Scottish Water

Trusted to serve Scotland

SCOTTISH WATER

WIC ANNUAL RETURN

COMMENTARIES

June 2015

Table of Contents

A Tables Base Information

Table A1 Connected and Billed Properties

General Comments

Property numbers are for the report year as at 30 September 2014.

A confidence grade of A2 has been applied to the figures reported in Table A1 for household properties in the report year, and B4 for non-household properties. The confidence grade reflects the number of properties expected to be added at the Central Market Agency (CMA) via the gap sites project currently underway, in addition to the other known issues noted in this commentary. Further details are set out below.

Data Sources

The non-household figures have been sourced from settlement reports supplied by the CMA, which are loaded into Scottish Water's reconciliation datamart. This is consistent with previous Annual Returns with the exception of the vacancy status, used to determine whether the property is 'Billed' or 'Void', this has been sourced from the Market Data Set (MDS) files which are also published by the CMA along with the disaggregated settlement reports.

Changes to the disaggregated settlement reports have resulted in a separate line for each attribute change; if the occupancy status of a supply point changes during the month, a separate line is included for the period vacant and for the period occupied. This information is valuable in enabling more accurate reconciliation of wholesale charges but is not compatible with the previous approach to Annual Return reporting as it results in the supply point being included in counts of Billed and Void within the datamart. The MDS files show the occupancy status of the supply point at the run date, similar to the disaggregated reports prior to the recent changes, so have therefore been used as the source of this information this year.

The September 2014 2nd Reconciliation (R2), the latest available at the end of March 2015, along with the MDS file published at the same time were used to populate the A Tables.

The disaggregated settlement reports include all premises which are in settlement at the CMA. When new Supply Points are created, via either the New Connection or the Gap Site processes, 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 'New' and 'Partial' Supply Points are held in the Central Systems but are not in settlement and therefore not reflected in the A Tables.

As of 1st April 2015, there were 1,388 water and 2,209 sewerage 'New' and 'Partial' Supply Points registered at the CMA. The current balance of 'New' and 'Partial' Supply Points consists of an on-going run-rate of new connections and gap sites.

A further 'gap sites' project is currently underway; Gap Site Phase 3. The CMA has been undertaking a comparison between premises listed in the records of the Scottish Assessors Association (SAA) and premises registered in the market. The purpose of the exercise is to establish a cross-reference between the premises which are assessed and the premises registered in the market. Where no match can be obtained and the CMA consider the assessed property to be an eligible premise, it is considered to be a potential gap site for review by Scottish Water and Licensed Providers. Once complete, the cross referencing is made available in the CMA's Central Systems in the interests of data quality.

Processing work commenced during 2014 and was at a relatively early stage at the time of this Annual Return resulting in no significant impact on this year's data. The CMA is expected to publish circa 50,000 potential gap sites for investigation by Scottish Water. Experience from previous gap site projects and the batches published to date is that attrition rates are high so the number of validated sites created will be considerably less. Findings to date of the batches processed to date are that a proportion does not have services from Scottish Water and some are already registered in the market.

At the time of the September R2 settlement run, used to populate this year's Annual Return, 874 Gap sites had been fully processed into the market and were tradeable at the CMA. The impact on this year's property counts is therefore relatively minor with the bulk of the increase still to come in the 2016 Annual Return. More than half of these properties were flagged as vacant and the majority were liable for Roads and Property Drainage charges only (typically because it forms part of a multi-occupancy premises for which the water and foul sewerage services are already recorded at the CMA). The CMA is scheduled to publish its last batch of Gap Site candidates in July this year and the project is expected to continue well into 2016/17.

Scottish Water has continued to monitor the occupancy status of properties. As of March 2015 14.4% of Supply Points were flagged as vacant, this is a slight increase from 13.8% last year but still remains a considerable reduction from 20.4% two years ago.

The current Gap Site project is also affecting the vacancy rate in two ways. First, the proportion of gap sites which are genuinely vacant is higher than for the customer base as a whole, so the addition of these gap sites to the market will increase the overall % of vacant properties in settlement. Secondly, as part of their process of registering gap sites at the CMA, several Licensed Providers involved in the project will tend to process gap sites into settlement and then switch them all to vacant at the CMA pending confirmation of the occupancy status of the property. This temporary switching to vacant contributes towards, and slightly skews, the occupancy status changes in the table below.

The table below shows that there has been a slight net movement of Supply Points from occupied to vacant over the last year. Following the correction that occurred in 2013 due to the introduction of the Vacancy Admin Scheme and the opening of the Vacant Site Incentive Scheme to non-registered Licensed Providers, this year's movement is likely to be more reflective of actual market activity. However, Scottish Water continues to have concerns about the proportion of Supply Points flagged as vacant but which are truly occupied as reported vacancy levels continue to be higher than expected given current economic conditions. Over the last year we have worked with Licensed Providers to propose potential improvements to the Vacant Incentive process to the Commission, who are expected to issue a consultation shortly.

Occupancy status changes in 12 months prior to Annual Return data cut	Occupied to Vacant	Vacant to Occupied	Net change in occupied SPIDs
2010	14,032	12,741	-1,291
2011	19,029	16,400	-2,629
2012	33,191	26,045	-7,146
2013	23,762	31,890	8,128
2014	21,698	20,257	-1,441

Forecast data for 2015/16

Our Delivery Plan for the 2015-21 period assumes zero growth in non-household revenue before allowing for the impact of the Gap Site Phase 3 Project.

Forecast non-household data for the 2015/16 financial year has therefore been derived by adding the forecast new non-household premises which will have been processed into settlement by the Gap Site Phase 3 Project to the actuals for 2014/15. 10,530 Gap Sites are expected to be tradable in the market by next Annual Return runtime. Analysis of project gap sites already in the market and information from project planning suggests 60% of these sites will be Surface Water Drainage Only; the remaining 40% will predominantly be measured sites (32.5%) with Water, Sewerage and Surface Water Drainage services, the remainder will be Unmeasured. The vacancy status of Surface Water Drainage only sites is higher due to the nature of the properties; this is projected to be 45%, with Measured and Unmeasured sites to be 24% and 28% respectively, this is based on the current market position for the project sites.

Non-household connected properties

The number of connected non-household properties taking water services has decreased by 3,454 to 150,149. Non-household properties taking sewerage services have similarly decreased by 2,773 to 123,975.

Line ref.	Non-household connected properties	2013/14 Annual Return	2014/15 Annual Return	Variance
A1.8	Unmeasured non-household connected properties – water	31,815	28,737	-3,078
A1.9	Measured non-household connected properties - water	121,788	121,412	-376
A1.8 + A1.9	**Total connected non-household connected properties - water**	**153,603**	**150,149**	**-3,454**
A1.19	Unmeasured non-household connected properties – sewerage	29,205	26,465	-2,740
A1.20	Measured non-household connected properties - sewerage	97,543	97,510	-33
A1.19 + A1.20	**Total connected non-household connected properties – sewerage services**	**126,748**	**123,975**	**-2,773**

These decreases are primarily due to the deregistration of properties found to be incorrectly in the market (generally duplicates, domestic and demolished properties); identified through the operation of business-as-usual processes.

The largest decreases have been observed in unmeasured properties. This is due to properties being deregistered, properties moving from unmeasured to measured charges and properties where it is identified that charges are being wrongly applied for unmeasurable services. The latter scenario will typically relate to part of a multi-tenancy premises where it is identified that water and foul sewerage charges are already being applied to the entire premises on a metered basis. A similar number of measured properties have been deregistered but the decrease is not as sizeable as it is offset by new connections and the addition of Gap Sites to the market and properties moving from unmeasured to measured.

Other factors affecting the totals include new connections to the network, changes to services recorded at properties and premises changing their status, namely from Council Tax to business rated and in the reverse direction, for example holiday chalets or houses for short term lettings, leading to some churn in this sector.

Changes to Unmeasured Connected Properties

Removed

	Total	Dereg/ Pdisc	Remove Unm Service Element	Unmeasured to Measured
Water	**3,754**	2,613	12	1,129
Sewerage	**3,438**	1,814	536	1,088

Added

	Total	Gap Site/ New Conn	Unm Service Element Added	Measured to Unmeasured
Water	**676**	199	182	295
Sewerage	**698**	169	276	253

Changes to Measured Connected Properties

Removed

	Total	Dereg/ Pdisc	Remove Metered Service Element	Measured to Unmeasured
Water	**2,380**	2,033	52	295
Sewerage	**1,987**	1,529	205	253

Added

	Total	Gaps & New Conn	Metered Service Element Added	Unmeasured to Measured
Water	**2,004**	816	59	1,129
Sewerage	**1,954**	713	153	1,088

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 decreased by 2,277 in the report year.

As set out above, the decreases are mainly due to the deregistration of properties found to be incorrectly in the market. The decrease is largest for unmeasured properties; this is due to deregistrations being skewed towards unmeasured, void properties. Duplicate Supply Points have been found to be more prevalent for unmeasured properties and sites are often flagged as vacant prior to being deregistered.

The 12 months prior to the September 2014 R2 settlement report used to populate this year's Annual Return saw a small net movement in Supply Points turning from occupied to vacant at the CMA. There continues to be issues with properties which are flagged as vacant at the CMA by the registered Licensed Provider but which Scottish Water is unable to agree are unoccupied. However, the position is greatly improved compared with previous years.

There has been a corresponding decrease of 1,802 in the number of void properties having sewerage services over the period for the same reasons.

Void properties	2013/14 Annual Return	2014/15 Annual Return	Variance
Unmeasured void properties – water	9,502	7,571	-1,931
Measured void properties – water	11,571	11,225	-346
Total void properties – water	**21,073**	**18,796**	**-2,277**
Unmeasured void properties – sewerage	8,743	7,163	-1,580
Measured void properties - sewerage	10,115	9,893	-222
Total void properties - sewerage	**18,858**	**17,056**	**-1,802**

Non-Household billed properties and wholesale revenue

As shown in the table below, there has been a small decrease in billed properties, since last year's Annual Return, namely 1,177 for water and 971 for sewerage. As set out above, this is the net effect of changes in occupancy status and Supply Points processed into settlement, offset by de-registration of properties found to be incorrectly in the market (for example duplicates, domestic and demolished properties) and disconnection activity.

Line ref.	Water services – billed	2013/14 Annual Return	2014/15 Annual Return	Variance
A1.3 + A1.4	**Total billed Non-household properties – water**	**132,530**	**131,353**	**-1,177**
A1.14 + A1.15	**Total billed Non-household properties - sewerage**	**107,890**	**106,919**	**-971**

Movement of Properties between Void and Billed

	Void to Billed	Billed to Void
Water	4,580	4,964
Sewerage	4,361	4,623

A1.1 & 1.6 Household properties (connected and billed) (water)

The data for these lines has been sourced directly from the WIC4 reports of September 2014 for the report year. Report year +1 household growth is obtained directly from the final determination.

The growth in billed properties (including exempt) was 8,372. The growth in connected properties of 9,973 differs to the growth in billed properties as we are now billing properties which were, in the past, connected but not billed.

Line ref.		2013/14 Annual Return	2014/15 Annual Return	Variance
A1.1	Unmeasured household billed properties - potable water (including exempt)	2,402,987	2,411,359	8,372
	Number of void properties	50,612	52,213	1,601
A1.6	Unmeasured household connected properties	2,453,599	2,463,572	9,973

A1.2 Measured household billed properties (water)

The number of measured households has decreased by 18 customers this year. This reduction is principally due to customers determining that Council Tax based charging is more economic. The confidence grade of A2 is consistent with previous year. The forecast of 445 measured households for 2015-16 is based on the average movement over the last 2 years.

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

The recorded number of billed non-household properties has decreased by 1,177 to 131,353 compared with the 2013/14 Annual Return.

This movement was due to the combined effect of changes in occupancy status at Supply Points, gap sites and new connections processed into settlement, physical disconnections and de-registrations as set out above.

Line ref.	Water services - (connected and billed)	2013/14 Annual Return	2014/15 Annual Return	Variance
A1.3	Unmeasured non-household billed properties – potable water (including exempt)	22,313	21,166	-1,147
A1.4	Measured non-household billed properties - potable water	110,217	110,187	-30
	Total billed Non-household properties	**132,530**	**131,353**	**-1,177**

A1.6 Unmeasured Household Connected Properties (water)

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 52,213.

A1.7 Measured household connected properties (water)

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 (water)

The recorded number of connected non-household properties receiving water services has decreased by 3,454 to 150,149 compared with the 2013/14 Annual Return. As set out earlier, this is primarily due to the deregistration of properties found to be incorrectly in the market (generally duplicates, domestic and demolished properties), identified through business-as-usual processes. The decrease is minimal in measured properties as this is offset by the addition of New Connections and Gap Sites into the market.

Line ref.	Connected Properties	2013/14 Annual Return	2014/15 Annual Return	Variance
A1.8	Unmeasured non-household connected properties	31,815	28,737	-3,078
A1.9	Measured non-household connected properties	121,788	121,412	-376
	Total connected Non-household properties	**153,603**	**150,149**	**-3,454**

A1.11 Number of properties connected during the report year (water)

The number of properties connected in the report year of 15,369, and is in line with the forecast figure. The number of properties connected in this report year shows an increase to the previous year of 789. The forecast for 2015/16 shows a continued increase as we have seen the volume of applications increase over this report year.

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

A1.12 Unmeasured household billed properties (foul sewerage)

There has been growth of 7,542 unmeasured household billed properties for sewerage in the report year.

The confidence grade remains unchanged at A2

A1.13 Measured household billed properties (foul sewerage)

The decrease of 7 measured household properties is directly linked to 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 (foul sewerage)

The recorded number of billed non-household properties receiving sewerage services has decreased by 971 to 106,919 compared with the 2013/14 Annual Return. This movement was due to the combined effect of changes in occupancy status at Supply Points, gap sites and new connections processed into settlement, physical disconnections and de-registrations as set out above.

Line ref.	Billed Properties	2013/14 Annual Return	2014/15 Annual Return	Variance
A1.14	Unmeasured non-household billed properties – sewerage	20,462	19,302	-1,160
A1.15	Measured non-household billed properties – sewerage	87,428	87,617	189
	Total billed Non-household properties	**107,890**	**106,919**	**-971**

A1.17 Unmeasured Household Connected Properties (foul sewerage)

Please refer to the commentary for line A1.6. For the current report year, the void property total is 50,300. The number of voids is calculated by subtracting A1.12 from line A1.17.

A1.18 Measured Household Connected Properties (foul sewerage)

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 (foul sewerage)

The recorded number of connected non-household properties taking sewerage services has decreased by 2,773 to 123,975 compared with the 2013/14 Annual Return. As set out earlier, this is primarily due to the deregistration of properties found to be incorrectly in the market (generally duplicates, domestic and demolished properties).

