; the total forecast to complete the enhancements is currently predicted to be £841.9m.

G1.18: Q&SIIIb Enhancements – OMG Unallocated Enhancement Expenditure

Projects containing OMG Enhancement drivers are captured in these lines. The overall expenditure for Q&S3b OMG Enhancements is forecast to be £178.2m.

This is the profile shown in our March 2011 Delivery Plan update expressed in out-turn prices.

G1.19 – G1.21 Q&SII & IIIa Completion Expenditure

Projects from the completion programme are captured in these lines. In 2010/11 a total expenditure of £108.9m was made against this programme with £42.7m being spent on the Q&SII programme and £66.2m on Q&SIIIa. The Completion programme is predicted to outturn at £230.5m with a forecast of £57.6m on Q&SII and £172.9m on Q&SIIIa.

G1.22: Q&SIV Early Start

Projects containing Q&SIV Early start drivers are captured in these lines. In 2010/11 expenditure of £0.7m was made against Q&SIV Early start with a total forecast spend of £34.7m being predicted during completion of the Programme.

G1.23 – G1.32: Total Additional Operating Expenditure Outstanding

Additional operating expenditure is calculated through the analysis of the proportion of capital spend allocated to quality, enhanced level of service or growth. The value in the report year and future years is calculated from the acceptance (beneficial use) date resulting in expenditure being split proportionately across two years depending on where the beneficial use date falls. Where there have been changes to the driver allocation, the Opex impact value reported against quality is amended in prior years.

G1.33 – G1.38: Grants and Capital Contributions

The infrastructure charge income is reported as contribution against the Q&SIIIb programme. No future grants or contributions are reported as these are not confirmed.

G1.39 – G1.47: Expenditure Totals

These lines sum the figures provided in G1.1 to G1.38 and are automatically populated.

Table G2 Summary – Outputs

We have only commented where we have delivered outputs in 2010/11.

G2.1- G2.4 Growth

We note that growth is driven by both quality projects and demand from developers. At present market demand is less than anticipated.

G2.1 Strategic Capacity - Water Treatment

A total of 8,041 p.e. was delivered in 2010/11.

G2.2 Strategic Capacity – Wastewater Treatment

A total of 9,496 p.e was delivered in 2010/11.

G2.3 Strategic Water Network Capacity (Infrastructure Charges)

A total of 16,625 p.e was delivered in 2010/11 associated with the income received from infrastructure charges.

G2.5 – G2.21 Q&SIIIb Enhancements – Drinking Water Quality

G2.5 Number of Zones with reduced lead levels to meet the standard

7 outputs were delivered in 2010/11 outperforming the Delivery Plan target of 6.

G2.8 Number of DMA's subject to water quality investigations

61 outputs were delivered in 2010/11 outperforming the Delivery Plan target of 50.

G2.12 Number of WwTW with Backflow prevention devices installed

4 outputs were delivered in 2010/11 outperforming the Delivery Plan target of 0.

G2.14 Number of zones covered by Water Safety plans

109 outputs were delivered in 2010/11 outperforming the Delivery Plan target of 80.

G2.21 Type B (Customer Requested) Raw Water supplies provided with treatment

1 output was delivered in 2010/11. There is no Delivery Plan target as these outputs are demand driven or opportunistic.

G2.22 – G2.35 Q&SIIIb Enhancements – Environment

G2.22 Number of UIDs improved to meet new standard (exclude 7 stage)

3 outputs were delivered in 2010/11 outperforming the Delivery Plan target of 0.

G2.24 Number of legislative requirements met through improved WwTW discharges

1 output was delivered in 2010/11 outperforming the Delivery Plan target of 0.

G2.33 Number of environmental studies undertaken

14 outputs were delivered by 2010/11 outperforming the Delivery Plan target of 11.

G2.36 – G2.43 Q&SIIIb Enhancements – Customer Service

G2.38 Number of properties removed from low pressure register

484 properties were removed from the low pressure register in 2010/11 outperforming Delivery Plan target of 221.

G2.39 Number of properties removed from the low pressure register (Exclusions)

50 outputs were delivered in 2010/11 outperforming the Delivery Plan target of 25.

G2.54 – G2.55 Q&SIIIa & Q&SII Delivery Projects

At the end of 2010/11, we have reduced the overall number of projects remaining to be signed off to 62 which is ahead of our delivery plan target of 66. This represents an 80% reduction in the number of completion projects outstanding from the start of the year.

G2.54 Q&SII projects remaining

A starting position of 62 projects is reported in March 2010. This reflects the original list of 68 completion projects, less 5 which were delivered pre 2010 and less Newhall which was removed through the OMG working group pre 2010. The number of projects still to be completed at the end of 2010/11 was 16.

