SCOTTISH WATER

WIC ANNUAL RETURN

COMMENTARIES

September 2008

A Tables Base Information

Table A1 Connected and Billed Properties

General Comments

Property numbers are for the report year as at 30 September 2007.

In general, a confidence grade of A2 has been applied to figures reported in Table A1. Unmeasured household numbers have improved to A2 because they are sourced directly from WIC4 returns. Non-household and measured household figures remain A2 as they continue to be sourced directly from corporate systems which are subject to review throughout the report year.

Household properties (connected and billed)

The reporting methodology has changed from last year's Return which was based on 2004 WIC 4 data. We now have 2007 WIC 4 reports, which have been completed at the mid-year by each local authority and these are suitable for use in the Annual Return. Therefore, the data for the lines concerning household properties has been sourced directly from the WIC 4 reports of 2007 for report year and updated with new household growth data from the General Registers Office for Scotland for report year +1.

Growth in household properties

Comparison with Final Determination forecasts
The table below shows the growth that was forecast at the time of the Strategic Review of Charges for 2006 – 2010 (SR06).

Forecasts as at March 2006 (households)	2006/07	2007/08 Report Year	Change	2008/09 Forecast	Change
Total number of billed properties (Final Determination, Appendix 10)	2,216,768	2,232,287	15,519	2,255,100	22,813
Number of exempt properties	61,913	63,327	1,414	64,543	1,216
Total household properties taking services (unmeasured)	2,278,681	2,295,614	16,933	2,319,643	24,029

In the Final Determination the number of billed households (excluding exempt) was expected to increase by 15,519 for the report year and 22,813 for the following year. Adding our own estimates for exempt properties, the actual increase is 16,933 for the report year and 24,029 for report year +1, as shown in the table above.

Outturn growth
However, the increase has been greater than forecast, with growth in billed properties (including exempt) of 30,012, as shown in the table below. The growth in connected properties is less than the growth in billed properties as we are now billing properties which were, in the past, connected but not billed.

Line ref.	Unmeasured Household - Water	2006/07	2007/8 Report year	Change
A1.1	Unmeasured household billed properties - potable water (including exempt)	2,287,706	2,317,718	30,012
P1.49	Number of void properties	54,708	50,930	-3,778
A1.6	Unmeasured household connected properties	2,342,414	2,368,648	26,234

Non-household properties (connected and billed)

The recorded number of non-household properties taking water services has decreased by 3,114 to 125,272. The majority of the change occurred in the measured billed properties (A1.4) where 2,758 fewer properties were billed. The number of billed non-household properties at 30 September 2007 has been advised to us by Business Stream. We do not currently know the reason for the 3.5% reduction in the number of the billed measured properties as we do not have access to customer information concerning the occupiers of these properties. In future years, information on property numbers will be provided to us by the Central Market Agency (CMA).

Line ref.	Water services - (connected and billed)	2006/07	2007/8 Report year	Change
P2.1	Properties paying standard charges (unmeasured)	44,584	44,240	-344
P2.4	Exempt properties	4,531	4,519	-12
A1.3	Unmeasured non-household billed properties – potable water (including exempt)	49,115	48,759	-356
A1.4	Measured non-household billed properties - potable water	79,271	76,513	-2,758
	Total Non-household properties taking services	**128,386**	**125,272**	**-3,114**
P2.5	Void unmeasured properties	7,665	6,397	-1,268
P4.17	Void measured properties	3,832	3,144	-688
A1.8+A1.9	Total Non-household properties recorded	**139,883**	**134,813**	**-5,070**

A decrease of 1,956 in void properties was a result of our preparation for the opening of the retail market and the migration of non-household property data to the CMA. As part of the preparation we engaged a company called CCML to survey all the properties with unknown status on the database. These included some properties that had been flagged as void but for which the status was questionable. A number of properties, approximately 2,000, were neither present or capable of receiving water services and were therefore removed from the database.

A1.1-5 Billed Properties - Water

A1.1 Unmeasured household billed properties

The number of billed and exempt unmeasured household properties sourced from WIC4 has increased by 30,012 as shown below.

Line ref.	Annual return (households)	Report Yr -1	Report Yr	Growth	Report Yr +1	Growth
P1.37	Total number of billed properties	2,219,412	2,258,556	39,144	2,281,966	23,410
P1.48	Number of exempt properties	68,294	59,162	-9,132	59,162	0
A1.1	Total billed unmeasured households	2,287,706	2,317,718	30,012	2,341,128	23,410

It can be seen from the above table that the number of billed properties has increased by 39,144 and the number of exempt properties has decreased by 9,132 giving an overall increase in billed properties of 30,012. The decrease in exempts to 59,162 has brought the reported exempt figure more into line with that expected in the Council Tax Base Returns of 57,916.

The data concerning unmeasured household numbers provided for the Annual Return comes directly from council reports and we consider it to be robust. The confidence grade has increased from B2 to A2, reflecting the quality of the external data source provided for the WIC4.

A1.2 Measured household billed properties

The number of measured households reduced by 65 compared with the prior year, as customers opted to revert to the council tax charging system.

A1.3 Unmeasured non-household billed properties

Line ref.	Unmeasured non-household – Water	2006/07	2007/8 Report year	Change	Change %
P2.1	Properties paying standard charges	44,584	44,240	-344	-0.8%
P2.4	Exempt properties	4,531	4,519	-12	-0.3%
A1.3	Unmeasured non-household billed properties - potable water (including exempt)	49,115	48,759	-356	-0.7%
P2.5	Void unmeasured properties	7,665	6,397	-1,268	-16.5%
A1.8	Unmeasured non-household connected properties	56,780	55,156	-1,624	-2.9%

No significant change occurred in the number of exempt properties and properties paying standard charges. A reduction of 1,268 in void properties was a result of preparation for the opening of the retail market and the migration of non-household property data to the CMA, which identified these properties as not present or incapable of receiving water services.

A1.4 Measured non-household billed properties

A decrease of 2,758 (3.5%) occurred in the report year. We do not know the reason for this decrease because we do not have access to information about the occupiers of the premises that have been supplied to us by Business Stream as disconnected.

A1.6-11 Connected Properties – Water

A1.9 Measured non-household connected properties

We do not know the reason for the decrease of 3,446 in measured non-household connected properties. There has been no change to policies or procedures in the report year and the decrease may be attributable to normal activity of businesses closing or moving between premises. The table below shows that the principal proportionate reduction occurred in the number of void properties (-18%), resulting from the verification work performed prior to market opening.