Line ref.	Connected Properties	2013/14 Annual Return	2014/15 Annual Return	Variance
A1.19	Unmeasured non-household connected properties	29,205	26,465	-2,740
A1.20	Measured non-household connected properties	97,543	97,510	-33
	Total connected Non-household properties	**126,748**	**123,975**	**-2,773**

A1.22 Number of properties connected during the report year (foul sewerage)

New properties connected have increased in this report year to 14,465, an increase of 851, a description is provided in the commentary to A1.11.

A1.23 Unmeasured Household Billed Properties (including exempts) not billed for Property Drainage (surface drainage)

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

A1.25-26 Measured and Unmeasured Billed Properties not billed for Property Drainage (surface drainage)

There has been a small increase in properties not billed for Property Drainage since 2013/14.

This is the result of the removal of Property Drainage charges at some properties, offset by changes to occupancy status and deregistrations. A substantial increase in requests to verify property drainage services has been observed in the last two years and some of the movement shown below will have arisen from such requests where a property is found not to drain to the public sewer.

Line ref.	Properties not billed for Property Drainage	2013/14 Annual Return	2014/15 Annual Return	Variance
A1.25	Unmeasured non-household billed properties not billed for property drainage	1,252	1,293	41
A1.26	Measured non-household billed properties not billed for property drainage	1,758	1,918	160
	Total billed Non-household properties	**3,010**	**3,211**	**201**

A1.27 Household Billed Properties billed for Surface Drainage only

Due to our tariff structure, there are zero unmeasured 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 increased by 1,079 to 13,468 since 2013/14. This movement is due to the net effect of changes in occupancy status at Supply Points, gap site and new connection Supply Points processed into settlement which are surface drainage only and changes to services on the Supply Point. The latter group will typically relate to the correction of data at multi-tenancy premises where it is identified that water and foul sewerage charges are already being applied to the entire premises on a metered basis. In this scenario any incorrectly applied unmeasured water and foul sewerage charges on individual rated components of the premises are removed, leaving only surface drainage charges.

A1.30 Unmeasured Household connected Properties (surface drainage)

The reported number of connected properties has increased from 2,356,191 in 2013/14 to 2,365,216 in this reporting year. The difference of 9,025 reflects the changes in property numbers confirmed as being connected to our sewers.

A1.31 Measured Household connected Properties (surface drainage)

This line shows an increase from 426 to 432, reflecting the comparable increase in billed customers.

A1.32-33 Non-household Connected Properties (surface drainage)

The recorded number of connected non-household properties connected for surface drainage has decreased by 1,691 to 140,039 compared with the 2013/14 Annual Return. As set out earlier, this relates to the net effect of deregistration of properties found to be incorrectly in the market, changes to Property Drainage data following a request to verify the services, and gap site and new connection Supply Points processed into settlement.

Line ref.	Properties connected for Surface Drainage	2013/14 Annual Return	2014/15 Annual Return	Variance
A1.32	Unmeasured non-household connected properties	48,012	46,408	-1,604
A1.33	Measured non-household connected properties	93,718	93,631	-87
	Total connected Non-household properties	**141,730**	**140,039**	**-1,691**

A1.35 Number of properties connected during the report year (surface drainage)

New properties connected have increased in this report year to 14,465, an increase of 851; a description is provided in the commentary to A1.11.

The confidence grade remains at A2.

A1.36 – Number of Billed Properties (Trade effluent)

The number of billed properties has reduced from the 1,348 reported in AR14 to 1,328. The reduction in billed Drainage Point Identifiers (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 is 1,314. This is the number of properties that existed at P6 that were also billed at P12.

The confidence grade for the report period and forecast is A2 and A3 respectively.

A1.37 – Connected Properties (Trade effluent)

The number of billed and connected properties has increased from 2,924 to 2,978. Whilst this is at variance with the reduction in the number of billed properties, it reflects the fact that Scottish Water continues to issue an increasing proportion of “Letters of Authorisation” to small dischargers, rather than full consents.

The forecast number of billed and connected properties is 3,042.

Note, these figures are not affected by the inappropriate disconnection 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.

The confidence grade for the current and forecast years remains at A2 and A3 respectively.

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

The total BOD load receiving secondary treatment reported has decreased from 21,234 Tonnes/year to 15,639 Tonnes/year. Further analysis is required to identify the specific reason for this but the decrease in trade effluent volume will have had an effect. This could be down to dischargers recycling waste water and an increase of treatment of waste water before discharging to sewer. The forecast figure is down slightly to 15,636T/yr.

The confidence grade has been revised to B4 for the current and forecast years. This is primarily due to the change in the volume calculation method which has moved from accepting the Licensed Provider generated volumes to using the new CMA based calculation. The new method is either based on the metered water supplied volume minus allowances, or is based on the private effluent meter readings, as appropriate.

To improve the accuracy of the volumes the Licensed Providers need to submit current meter readings to avoid the use of readings from prior months.

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

The reported total COD load receiving secondary treatment has decreased from 44,025 to 35,115T/yr. The forecast is 42,715T/yr.

The confidence grade has been revised to B4 for the current and forecast years. This is primarily due to the change in volume calculation method and the need for the system to updated with meter readings by Licensed Providers in order for the volume calculations to be correct.

Table A2 Population, Volumes and Loads (Water)

A2.1 Population Water – Winter

Population data is based on General Register Office for Scotland (GROS) population projections for this year. Populations are derived from the published GROS 2012 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 143,061 was reached. This figure has changed little from AR14.

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

A2.3 Population of unmeasured household properties

The population of unmeasured household properties connected to our networks has increased by 68,603 for water, reflecting an increase in the GROS 2012 dataset in comparison to the GROS 2008 dataset used in the last few years.

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 17, reflecting the revisions to the data sources obtained directly from the General Register Office for Scotland (GROS). WIC2014 was based on the GROS 2008 dataset. This year's values are based on the GROS 2012 dataset which forecasts lower total households, which slightly increase the ratio of people per household. However, as GROS have also updated their population forecasts, the net result is the small decrease reported.

The confidence grade remains the same at A2.

A2.6 - 7 Water treated at own works to own customers & 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 1823.8 Ml/d in 2013/14 to 1806.7 Ml/d in 2014/15, principally due to reduced total leakage and a reduction in water delivered to non-household properties.

DI is being reported with a B2 confidence grade maintained from the previous 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 Ml/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)

The unmeasured household volume of water delivered has increased from 841.4 Ml/d to 875.8 Ml/d. The rise in water delivered is due to an increase in the estimated rate of supply pipe losses per property and an increase in the number of reported occupied household properties. The confidence grade for this line remains at B2, reflecting the continued confidence associated with the Scottish Water unmeasured household volume calculated using data reported from Scottish Water's Continuous Area Per Household Consumption (PHC) Monitor.

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

The measured household volume of water delivered has remained at 0.2 Ml/d. The percentage of meter under-registration has remained at 4.1%, taken as a mean from the 2007/08, 2008/09 and 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 2013/14 Annual Return. Consumption data calculated by the Central Market Agency (CMA) has been used to populate lines A2.13 and A2.14.

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.

Table A2 has been populated using the latest available data at the time of reporting. For April to July 2014 inclusive, the R3 report has been used; for August 2014 to January 2015 the R2 report has been used; and for February and March 2015, the R1 report has been used.

A2.13 Unmeasured Non-Household Consumption

The reported unmeasured non-household volume of water delivered has decreased from 20.15 Ml/d to 17.56 Ml/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. The table below summarises this component:

	AR11	AR12	AR13	AR14	AR15
Occupied and exempt properties	47,451	20,216	20,730	22,313	21,176
Consumption (Ml/d)	14.80	19.13	19.70	18.99	16.18
Underground supply pipe leakage l/prop/d	29.67	29.71	24.57	32.12	43.68
Underground supply pipe leakage (Ml/d)	1.41	0.60	0.51	0.72	0.92
Water delivered (Ml/d)	**16.21**	**19.73**	**20.2**	**19.7**	**17.1**
Void properties (vacant)	18,282	12,272	16,071	9,502	7,561
Internal plumbing losses (voids) l/prop/d	11.05	10.68	10.18	9.52	9.23
Underground supply pipe leakage (voids) l/prop/d	34.94	34.23	28.31	37.01	50.32
Internal plumbing losses (voids) (Ml/d)	0.20	0.13	0.16	0.09	0.07
Underground supply pipe leakage (voids) (Ml/d)	0.64	0.42	0.45	0.35	0.38
Water delivered to void (vacant) properties (Ml/d)	**0.84**	**0.55**	**0.62**	**0.44**	**0.45**
Total line A2.13 unmeasured non-household volume (Ml/d)	**17.05**	**20.28**	**20.83**	**20.15**	**17.56**

A2.14 Measured Non-Household Consumption
The consumption in line A2.14 reflects the actual consumption recorded at metered Supply Points plus an element for meter under registration (line A2.30). The metered volume has decreased from 372.4 Ml/d to 367.9 Ml/d in the current reporting year; the total water delivered in 2014/15 being 385.5 Ml/d compared with 390.1 Ml/d in 2013/14.

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 is used if available. In the absence of a Yearly Volume Estimate value, the industry standard consumption for that meter size is used.

The A tables report consumption at occupied properties only, with the exception of the adjustment described below which is applied in relation to estimated consumption at properties wrongly flagged as vacant at the CMA.

Other Adjustments to Billed Consumption

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

There are a number of 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 a Licensed Provider 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 erroneous consumption has been identified, usually due to either a faulty meter or spurious 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 increased from 48.38 Ml/d in 2013/14 to 55.58 Ml/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.

A summary of changes to the individual components which make up WTLU is provided below:

- No significant change in fire service use (from 8.5 Ml/d to 8.4 Ml/d).
- Increase in licensed standpipe use (from 12.8 Ml/d to 17.0 Ml/d); the same methodology as last year has been used. The reason for the higher volumes associated with this component are that a greater number of standpipes have been issued and in particular more licenses being used for building work.
- Increase in Waste Water Treatment Works (WWTW) volumes from 12.2 Ml/d to 15.6 Ml/d; there has been a minor change to the methodology used. This year a volume for Waste Water Pumping Stations (WWPS) has been added to this component which added 0.4 Ml/d. The other reason for the increase this year is higher flows from the sampled WWTW.
- No significant change in Scottish Water Offices and Depot use which remains at 0.1 Ml/d.
- No significant change in Scottish Water jetting volumes which remain at 1.2 Ml/d this year.
- No significant movement in unbilled field trough usage (from 11.3 Ml/d to 11.2 Ml/d).
- No significant change in water used for temporary building connections which remains at 1.6 Ml/d.
- Unbilled water use by non-household users has decreased from 0.7 Ml/d to 0.5 Ml/d. This decrease is a result of previously unbilled supplies becoming metered and billed in year.

A2.16 Water taken unbilled – illegally

The volume of water reported as water taken illegally unbilled (WTIU) has increased slightly to 1.73 Ml/d compared with 1.49 ML/d in AR14.

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 remained unchanged at 0.8Ml/d.
- Hydrant misuse - the volume has decreased from 0.4 Ml/d to 0.3 Ml/d.
- Illegal standpipes - the volume has increased from 0.3 Ml/d to 0.6 Ml/d. This increase is a result of more illegal standpipes being reported which in part due to Scottish Water operational staff being more vigilant looking for illegal standpipe users.

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

The volume of water reported as distribution system operational use (DSOU) has decreased from 4.0 Ml/d in 2013/14 to 2.4 Ml/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:

- Service Reservoir Cleaning – the volume has decreased from 0.7 Ml/d to 0.6 Ml/d.
- Mains Rehabilitation & New Mains - the volume used had decreased from 0.05Ml/d last year to 0.01 Ml/d in AR15.
- Proactive Flushing & Swabbing - the volume of water has decreased from 2.4 Ml/d to 1.0 Ml/d in this reporting year. There has been a minor change in methodology, this component now included volumes associated with the DMA Cleaning Project (0.1 Ml/d).
- Burst Repairs / Other Network Interruptions – the methodology applied is the same as the previous year; the volume has remained steady at 0.4 Ml/d.
- Reactive Water Quality Incidents – the volume has reduced from 0.4 Ml/d to 0.3 Ml/d as a result of Scottish Water receiving fewer WQ contacts.
- Planned Water Quality Sampling – the volume reported remains constant at 0.1 Ml/d.

A2.18 Net Consumption (including supply pipe losses)

Net consumption has increased from 1305.7 Ml/d to 1338.7 Ml/d, and the confidence grade remains at B3. The increase in volume is mainly due to the increased volume of line A2.11 (Water Delivered to Unmeasured Households) and A2.15 (Water taken unbilled- legally), although it is offset by decreases in lines A2.13 (Unmeasured non-household volume of water delivered (including losses)) and A2.14 (Measured non-household volume of water delivered (inc losses)).

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

Distribution losses have reduced from 518.0 Ml/d in AR14 to 467.9 Ml/d in AR15 due to continuing leakage reduction activity.

The confidence grade for this line remains B3.

A2.20 Customer supply pipe losses

Customer supply pipe losses (SPL) have increased from 89.8 Ml/d in AR14 to 122.4 Ml/d in AR15, following the implementation of a new methodology to estimate this component. SPL is now calculated based on measurements taken at 80 properties at both ends of the supply pipe. The average SPL from these properties is then extrapolated up to Scottish Water level, corrected using the Hour Day Factor (HDF) and Average Zonal Night Pressure (AZNP) from the sample site, to the SW average.

The confidence grade remains the same at C3.

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 Total Leakage (pre-MLE Adjustment)

The 'Total Leakage' by definition within the guidance documentation is considered by Scottish Water to include summing the DMA reported leakage, Service Reservoir leakage and Trunk Main leakage. The Total Leakage has reduced from 552.7 Ml/d in AR14 to 530.8 Ml/d this year. A summary of each of the components making up these components is given below:

- DMA leakage has reduced from 497.3 Ml/d in AR14 to 473.7 Ml/d in the current reporting year. The coverage of reportable DMAs has decreased slightly from 89.8% in AR14 to 89.6%.
- Service Reservoir leakage has increased from 8.9 Ml/d in AR14 to 9.8 Ml/d this year. The rise in leakage is partly due to the inclusion of some known overflowing tanks this year which accounted for 0.5 Ml/d.
- Trunk Main leakage has increased from 46.6 Ml/d in AR14 to 47.2 Ml/d this year.

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 increased from 3.0% for AR14 to 3.3% in AR15.

A2.24 MLE Adjustment

The MLE adjustment for AR15 is 13.2 Ml/d. The overall AR15 MLE calculation is associated with the appropriate MLE confidence grades (mid-point of WICS confidence grades), being assigned to water balance components in line with WICS own confidence grades.

The confidence grade for this line is B3.

A2.25 Total Leakage (post-MLE Adjustment)

Where the water balance closing error (A2.23) between top down and bottom up leakage is less than 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 closing 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 (Ml/d)	Bottom Up Leakage (Ml/d)	MLE Leakage (Ml/d)
AR07	1,004		
AR08	924		
AR09	868	776	816
AR10	783	705	738
AR11	757	693	699
AR12	661	617	629
AR13	617	561	575
AR14	608	553	566
AR15	590	531	544

The AR15 Maximum Likelihood Estimation (MLE) leakage is 544.0 Ml/d and is reported with confidence grade B3. This is a reduction of 21.8 Ml/d from the AR14 MLE leakage figure of 565.8 Ml/d.