G2.55 Q&SIIIa projects remaining

A starting position of 251 projects is reported in March 2010. This reflects the original list of 265 completion projects, less 14 which were delivered pre 2010. The number of projects still to be completed at the end of 2010/11 was 46.

Table G3 Monitoring Serviceability

General Comments

G3.1 – 3.19 column 40, 60, 70, 80 have not been populated as the 2010-15 Delivery Plan does not profile serviceability target by year, only a forecast for 2015 is specified, this is reported in column 90.

G3.1 – 3.4 Drinking Water Quality Indicators (Annual Measure)

G3.1 – 3.2 % of compliant zones for Iron & Manganese

We improved the exclusion of iron from drinking water by 2.58% from 2009 to 92.88% compliance of water supply zones.

We improved the exclusion of manganese from drinking water by 0.81% from 2009 to 94.43% compliance of water supply zones.

G3.3 Number of microbiological failures at water treatment works

The number of microbiological failures has increased by 14 from 2009 to 44.

G3.4 Lead communication pipe survey

There is no specific serviceability objective for “Lead communication pipe survey” within our Delivery Plan (Table 3.1, page 8). This output is reported in line G2.17.

G3.5 – 3.9 Environment Serviceability Indicators

G3.5 Number of Failing Wastewater treatment works

The number of Failing Wastewater treatment works is 11 for 2010/11 as confirmed with SEPA.

G3.6 Number of sludge treatment facilities improved to comply with safe sludge matrix

There is no specific serviceability objective for “Number of sludge treatment facilities improved to comply with safe sludge matrix” within our Delivery Plan (Table 3.1, page 8). This output is reported in line G2.30.

G3.7 The maximum number of UID's

During the report year, we have continued to complete the delivery of both the Q&SII uCSO completion outputs and the Q&SIII UID outputs. At March 2011 there were 821 UIDs.

G3.8 Number of Pollution Incidents

Environmental Pollution Incidents occur where there is a failure at an asset that impacts on the environment, as agreed with SEPA. These can fall into either a category 1, 2 or 3 for both water or wastewater incidents. We recorded a total of 824 wastewater incidents in 2010/11. There were 28 category 1 & 2 incidents and 796 category 3 incidents.

In addition to this, there were a further 11 water category 3 incidents and 9 wastewater/water compliance incidents. The total of 844, which includes all pollution incidents, has also been agreed with SEPA.

Improvements have been made throughout the year to the process of recording and agreeing the incidents. SW and SEPA now operate a shared spreadsheet with incidents being agreed on a regular basis.

G3.9 Water Efficiency Plan

There is no target set out in the Delivery Plan 2010-15 therefore we have not reported any figures.

Our plan for a water efficiency trial through household metering and other measures was submitted to Ministers for approval on 15 March 2011. We are awaiting the decision from Ministers.

G3.10 – 21 Customer Service Serviceability Indicators

G3.10 Properties on the Low Pressure Register

The overall number of low pressure properties has reduced from 2,496 to 1,962. Targeted investment and operational changes have improved pressure to 518 properties during 2010/11. No properties have been recorded as being added to the register due to investigation work, through customer complaints, or due to better information. Further investigation work has also resulted in 18 properties being removed through better information. Two properties were added as a result of asset deterioration and no properties have been added due to operational changes.

<i>2009/10 Properties reported for low pressure</i>	<i>2,496</i>
Removed due to operational improvements	-446
Removed due to asset improvements	-72
Removed due to better information	-18
Added due to asset deterioration	+2
2010/11 Properties reported for low pressure	1,962

G3.11 Properties with Unplanned Interruptions to supply > 12 hours

The overall figure for 2009/10 was 3,862 properties which is a decrease of 1,762 over 2009/10. Included in the total figure are 830 properties (21% of the total) which had frozen supply pipes over December / January. During March 2011, a 21" main burst at Burncrooks resulting in 1,106 properties (29% of the total) being out of supply for more than 12 hours.

G3.12 Number of Bursts per 1,000km of mains

There were 207 mains bursts per 1,000km during 2010/11. This was a decrease of 10 from 2009/10. The number of reported bursts is still higher than our target due to the adverse weather and low temperatures at the end of 2010.

G3.13 – G3.14 Customer Service Serviceability Indicators - Sewer Flooding

The 2010/11 guidance requests that we document our criteria for assessment during the report period. We note that our methodology remains unchanged from last year, as outlined in our 2009/10 commentary document (page 33).

G3.13 Properties at Risk of Internal Flooding

The number of properties at risk of internal flooding at March 2011 was 341 in line with our delivery plan target.

G3.14 Properties internally flooded due to other causes

The figures reported here relate to flooding caused by blockages or failure of main and lateral sewers. The number of properties internally flooded in 2010/11 was 820, a decrease of 111 on the previous year.