	Measured non-household – Water	2006/07	2007/8 Report year	Change	Change %
P4.16	Billed properties	79,271	76,513	-2,758	-3.5%
P4.17	Void properties	3,832	3,144	-688	-18.0%
A1.9	Measured non-household connected properties	**83,103**	**79,657**	**-3,446**	**-4.1%**

A1.11 Number of properties connected during the report year

The reduction in the number of new connections, compared to AR07, is due to developer demand stabilising. It is expected that the new connections will remain at the current level moving forward.

A1.12-16 Billed Properties – Foul Sewerage

A1.12 Unmeasured household billed properties

The growth of 22,016 unmeasured billed households for sewerage is consistent with the 30,012 growth in those households billed for water service, explained in the commentary for line A1.1 above.

A1.13 Measured household billed properties

A reduction of 42 measured household properties occurred in the reported year consistent with the reduction of 65 such properties reported for water services in line A1.2

A1.14 Unmeasured non-household billed properties (including exempt)

No significant changes have occurred in unmeasured non-household properties paying standard charges for foul sewerage or exempt properties for the reported period.

Line ref.	Unmeasured non-household – Waste	2006/07	2007/8 Report year	Change	Change %
P6.1	Properties paying standard charges	40,960	40,768	-192	-0.5%
P6.4	Exempt properties	4,468	4,429	-39	-0.9%
A1.14	Unmeasured non-household billed properties (including exempt)	**45,428**	**45,197**	**-231**	**-0.5%**

A1.15 Measured non-household billed properties

The decrease of 836 in measured non-household properties receiving wastewater services is significantly less than the reduction of 3,446 for water services reported at line A1.9. We do not know the reason for this difference because we no longer have access to information about the occupiers of the properties. The reductions were supplied to us by Business Stream.

A reduction of 1,215 in the void properties is a result of preparation for the opening of the retail market and the migration of non-household property data to the CMA, which identified these properties as not present or incapable of receiving wastewater services.

Line ref.	Measured non-household – Waste	2006/07	2007/8 Report year	Change	Change %
A1.15	Measured non-household billed properties	58,445	57,609	-836	-1.4%
P8.17	Void properties	3,209	1,994	-1,215	-37.9%
A1.20	Measured non-household connected properties	**61,654**	**59,603**	**-2,051**	**-3.3%**

A1.17-22 Connected Properties – Foul Sewerage

A1.19 Unmeasured non-household connected properties

In addition to the reduction of 231 billed properties explained under line A1.14 above, the number of non-household properties reported as void has reduced by 1,556 as part of the verification exercise prior to market opening.

Line ref.	Unmeasured non-household – Waste	2006/07	2007/8 Report year	Change	Change %
A1.14	Unmeasured non-household billed properties (including exempt)	**45,428**	**45,197**	**-231**	**-0.5%**
P6.5	Void unmeasured properties	9,410	7,854	-1,556	-16.5%
A1.19	Unmeasured non-household connected properties	**54,838**	**53,051**	**-1,787**	**-3.3%**

A1.22 Number of properties connected during the report year

New properties connected are described in the commentary to A1.11.

A1.23-29 Billed Properties – Surface Drainage

A1.30-35 Connected Properties – Surface Drainage

Changes in the number of properties connected and billed for surface drainage arose during the report year because of the verification work undertaken in preparation for market opening.

New properties connected are described in the commentary to A1.11.

A1.36-39 Trade Effluent

A1.36 Billed Properties

The number of billed properties continues to fall as the number of closures outstrips the number of new properties requiring to be processed under the TE guidelines. They fell from 1,744 in 2006/07 to 1,631 in the 2007/08 report year. This downward movement has been affected by the change in Scottish Water's policy to remove small/low risk discharge points from the sampling and TE Charging programme. The CG is now reported as A3.

A1.37 – Connected Properties

In contrast, the number of connected properties has risen from 3,352 to 3,553 (+6%). This is because consents remain live for a period after a site closes. Therefore sites that are no longer billed for trade effluent are still recorded as connected for the service. We expect that the number of connected sites will decline in due course in line with the policy outlined above. The CG is now reported as A3.

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

The total BOD load receiving secondary treatment has decreased from 31,221t to 30,306t, in line with the reduction in the number of billed properties (line A1.36).

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

The total COD has seen a reduction from 71,428t to 58,217t.

Between 2006/07 and 2007/08 there was a net reduction of 113 trade effluent discharging premises, representing the net of new premises opening up, closures and the reclassification of small dischargers from trade effluent consents to standard sewage charges. In May 2007 a significant discharger, which in 2006/07 discharged 2.5Mm3 (1,250 tBOD & 2,575 tCOD) ceased trading. At another unassociated site the daily volume discharged reduced by 200 m3 but the strength of the waste discharged reduced by 1,280 tBOD and 2,580 tCOD over the year.

Table A2 Population, Volumes and Loads

A2.1-9 Summary – Population

Population

In last year's Annual Return, General Register Office for Scotland (GROS) 2004-based population projections were updated with GROS 2005 mid-year estimates. For this report year, population data is based on GROS 2006-based population projections (total for Scotland). The winter population reported this year shows an increase of about 23,821, some 17,053 more than we forecast last year.

Last year, we derived a household occupancy rate by taking the GROS 2004-based private household population projections and dividing by the reported number of occupied households. This gave a forecast occupancy rate of 2.17 people per household. The occupancy rate was then applied to occupied households with water and waste services to get a population figure for each. We have changed our methodology, since last year, for deriving the population of properties served by us. We have become aware that GROS produces its household projections based on its population projections. Our previous methodology therefore embodied a circular logic.

For our revised methodology, occupancy rates which are derived from an estimate of the number of households no longer drive the population data. Rather, we use ratios of total to occupied households and populations from the last complete dataset supplied by GROS based at 2004. Applying these ratios to GROS 2006-based population projections (total for Scotland) allows us to obtain the number of people in households and the number of people not in households. Connection rates from WIC4 2007 are applied to determine the population with water and wastewater services.

An increase in population from GROS 2006 projections has the effect of increasing the population of unmeasured households by 22,700 for the report year. An increase in the number of occupied households from WIC4, slightly ahead of the population derived from GROS projections, has meant a reduction in the occupancy rate to 2.16 people per household.