A2.26 Volume of non-potable water delivered

Eleven non-household customers receive non-potable water supplies. In most cases there is also a separate potable supply to the premises. Several of these Supply Points are subject to Schedule 3 charging arrangements and all but one of the non-potable supplies is metered.

The volume reported in line A2.26 reflects the consumption calculated by the CMA for the metered non-potable supplies in addition to an estimated consumption for the one unmetered supply, Buckieburn Farm and Freshwater Research Unit. The estimated consumption for this supply of 5.55 Million Litres/day is based on the volume measured by the customer at the outlet from the premises to a watercourse. Scottish Water is currently in the process of installing a meter on the raw water supply pipe to the premises which will provide a more accurate measurement of consumption. Difficulties with the nature and location of this supply have delayed the meter installation which is now expected to be completed by May 2015.

A2.27 Per capita consumption (unmeasured h/hold – excluding supply pipe leakage)

The PCC figure for AR15 is 148.9 l/head/day, compared with an AR14 reported figure of 160.0 l/head/day.

The confidence grade remains at B2.

A2.28 Per capita consumption (measured h/hold – excluding supply pipe leakage)

The PCC figure for AR15 is 213.4 l/head/day, compared with an AR14 reported figure of 220.4 l/head/day.

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 mean value between 2007/08 and 2009/10 from the supporting information document for the OFWAT Service and Delivery Supporting Information Reports and remains at 4.1%. When applied to the domestic metered volume the total measured household meter under-registration is 0.009 Ml/d.

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

The 2007/8, 2008/09 and 2009/10 OFWAT 'Service and Delivery' supporting information documents have been used to derive a mean figure for non-household meter under-registration, which remains at 4.7%. The decrease in the meter under-registration volume from 17.4 Ml/d to 17.2 Ml/d is due to a decrease in the volume of water delivered to measured non-households.

Table A3 Population, Volumes and Loads (Waste water)

A3.1-A3.4 Summary – Population

A3.1 Population Waste water – Winter

Population data is based on General Register Office for Scotland (GROS) population projections for this year. The winter population for waste water has increased by 18,048.

A3.2 Population Waste 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. A total of 100,394 summer population is included. The increase since AR14 is due to more complete coverage of sewerage catchments, which incorporate more tourist accommodation.

The confidence grade remains the same at B2.

A3.3 Household Population connected to the waste water service

The population of unmeasured household properties connected to our networks has increased by 71,115 for waste water reflecting an increase in the GROS 2012 dataset in comparison to the GROS 2008 dataset used in the last few years.

A3.5-A3.11 Sewage – Volumes

A3.5 Unmeasured household volume (including exempt)

The unmeasured household volume has increased from 686.96 Ml/d to 691.33 Ml/d. The increase in the waste volume is a result of the increase in population reported in the year.

The confidence grade has remained at B3.

A3.6 Measured household volume

The measured household volume is the same as last year at 0.024 Ml/d in the report year. The number of households with a sewage service has remained stable compared with last year which means that these households have simply reduced their volumes.

The confidence grade remains at A2.

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

There is a marked decrease in unmeasured non-household foul volume (17.8 Ml/d to 14.4 Ml/day). There is a corresponding increase in the measured non-household volume.

The confidence grade remains at B3 as volumes are based on an estimate derived from the use of actual data from the installed Full Business Metering (FBM) meters.

A3.8 Measured non-household foul volume

The total volume of foul waste from measured non-households has increased from 136.92 Ml/d to 141.03 Ml/d. The confidence grade remains at B3.

A3.9 Trade Effluent Volume

The volume of trade effluent discharged has decreased from 80.596Ml/d to 76.066Ml/d. This figure is the volume associated with the Drainage Point IDs (DPIDs) billed at P6. The CMA system now calculates the Trade Effluent volume. However, in the absence of any Licensed Provider submitted meter readings, the CMA system defaults to an "industry standard" volume, which is very low. This may account for the apparently significant reduction. Volumes reported this year are taken from the latest available reconciliation run from the CMA for the reporting period. For DPIDs which haven't been billed by the CMA we have used, in order of preference, volumes submitted by the Licensed Providers for the DPID for the reporting period (the CMA system accepts these volumes even though the DPID doesn't appear on reconciliation runs), or the calculated annual volume estimate sent to the CMA when the DPID is initially set up, which is 200 times the Consented daily volume.

The confidence grade has been revised to B4 for the current year. This is primarily due to the change in volume calculation method and the need for the system to be updated with meter readings by Licensed Providers in order for the volume calculations to be correct.

A3.10 Total Volume

The confidence grade remains at B3.

A3.11 Volume septic tank waste

The volume of septic tank waste has increased significantly from 29.93 Ml to 48.27 Ml over the reporting period. This illustrates an increase in the number of private tanks being emptied as reported by the Scottish Water Gemini system over the previous year.

As there has been no change to the methodology used the A3 confidence grade is retained.

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

The household load reported is based on household occupancy multiplied by 60g per head per day in line with E table guidance.

The increase in unmeasured household load to 106,999 tonnes BOD/year is a result of an increase in household population and more complete coverage of sewerage catchments.

The measured household load has increased due to more complete coverage of sewerage catchments.

There has been no change in methodology therefore the confidence grade remains the same.

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

The non-household load is derived as 300g/m^3 applied to the volumes of sewage reported in lines A3.7 and A3.8.

There has been no change in methodology therefore the confidence grade remains the same

A3.16 Trade effluent load

The total BOD load discharged to the network has decreased from 22,581T to 17,866T.

The forecast figure is 17,863T.

The confidence grade has been revised to B4 for the current and forecast years. This is primarily due to the change in volume calculation method and the need for the systems to updated with meter readings by Licensed Providers in order for the volume calculations to be correct.

A3.18-A3.21 Septic tank loads

An increase from 117.89 to 137.90 tonnes is reported in line A3.18. This illustrates an increase in the number of private tanks being emptied as reported by the Scottish Water Gemini system over the previous year.

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

In addition there has been a significant increase in other tanker loads reported on line A3.20. This is due to growth in the waste management third party business by Scottish Water`s commercial arm generating business for the disposal of liquids, effluents and organic wastes which are discharged into Scottish Water's waste treatment facilities. The most significant of the increases were to Kinneil Kerse and Lerwick (Shetland).

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

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 previous year.

There is a small decrease from the previous year 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).

There is a small decrease from the previous year 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 reduction from 65,291 to 65,112 tonnes was observed, which is the result of reduced population equivalents for trade effluent sites receiving treatment through PPP treatment works.

There has been no change in methodology therefore the confidence grade remains the same.

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

The reported mass of waste water treatment sludge recycled was 122.608ttds, of which the majority, 102.39ttds, came from the PPP/PFI works. As with AR10, all the Scottish Water's figures reported were taken direct from the Gemini system and Recycling contractor's waste transfer notes. As in previous years we have retained the existing confidence grade.

For the Scottish Water sludge an overall increase in the volume of enhanced treated sludge was noted 1.4ttds. This was mainly attributable to increased treatment and processing of sludge at Perth and Kinneil Kerse sludge treatment centres during the reporting period.

Conventional sludge production showed a very small decrease of 1.18ttds from the previous year. This is mainly associated with better digestion capability at all the conventionally treated sites, combined with better de-watering of the digested sludge, particularly at Dalderse and Cumnock where new centrifuges have been installed.

E Tables – Operating Costs and Efficiency

General Comments

Methodology

Cost analysis in E Tables (E4, E6, E7, E8, E9 and E10) 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.

Cost Allocation

Consistent with prior years, costs are captured or allocated in line with Regulatory Accounting Rules including modifications, agreed with the Commission, to reflect the Scottish retail market.

A more detailed commentary on ABM methodology and cost allocation is provided in support of Regulatory Accounts Tables M18 and is not repeated in this document.

Confidence Grades – Confidence grades of the operating cost lines on the E Tables remain consistent with 2013/14.

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. A smaller proportion of costs – mainly general and support costs – remains to be allocated to asset/zone by means other than direct capture.

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.

Table E3 and E3a PPP project analysis

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

The following works form part of each scheme:

PPP Scheme	Waste Water 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

E3.1 Annual average resident connected population

The annual average resident connected population increased by 48,330 to 2,180,807. This reflects the increase in the general population reported in Table E7.1. The confidence grade remains at B3.

E3.2 Annual average non-resident connected population

The annual average non-resident connected population increased by 102 to 23,450.

The confidence grade remains at B3 which is unchanged from the Annual Return last year.

E3.3 Population equivalent of total load received

The population equivalent of total load received decreased by 8,177 to 2,973,152. This drop is due to a reduction in the trade effluent load and non-domestic load reported as being received at these WWTW.

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

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

	Population	Non-domestic load	Tourist	Trade effluent	Imported public septic tanks
Current AR	2,180,807	396,698	23,450	362,054	279
% of Total	73.35%	13.34%	0.79%	12.18%	0.01%
Previous AR	2,132,477	396,887	23,348	415,913	994
% of Total	71.53%	13.31%	0.78%	13.95%	0.03%
Difference	48,330	-190	102	-53,859	-714
Comment				Due to the opening of the retail market to competition in April 2008, the source of this data is now the Central Marketing Agency. 10 major businesses closed.	

	Imported private septic tanks	Imported WTW sludge	Imported WWTW sludge	Imported other loads	Sludge return liquors	Total
Current AR	815	0	8,676	0	372	815
% of Total	0.03%	0.00%	0.29%	0.00%	0.01%	0.03%
Previous AR	64	9,932	0	0	1,714	64
% of Total	0.00%	0.33%	0.00%	0.00%	0.06%	0.00%
Difference	751	-9,932	8,676	0	-1,341	751

E3.4 Sewerage

Fort William	Includes incoming sewer and 4 pumping stations.
Inverness	Includes 1 major pumping station and associated pumping mains/gravity sewer.
Hatton	Includes extensive pumping mains and 16 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 1 terminal pumping station.
Lossiemouth	Includes extensive pumping mains and 7 pumping stations.
Buckie	Includes extensive pumping mains and 12 pumping stations.
Banff/Macduff	Includes extensive pumping mains and 10 pumping stations.
Seafield	Includes the Esk valley trunk sewerage network, a number of storm water works with overflow and 7 sewage pumping stations.
Newbridge	Includes short section of incoming sewer, a storm water works with overflow and 2 pumping stations.
Whitburn	Includes 1 terminal pumping station.
Levenmouth	Includes 8 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
Levenmouth	Indigenous sludge, plus Scottish Water imports
Daldowie	Receives sludge from Dalmuir and Scottish Water waste water treatment works (Daldowie, Shieldhall, Paisley, Dalmarnock and Erskine) by sludge pipeline, and from SW tankered imports
Meadowhead	Indigenous sludge, plus imports from Stevenston and Inverclyde

Temporary sludge treatment facilities

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

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 - means a pumping station that is the final point on the forward flow path from a sewerage network into a waste water treatment works and may include both pumping of all/partial 'FFT' flows or storm water 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 waste water treatment works depending on actual location and power supply source. It is not a Combined Pumping Station or a Storm Water 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)This pumping station receives flows from a small part of the catchment.
Hatton	South Balmossie (1,563 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.

E3.9-13 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.

The Meadowhead CAR license was issued 12 May 2014. None of the limits have changed from those contained in the previous COPA consent.

E3.9 Suspended solids consent – all CAR.

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

At Dalmuir there has been an Improvement Plan and Variation Notice in place since May 2012. This Variation Notice suspends the ammonia consent condition until 31/12/15.

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). Here, 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-(total number of failures/total number of samples)) x 100

The SEPA Annual Compliance Report for period ending 31 December 2014 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
Persley	CAR	Ammonia	23/07/14 E	Prolonged period of dry weather/low flow led to high concentration of incoming ammonia. The site is not designed to treat ammonia.
Meadowhead	UWWTD	BOD	12/02/14 E	Sludge removal from the process inhibited by screenings/rags blockages of the sludge pipelines. This led to a carry-over of sludge into the final effluent which resulted in a BOD exceedance.
Inverclyde	UWWTD	BOD	09/09/14 E	Prolonged period of dry weather/low flow led to high septicity in the influent sewage & difficulty in settling/removing sludge from the WwTW process. This led to a carryover of sludge into the final effluent which resulted in a BOD exceedance.

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.

E3.22-32 Sewerage Data
Includes all sewerage (sewers, pumping stations, rising mans, outfalls and long sea outfalls)

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

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

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 waste water treatment works, the length of rising main connecting the terminal pumping station and waste water treatment works is included.

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 storm water, combined and terminal pumping stations. Interstage and final effluent pumping stations forming part of a waste water treatment plant are not included.

E3.25 Capacity of pumping stations (m3/d)
Includes storm water, combined and terminal pumping stations. Maximum flow pumped forward per day. This excludes capacity of standby pumps.

E3.26 Capacity of pumping stations (kw)
Includes storm water and combined pumping stations, but not terminal pumping stations. Includes capacity of standby pumps.

E3.27 Number of combined pumping stations
Combined pumping station means a network waste water pumping station containing a pump or pumps transferring waste water forward within the downstream sewerage network. The transferred waste water 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 storm water 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, Cummingston, 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 SWW: 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 storm water pumping stations

Storm water pumping station means a network waste water pumping station containing a pump or pumps transferring waste water, containing storm water, to a storm water storage tank or storm overflow. The storm water pumping station transfers waste water in excess of "FFT", the generally accepted term used in design and SEPA consents. For the sake of clarity, the function of the storm water pumping station is to prevent and/or limit surcharging of the upstream sewerage system. The following storm water 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 storm water pumping stations (m3/d)

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

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 (Watermill)
Lossiemouth	Burghead, Cummingston, 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

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.

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 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.

	E3a.2	E3a.9	E3a.17	
Site	**N**	**T**	**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 13/14.

The following confidence grades have been assigned:

	E3a.3	E3a.10	E3a.18	
Site	**N**	**T**	**S**	**Comment**
Fort William	A2	A2	N	No sludge centre at works
Inverness	N	A2	A2	No separate cost for sewerage
Hatton	A2	A2	A2	
Nigg	A2	A2	A2	
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	N	No WML charge included in invoice
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 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 administers the PPP projects 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 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.