G3.15 The Overall Satisfaction level (from the customer service questionnaire)

As part of our commitment to improve the customer service we have reviewed how we measure customer satisfaction. In the past we conducted 1500 telephone interviews every 6 months to determine customer satisfaction levels. Whilst this provided valuable information and assisted in achieving improvements to our service, it had limitations. In particular, developing and tracking the success of improvement plans.

In 2010 we introduced a postal survey to monitor customer satisfaction all year round. Since its introduction, over 15,000 customers have taken part, providing satisfaction tracking and insightful comments about their experience. This valuable information is being used to drive improvements that are most valued by our customers. Despite a particularly demanding year due to severe weather events, our annual satisfaction score is 80.1%. Given the impact of the weather and the increased number of responses we are very pleased to have maintained our score at this level.

G3.16 The maximum number of 'second tier' complaints referred to Waterwatch

The overall number of second tier complaints referred by Waterwatch in 2010/11 was 50.

G3.17 The number of telephone contacts relating to drinking water quality

Total number of telephone contacts which related to drinking water quality in 2010/11 was 20,510, a reduction of 3,658 on 2009/10.

G3.18 Metering Trial

There is no target set out in the Delivery Plan 2010-15 therefore we have not reported any figures.

Our plan for a water efficiency trial through household metering and other measures was submitted to Ministers for approval on 15 March 2011. We are awaiting the decision from Ministers.

G3.19 Creation of a register of all properties affected by external sewer flooding

There is no target set out in the Delivery Plan 2010-15 therefore we have not reported any figures.

G3.20 The Overall Performance Assessment (OPA) Score

The 2010/11 OPA score was 330. This is the first year that 17 indicators have been incorporated. Using the 2010-15 methodology our score of 291 for 2009/10 would have been 306.

G3.21 The average annual level of leakage

The 2010/11 Maximum Likelihood Estimation (MLE) leakage is 699.1 MI/d. This is a reduction of 39.1 MI/d from the 2009/10 MLE leakage figure of 738.2 MI/d.

Table G4 OMD Inputs including Q&SII and Q&SIII a project Sign-off

General Comments

G4.1 - G4.37 show the enhancements under the Q&SIIIb programme by OMD grouping. The number of outputs recorded is by Milestones 1 to 5 by quarter. The data reflects the cumulative actual and forecast position by year over the 2010-15 regulatory period. The data reported reflects the position recorded in the Quarter 4 2010/11 CIR.

This is the first year that OMD has been reported so comparisons with previous years are not available.

Lines G4.38 - G4.39 report the actual and forecast OMD expenditure by quarter by year for the 2010-15 regulatory period.

Lines G4.40 – G4.44 report the actual and forecast Q&SII and Q&S3a projects signed off at MS5 by quarter and year.

Where no line comment is given we are forecasting to achieve all outputs.

G4.1 – G4.13 Q&SIIIb Enhancements – Drinking Water Quality- OMD outputs

G4.2 Number of treatment works improved to meet drinking water quality standards

There has been 1 addition to the Technical Expression- Forehill WWTW, increasing our forecast to 7 outputs.

G4.3 Km of mains rehabilitated

This programme is now reporting the anticipated delivery profile of 4,346 km. This reflects this reduced length of mains being required to meet the zonal compliance requirements and is less than the Delivery Plan profile of 4,532 km.

G4.14 – G4.25 Q&SIIIb Enhancements – Environment - OMD outputs

G4.24 Number of environmental studies undertaken

Two studies, Waternish and Sanday have been removed from the programme and 4 have been added taking the total forecast to 112 outputs.

G4.26– G4.31 Q&SIIIb Enhancements – Customer Service- OMD outputs

G4.29 Works associated with the Commonwealth Games

At present we forecast 92 outputs will be delivered within the regulatory period. However, the outputs associated with Elmvale Row are being reviewed as past of the Glasgow Strategic Drainage Plan (GSDP) and may be removed from the programme.

G4.34 – G4.35 Q&SIIIb Enhancements – Growth- OMD outputs

Growth is no longer included in the OMD calculation.

G4.36 – G4.37 Q&SIIIb Enhancements –7 Stage Process outputs

G4.36 Number of UID improved (under 7 stage)

The forecast includes 6 outputs relating to Airdrie & Coatbridge which are not part of the 7 stage process. There have been 11 additions to the Technical Expression, which have increase the total number of UIDs to be improved to 214.

G4.41 Q&SII Projects signed off (cumulative)

The cumulative figure reported in G4.41 is 65 projects in 2015/16. This does not include projects that have been removed from the completion programme through agreement with the OMG working group. A total of 3 projects have been removed. This would then be consistent with the G2.54 commentary, which shows a starting list of 68 projects.

G4.43 Q&SIIIa Projects signed off (cumulative)

The cumulative figure reported in G4.43 is 249 in 2015/16. This excludes 16 projects that have, with OMG working group agreement, been removed from the starting list of 265 projects (see G2.55 commentary).