Confidence grades (A2.1, A2.3-6, 2.8) have improved from a B2 to an A2 following the GROS update to 2006 based population projections (total for Scotland). GROS supply population projections on a bi-annual basis. In the last annual return figures supplied were 2 years from the base year of GROS projections. This year figures supplied for report year are 1 year from the base year, which allows the best method for assessment.

A2.2 & A2.7 Summer Population Water and Wastewater

To determine the increment of the summer population (above the winter population), a new 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 was reached of 261,942. This is an increase of 4,602 from last year (257,340).

A2.10-19 Water Balance

A2.11 Distribution input treated water

Lines A2.10 and A2.11 report 'water treated at own works to own customers' and 'distribution input treated water'. These are both reported identically because we do not supply treated water to any party other than direct customers of Scottish Water through the water distribution networks.

Distribution Input (DI) has reduced from 2,296 Ml/d to 2,271 Ml/d due to reduced total leakage.

We have undertaken an information improvement project to improve the collection and analysis of DI data. The first phase of the project covered the 76 WTWs with the greatest throughput equating to 95% of the overall reportable DI by volume.

The project included:

- Site surveys and associated meter confidence grading;
- Development of a remedial or replacement list;
- Deployment of data loggers;
- Development of independent flow verification;
- Development of a data warehouse;
- Monthly validation of reported DI data;
- Development of automated reporting utilising logger or telemetry data; and
- Development of initial regional level DI reporting.

DI data is passed from loggers and telemetry to a data warehouse which stores flow data and asset information as well as maintenance and survey reports. Therefore as well as detailed flow information the confidence in the data can also be assessed.

We have commissioned additional work to include all DI flow meters, regional transfer flow meters, independent DI flow meter verification and DI flow meter replacement as part of an ongoing data improvement process.

DI is being reported with a C3 confidence grade, compared with C4 in the previous year. The availability of measured flow data has increased to 96% during the reporting year; however the average grade for reliability remains unchanged. The accuracy of the figure has improved following extensive site surveys and verification of flow meter data.

A2.12 Unmeasured household volume of water delivered

Unmeasured household volume of water delivered has reduced from 892.4 Ml/d to 863.3 Ml/d, the main cause being a revised figure for Underground Supply Pipe Leakage (reported in lines A2.31 to A2.36).

An annual average PCC value of 146.98 l/hd/d with confidence grade C4 has been used, and incorporated into the 154.24l/hd/d reported in line A2.25. The difference represents plumbing losses in customers' properties. Based on this, unmeasured household volume of water delivered is being reported with confidence grade C4.

A2.13 Measured household volume of water delivered

Measured household volume of water delivered has reduced slightly from the previous year mainly because the number of properties has reduced from 595 to 530. Data sources are the same as in previous years. This line is again being reported with confidence grade A2.

A2.14 Unmeasured non-household volume of water delivered

The small increase in the unmeasured non-household volume of water delivered has been caused by a combination of the following:

- A decrease in the number of supply points from 49,115 to 48,759.
- The investigation into supply points described as being void non-household resulted in an additional 2.38 Ml/d of reported usage.
- Reductions of 0.32 Ml/d due to supply points transferring to measured non-household where second meter reads have been completed during the reporting year.

The calculation for this line is based on the consumption of comparable measured non-domestic properties. The measured and unmeasured non-household customers are grouped together based on the WIC customer classification and a series of bands based on the rateable value (RV) of the properties. A linear relationship between the measured volume and the rateable value is determined using the Hi-Affinity billed volumes for measured non-households within each WIC classification and RV band. The confidence grade is therefore B4.

A2.15 Measured non-household volume of water delivered

The methodology employed to calculate measured non-household volume of water delivered has changed. In previous years the volume was generated from the Business Objects report, which presented a billed volume for meters. This year a consumption report using actual meter read data has been generated by Business Stream and provides a more consistent data set.

Although the number of supply points has decreased, the volume of water delivered has increased from 439.96 Ml/d to 464.4 Ml/d. This is primarily due to the new methodology of using metered volumes, rather than billed volumes, as well as the inclusion of Aberdeen Shipping Water use. Details on the latter were uncovered during an investigation; Aberdeen Shipping Water was not held on the main billing system.

The percentage meter under-registration has remained at 4.8% and is the average percentage quoted by the English and Welsh water and sewage companies.

As the data is obtained from an A2 rated corporate source, this line is again being reported with confidence grade A2.

A2.16 Total volume (potable water)

Total volume of potable water is being reported with a confidence grade of B3 as in the previous reporting year.

A2.17 Water taken unbilled

Water taken unbilled is the sum of: water taken unbilled legally, water taken unbilled illegally and distribution system operational use (i.e. A2.27, A2.28 and A2.29). More of this data now comes from measured volumes, rather than estimated flow rates and durations, so the confidence grade for this line has moved from D4 to C4.

A2.18 Leakage – Distribution losses (incl trunk mains and service reservoirs)

Distribution losses have decreased from 855 Ml/d to 807 Ml/d due to leakage reduction and methodology changes in key water balance components. This figure is being reported with confidence grade B3. This is based on a reporting DMA coverage of >60% but <80% (actual 72%) being recorded at least 28 times per year.

An additional 1.19Ml/d was added to the 807Ml/d to incorporate underground supply pipe leakage for troughs, which could not be accounted for in the normal calculation in line A2.30.

A2.19 Overall water balance

The reconciliation of the water balance components to measured distribution input (which is the gap between the figures reported using the top-down and bottom-up methodologies for reporting leakage) was 8.5% in 2005/06, 7.4% in 2006/07 and 1.2% in this reporting year (2007/08). This trend towards closer reconciliation is due in part to data improvements on the "top-down" water balance components (where an additional 57.55 Ml/d has been accounted for from the previous reporting year) and an improved accuracy in 'bottom-up' leakage from increased DMA property coverage. Reportable DMA property coverage (i.e. DMAs which are at category 1 operating status) has increased to 72%. As DMA coverage continues to increase, the reliability grade applicable to the water balance is forecast to continue to improve. Overall water balance is reported as confidence grade C3. Although the reconciliation error is small enough to justify an A grade for reliability, the grades for the components of DI are such that the C grade is more realistic. Accuracy band 3 reflects the accuracy of the components of DI contributing to this line.

A2.20 Water delivered – non potable

A2.20 Volume of non-potable water delivered

The estimated volume of non-potable water delivered has not altered from the previous year. There is a small amount of metered actual consumption, but the majority of the estimated volume is based on the agreed consumption held within the contracts regarding the extraction limits. The confidence grade reported is C5.