	E3a.6	E3a.13	E3a.21	
Site	**N**	**T**	**S**	**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	N	N	Treatment cost only (exotics) are included with E3a.26
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	14/15 £m	13/14 £m	Variance £m	Comment
Ft William	0.009	-0.017	0.026	14/15 includes higher ABM support costs +£0.006m, 13/14 included release of accrual of legal/consultants costs -£0.020m
Inverness	0.661	0.445	0.216	14/15 includes higher other Scottish Water operating costs +£0.003m , higher sludge tankering and disposal costs +£0.185m, higher terminal pumping costs +£0.003m, and higher ABM support costs +£0.005m, 13/14 included release of accrual for legal/consultants costs -£0.020m
Hatton	0.298	0.231	0.067	14/15 includes higher other Scottish Water operating costs +£0.005m, higher sludge tankering costs +£0.022m, higher terminal pumping costs +£0.006m, and higher ABM support costs +£0.006m, 13/14 included release of accrual of legal/consultants costs -£0.028m
Nigg	1.116	1.362	-0.246	14/15 includes lower legal/consultants fees -£0.013m, and lower other Scottish Water operating costs -£0.070m, higher sludge tankering costs +£0.103m, and lower ABM support costs -£0.013m, 13/14 included SEPA recharge from KWS (now included with E3a.26) +£0.253m
Persley	0.017	0.012	0.005	14/15 includes higher other Scottish Water operating costs +£0.004m, and higher ABM support costs +£0.001m
Peterhead	0.008	0.009	-0.001	
Fraserburgh	0.008	0.008	0.000	
Lossiemouth	0.257	0.137	0.120	14/15 includes higher legal/consultants fees +£0.015m, and higher other Scottish Water operating costs +£0.047m, higher sludge tankering costs +£0.050m, lower terminal pumping costs -£0.001m, and higher ABM support costs +£0.009m
Buckie	0.009	-0.007	0.016	14/15 includes higher other Scottish Water operating costs +£0.001m, higher ABM support costs +£0.002m, 13/14 included release of accrual of legal/consultants costs -£0.013m

Site	14/15 £m	13/14 £m	Variance £m	Comment
Banff/Macduff	0.016	-0.001	0.017	14/15 includes higher other Scottish Water operating costs +£0.001m, higher ABM support costs +£0.003m, 13/14 included release of accrual of legal/consultants costs -£0.013m
Seafield	0.250	0.015	0.235	14/15 includes higher consultants costs +£0.114m, and higher other Scottish Water operating costs +£0.006m, higher sludge tankering costs +£0.083m, and higher ABM support costs +£0.031m
Newbridge	0.028	0.028	0.000	
East Calder	0.010	0.011	-0.001	
Blackburn	0.005	0.005	0.000	
Whitburn	0.007	0.007	0.000	
Levenmouth	0.373	0.383	-0.010	14/15 includes higher legal/consultants costs +£0.009m, lower Scottish Water operating costs -£0.017m, higher sludge tankering costs +£0.001m, and lower ABM support costs -£0.003m
Dalmuir	0.875	0.990	-0.115	14/15 includes lower legal/consultants costs -£0.056m, lower Scottish Water sludge disposal costs -£0.042m, lower other Scottish Water operating costs -£0.009m, and lower ABM support costs -£0.008m
Daldowie	2.624	2.147	0.477	14/15 includes lower Shieldhall centrifuging costs -£0.242m, higher other Scottish Water operating costs +£0.009m, higher sludge tankering costs +£0.720m, and lower ABM support costs -£0.010m
Meadowhead	1.115	0.986	0.129	14/15 includes higher other Scottish Water operating costs +£0.033m, higher terminal pumping costs +£0.096m
Stevenston	0.391	0.408	-0.017	14/15 includes higher other Scottish Water operating costs +£0.005m, and lower terminal pumping costs -£0.022m
Inverclyde	0.401	0.389	0.012	14/15 includes higher other Scottish Water operating costs +£0.021m, and lower terminal pumping costs -£0.009m
TOTAL	**8.478**	**7.548**	**0.930**	

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	14/15 £m	13/14 £m	Variance £m	Comment
Ft William	4.103	4.035	0.068	14/15 lower flows/loads -£0.029m plus inflation +£0.097m
Inverness	7.725	6.361	1.364	14/15 penalties -£0.192m, higher flows/loads £0.863m plus inflation +£0.171m, 13/14 included penalties -£0.484m, release of accruals -£0.038m,
Hatton	21.943	21.210	0.733	14/15 higher flows +£0.203m, plus inflation +£0.301m, and release of accrual -£0.042m, 13/14 included release of accruals -£0.271m
Nigg	13.063	14.053	-0.990	14/15 penalties -£0.857m, lower flows/loads -£0.270m, plus inflation +£0.212m, Business Rates Rebate -£0.116m, Carbon Reduction Commitment +£0.030m, SEPA recharge from KWS +£0.26m and electricity recharge from KWS +£0.039m (both previously included in E3a.24), release of accruals of -£0.496m, 13/14 included penalties -£0.103m, release of accruals -£0.105m.
Persley	2.348	2.384	-0.036	14/15 penalties -£0.002m, higher flows/loads +£0.053m, plus inflation +£0.040m, Business Rates Rebate -£0.028m, Carbon Reduction Commitment +£0.003m, and release of accruals of -£0.116m, 13/14 included penalties -£0.009m, release of accruals of -£0.005m
Peterhead	1.944	1.681	0.263	14/15 higher flows/loads +£0.204m, plus inflation +£0.032m, Business Rates Rebate -£0.015m, Carbon Reduction Commitment +£0.003m, and release of accruals of -£0.012m, 13/14 included release of accruals of -£0.051m

Site	14/15 £m	13/14 £m	Variance £m	Comment
Fraserburgh	1.899	1.841	0.058	14/15 penalties -£0.008m, lower flows/loads -£0.039m, plus inflation +£0.031m, Business Rates Rebate -£0.019m, Carbon Reduction Commitment +£0.003m, and release of accruals of -£0.009m, 13/14 included penalties -£0.009m and release of accruals -£0.090m.
Lossiemouth	4.613	4.167	0.446	14/15 penalties -£0.049m, higher flows +£0.407m, plus inflation +£0.064m, and release of accruals of -£0.008m, 13/14 included penalties -£0.014m, release of accruals of -£0.018m
Buckie	2.734	2.507	0.227	14/15 higher flows +£0.179m, plus inflation +£0.040m, and release of accruals of -£0.001m, 13/14 included release of accruals of -£0.009m
Banff/Macduff	3.148	2.688	0.460	14/15 higher flows +£0.410m, plus inflation +£0.041m, and release of accruals -£0.002m, 13/14 included release of accruals of -£0.012m
Seafield	20.563	19.814	0.749	14/15 based on 100% compliance with the contract plus inflation +£0.492m, Sludge rebate +£0.020m, Seafield Odour Improvement project +£0.104m, higher business rates +£0.125m, and release of accruals -£0.019m, 13/14 included Prestonpans imports +£0.200m, and release of accruals -£0.465m
Newbridge	2.977	2.868	0.109	
East Calder	1.624	1.564	0.060	
Blackburn	0.812	0.782	0.030	
Whitburn	1.082	1.043	0.039	
Levenmouth	10.801	15.531	-4.730	14/15 lower flows -£0.775m, plus inflation -£0.925m, Opex claim compensation -£0.064m, Odour Project chemical dosing +£0.200m, and release of accruals -£0.099m, 13/14 included Leven PS fence +£0.030m, Methil PS land purchase +£0.040m, Odour Project +£3.35m, Carbon Reduction Commitment +£0.205m, and release of accruals -£0.558m.

Site	14/15 £m	13/14 £m	Variance £m	Comment
Dalmuir	13.274	8.253	5.021	14/15 slightly higher flows +£0.011m, plus inflation +£0.086m, Annual operations compensation payment +£0.090m, New Investments Opex +£0.001m, centrifuge project -£0.006m, Compensation Event provision +£3.000m, business rates +£0.017m, release of accruals -£0.664m, 13/14 included Carbon Reduction Commitment +£0.114m, additional works +£0.150m, and release of accruals -£2.750m.
Daldowie	19.055	19.590	-0.535	14/15 lower sludge volumes -£0.110m plus inflation +£0.420m, necessary change costs +£0.026m, higher business rates +£0.009m, claim excess ragging -£0.020m, chromium and Commonwealth Games costs +£0.163m, additional works +£0.011m, release of accrual -£0.817m, 13/14 included Screening improvements at Daldowie +£1.500m, Carbon Reduction Commitment +£0.478m, and release of accruals -£1.761m
Meadowhead	8.301	9.715	-1.414	14/15 service fee inflation +£0.104m, Landfill Tax & Gas cost -£0.035m, higher business rates +£0.026m, additional works +£0.726m, release of accruals -£0.127m, 13/14 included Carbon Reduction Commitment +£0.133m, Project Variation re UPM/PADR 2 +£2.400m, and release of accruals -£0.425m.
Stevenston	3.422	2.856	0.566	14/15 lower flows -£0.130m, plus inflation +£0.043m, trader necessary change -£0.005m, higher business rates +£0.011m, release of accruals -£0.024m, 13/14 included Carbon Reduction Commitment +£0.025m, release of accruals -£0.696m
Inverclyde	4.133	3.587	0.546	14/15 lower flows -£0.028, plus inflation +£0.051m, higher business rates +£0.003m, additional works +£0.515m, and release of accruals -£0.003m, 13/14 included Carbon Reduction Commitment +£0.019m, release of accruals -£0.027m
TOTAL	**149.564**	**146.530**	**3.034**	

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 Public Sector Capital Equivalent (PSCE) value; similarly for Levenmouth, and Almond Valley Seafield & Esk(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

E4.1-5 Source Types

The number of sources has decreased by 2 to 282. This reduction is due to a number of previously reported sources supplying water treatment works (WTW) which were closed during 2014/15 (4 sources). However, there were also 2 new sources added. Details are provided in the table below:

	2013/14 No. of sources	284
Reductions	Source or WTW closures	4
Additions	New sources	2
	2014/15 No. of sources	**282**

Distribution input (DI) reduced by 17.082 Ml/d to 1806.674 Ml/d.

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

Source Type	**2013/14**	**2014/15**	**Net Change**
			Ml/d
Impounding reservoirs	1346.429	1342.682	-3.747
Lochs	19.428	19.367	-0.061
River and burn abstractions	381.173	374.031	-7.142
Boreholes	76.727	70.595	-6.132
Total	**1823.756**	**1806.674**	**-17.082**

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 remains at B2 (as per previous year). The overall reliability band remains as B. Although the asset information now held in Ellipse is sufficient to enable the number of sources to be reliably determined, it is recognised that there is still work to be done in establishing a robust process for this data being maintained as business as usual. Currently it is reliant on annual checks and bulk updates. The confidence grade for columns 110-140 (the average daily output of these sources) remains at B2 (in line with reported confidence for table A2).

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 put into supply in the peak seven day period during the reporting year

B = the average daily volume put into supply in the reporting year

In this reporting year, A was 1,806.674 Ml/d and B was 1,891.114 Ml/d. The peak to average ratio is therefore 1.047.

No changes were made to the process or methodology used to report this line, other than to use the reporting year "peak week" as per the revised definitions. 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 reporting year. The confidence grade is therefore B2, the same as the DI data reported on table A2.

E4.14 Average pumping head – resources and treatment

The reported Average Pumping head this year is 27.7m, an increase of 0.1m from the previous year.

As limited flow and pressure data is available, the methodology used was to update last year's figures by calculating the change to the "Work Done" (m^4) at regional level based on the proportional (regional) change to DI. This figure was then divided by the Regional DI to obtain the Regional Pumping Head, which was then aggregated.

Although the definitions include a requirement to report on inter-stage 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 remained at C4. 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) decreased by 7 to 249; the total distribution input (DI) reduced by 17.08 Ml/d to 1,806.67Ml/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	2013/14		2014/15		Net Change	
	No.	*% (1)*	*No.*	*%*	*No.*	*%*
<= 1 Ml/d	142	1.1	134	1.11	-8	0.01
>1, <= 2.5 Ml/d	25	1.3	27	1.36	2	0.06
>2.5, <= 5 Ml/d	26	3.5	25	3.02	-1	-0.48
>5, <= 10 Ml/d	16	4.5	17	4.62	1	0.12
>10, <= 25 Ml/d	20	10.8	19	10.64	-1	-0.16
>25, <= 50 Ml/d	12	15.2	12	14.65	0	-0.55
>50, <= 100 Ml/d	9	22.8	9	23.27	0	0.47
>100, <= 175 Ml/d	4	20.1	4	21.15	0	1.05
>175 Ml/d	2	20.7	2	20.17	0	-0.53
Total	**256**		**249**		**-7**	

The confidence grade for proportion of total DI remains at B2.

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

Water Resources & Treatment E4.19

	Total
Functional expenditure:	£m
2014/15	56.046
2013/14	61.151
Variance	**+5.105**

Water resources and treatment costs have decreased by £5.1m (8.3%) from 2013/14. This is analysed as follows:

- £1.1m (8.2%) increase in employment costs is mainly due to pay progression increase of £0.3m; and increased asset operating costs from focus on water quality OPA improvements of £0.8m;
- Power costs remained stable at £11.1m with increase in carbon tax of £0.3m; additional costs resulting from capital investment of £0.1m; offset by a reduction in consumption (net of higher prices) of £0.4m;
- £9.5m (110.0%) decrease in hired and contracted costs is mainly due to reversal of prior year water landfill tax accrual (£5.5m) resulting in a net reduction of £11.0m; partly offset by current year water landfill tax costs of £1.9m; and additional costs resulting from capital investment of £0.1m;
- £0.6m (4.9%) increase in materials and consumables mainly due to increased asset operating costs associated with improving water quality OPA of £0.5m; and additional costs resulting from capital investment of £0.3m;
- £0.1m (2.0%) decrease in SEPA costs mainly due to inflationary increase of 2.7% offset by individual consent changes;
- Other direct costs remained stable at £2.0m; and
- £2.8m (22.7%) increase in general and support costs mainly due to increase in payroll costs reflecting pay progression and the 2014 pension fund triennial valuation of £2.5m; and increases in support costs of £0.5m; partly offset by increase in renewable energy of £0.2m.

Water resources and treatment costs analysed by region:

Functional expenditure:	North £m	East £m	South £m	West £m	Direct £m	General and Support £m	Total £m
2014/15	9.867	11.273	7.543	12.168	**40.851**	15.195	**56.046**
2013/14	12.082	12.803	9.214	14.670	**48.769**	12.382	**61.151**
Variance	**+2.215**	**+1.530**	**+1.671**	**+2.502**	**+7.918**	(2.813)	**+5.105**

Changes to the numbers of WTW by process type and size band have arisen as a result of operational changes and process re-classifications in WTW during 2014/15. Re-stating 2013/14 figures on like-for-like basis shows the following variations:

Analysis of water resources and treatment costs by process type:

Process Type	2014/15 £m	2013/14 £m	Variance £m
SD : Simple Disinfection	1.668	1.709	+0.041
W1 : SD plus simple physical or chemical treatment	0.313	0.252	(0.061)
W2 : Single stage complex physical or chemical treatment	8.320	10.502	+2.182
W3 : Multiple stage complex treatment, excluding W4	26.787	32.360	+5.573
W4 : Very high cost treatment Process	3.763	3.946	+0.183
Direct	**40.851**	**48.769**	**+7.918**
General and Support	15.195	12.382	(2.813)
Total	**56.046**	**61.151**	**+5.105**

Analysis of water resources and treatment costs by size band:

Size band	2014/15 £m	2013/14 £m	Variance £m
<=1 Ml/d	6.208	6.762	+0.554
>1 to <=2.5 Ml/d	2.528	3.285	+0.757
>2.5 to <=5 Ml/d	3.598	4.161	+0.563
>5 to <=10 Ml/d	4.514	5.375	+0.861
>10 to <=25 Ml/d	6.545	8.127	+1.582
>25 to <=50 Ml/d	6.189	7.149	+0.960
>50 to <=100 Ml/d	4.730	6.103	+1.373
>100 to <=175 Ml/d	3.255	4.263	+1.008
>175 Ml/d	3.284	3.544	+0.260
Direct	**40.851**	**48.769**	**+7.918**
General and Support	15.195	12.382	(2.813)
Total	**56.046**	**61.151**	**+5.105**

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

- Balmore WTW [West, 175+ Ml/d, W2] decreased by £0.2m, due to continued capital works at Loch Lomond source;
- Belmore WTW [West, 10-25 Ml/d, W3] decreased by £0.1m, due to reduction in price and volume of purchased raw water;
- Craignure WTW [North, <1 Ml/d, W1] increased by £0.1m, due to operational challenges and resulting process changes;
- Glenfarg WTW [East, 50-100 Ml/d, W4] increased by £0.2m, due to prior year power bills; and additional pumping from source required because of dry weather; and
- Teangue WTW [North, <1 Ml/d, W4] increased by £0.2m, due to tankering required to maintain supplies during extreme weather.

The individual works which have larger movements due to the increase in landfill tax, and associated changes in disposal route to reduce this impact, are:

- Black Esk WTW [South, 10-25 Ml/d, W3] increased by £0.1m;
- Bradan WTW [West, 100-175 Ml/d, W3] increased by £0.2m;
- Burncrooks WTW [West, 10-25 Ml/d, W3] increased by £0.1m;
- Camphill WTW [West, 25-50 Ml/d, W3] increased by £0.1m;
- Carron Valley WTW [West, 7, W3] increased by £0.2m;
- Daer WTW [South, 100-175 Ml/d, W3] increased by £0.1m; and
- Penwhirn WTW [South, 10-25 Ml/d, W4] increased by £0.1m.

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 £40.8m total direct resource and treatment costs, £40.1m of costs or 98.3% 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 and remain consistent with 2013/14.

Table E6 Water Distribution

E6.1 Annual average resident connected population

The annual average resident connected population increased by 75,097 to 5,191,802. This figure is consistent with the figure reported in A2.1.

The methodology used to allocate population to 4 operational regions remains unchanged from the method used last year.

The confidence grade remains at A2.

E6.2 Total connected properties

The total number of connected properties has increased by 6,501 to 2,614,180. This figure is consistent with the figure reported in A1.10.

The methodology used to allocate properties to 4 operational regions remains unchanged from the method used last year.

The confidence grade remains at B4.

E6.3 Volume of water delivered to households

The volume of water delivered to households decreased by 34.4 Ml/d to 876.0 Ml/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 property figures calculated for line E6.2, multiplied by the regional specific Per Household Consumption figure.

The confidence grade remains at B2.

E6.4 Volume of water delivered to non-households

The volume of water reported as delivered to non-households decreased by 7.2 Ml/d to 403.0 Ml/d. This figure is consistent with the sum of the figures reported in A2.13 and A2.14.

Measured and unmeasured non-household volumes are allocated to water operational areas and summed to regional level; the method remains unchanged from last year.

The confidence grade remains unchanged at B4.

E6.5 Area

There has been a small change to the East operational region in the last year, which has resulted in a small increase in area. This was due to an island off Orkney being included in the region boundaries for the first time in corporate GIS. This has increased the total area to 79,799km^2

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 remains unchanged at 290.

This was calculated using the same methodology as last year and matches the number reported to the Drinking Water Quality Regulator.

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.

E6.7-11 Functional Cost

Water Distribution E6.11

	Total
Functional expenditure:	£m
2014/15	63.297
2013/14	60.904
Variance	**(2.393)**

Water distribution costs increased by £2.4m (3.9%), from 2013/14. This is analysed as follows:

- £0.8m (4.0%) increase in employment costs mainly due to pay progression increase of £0.5m; and increased customer focussed costs to improve OPA of £0.3m;
- £0.6m (7.8%) increase in power costs mainly due to increase in carbon tax of £0.3m; offset by a reduction in consumption (net of higher prices) of £0.3m;
- £0.8m (7.4%) decrease in hired and contracted services mainly due to reduction in provision for network intervention activity as a result of contractual arrangements of £1.0m;
- £0.2m (9.9%) increase in materials and consumables;
- £1.7m (42.3%) decrease in other direct costs mainly due to decrease in insurance claim costs of £1.4m; and
- £3.2m (22.6%) increase in general and support costs mainly due to increase in payroll costs reflecting the 2014 pension fund triennial valuation of £2.6m; and increases in support costs of £0.6m; partly offset by increase in renewable energy of £0.2m.

Water distribution costs are analysed by region:

	North	East	South	West	Total	General and Support	Total
Functional expenditure:	£m	£m	£m	£m	£m	£m	£m
2014/15	5.763	12.412	11.621	15.902	**45.698**	17.599	**63.297**
2013/14	5.643	12.231	11.691	16.980	**46.545**	14.359	**60.904**
Variance	**(0.120)**	**(0.181)**	**+0.070**	**+1.078**	**+0.847**	**(3.240)**	**(2.393)**

Confidence Grades – Confidence grades on Table E6 are consistent with grades in the general E table commentary and remain consistent with 2013/14.

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.

E6.12-16 Potable mains

There were no significant changes in the figures of Bands 1-4 or total length of mains, with a total increase in length of 150.08 km (0.3%).

The inventory is reported from our corporate GIS, where the diameter field is populated to 99.3% leaving 330km (0.7%) of mains not populated with diameter. The default value used to infill is DN150, falling into Band 1, which is the smallest band.

The confidence grades remain at B2.

E6.17 Total length of unlined iron mains

The total length of unlined iron mains increased by 71.31 km (0.6%) to 12,705.30km

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

169.58km of GIS potable main was populated by the Infill material model and is defaulted to unlined spun iron, constituting 0.35% of reported value.

The information available for pipe lining is not fully complete, with 39.68% of ferrous inventory having null or unknown as the lining attribute. If the GIS lining attribute is held as bitumen or unknown for grey, cast and spun iron, it is included as unlined iron main. Ductile iron is assumed to be cement lined where the lining material is unknown and totals 1912.83km.

E6.18 Total length of mains >320mm diameter

The total length of mains greater than 300mm diameter decreased by 6.44km to 3,911.81km.

The inventory is reported from our corporate GIS. The diameter field is populated for nearly all these mains, with less than 0.04% not populated with a valid diameter. The confidence grade remains at B2.

E6.19 Water mains bursts

The number of water mains bursts has decreased by 111 to 7,745 over the report year representing an overall 1.41% reduction on last year.

Generally over the first eight months there was a decrease in the number of bursts compared to last year by around 15.5%. An increase in the number of bursts was evident throughout the last 4 months of the report year of around 29.6%.

The trend over the last five years has been a decrease in the number of customer reported bursts, with a 22% decrease overall. This includes a 3.2% decrease in the report year. In 2013/14 there was a 5.7% decrease in the number of non-customer-reported bursts. This has increased by 6.1% in the report year.

The annual number of non-customer-reported bursts for the reporting year is 20% of the total number of bursts, leaving 80% being customer reported bursts. This split is comparable to the last few years.

The confidence grade remains at B3.

E6.20 Leakage level

We also report leakage in terms of Maximum Likelihood Estimation (MLE) leakage in A2 and G3 tables.

For E6.20, the top-down leakage level used in the MLE assessment has decreased by 17.46 Ml/d from the 607.8 Ml/d reported in 2013/14 to 590.34 Ml/d in 2014/15.

The confidence grade remains at B3.

E6.21 Properties reported for low pressure

The overall number of low pressure properties has reduced from 429 to 415. Targeted investment and operational changes have improved pressure to 17 properties during 2014/15. 5 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 8 properties being removed through better information. 6 properties were added as a result of asset deterioration. There have not been any properties added within the report year due to operational changes.

The confidence grade remains at B2.

2013/14 Properties reported for low pressure	429
Removed due to operational improvements	-14
Removed due to asset improvements	-3
Removed due to better information	-8
Added due to asset deterioration	+6
Added due to better information	+5
Added due to operational changes	0
2014/15 Properties reported for low pressure	**415**

E6.22 Total number of pumping stations

The total number of pumping stations increased by 5 to 604. The table below shows the change in the number of stations recorded in the corporate asset inventory as being operational during this year:

2013/14 No. of pumping stations	599
Stations removed	-5
Stations added	10
2014/15 No. of pumping stations	**604**

The confidence grade remains at B2.

E6.23 Total capacity of pumping stations

The total capacity of pumping stations is 2,437,588 m3/d.

The change recorded this year is attributed to the increase in asset numbers and improved data quality. 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 increased by 330.9 kW to 42,965.355 kW.

Our methodology for determining the design capacity (in kW) of stations remains unchanged.

The confidence grade remains at C3.

E6.25 Average pumping head

Average pumping head is reported as 32.02m this year. This reflects an increase of 0.29m on the previous year.

As limited new flow and pressure data is available, the methodology updates last year's figures by calculating the change to the "Work Done" (m^4) at regional level based on the proportional change to DI. This figure was then divided by the Regional DI to obtain the Regional Pumping Head, which was then aggregated.

Pumping head data

We note that due to data limitations our confidence grade has remained at C4. 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 15 to 1,348. During the year 11 new service reservoirs were commissioned. The changes are generally the result of operational revisions across the network.

The total capacity of service reservoirs increased by 70.06 Ml to 4,037.8 Ml. This is mainly due to improvement in data quality and the result of operational revisions across the network.

The confidence grades remain at B2.

E6.28-29 Water Towers

The total number of water towers remains unchanged at 19.

The total capacity of water towers remains unchanged at 29.7 Ml.

The confidence grades remain at B2.

Table E7 Waste water Explanatory Factors - Sewerage & Sewage treatment

E7.1 Annual average resident connected population

The annual average resident connected population increased by 64,839 to 4,886,154.

The confidence grade remains at B2.

E7.2 Annual average non-resident connected population

The annual average non-resident connected population increased by 607 to 70,459.

As with previous years, tourist population has been determined on the basis of average bed spaces multiplied by an average occupancy factor. Average occupancy rates are taken from Visit Scotland's latest available "Tourism in Scotland" report.

The confidence grade remains at C4.

E7.3 Volume of sewage collected (daily average)

The daily average volume of sewage collected increased by 25.1 Ml/d to 3,003.2 Ml/d.

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 waste water 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 waste water 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 6,245 to 2,489,308.

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

E7.5 Area of sewerage district

There has been a small change to the East operational region in the last year, which has resulted in a small increase in area. This was due to an island off Orkney being included in the regional boundaries for the first time in corporate GIS. This has increased the total area to 79,799km^2.

E7.6 Drained area

The drained area has increased slightly by 9.5 km^2 to 1,917 km^2. This rise is as a result of both the addition of new development and on-going verification of the sewered areas in our corporate GIS.

The confidence grade remains at B2 as the data is sourced from our corporate GIS.

E7.7 Annual precipitation

During the year annual precipitation was 1,229 mm, which is 116 mm higher than last year.

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 1km grid spacing.

E7.8 Total length of sewer

The total length of sewer reported increased by 1,444km to 51,510km. This change comprises of: an increase of 1,394km of main sewer; an increase of 50km of rising main.

The information comes from our GIS inventory (34,074km) and a statistical calculation of lateral sewer length based on unit length connections by dwelling (17,436km).

The confidence grade remains at C4.

E7.9 Total length of lateral sewer

The total length of lateral sewer has increased by 1,005km to 17,436km. The calculation used is based on the number of properties connected to the waste water network (connected properties).

This is supported by a proximity calculation which allocates the Ordnance Survey Address Point References (OSAPRs) located within 70m of the waste water network. This is the same methodology as used in previous returns. CACI (ACORN) house type proportions in each operational region are also used as part of this calculation. http://acorn.caci.co.uk/

Unit lengths of lateral sewer are derived from a 2004 survey and checked for validity in 2014 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.

E7.10 Length of combined sewer

The length of combined sewer has increased by 29km to 17,449km.

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 storm water sewer

The length of separate storm sewer has increased by 190km to 8,184km. This increase is due to the construction of separate foul and storm sewers for new builds.

E7.12 Length of sewer >1,000mm diameter

The length of sewer greater than 1000mm diameter increased by 9km to 785km. The continuous asset recording from our capital investment programme is resulting in a consistent rise in this figure.

The confidence grade remains at B2.

E7.13 Length of critical sewer

The length of critical sewer has increased by 8km to 10,885km.

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 reported sewer collapses has increased from the 124 reported last year to 2,246 due to a change in methodology which ensures that all Work Orders raised have a fault code applied to better reflect the actual cause of the issue in the sewer network and the action undertaken to resolve it. This has caused the reported number to appear substantially greater than in previous years but we feel that it now better reflects the customer focussed approach this type of occurrence may cause.

E7.15-19 Sewerage Costs

Sewerage E7.19

	Total
Functional expenditure:	£m
2014/15	41.132
2013/14	41.626
Variance	**+0.494**

Sewerage costs have decreased by £0.5m (1.2%) from 2013/14. This is analysed as follows:

- £0.2m (1.2%) increase in employment costs due to pay progression increase of £0.3m; and increased customer focussed costs to improve OPA of £0.5m; partly offset by decreased CSO operating costs of £0.4m; and less in house choke clearance of £0.4m;
- Power costs remained stable at £7.4m with an increase in carbon tax of £0.2m; additional costs resulting from capital investment of £0.2m; offset by reduced consumption (net of higher prices) of £0.4m;
- £2.4m (42.1%) decrease in hired and contracted costs mainly due to reduction in provision for network intervention activity as a result of contractual arrangements of £1.0m; and reduction in sewer repairs of £1.2m; partly offset by additional costs resulting from capital investment of £0.4m;
- £0.3m (49.4%) increase in materials and consumables;
- £0.1m (4.6%) increase in SEPA charges mainly due to the inflationary increase of 2.7%;
- £0.8m (59.3%) decrease in other direct costs due to a decrease in insurance claim costs of £0.8m; and
- £2.2m (19.8%) increase in general and support costs mainly due to increase in payroll costs reflecting the 2014 pension fund triennial valuation of £1.9m; and increases in support costs of £0.4m; partly offset by increase in renewable energy of £0.3m.