A2.21-8 Water delivered – components

A2.21 & A2.22 Bulk supply imports/exports

There are no bulk supply imports or bulk supply exports so these are again reported as 0 Ml/d at confidence grade N.

A2.23 and A2.24 Estimated water delivered per unmeasured and measured non-household

These calculations remain unchanged from the previous reporting year and the confidence grades are again reported as A2.

A2.25 Per capita consumption (unmeasured household – excl s/pipe leakage)

The PCC value for the reported year excludes the July (peak consumption month) figure from the previous reporting year, as this was considered to be an exceptional outlier. The estimated PCC factor for July 2007 is therefore assumed to be an average of the June and August figures. This gives an annual average PCC value of 146.98 l/hd/d for the reported year. The confidence grade

is again reported as C4. We have established a continuous unmeasured household PCC monitor. This monitor will accurately measure PCC, including monthly variations and seasonal trends, and the data is expected to be available for use in the reporting year 2008/09.

A2.26 Per capita consumption (measured household – excl s/pipe leakage)

A number of PCC studies were carried out during the year which has enhanced the data quality for the calculation, the confidence grade reported is B2.

A2.27 Water taken unbilled – legally

The volume reported as water taken legally unbilled (WTLU) has increased from 34.5 Ml/d in 2006/07 to 63.2 Ml/d in this report year. The confidence grading has moved from D4 to C4.

Usage	Units	2006/07	2007/08
Fire fighting	Ml/d	13.12	14.97
Standpipe volumes	Ml/d	16.01	12.41
WWTW use	Ml/d	3.79	15.73
Scottish Water offices and depots	Ml/d	0.40	0.32
Scottish Water jetting	Ml/d	0.99	1.08
Animal field taps and troughs	Ml/d	0.00	16.35
Building water use (temporary connections)	Ml/d	0.00	2.31
TOTAL	**Ml/d**	**34.49**	**63.18**

The changes in volumes and confidence are due to site visits, data collection and improvements in methodologies:

- The increase in fire service use is due to the net effect of several changes including: hose flow rates (19mm, used indoors and with foam – 3.75 l/sec, 70mm, used outdoors – 10 l/sec), assessment of durations and average numbers of hoses required for various incident types and a reassessment of the other major fire service uses of water (appliance testing, training and vehicle washing). These changes were identified during meetings with Lothian and Borders Fire Service.
- The decrease in licensed standpipe use results from a programme of metering standpipes for various categories of usage and applying average measured volumes to these categories. We believe that some customers may be using unlicensed standpipes as well as Scottish Water metered standpipes and hence total volumes are being under-reported. We are attempting to clarify by shadowing metered standpipe users.
- The increase in reported WWTW use is supported by readings we have been taken at 169 WWTW, selected to be representative of the various types and sizes and accounting for 33% of PE, throughout the reporting year. The usage levels have been grouped by WWTW type and size, and average measured usages applied to the unmeasured works. Additionally, the discrepancy in usage between Scottish Water and PFI WWTW is being investigated with early indications suggesting that at some sites readings have been under-recorded.
- The reported consumption in Scottish Water offices and depots has decreased because of the composite effects of our changed methodology. The methodology has been revised to account for the presence of Business Stream and contractor staff in Scottish Water offices. The PCC values for office workers has also changed from the 2006/07 domestic PCC value (147.72 l/hd/d) to that reported in the "Final Watermark Project Report" (9.3 m^3/hd/annum = 25.48 l/hd/d for an office without a canteen, 18.6 m^3/hd/annum = 50.96 l/hd/d for an office with a canteen). An allowance is applied for additional usage at depots and laboratories.
- Unbilled field trough usage has been reported for the first time this year and is calculated using the average consumption for metered troughs and applying it to the derived number of

unmeasured unbilled field troughs (based on a number of DMA field studies). We are considering the feasibility and benefits of metering all field troughs.

- Building water use is based on the average volume of construction water used per property and the number of properties constructed during the reporting year. The data is sourced from government reports and Scottish Water records. The figure is included as WTLU because developers are billed for a construction licence rather than for a volume of water.

A2.28 Water taken unbilled – Illegally

The volume of water reported as water taken illegally unbilled (WTIU) has reduced from 5.40 Ml/d in 2006/07 to 3.07 Ml/d in the reporting year.

The confidence grade has changed from D4 to C4. This is due to measurement of hydrant misuse volumes from data analysed by our corporate leakage tool (PSP), and an increase in the confidence of licensed standpipe flows from which the unlicensed flows are extrapolated. A campaign aimed at minimising unlicensed standpipe use has recently been launched.

A2.29 Water taken unbilled – Distribution system operational use

The volume of water reported as distribution system operational use (DSOU) has increased from 3.77 Ml/d in 2006/07 to 4.89 Ml/d in this reporting year. The confidence grade has changed from D4 to C3. The changes in volumes and confidence are due to site surveys, data collection and improvements in methodologies as follows:

- Reservoir Cleaning – the volume has increased from 0.22 Ml/d to 0.62 Ml/d. The methodology is to sum the volume of water drained from reservoirs prior to cleaning and also the volume of water used during the cleaning process. In the previous reporting year it was assumed that 300mm of water was drained from each tank, and a volume equivalent to 20% of capacity was used in the cleaning process. Following several shadowing exercises, these figures have been revised and it is now assumed that an average of 67% of the reservoir capacity is drained and 3.75% of the capacity is used during cleaning.
- Mains Rehabilitation & New Mains - the volume used has reduced from 1.84 Ml/d to 0.99 Ml/d. This is primarily due to a reduction in the assumed flushing flow rate from 8 l/sec to 2.7 l/sec, based on flushing values obtained from shadowing of programmed flushing and swabbing activities.
- Programmed Flushing & Swabbing - the volume of water has increased from 0.002 Ml/d to 1.77 Ml/d in this reporting year. Event data for the previous year was obtained from the Operations Log (20 events) and estimated flows and durations applied. In the current reporting year discussions with local operations staff have identified 251 regular events. Durations and flows were measured during shadowing of 66 of these events. The reported volume for the remainder is calculated from an average of measured flow rates (2.7 l/sec) x actual durations x actual frequencies.
- Burst Repairs / Other Network Interruptions – these events are cross referenced with work order numbers to determine whether mains were shut down or flushed. An estimated volume for flushing (2.7 l/sec for 30 minutes) is assigned along with an estimated volume from drain down (2.28 m^3 per burst).
- Reactive Water Quality Incidents - the mains flushing volume for these events is estimated based on a flow rate of 8 l/sec for 60 minutes per event. This higher rate is required to flush the cause of the water quality complaint from the main.