Sewerage costs are analysed by region:

	North	East	South	West	Direct	General and Support	Total
Functional expenditure:	£m	£m	£m	£m	£m	£m	£m
2014/15	3.372	7.523	7.280	9.792	**27.967**	13.165	**41.132**
2013/14	3.963	8.295	8.233	10.147	**30.638**	10.988	**41.626**
Variance	**+0.591**	**+0.772**	**+0.953**	**+0.355**	**+2.671**	**(2.177)**	**+0.494**

E7.20 Total number of pumping stations

The total number of pumping stations has increased by 45 to 2,201.

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

The confidence grade remains at B3.

E7.21 Total capacity of pumping stations (m^3/d)

The total capacity of pumping stations increased by 433,547.94 m3/d to 13,070,499 m3/d.

This figure is based on extrapolated corporate data as not all stations have a design capacity in m^3/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 has increased by 2,978 kW to 80,785 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 32.1m this year representing an increase of 1.2m compared with the previous year. This figure has been calculated by additions, deletions and corrections to the pumping data contained in the historic AR09 spreadsheet.

Due to data limitations our confidence grade has remained at C5. 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.

E7.24 Total number of combined pumping stations

The total number of combined pumping stations has increased by 10 to 1,358.

The confidence grade remains at B3.

E7.25 Total capacity of combined pumping stations

The total capacity of combined pumping stations increased by 158,192 m3/d to 10,454,760 m3/d.

The change recorded this year is mainly attributed to the inclusion of new sites containing large pumps.

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

E7.26 Total number of storm water pumping stations

The total number of storm water pumping stations remains unchanged at 36.

The confidence grade remains at B3.

E7.27 Total capacity of storm water pumping stations

The total capacity of storm water pumping stations increased by 7,336 m3/d to 274,447 m3/d.

The change recorded this year is attributed to some improved data used to calculate capacity across the regions.

The confidence grade remains at C4.

E7.28 Number of combined sewer overflows

The number of combined sewer overflows (CSOs) decreased by 212 to 2,937. A desktop survey backup up by selected site surveys has been carried out this year to identify and record screens and type of screens (powered / non-powered). Continual improvement has been done to identify abandoned CSO and duplicate records, which has reduced the overall number. 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 decreased by 68 to 920. Screened CSOs constitute 31.3% of the total number of CSOs reported in E7.28. The decrease is due to on-going desktop surveys backed up by selected site surveys carried out to identify and record screens and type of screens (powered / non-powered) and rationalisation of CSO in the UID programme. The confidence grade remains at A3.

E7.30 Number of sewage treatment works

The number of reported sewage treatment works (WWTW) decreased by decreased by 14 to 1,854. The replacement of several small WwTW or septic tanks with pumping stations taking flows to larger existing catchments has helped reduce the total number. Investigation of the existing WwTW data set identified some missing septic tanks, which were added during the year.

The confidence grade remains at A3.

E7.31 Total load

The total load decreased by 6,579 kg BOD/day to 222,527 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 (72.94% of total load)

The population load increased by 991 kg BOD/day. The increase in population load is a reflection of the increase in population reported in line E7.1.

Tourist (1.27% of total load)
The tourist load increased by 30 kg BOD/day. This increase is due to a greater occupancy rate being reported at tourist accommodation.

Non-domestic load (10.25% of total load)
The non-domestic load increased by 206 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 (9.47% of total load)
The trade effluent load decreased by 12,893 kg BOD/day. This is due to several businesses either closing down or changing description. 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 (0.15% of total load)
The imported private septic tanks load increased by 66 kg BOD/day.

Imported public septic tanks (0.21% of total load)
The imported public septic tanks load increased by 261 kg BOD/day.

Imported other loads (3.84% of total load)
The imported other load increased by 6,593 kg BOD/day.

Imported WWTW sludge (1.57% of total load)
The imported WWTW sludge load decreased by 1,593kg BOD/day.

Imported WTW sludge (0.20% of total load)
The imported WTW sludge load decreased by 151 kg BOD/day.

Sludge return liquors (0.10% of total load)
The sludge return liquor load decreased by 88 kg BOD/day.

The confidence grade remains at B3.

E7.32-36 Sewage Treatment Costs

Sewage Treatment E7.36

	Total
Functional expenditure:	£m
2014/15	50.863
2013/14	46.627
Variance	**(4.236)**

Sewage treatment costs increased by £4.2m (9.1%) from 2013/14. This is analysed as follows:

- £1.1m (10.3%) increase in employment costs due to pay progression increase of £0.3m; review of sewage/sludge cost split of £0.2m; and increased STW operating costs of £0.6m;
- £0.9m (6.3%) increase in power costs mainly due to an increase in carbon tax of £0.4m; additional costs resulting from capital investment of £0.3m; and higher prices and increased consumption of £0.1m;

- £0.7m (26.6%) decrease in hired and contracted costs mainly due to reduction in STW operating costs of £0.9m; partly offset by additional operating costs as a result of capital investment of £0.2m;
- £0.5m (26.1%) increase in materials and consumables mainly due to increased E&M maintenance of £0.5m; and additional costs resulting from capital investment of £0.1m;
- £0.1m (0.9%) increase in SEPA costs due to inflationary increase of 2.7% offset by individual consent changes;
- £0.2m (19.4%) increase in other direct costs; and
- £2.1m (23.3%) increase in general and support costs mainly due to increase in payroll costs reflecting the 2014 pension fund triennial valuation of £1.9m; and increases in support costs of £0.4m; partly offset by increase in renewable energy of £0.3m.

Sewage treatment costs are analysed by region:

	North	East	South	West	Direct	General and Support	Total
Functional expenditure:	£m	£m	£m	£m	£m	£m	£m
2014/15	6.180	8.997	13.037	11.404	**39.618**	11.245	**50.863**
2013/14	5.767	8.851	12.213	10.674	**37.505**	9.122	**46.627**
Variance	**(0.413)**	**(0.146)**	**(0.824)**	**(0.730)**	**(2.113)**	**(2.123)**	**(4.236)**

Confidence Grades – Confidence grades on Table E7 are consistent with grades in the general E table commentary and remain consistent with 2013/14.

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 Waste Water Explanatory Factors - Sewage Treatment Works

E8.1-8 Sewage treatment works size bands

The total number of sewage treatment works (WWTW) decreased by 14 to 1,854. Changes to the number of WWTW this year are broken down by size band and treatment category in the tables below:

Size Band	2013/14	2014/15	Net Change
0	1,141	1126	-15
1	223	227	4
2	136	139	3
3	186	180	-6
4	123	123	0
5	36	37	1
6	23	22	-1
Total	1,868	1,854	-14

Treatment Category	2013/14	2014/15	Net Change
Septic Tanks	1,182	1,173	-9
Primary	43	43	0
Sec Activated Sludge	180	179	-1
Sec Biological	293	296	3
Tertiary A1	33	35	2
Tertiary A2	19	18	-1
Tertiary B1	61	60	-1
Tertiary B2	15	14	-1
Sea Preliminary	10	8	-2
Sea Screened	5	4	-1
Sea Unscreened	27	24	-3
Total	1,868	1,854	-14

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 decreased by 7 to 45. 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 8 to 62. The confidence grade remains at A1.

E8.11-18 Average Daily Loads

The total average daily load, excluding septic tanks, has decreased by 6,460 kg BOD/day to 216,908 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	2013/14	2014/15	Net Change
	Excluding septic tanks		
0	439	437	-2
1	1,122	1,104	-18
2	1,821	1,898	77
3	10,420	10,225	-195
4	36,202	36,089	-113
5	31,310	32,008	698
6	142,055	135,147	-6,907
Total	**223,368**	**216,908**	**-6,460**

Treatment Category	2013/14	2014/15	Net Change
Septic Tanks	5,738	5,619	-119
Primary	3,892	4,059	167
Sec Activated Sludge	153,787	150,256	-3,531
Sec Biological	22,343	22,074	-269
Tertiary A1	23,538	23,666	128
Tertiary A2	4,508	4,568	60
Tertiary B1	10,839	8,209	-2,630
Tertiary B2	1,546	1,547	1
Sea Preliminary	1,915	1,717	-198
Sea Screened	605	400	-205
Sea Unscreened	396	412	16
Total	**229,105**	**216,908**	**-12,197**

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 74 kg BOD/day to 8,628 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 increased by 26,560 kg BOD/day to 40,339 kg BOD/day. Secondary Activated Sludge and Tertiary A1 categories are mainly responsible for the increase

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 2014/15.

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 Secondary Biological.

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.

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.

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 process type:

Changes to the numbers of STW by process type have arisen as a result of operational changes and process re-classifications in STW during 2014/15. Re-stating 2013/14 figures on like-for-like basis shows the following variations:

	Septic tanks	Primary	Secondary	Tertiary	Sea Outfalls	Direct	General and Support	Total
Total treatment works	£m	£m	£m	£m	£m	£m	£m	£m
2014/15	2.925	1.067	27.730	7.653	0.243	**39.618**	11.245	**50.863**
2013/14	2.933	1.131	25.982	7.135	0.324	**37.505**	9.122	**46.627**
Variance	**+0.008**	**+0.064**	**(1.748)**	**(0.518)**	**+0.081**	**(2.113)**	**(2.123)**	**(4.236)**

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:

- Girvan STW [West, Secondary Activated Sludge, Band 5] increased by £0.1, due to review of sewage/sludge treatment cost split; and
- Largs STW [West, Secondary Activated Sludge, Band 5] increased by £0.1m, due to extra costs to overcome operational challenges.

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 £39.6m total direct waste water treatment costs, £37.4m of costs or 94.3% have been directly charged to assets in our corporate costing system.

Other costs have been allocated to Waste Water 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 and remain consistent with 2013/14.

Table E9 Large Sewage Treatment Works Information Database

E9.0a Name of operational area

The number of large non-PPP WWTW has decreased by 1 to 22, this is because:

- a decrease in the trade effluent load has led to Livingston WwTW being removed from the large works category, and a decrease in the trade effluent load has led to Dunbar WwTW falling just under the large works kg BOD/day criteria.
- An increase in other tanker loads has led to Rovahead (Lerwick) WwTW being included in the large works category.

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 decreased by 93,776 to 2,285,125.

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	2013/14	2014/15	Net Change	% Change	Classification change 2014/15
Allers	42,247	40,923	-1,324	-3.13%	
Alloa	49,442	45,455	-3,987	-8.06%	
Ardoch	59,818	65,631	5,813	9.72%	
Bothwellbank	25,055	25,108	53	0.21%	
Carbarns	46,611	47,915	1,304	2.80%	
Dalderse	94,435	92,954	-1,481	-1.57%	
Daldowie	270,439	269,679	-760	-0.28%	
Dalmarnock	397,600	231,125	-166,475	-41.87%	
Dunbar	25,499	24,589	-910	-3.57%	Not a large works
Dunfermline	78,009	77,678	-331	-0.42%	
Dunnswood	31,070	31,858	788	2.54%	
Erskine	75,970	79,004	3,034	3.99%	
Galashiels	33,085	28,145	-4,940	-14.93%	
Hamilton	63,174	62,664	-510	-0.81%	
Kinneil Kerse	61,358	141,171	79,813	130.08%	
Kirkcaldy	62,642	61,238	-1,404	-2.24%	
Laighpark (Paisley)	111,344	130,515	19,171	17.22%	
Livingston	39,507	8,083	-31,424	-79.54%	Not a large works
Perth	103,248	83,915	-19,333	-18.72%	
Philipshill	60,085	60,996	911	1.52%	
Shieldhall	519,054	533,800	14,746	2.84%	
Stirling	71,285	73,019	1,734	2.43%	
Troqueer	46,597	44,031	-2,566	-5.51%	
Rovahead	11,327	25,629	14,302	126.26%	Added in AR15
	2,378,901	**2,285,125**	**-93,776**		

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

Dalderse BOD consent has changed from 20 to 75.
Kirkcaldy BOD consent has changed from 75 to 225.
Laighpark BOD consent has changed from 15 to 75.
Perth BOD consent has changed from 30 to 0.
Shieldhall BOD consent has changed from 20 to 0.

E9.4 COD consent

There have been no changes to the COD consent standards.

E9.5 Ammonia consent

Bothwellbank; Ammonia consent has changed from 13 to 12.

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 2014 to the end February 2015 for this line. For WWTW with a two tier consent we have taken exceeding the lower tier as being a non-compliant sample.

E9.8-14 Treatment Works Category

This information is held in the corporate asset inventory. We are reporting 22 large WWTWs in Table E9, this is in line with E8.7.

E9.15-21 Works cost

Analysis of functional costs for large sewage treatment works:

	2014/15	2013/14	Variance
	£m	£m	£m
Daldowie	0.915	0.841	(0.074)
Dunbar	n/a	0.308	+0.308
Galashiels	0.086	0.071	(0.015)
Livingston	n/a	0.156	+0.156
Tertiary treatment	**1.001**	**1.376**	**+0.375**
Allers	0.280	0.288	+0.008
Alloa	0.382	0.421	+0.039
Ardoch	0.314	0.524	+0.210
Bothwellbank	0.192	0.186	(0.007)
Carbarns	0.301	0.259	(0.042)
Dalderse	0.433	0.399	(0.034)
Dalmarnock	1.169	0.959	(0.211)
Dunfermline	0.215	0.173	(0.042)
Dunnswood	0.325	0.225	(0.100)
Erskine	0.525	0.483	(0.042)
Hamilton	0.539	0.445	(0.094)
Kinneil Kerse	0.342	0.419	+0.077
Kirkcaldy	0.487	0.525	+0.038
Laighpark (Paisley)	1.024	1.034	+0.010
Perth	0.516	0.422	(0.094)
Philipshill	0.779	0.678	(0.101)
Rovahead	0.091	n/a	(0.091)
Shieldhall	2.210	2.024	(0.186)
Stirling	0.412	0.421	+0.009
Troqueer	0.265	0.283	+0.018
Secondary treatment	**10.801**	**10.167**	**(0.634)**
Direct large treatment works	**11.802**	**11.543**	**(0.259)**
General and Support	1.959	1.474	(0.485)
Total large treatment works	**13.761**	**13.017**	**(0.744)**

The number of treatment plants classified as large works has decreased by 1 from 2013/14, with Rovahead being classified from small to large, and Dunbar and Livingston from large back to small.

- Ardoch STW [South, Secondary Activated Sludge, Band 6] has decreased £0.2m, due to operational issues in prior year;
- Dalmarnock STW [West, Secondary Activated Sludge, Band 6] has increased by £0.2m, due to operational issues;
- Dunbar STW [South, Tertiary A2, Band 5] has moved from large tertiary to small tertiary £0.3m;
- Dunnswood STW [South, Secondary Activated Sludge, Band 6] has increased by £0.1m, due to extra costs to overcome operational challenges;
- Hamilton STW [South, Secondary Activated Sludge, Band 6] has increased by £0.1m, due to operational issues in prior year;

- Livingston STW [South, Tertiary B1, Band 4] has moved from large tertiary to small tertiary £0.2m;
- Philipshill STW [South, Secondary Activated Sludge, Band 6] has increased by £0.1m, due to operational issues in prior year;
- Rovahead STW [East, Secondary Activated Sludge, Band 6] has moved from small secondary to large secondary £0.1m]; and
- Shieldhall STW [West, Secondary Activated Sludge, Band 6] has increased by £0.2m, due to operational issues in prior year; and review of sewage/sludge treatment cost split.

Confidence Grades – Confidence grades on Table E9 are consistent with grades in the general E table commentary and remain consistent with 2013/14.

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 Waste water Explanatory Factors - Sludge Treatment and Disposal

E10.1 Resident population served

The total resident population served decreased by 7,548 to 2,651,302. This change is due to a small reduction in the sludge volume from PPP sites.

The confidence grade remains at C3.

E10.2 Amount of sewage sludge

The reported mass of sewage sludge has increased slightly to 20.217 ttds. As in previous years all the reported figures have been taken directly from the Gemini system.

No significant changes have occurred and the confidence grade remains the same as the previous year.

E10.3-11 Sludge Treatment and Disposal Costs

Sludge Treatment E10.11

	Total
Functional expenditure:	£m
2014/15	13.920
2013/14	13.156
Variance	**(0.764)**

Sludge treatment costs have increased by £0.8m (5.8%) from 2013/14. This is analysed as follows:

- Employment costs remained stable at £2.3m with pay progression increase of £0.1m; offset by review of sewage/sludge cost split of £0.2m;
- £0.1m (5.1%) increase in power costs mainly due to an increase in carbon tax of £0.1m;
- £0.5m (10.8%) increase in hired and contracted costs mainly due to changes in sludge disposal routes £0.2m; and sludge treatment operating challenges of £0.3m;
- £0.2m (23.2%) increase in materials and consumables due to sludge treatment operating challenges of £0.2m;
- £0.1m (38.8%) increase in other direct costs; and
- £0.1m (4.6%) decrease in general and support costs mainly due to a reduction in inter-site sludge tankering support of £0.7m; offset by increase in payroll costs reflecting the 2014 pension fund triennial valuation of £0.6m.

Scottish Water incurs costs associated with the transportation of sludge from its own sewage treatment works to PPP sludge treatment centres (£3.5m). These costs have been reported within E3a.20 with the corresponding sludge loads 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:

	2014/15 £m	2013/14 £m	Variance £m
Farmland:			
Untreated	0.000	0.000	+0.000
Conventional	3.763	2.403	(1.360)
Advanced	8.635	7.555	(1.080)
Incineration	0.000	0.000	+0.000
Landfill	0.867	0.868	+0.001
Composted	0.000	0.000	+0.000
Land reclamation	0.655	2.330	+1.675
Other	0.000	0.000	+0.000
Total	**13.920**	**13.156**	**(0.764)**

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

- Perth (Farmland Advanced) increase in volume following operational issues during 2013/14 of £0.7m; and
- Decreased volume was available for Land Reclamation in 2014/15 at a number of sites, mainly; Cumnock £0.4m (now Farmland Conventional); Dalderse £0.3m (now Farmland Conventional); Kirkcaldy £0.2m (now Farmland Advanced), St Andrews £0.1m (now Farmland Advanced); and Stirling £0.8m (now Farmland Conventional), although more was available at Troqueer £0.3m (was Farmland Advanced).

Confidence Grades – Confidence grades on Table E10 are consistent with grades in the general E table commentary and remain consistent with 2013/14.

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 / waste water 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.

G Tables – Investment Monitoring

Tables G1 – 2: General Comments

Tables G1 – G2 present a summary of Scottish Water's investment programmes for Q&S3b, Q&S2 & 3a (completion programme) and Q&S4 early start. The investment costs and outputs reported in these tables reflect the position as reported in the Q4 2014/15 Capital Investment Return (CIR).

Elements reported include the pre 2010 expenditure, the actual expenditure from 2010/11, the report year and forecasts Post March 2015. Scottish Water successfully delivered £469.9 million of investment in 2014/15, comprising £436 million on Q&S3b projects, £2 million on completion (Q&S2 and Q&S3a) projects and £32 million on Q&S4 early start. Our total SR15 early start expenditure during the period was £46.8 million. Table G1 reports the total investment in the year.

Total investment to March 2015 is £2,377.4m comprising £196.2m for completion programme (Q&S2 & Q&S3a), £2,134.4m for Q&S3b and £46.8m for Q&S4 early start. Net capital investment to March 2015, excluding grants and contributions, is £2,311.4m. Programme risk, rebates, contingencies and SWS1/SWS2 contractual payments/recoveries have been allocated to line G1.16. The £86.2m Q&S3b plus programme has also been allocated to G1.16.

The Q&S2 Completion Programme was completed in 2013/14 and 1 project remains in the Q&S3a Completion Programme. Scottish Water has delivered 312 projects out of the 313 projects. The remaining output is at Killylour water treatment works where we have agreed a design with the contractor for an additional upstream dissolved air flotation system (DAF) treatment process. The planning application was approved by Dumfries and Galloway Council on 27 May 2015 and we are working to deliver water into supply by March 2016.

Capital maintenance investment accounts for 56.7% of the investment in 2014/15.

The table below reflects the inflation assumptions used within the CIR. Inflation assumptions have been updated to reflect the 2014/15 Delivery Plan.

Inflation Assumptions

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Overall COPI Assumption	0.0%	2.4%	-3.1%	-2.8%	2.4%	3.18%	3.75%	4.12%
COPI Deflation Risk Assumption	0.0%	2.4%	-3.1%	-2.8%	2.4%	3.18%	3.75%	4.12%

Table G1 Summary - Investment

The total gross capital investment shown on table G1 is £2,728.2m which is the forecast cost to complete the SR10 programme. Maintenance and strategic growth forecast after March 2015 has been excluded from G1 and is assumed to form part of the SR15 programme. Q&S4 Start Early expenditure after March 2015 is not shown in table G1 as this will also form part of the SR15 programme.

Table G1 includes risk provision of £28.7m for completion of the programme, approximately 8% of the remaining investment.

Table G1 excludes investment for the two PFI projects: Dalmuir and Seafield. The expected cost of PFI is £37.4m. Combining PFI with the forecast cost of the programme in G1 gives a forecast total investment of £2,765.6m.

Programme Financing

The SR10 Programme is forecast to be delivered for the available financing, £2,778.4m. The components of the programme financing are shown in the table below:

Programme financing (£m, outturn)	Actual
Regulatory financing 2010-15	2,669.0
Additional inflation allowance	24.1
Financing from other sources	
SEPA to part finance scope increases for waste water asset flood risk studies	1.4
Forth Replacement Crossing (3rd party contribution)	1.6
New Roads and Street Works Act income	40.2
Additional Central Energy Efficiency Fund funding combined heat and power at Galashiels	0.7
Funding brought forward from 2015-21 period to support early delivery of SR15 outputs	5.0
Funding deferred from 2015-21 period to support the OMG undefined outputs	11.5
Additional internal financing from revenue	
Energy funding for business outperformance	5.4
General receipts funding for the maintenance programme	19.5
Total	**2,778.4**

G1.1-1.6 Q&S3b Capital Maintenance

Projects containing Capital Maintenance drivers are captured in these lines. In 2014/15 expenditure of £266.6m was made against Q&S3b Capital Maintenance; the total expenditure for the programme was £1,244.6m.

G1.7–1.11 Q&S3b Growth Investment

Projects containing Growth drivers are captured in these lines. In 2014/15 expenditure of £35.1m was made against Q&S3b Growth; the total forecast to complete the growth element of the programme is currently predicted to be £170.6m. £0.1m is forecast in the tables post March 2015.

G1.12-1.17 Q&S3b Enhancement Expenditure

Projects containing enhancement drivers are captured in these lines. In 2014/15 expenditure of £134.9m was made against Q&S3b enhancements; the total forecast to complete the enhancements is currently predicted to be £1,064.7m including post March 2015 investment and risks.

G1.18: Q&S3b Enhancements – OMG Unallocated Enhancement Expenditure

This has been fully allocated to projects/programmes in agreement with OMG.

G1.19 – G1.21 Q&S2 & 3a Completion Expenditure

Projects from the completion programme are captured in these lines. In 2014/15 a total expenditure of £1.3m was made against this programme with the majority of spend being on the Q&S3a programme and £4k on the Q&S2 programme. The completion programme is predicted to outturn at £201.4m with a forecast of £47.2m on Q&S2 and £154.2m on Q&S3a.

G1.22: Q&S4 Early Start.

Projects containing Q&S4 Early Start drivers are captured in these lines. In 2014/15 expenditure of £32.1m was made against Q&SIV early start, with a total spend of £46.8m within the 2010-15 period. The future costs are assumed to be financed from the Q&S4 programme.

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

Additional operating expenditure is calculated through the analysis of the proportion of capital spend allocated to quality, enhanced level of service or growth for future years. The value in the report year is based on the actual opex released as a consequence of the capital programme.

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

The infrastructure charge income is reported as contribution against the Q&S3b 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 to March 2015 or if a programme is behind Delivery Plan.

G2.5 – G2.21 Q&S3b Enhancements – Drinking Water Quality

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

In 2014/15 1 output was delivered. In total 62 outputs have been delivered by March 2015, 2 less than our Delivery Plan target. Water in to supply has been achieved and regulatory sign-off is being sought for the final 2 outputs at Kaim and Terregles. The output at Kaim was signed off in June. The DWQR has visited Terregles, which is linked to the completion project at Killylour, and asked for additional information to support the sign off of the lead output.

G2.6 Number of treatment works improved to meet drinking water quality standards

In 2014/15 1 output was delivered. In total 4 outputs have been delivered by March 2014, less than our Delivery Plan target. We forecast to deliver the remaining 3 outputs by July 2017. The delivery of one of these outputs at Lochmaddy (supplying around 650 customers) has been extended beyond March 2015 through an agreed Technical Expression change.

G2.7 Length of mains rehabilitated to improve drinking water quality

We are committed to rehabilitating 4,146km of mains as part of the 2010-15 programme in order to reduce the risk to, and improve the drinking water quality to, more than 950,000 customers. At the end of March 2015, we had completed 2,922km of mains rehabilitation against a target of 2,827km. A further 1,224km of mains is planned to complete the programme and achieve regulatory sign-off by August 2017.

G2.10 Number of sites with increased physical security

In 2014/15 69 outputs were delivered. In total 675 outputs have been delivered by March 2015, less than our Delivery Plan target of 721. We forecast to deliver the remaining 46 outputs by March 2016.

G2.13 Number of WTW receiving improved disinfection control

In 2014/15 4 outputs were delivered. In total 28 outputs have been delivered by March 2015, matching our Delivery Plan target. Two outputs remain to be delivered in order to compelte the programme: Beasdale (supplying around 8 customers) and Lochmaddy (supplying around 650 customers) and are planned to be completed in March 2016 and July 2017 respectively. Both of these outputs had extended delivery dates beyond March 2015 through agreed Technical Expression changes.

G2.15 Number of WTW with reduced cryptosporidium risk

In 2014/15 4 outputs were delivered. In total 26 outputs have been delivered by March 2015, less than our Delivery Plan target. We are working with the DWQR on delivering the remaining 20 outputs to ensure that the benefits to our customers are delivered as quickly as possible.

G2.21 Type B (customer requested) Raw Water Supplies provided with treatment

In 2014/15 62 outputs were delivered. In total 82 outputs have been delivered by March 2015, 11 outputs less than our Delivery Plan target. The remaining 11 outputs, to be delivered by 4 projects, will be completed by March 2016.

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

In 2014/15 3 outputs were delivered. In total 24 outputs have been delivered by March 2015, matching our Delivery Plan target. The remaining 7 outputs at Stromness have been extended beyond March 2015 through agreed Technical Expression changes.

G2.23 Number of UIDs improved to meet new standard (under 7 stage)

In 2014/15 55 outputs were delivered. In total 126 outputs have been delivered by March 2015, more than our Delivery Plan target. We forecast to deliver 70 outputs beyond March 2015. The 70 outputs delivering beyond March 2015 are part of the 7 stage process.

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

In 2014/15 11 outputs were delivered. In total 57 outputs have been delivered by March 2015, less than our Delivery Plan target. Overall, 22 outputs have yet to be delivered in order to complete the programme, 10 of which are linked to Stromness and planned to deliver in August 2017.

G2.31 Number of WwTW brought into compliance with non-sanitary requirements

In 2014/15 21 outputs were delivered. In total 81 outputs have been delivered by March 2015, 1 less than our Delivery Plan target. The final output is at Dalmarnock WwTW serving around 239,000 customers and, although being delivered late, can be addressed more cost effectively alongside the investment planned at the works during the 2015-21 period.

G2.33 Number of environmental studies undertaken

In 2014/15 1 output was delivered. In total 113 outputs have been delivered by March 2015, in line with our Delivery Plan target. The remaining output in this programme is Fisherrow Sands, part of the Bathing Water programme, which was added to the programme in 2013 with a planned completion date of December 2015.

G2.35 Number of water resource zones with company level of service restored (7 stage)

In 2014-15 3 outputs were delivered. In total 12 outputs have been delivered by March 2015, in line with our Delivery Plan target. The remaining 2 outputs are at Inverness & Nairn and Bonar Bridge which are planned to be delivered in September 2018 and September 2016 respectively.

G2.42 Number of models to support the flooding bill

In 2014/15 2 outputs were delivered. In total 69 outputs have been delivered by March 2015, less than our Delivery Plan target. We forecast to deliver the remaining 3 outputs by Oct 2015.

G2.44 Number of climate change studies

In 2014/15 1 output was delivered. In total 11 outputs have been delivered by March 2015, in line with our Delivery Plan target. One output is remaining to be delivered to complete the programme by December 2015.

G2.54 – G2.55 Q&S3a & Q&S2 Delivery Projects

In 2014/15 1 output was delivered. One output is remaining to be delivered at Killylour water treatment works.

Table G3 Monitoring Serviceability

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

The exclusion of iron from drinking water increased by 2.53% from 91.61% in 2013 to 94.14% compliance of water supply zones in this reporting year.

The exclusion of manganese from drinking water has increased by 1.88% from 92.95% in 2013 to 94.83% compliance of water supply zones in 2014.

G3.3 Number of microbiological failures at water treatment works

The number of microbiological failures at water treatment works has increased by 23 from 17 in 2013 to 40 in 2014.

G3.4 – Number of Customer Contacts relating to Taste

This is a new line for AR15 to lead in to reporting on our Delivery Plan for the 2015-21 period. The total number of contacts relating to taste for 2014 was 2,671.

G3.5 – Number of Customer Contacts relating to Discolouration

This is a new line for AR15 to lead in to reporting on our Delivery Plan for the 2015-21 period. The total number of contacts relating to discolouration for 2014 was 9,211.

G3.6 Number of Failing Waste Water Treatment Works

The number of failing waste water treatment works is 3 for 2014/15. This is an increase of 2 from 2013/14. The works reported as failing under this measure are: Arrochar, Doune, and Ellon. Because of the differences in definitions we are reporting the above sites, plus a fourth site at Fallin, as failing under the OPA measure.