A2.30 Total leakage – total losses

For reporting and comparison purposes, the most reliable leakage estimate currently available is based on the Integrated Flow Method i.e.:

Total leakage = DI - Water delivered and water not delivered except leakage
Total leakage has reduced from 1003.8 Ml/d in 2006/07 to 924.014 Ml/d in the report year and has been achieved by:

- Introduction of improved active leakage control i.e. reduced find and fix times, supported by increasing DMA coverage; and
- Methodology changes and data improvements in water balance components including migration to retail market billing system data, introduction of new usage components such as troughs and building use, and work shadowing and detailed field investigations leading to increased measurement of WTLU and DSOU components.

In recent years the trend in total leakage reduction (reported using the integrated flow method) is:

Report year	Leakage (Ml/d)
2003/04	1146
2004/05	1139
2005/06	1104
2006/07	1004
2007/08	924

The trend of total leakage reduction is forecast to continue as more extensive active leakage control is supported by the increased DMA coverage combined with greater confidence in the methodologies used to calculate the water balance components.

For the 2007/08 WIC Return the total losses are reported as the residual of the top down water balance. The confidence grade of C3 is determined by the coverage of reporting DMAs.

A2.31 – A2.36 Leakage – supply pipe losses

The confidence grade for the average rate of loss through supply pipes has been improved to C3 by measuring additional events to give a total of 100 flow samples. The rate of incidence has been calculated from Scottish Water operations data for DMAs. It is based on a surrogate value of the number of leaks found but not repaired in the reporting year. The values for these areas have been pro-rated across Scotland based on property counts. The duration for these leaks is assumed to be 1 year.

The calculation of lines A2.32 – A2.36 has again been completed based on the breakdown of supply pipe leakage by OFWAT reporting companies.

A2.37 Meter under-registration (measured households) (included in water delivered)

We have derived meter under-registration from the average reported in the most recent OFWAT 'Security of supply' report. Using this data household meter under-registration has increased from 3.1% to 3.8%. However, during 2007/08 the volume of water delivered to measured households decreased, falling from 0.330 Ml/d in 2006/07 to 0.212 Ml/d. The reported error (or under-registration) therefore decreased (in absolute terms) from 0.0102 Ml/d to 0.00816 Ml/d.

A2.38 Meter under-registration (measured non-households) (included in water delivered)

The OFWAT "Security of Supply" report was also used to derive a figure for non-household meter under-registration. The result is an increase from 20.14 Ml/d to 21.27 Ml/d. The volume change is due to the increase in the metered volume as the percentage error has remained constant at 4.8%.

We do not undertake routine meter calibration and therefore do not have company specific meter under-registration figures. The bulk of the metering stock (over 99%) consists of mechanical meters which are calibrated at the time of manufacture and are accurate on installation. The meters cannot thereafter be calibrated in-situ and if broken or known to be under-recording need to be replaced. The current approach is that meters are only changed or replaced when customer contacts indicate that bills are incorrect or problems with meters have caused disruption to water supplies.

A2.39-45 Sewage Volumes

A2.39 Unmeasured household volume (including exempt)

This has increased from 660.51 Ml/d to 687.27 Ml/d. This increase of 4.1% in the waste volume is a result of the increase in population reported in the year, and the increase in the PPC. The confidence grade has improved from C4 to B3, in line with the increase in confidence grade assigned to the WIC4 data, as explained in Table A1.

A2.41 Unmeasured non-household foul volume (including exempt)

The increase in the foul volume reported is a consequence of the increase in the volume of water supplied to unmeasured non-household properties reported at line A2.14.

A2.42 Measured non-household foul volume

The total volume of foul waste from measured non-households has decreased by 6.1% compared with the prior year, reflecting the drop in volume of water measured non-household and its return to sewer percentage.

A2.43 Trade effluent volume

The average daily volume has decreased from 117Ml/D to 105Ml/D, which is in line with the decrease of properties connected.

A2.44 Total Volume

The confidence grade has improved from C4 to B3, in line with the increase in confidence grade assigned to the WIC4 data, as explained in Table A1.

A2.45 Volume septic tank waste

The reported volume of septic tank waste increased from 29.66 Ml to 37.80 Ml. Since 2005/06 Scottish Water has been updating and increasing the volume of collections that are undertaken. This increase reflects the changes with the system and process that were first implemented in 2006. It is expected that the current activity will be sustained.

The confidence grade of A3 reflects the accuracy of the data source and the methodology used this year.

A2.46-60 Sewage Load (BOD/yr)

Where COD information is available, this in converted into an equivalent BOD by dividing by two.

A2.46 – 47 Unmeasured and measured household load

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

A2.48 – 49 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 A2.41 and A2.42. We believe that line A2.49 should read 'measured non-household foul load' and have entered our data accordingly.

A2.50 Trade effluent load

The total BOD load discharged to the network has decreased from 32,931t to 32,042t. When comparing this with A1.38, some 1,736t was discharged to WWTW which did not provide secondary treatment.

A2.52 – 54 Septic tank loads

The reported septic tank loads (lines A2.52 and A2.53) are derived by applying an assumed load of 6,543g/m^3 to the volumes removed from private and public septic tanks respectively.

A2.56 Average COD concentration

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

A2.57 Average suspended solids concentration

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

A2.58 Equivalent population served (resident)

The figure in A2.58 is the total load divided by 60g, which equates to the equivalent population and has not significantly changed from the prior year.

A2.59 Equivalent population served (resident)(numerical consents)

This has not significantly changed when compared with the prior year and also includes PPP Works.

The figure in A2.59 is the total load divided by 60g which equates to the equivalent population (representing works that have a numerical consent).

A2.60 Total load receiving treatment through PPP treatment works

In the report year a slight increase from 71,938 to 73,070 has occurred due to the added load from unmeasured non household as seen in A2.41 above.

A2.61-62 Sewage Sludge Disposal

The reported mass of sewage sludge recycled was 122.231ttds in the report year, of which 99.852ttds was PPP/PFI and 21.54ttds directly from Scottish Water. This year all figures reported were actual data taken direct from the Gemini system, and no theoretical data from the model was utilised. This has increased the confidence grade from B3 to A2.