G3.7 Number of sludge treatment facilities improved to comply with safe sludge matrix

There was no further sludge treatment facilities improved to comply with safe sludge matrix in 2014/15. The programme is now complete and the figure reported in 2014/15 is 2.

G3.8 The maximum number of UIDs

During the report year we have continued to complete the delivery of both the Q&S2 uCSO completion outputs and the Q&S3 UID outputs.

This indicator is dependent on the outcome of the seven-stage process and studies which may reduce or increase the number of outputs to be delivered and the number of known unsatisfactory discharges.

At March 2015 there were 791 UIDs compared to a position of 857 UIDs in March 2014. Studies continue to be undertaken during the 2015/16 period.

G3.9 Number of Pollution Incidents

Environmental Pollution Incidents occur where there is a failure at any water or waste water asset that impacts on the environment, as agreed with SEPA. These are classified by SEPA as water or waste water category 1, 2 or 3 incidents. We recorded a total of 249 waste water incidents in 2014/15. The number of agreed Cat 1, 2 & 3 incidents are listed below.

Water Cat 1&2	1 incident agreed
Sewerage Cat 1&2	8 incidents agreed
Sewerage Cat 3	241 incidents agreed

G3.10 Pollution incidents (sewerage) per 1,000 km

There were 4.83 pollution incidents (sewerage) per 1,000 km during 2014/15, a decrease of 0.46 from 2013/14.

G3.11 Serious pollution incidents (sewerage) per 10,000 km

There were 1.55 serious pollution incidents (sewerage) per 10,000 km during 2014/15, an increase of 0.55 from 2013/14.

G3.12 Serious pollution incidents (water) per 10,000 km

There were 0.2 serious pollution incidents (water) per 10,000 km during 2014/15. This is unchanged from 2013/14.

G3.13 Discharge permit compliance

Discharge permit compliance has reduced by 0.34% from 99.83% in 2013/14 to 99.49% during 2014/15.

G3.14 Satisfactory sludge disposal

Satisfactory sludge disposal was 100% during 2014/15.

G3.15 Greenhouse Gas (GHG) Emissions (ktCO2e).

The Greenhouse gas (GHG) emissions (ktC02e) position for 2014/15 was 379, a reduction of 25 from 2013/14.

G3.16 Properties on the Low Pressure Register

The number of properties on the Low Pressure Register is reported as 46 excluding exclusions. This is a reduction of 10 from 2013/14.

G3.17 Properties with Unplanned Interruptions to supply > 12 hours

The overall figure for 2014/15 for properties affected for more than 12 hours was 563 properties, a reduction of 277 properties from 2013/14. In this reporting year no individual incidents affected more than 100 properties for greater than 12 hours and only 2 incidents affected over 50 properties. The combined impact of these 2 events affected 110 properties for greater than twelve hours.

G3.18 Number of hours lost due to water supply interruptions for three hours or longer

There were 0.28 hours per property lost due to water supply interruptions for three hours or longer, a reduction of 0.25 from the 2013/14 position of 0.53 hours. This reduction can mostly be attributed to the reduction in planned capital work in the final year of the SR10 investment period. The trend in this coming year is likely to reverse again as the volume of planned capital work increases in the current investment period.

G3.19 Number of Bursts per 1,000km of mains

There were 160 mains bursts per 1,000km during 2014/15. This was a decrease of 3 from 2013/14.

G3.20 Properties at Risk of Internal Flooding

The number of properties at risk of internal flooding at March 2015 was 302. This was a reduction of 90 properties compared to 2013/14 outturn of 392. The reduction in properties beyond 341 was due to early start SR15 investment.

G3.21 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 2014/15 was 367, a decrease of 65 on the previous year.

G3.22 Properties internally flooded due to overloaded sewers

This is a new reporting line for AR15. The number of properties internally flooded due to overloaded sewers in 2014/15 was 54.

G3.23 Incidents of internal sewer flooding for properties that have flooded within the last ten years

There were 156 incidents of internal sewer flooding during 2014/15 at properties that have flooded within the last ten years, a decrease of 6 incidents on the 2013/14 position.

G3.24 Properties at risk of external sewer flooding

This is a new reporting line for AR15. The number of properties at risk of external sewer flooding at March 2015 was 3,708. This is based on: 1 in 10year; 2 in 10year; and holding records.

G3.25 Incidents of external sewer flooding due to other causes

This is a new reporting line for AR15. The number of incidents of external sewer flooding due to other causes at March 2015 was 10,768.

G3.26 Incidents of external sewer flooding due to overloaded sewers

This is a new reporting line for AR15. The number of incidents of external sewer flooding in 2014/15 was 227.

G3.27 The Overall Satisfaction level (from the customer service questionnaire)

The Overall Satisfaction level at March 2015 was 92% and is an increase of 2% on the previous year.

G3.28 The maximum number of 'second tier' complaints referred to Scottish Public Services Ombudsman

The overall number of second tier complaints referred by the Scottish Public Services Ombudsman (SPSO) in 2014/15 was 4 which is a reduction of 7 on the previous year.

G3.29 The number of telephone contacts relating to drinking water quality

Total number of telephone contacts which related to drinking water quality in 2014 was 14,150; an increase of 1,865 from 2013.

G3.30 The Overall Performance Assessment (OPA) Score (In Year Value)

The 2014/15 OPA score was 400. This is the fifth year that 17 indicators have been incorporated and we have increased our score by 3 points on 2013/14.

G3.31 The Overall Performance Assessment (OPA) Score (Period Average)

This is a new reporting line for AR15. The period average OPA score was 370.

G3.32 The average annual level of leakage

The 2014/15 Maximum Likelihood Estimation (MLE) leakage is 543.99 Ml/d. This is a reduction of 21.85 Ml/d from the 2013/14 MLE leakage figure of 565.84 Ml/d.

G3.33 Household Customer Experience Measure (hCEM)

This is a new reporting line for AR15. The Household Customer Experience Measure was developed with the Customer Forum and was measured in 2014/15 in order to establish a baseline score for the post 2015 period. The score for 2014/15 was 82.6.

G3.34 Non-Household Customer Experience Measure (nhCEM)

As agreed with WICS this new line is not being submitted in this reporting year as the methodology to be used has not yet been agreed.

G3.35 High Esteem Test

As agreed with WICS this new line is not being submitted in this reporting year as the methodology to be used has not yet been agreed.

G3.36 Wholesale Key Performance Indicator (KPIs)

The 2014/15 Wholesale KPI score is reported as 92%.

G3.37 Water Available for Supply Index (covered by 1:40 level of service)

This is a new reporting line for AR15. The position at March 2015 was 88.90% of the population receiving a 1 in 40 year level of service or higher.

G3.38 Water Available for Supply Index (covered by 1:100 level of service)

This is a new reporting line for AR15. The position at March 2015 was 71.50% of the population receiving a 1 in 100 year level of service or higher.

G3.39 to 3.49 Asset Health Index (AHI)

Scottish Water is looking to develop measures to assess its assets and “risk to service” to inform future investment and service decisions. It is considering how recent asset data would be used to inform actual AHI scores. It is also developing its asset processes to update its asset information.

Table G4 OMD Inputs including Q&S2 and Q&S3a project sign-off

General Comments

G4.1 - G4.37 show the enhancements under the Q&S3b 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 period. The data reported reflects the position recorded in the Quarter 4 2014/15 CIR.

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

Lines G4.40 – G4.44 report the actual and forecast Q&S2 and Q&S3a projects signed off at MS5 date by quarter and year.

Where no line comments are given we are forecasting to achieve all Delivery Plan outputs.

G4.3 Km of mains rehabilitated

This programme met the March 2015 target, delivering a total of 2,922km of mains against a target of 2,827km. Due to an issue regarding the long term reliability of materials that have been used in 115km of this programme in Ayrshire we will not be claiming the associated OMD points (0.5 points) for the affected zones. A further 1,105 km is planned for post March 2015, delivering improvements to the Braden, Carron Valley, Daer, Kirbister, Lintrathen, Mannofield and Rawburn regulatory supply zones.

Table G5: Growth

Lines G5.1 to G5.14 show the expenditure Scottish Water has incurred or is forecast to incur on growth for the SR10 programme. The report has been produced using the same methodology as G1 with the projects actual expenditure taken from Scottish Water's financial systems and the forecast expenditure taken from Primavera. The % allocation assigned to each project has been taken from the systems which hold Scottish Water's CAPEX gateway approval forms. Most projects are assigned 100% to growth but there is significant growth investment delivered as part of large quality schemes.

The total Growth expenditure shown on table G5 aligns with the total Growth on table G1. Table G1 shows the split between Part 3 and Part 4 assets and also the split between household and non-household for RCC.

As this table is a recent addition to the submission, it was necessary to assign growth investment to Part 3 or Part 4 assets based on the primary asset type being worked on at project level. However, it is intended going forward to add additional drivers to distinguish Part 3 and Part 4 investment for the next strategic review period, giving a greater degree of accuracy for this section of the table.

At the start of the SR10 period projects were set up for; each unitary authority, water/ wastewater, and household/non household areas. This allows G1.9, G1.10 and the new lines; G5.1, G5.2, G5.4 and G5.5 to be populated from the resultant outputs.

Total growth expenditure in 2014-15 was £35.1m with £169.2m reported for the review period.

G5.15 to G5.40

G5.15 and G5.21 - Water household infrastructure charge income for the period to March 2015 is £22.204m, which relates to 73,813 new households being connected, or applying to be connected, to the water network.

G5.16 and G5.22 – Water non-household infrastructure charge income for the period to March 2015 is £0.748m, which relates to 2,207 new non-household properties being connected, or applying to be connected, to the water network.

G5.17 and G5.24 – Waste water household infrastructure charge income for the period to March 2015 is £17.202m, which relates to 56,661 new households being connected, or applying to be connected, to the waste water network.

G5.18 and G5.25 – Waste water non-household infrastructure charge income for the period to March 2015 is £0.149m, which relates to 481 new households being connected, or applying to be connected, to the waste water network.

G5.27 – For the period to March 2015 we paid RCC to developers for 71,866 household properties that are connected to our water assets (Part 2 & 3).

G5.28 – For the period to March 2015 we paid RCC to developers for 0 non-household properties that are connected to our water assets (Part 2 & 3).

G5.30 – For the period to March 2015 we paid RCC to developers for 42,752 household properties that are connected to our waste water assets (Part 2 & 3).

G5.31 – For the period to March 2015 we paid RCC to developers for 0 non-household properties that are connected to our waste water assets (Part 2 & 3).

G5.33 – For each new household property connected to the water network an Infrastructure charge is applicable. Therefore, for the period to March 2015, the number of household properties paying an infrastructure charge to Scottish Water for additional water strategic capacity is 73,813 (as line G5.21).

G5.34 – For each new non-household property connected to the water an Infrastructure Charge is applicable. Therefore, for the period to March 2015, the number of non-household properties paying an infrastructure charge to Scottish Water for additional water strategic capacity is 2,207 (as line G5.22).

G5.36 – For each new household property connected to the waste water network an Infrastructure charge is applicable. Therefore, for the period to March 2015, the number of household properties paying an infrastructure charge to Scottish Water for additional waste water strategic capacity is 56,661 (as line G5.24).

G5.37 - For each new non-household property connected to the waste water network an Infrastructure charge is applicable. Therefore, for the period to March 2015, the number of non-household properties paying an infrastructure charge to Scottish Water for additional waste water strategic capacity is 481 (as line G5.25).

G5.39 and G5.40 - The data reported in these two lines represents the increase in strategic capacity delivered, or forecast to be delivered, by all relevant projects with the exception of any "Infra Charge increase" projects. In these completed tables the reported data has been intentionally matched to lines G2.1 and G2.2.

Table G6 Project Analysis – Actuals & Forecast – Water & Waste water

General Comments

Table G6 is a new addition for AR15. The datasets used to create tables G1, G2 and G4 are taken from our corporate systems and are then also used to complete this table. The data in this table is consistent with Scottish Water's end of year reporting to our Board. The table analyses the SR10 Programme by individual Project (by Row), detailing out Investment, Outputs and Dates (by Column). It excludes investment considered for future and previous regulatory periods so that an assessment of the total cost of the SR10 programme can be made.

Column 1 - This contains the unique project auto code number.

Column 2 - This contains the Project Title.

Column 3 - This contains the Q&S Period for each project with a further breakdown to indicate OMG180 and 3b+. This is a project level assessment – some projects may have split funding.

Column 4 - This contains the group each project belongs to and is used by Scottish Water to allocate project ownership and project type.

Column 5 - This contains a more detailed view of programme groupings.

Column 6 - This splits the projects between Water or Waste Water or General

Column 7 - This contains the Technical Expression sign-off owner (if required).

Column 8 - This contains the internal delivery vehicle assignment.

Column 9 - This contains a sub set of Programme Grouping 2.

Column 10 - This analyses the projects by project classification, showing the key driver of the programme – quality, base maintenance, enhancement or growth.

Column 11 - This analyses projects between Infrastructure and Non-Infrastructure.

Columns 12 to 14 – These columns contain a £ summary of project classification.

Column 15 – This column contains the current status of projects.

Columns 16 & 17 - These columns contain the Forecast or Actual dates for CAPEX2 and 3 Approval.

Column 18 - Planning Approval – Contains the year planning approval was achieved, if required.

Column 19 – This column contains the forecast or actual CAPEX2 date.

Column 20 – This column contains the Local Authority area each project falls into if it has one location.

Column 21 to 28 – These columns contain the project expenditure analysed by financial year.

Column 29 – This column contains the total actual or forecast project expenditure.

Column 30 – This column contains the Table K budget allocation. This is in 2012/13 prices. In many cases, projects that were originally identified in table K have been split into multiple projects or aggregated to form larger projects. Although Scottish Water does assess the programme cost compared with the table K allocation, this is generally done at sub-programme and programme level.

Column 31 & 32 – This column contains the infrastructure & non-infrastructure grants received.

Column 33 & 34 – This column contains the infrastructure & non-infrastructure contributions received.

Column 35 – This column is assumed to be the non-capital maintenance element of the project.

Column 36 – This column contains the impact of projects on operating expenditure.

Column 37 – This column contains the proportion of capital maintenance element of the project – value.

Column 38- This column contains the proportion of capital maintenance element of projects – percentage.

Column 39 - This column contains the capital maintenance driver.

Column 40 – This column contains the capital maintenance output.

Column 41 – This column contains the population or population equivalent released from development constraints.

Column 42 – This column contains the regulatory sign off party, if required.

Columns 43 & 44 – These columns contain the primary driver codes and percentage allocations.

Columns 45 to 62 – These columns contain driver codes 2 to 10 with percentages.

Columns 63 to 65 – These columns contain the primary output, unit of measurement and Output value.

Columns 66 to 92 – These columns contain the output codes 2 to 10 with unit of measurement and value.