The mass recycled to farmland by Scottish Water directly has increased by 2.29ttds (Enhanced) and 1.382ttds (Conventional) compared with last year. This is principally due to the provision of enhanced treatment at our larger sites which formerly produced raw cake. There have been corresponding significant reductions in the mass of sewage sludge disposed of to landfill and land reclamation, 2.066ttds and 1.736ttds respectively. This change in emphasis has provided more secure outlets for our sludges going forward and has greatly reduced the requirement to utilise high risk and high cost outlets and helps meet landfill reduction targets.

B Tables Base Information

Table B1 Restrictions on Water Use

B1.1-1.3 Restrictions on Water Use

This year we continued to provide unconstrained services with 0% of the population affected by hosepipe bans.

Table B2 Pressure and Interruptions

General Comments

The overall number of low pressure properties has reduced by 24% from 7,772 to 5,907 predominantly through operational and asset improvements. Properties have also been added to, and removed from, the register through field work and customer contacts. Data improvement via detailed logging was also carried out. This resulted in an improved position with respect to the movement of properties on and off the register as 2,445 low pressure properties were added to the register, during 2007/08, and 2,738 were removed as a result of better information.

For interruptions, we have developed and introduced a Corporate Data Repository which stores all the information relating to interruptions. Information is input to this system direct from our hand-held devices or manually by contractors or Scottish Water staff from interruptions paper forms. Corporate reports, using Business Objects, have been developed by the IDR Business Reporting function and these are now used for the corporate reporting of interruptions figures. The introduction of the Corporate Data Repository and the improved process has resulted in the improvement of the confidence grade to an A for interruptions data.

Our performance in 2007/08 has demonstrated reductions in the number of properties subject to unplanned interruptions to supply.
The contributing factors for our improved performance are:

- Operational focus
- Targeted mains rehabilitation
- Critical stores – Improved replenishment process
- Continuing introduction of Pressure Management Areas.

B2.1-10 Properties receiving pressure/flow below reference level

B2.1 The number of connected properties is taken from line A1.10.

During 2007/08, we retained the former process and system to record and report the number of properties at risk of receiving low pressures. During March 2008, we transferred all low pressure data into the tactical application and are in the process of removing the spreadsheet used in previous years. The tactical application is planned to be replaced in the autumn of 2008 by a strategic application linked to the Corporate Data Warehouse.

The trend in the data shows low pressure properties decreasing predominantly through the capital investment and operational interventions. Further decreases in the numbers are expected this coming year through capital investment.

540 properties were removed from the register because they were in areas which have benefited from capital investment to improve the networks, principally through mains rehabilitation. These properties are no longer at risk of receiving inadequate pressure.

1,096 properties were removed from the register following permanent changes to our operational procedures, principally adjustments to valves and cross connections controlling zones within networks, such that pressures are consistently above the reference level for these properties.

The reported figure of 5,907 properties receiving low pressure contains 1,225 properties that are within 10.5m of the bottom water level of the supplying service reservoir. These properties are therefore compliant with service standards as required in Scottish Water's Guaranteed Standards Scheme for household customers. This should be taken into account when comparisons are made with other water companies.

Overall the trend in low pressure properties continues to decrease. The reduction is due to targeted investment which has improved pressure to 1,742 properties during the first two years of the programme (2006-2008). The number of properties receiving improved pressure is expected to improve as investment is made in the last two years of programme (2008-2010).

Currently there are only 3 properties on the Low Pressure Register identified as being supplied from a joint supply pipe (JSP). Going forward the new strategic application will address this issue and will capture and confirm exactly how many properties are connected to a JSP.

The confidence grade for B2.2 is the same as that quoted for line B2.9 in AR07 as this number and confidence grade have been carried forward.

B2.10 104 Low pressure properties were excluded from line B2.9 due to them being an allowable exclusion.

- 7 properties were excluded due to abnormal demand
- 10 properties were excluded due to mains leak
- 9 properties were excluded due to planned maintenance
- 72 properties were excluded due to private – not Scottish Water responsibility
- 2 properties were excluded due to pump failure
- 4 properties were excluded due to service leak

B2.11-25 Properties affected by planned and unplanned interruptions

We have continued to reduce the number of unplanned interruptions to our customers which last more than six hours which has contributed to the improvement of our OPA performance. We have put in place a new process to allow the reporting of the root cause of interruptions and continued to invest in water mains that have, historically, caused unplanned interruptions to supply.

The downward trend in OPA events (>6hrs) is a result of continued operational focus and targeted mains rehabilitation. There has been a large decrease from previous year in properties >12hrs. During 2007/08 we did not see any failures of trunk mains which contributed to unplanned interruptions to supply (UITS) over 12hrs whereas these did occur in the 2006/07 period.

Other projects that have contributed to our improved performance include:

- A stores and critical stock project was completed. This now provides critical stores at regional level (rather than central stores) and this, in turn, is an enabler to reduce

interruption time, particularly unplanned. This was introduced progressively throughout 2007/08 and will be reviewed during 2008/09.

- Within the last quarter of 2007/08 a pilot scheme was run in Clyde region to reduce leakage cycle times. This has helped resolve some process issues and is now being rolled out across other regions, on a phased basis.
- Continuing development of network management by the ongoing establishment of District Metered Areas (DMAs) and Pressure Managed Areas (PMAs) - this reduces impact area when a water main fails and pressure management helps reduce leakage volume and number of mains failures.

One area that has shown an upward trend is planned over-runs, where one event in Kilwinning led to 3,585 properties experiencing an over-run on a planned shut of 8 hours. Planned over-runs have been recognised as an area that requires improvement and an action plan is now in place to minimise these events.

There has also been a significant reduction in the number of properties affected by an unplanned interruption due to a third party but it should be noted that a large proportion of last year's figures was as a result of one incident which affected 5,000 properties in Dunfermline. This was detailed in last year's commentary.

A summary of the major incidents in the year i.e. those that affected more than 1,000 properties is given below:

		Interruption Banding			
Incident location	date	>3 <6 hrs	>6 <12 hrs	>12 <24 hrs	total
33 A Moss-Side Road Nairn	20/04/2007	2000			2000
Kennoway BPT	04/06/2007		1200		1200
Newhouse Area	06/09/2007		1158		1158
Balmonth Farm, Carnbee, Anstruther	03/10/2007		1500		1500
Easter Grangemuir Farm	17/10/2007	1800			1800
Pennyburn Road & Almswell Road, Kilwinning	13/11/2007		3585		3585
255 Garscube Road, Glasgow	14/12/2007	2480	20		2500
225 Hillpark Dr, Glasgow	10/01/2008	2500			2500
216 Tormusk Rd Glasgow	10/01/2008	2500			2500
		11280	7463	0	18743

Table B3 and B3a Sewage – Internal Flooding and External Flooding

General Comments

Due to the significance of sewer flooding indicators to the OPA, our strong focus on increasing the OPA score and, therefore, improving our service to customers has led to further reductions in our sewer flooding numbers and improvements in the corporate reporting of our performance.

A regional network analyst fully investigates each internal flooding incident and on completion of an investigation form e-mails it to IDR Business Reporting to confirm that an internal flooding incident has taken place. As there may be a small number of incomplete resolution forms following incidents, a small uplift (less than 10%) is applied to the final figures generated from completed forms. This is reflected in the improved confidence grade, B3, applied to the figures (+/- 5 to 10%). It is anticipated that, as confidence in our data capture improves, this uplift will not be necessary in the reporting of the figures in the AR09 Return.

IDR Business Reporting has also developed a series of corporate sewer flooding reports based on records in our Promise system. These reports are published on a scheduled date every month and are available to the whole business and are used for internal OPA reporting and regulatory reporting.

Monthly meetings also take place between representatives from Tactical Planning & Performance (TP^2) and IDR to review the figures and forecasts and agree on any necessary actions.

B3.1 Annual Flooding Summary

The number of connected properties is taken from line A1.21.

B3.2-5 Annual Flooding – Overloaded Sewers

The report year saw a decrease in the number of incidents and properties affected. The improved process for confirming actual events as described above has given us a greater confidence in the reporting of the number of incidents and properties.

B3.5 Last year we reported the number of properties for which flooding was limited to uninhabited cellars only as zero because we did not collate data in a way that enabled us to separate flooding in this area of property from other internal flooding. During this financial year, we collated data in a combined category of unoccupied basements and 'below floor level' and we put in place processes to separate this data out enabling us to report the line in this year's return.

B3.6-12 Annual Flooding – Other Causes

As in previous years, the figures reported here relate to flooding caused by blockages or failure of main sewers only. They do not include flooding caused by blockages or failure of lateral sewers.

Our systems and processes for capturing information about internal flooding due to other causes (IFOC) are identical to that for flooding from overloaded sewers (IFOS). However, there is one significant difference in the incidence of IFOC as compared with IFOS; flooding is often caused by blockage or collapse of a lateral sewer but is seldom (if ever) caused by overloading of a lateral sewer. Therefore, when we allocate incidents, for which we have missing or incomplete data, to categories of sewer type, we can be confident in allocating all overloaded sewer incidents to main sewers. For IFOC, however, we have to allocate the incidents for which we do not know the root cause proportionately between main sewers and lateral sewers, in proportion to the numbers of incidents for which we do have full data.

B3.7 We have reported as zero the number of properties flooded more than once in ten years for other causes. However, we do not have information about such properties because our flooding register has previously recorded only properties at risk of flooding from overloaded sewers (i.e. not 'other causes') and therefore a confidence grade of M missing has been given.

B3.11 The comment against B3.5 applies here also.

B3.13-28 Properties on the "At Risk" register

B3.13 – B3.23 The information used to report these figures is extracted from the Sewer Flooding Register Corporate Satellite Application (CSA).

No changes have been made to the process or methodology used to report lines B3.13-28 and B3a11-25, however improvements to business systems and processes, associated with the investigation and recording of flooding incidents, were introduced during the report year leading to an improvement in the data's confidence grade to B3. A significant aspect of these improvements were changes to field staff responsibilities and indications, thus far, have resulted in more efficient investigation of incidents and greater confidence in associated findings and conclusions.

A review of all properties/areas recorded on the CSA (using information gathered from customer surveys, drainage area studies, site investigations, historic data sources, customer contact records, etc) was initiated during the previous report year and is ongoing and has improved the accuracy of the data. The review is being undertaken to enable the improvement of information recorded on the CSA and, in turn, reduce cost inefficiencies in the flood alleviation programme. It is largely responsible for the overall fall in figures reported in Lines B3.13-15 and B3a.11-14, with action undertaken to permanently solve flooding problems also being responsible, to a lesser degree. The review is also responsible, in conjunction with incidents that occurred in the report year, for the figures reported in Lines B3.22 and B3a.19.

The improvements to business systems and processes introduced over the report year have resulted in an increase in the number of properties/areas added to the "At Risk" Register. It is expected that this trend will continue over the next report year as the implementation of these systems and processes becomes increasingly efficient over time. The above mentioned review of the CSA will continue however, and the overall trend of a reduction in figures reported in Lines B3.13-15 and B3a.11-14 is expected to continue. However, with respect to Lines B3.13-15, the scale of reduction is expected to be significantly less than that reported this year.

B3.22 A heavy storm occurred over the north-west of Glasgow on the 18th August. This storm led to flooding at 27 properties not previously recorded on the "At Risk" Register.

B3.24-27 Problem solving costs

These figures are derived by totalling the costs of flood alleviation projects undertaken in the report year and dividing this by the number of properties that benefited from these projects. The cost information is extracted from the Capital Investment Management System (CIMS).

Capex costs associated with permanent flood alleviation projects have risen steadily over recent years, however a drop in costs was incurred this year. This year was unusual as there has been a tendency for costs to increase. However it is expected that the previous trend will continue, as the general practice in recent years has been to undertake the projects that provided the greater cost/benefit ratio. Estimated costs for projects currently at design stage indicate that the average cost will be above that incurred in previous years and therefore support this expectation.

Opex costs associated with permanent flood alleviation projects have remained low over recent years, however a cost could not be reported this year as there were no opex costs associated with the schemes undertaken this year. It is anticipated that these costs will rise due to the increasing requirement to utilise non-conventional methods of alleviating flooding.

Capex costs associated with temporary flood alleviation measures have remained consistent with those incurred in the previous report year and it is expected that this trend will continue.

Table B3a Sewage – External Flooding

Our systems and processes for capturing and reporting information about external flooding are unchanged and identical to those described in last year's commentary. However the validation process for internal flooding that is described in the general comments for Table B3 is not presently carried out for external flooding. This is reflected in the lower confidence grade of B4 for the data in this table.

We record the number of incidents of external flooding but we have no records of the number of discrete areas that have been flooded. We have therefore been unable to complete lines B3a.1, B3a.6 and B3a.7.

B3a.22-23 Costs associated with permanent flood alleviation projects are wholly associated with internal flooding reported in lines B3.24-25 in Table B3. Figures reported in these lines are therefore reported as zero and non-applicable.

B3a.24: Average cost of temporary problem solving measures (capex)

The figure reported in this category is £3,190. No comparison can be made with the previous report year as no such measures were undertaken in that year.

B3a.25: Average cost of temporary problem solving measures (opex)

This figure is reported as zero and non-applicable as the costs of maintaining temporary problem solving measures are minimal and are therefore not quantified or recorded.

Table B4 Customer Service

General comments

This year's submission of Table B4 does not include data relating to performance of Business Stream. Therefore, the total numbers will show a significant reduction on those reported in 2006/07.

B4.1-7 Billing/Charging/Metering (BCM) enquiries

These figures are sourced from two different systems during the year. For the period 1st April 2007 to the end of August 2007, the data was recorded and reported from Hi-Affinity (billing system now transferred to Business Stream) and from September onwards, the data is reported from the Scottish Water corporate billing system, Peoplesoft.

The figures record our performance in billing areas such as septic tank emptying, rechargeable work and standpipes.

B4.8-14 Change of Payment Method (CoPM) enquiries

This section is wholly the responsibility of Business Stream so the relevant lines are reported as zero and non-applicable. Due to our very low number of metered domestic customers we currently do not have the facility that would allow us to carry out a customer's request re change of payment method e.g. moving to Direct Debit.

B4.15-21 New Written Complaints

The performance reported in this section is based entirely on the written complaints that were dealt with by the Customer Relations Team and excludes those complaints received and dealt with by other departments such as Corporate Communications.

We have decided to exclude these as they have not been captured on a consistent basis throughout the report year. However from January we have captured all written complaints on our corporate system and will be able to report on them in next year's return.

IDR Business Reporting has also developed a series of corporate Business Objects reports for the Customer Relations Team that allows the team leader to track response times to all written complaints in the corporate system even if they have been sent by a customer to another department. These reports went live in January and are now used by the Customer Relations Team to track our performance on written complaints.

Due to the manual process of recording and reporting written complaints performance up until January, and the fact that we cannot report reliably on the small number of written complaints dealt with outside the Customer Relations Team, we have applied a confidence grade of B to the data. The new processes and reports that have been in place since January means we anticipate that this will improve to an A for next year's return.

B4.15a/b The number of correspondence/complaint has been taken as the number of new complaints plus the number of follow up letters recorded. A follow up complaint is taken as when a customer has had to contact Scottish Water for an update or provided some additional information needed to resolve the case. Where new issues are raised, including the submitting of a claim form as a result of complaint, this is regarded as a new complaint.

B4.22-29 Telephone Contacts

This year there has been a 10% drop in household calls received and answered. This may be explained, in part, by the poor weather during the summer 2007. This often leads to a corresponding reduction in the incidence of hydrant vandalism, which normally accounts for seasonal highs. This resulted in total lower call volumes and a higher success rate in answering calls within 30 seconds.

The percentage of calls answered has stayed almost exactly the same (99%) and there is a slight increase in the percentage of calls answered in less than 30 seconds. The average time to answer a call has also dropped slightly and the percentage of abandoned calls has stayed roughly the same.

B4.22-28 These lines are reported from our Contact Centre Six system, reported via Crystal Reports and this is combined with monthly data from the BT Messagelink service. This process is unchanged from last year.

B4.29 Total telephone complaints are now taken from a Business Objects report from Promise. This represents a process improvement change from last year so the data is likely to be more reliable this year and as a result we have increased the confidence grade to A1. The total number of complaints this year is reported as 202,717 as against 180,028 last year; however, this is still down from 244,756 in 2005/06.

B4.30-40 Private Septic Tank Emptying

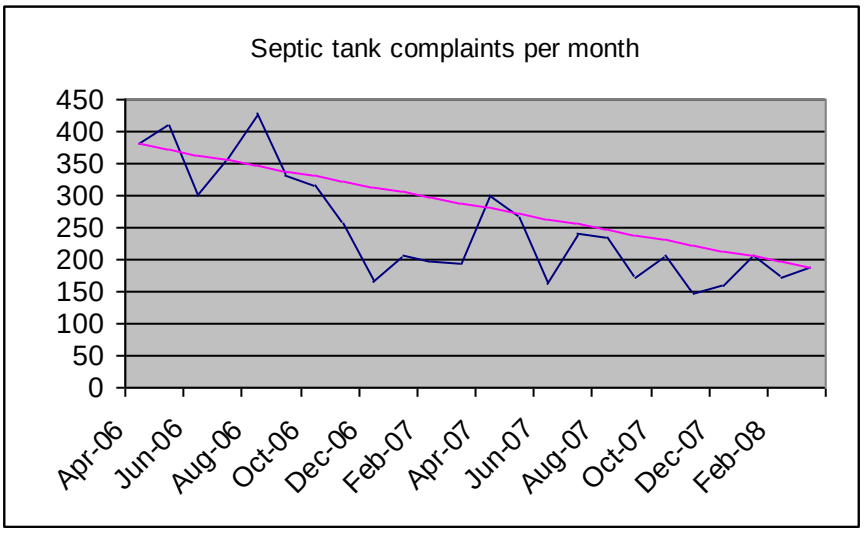
There has been only a slight increase in the number of requests for the septic tank service. However, a major change has been in the number of tanks de-sludgings. Argyll was identified as an area which required some focus and additional resources. A successful initiative was launched to clean up the data, match jobs issued with jobs performed, identify jobs still to complete and bill for services which had not been billed. This was followed by updating all relevant records on Gemini and tightening up of working practices. This included adopting procedures to hire contractors when existing resources are overstretched, workflow planning, the programming of de-sludgings based on anniversary dates, and the updating of records based on jobsheets on a weekly basis.

The number of emergency requests has also increased. This is primarily attributed to the acceptance of emergency jobs in the South West area. Previously all jobs regardless of service type were scheduled only in accordance with the 'Campaign areas', whereby only one area is targeted at any one time in order to optimize tank emptying and tanker mileage. The South West now accepts emergency de-sludgings from any area.

The response time to unscheduled de-sludgings has improved since last year. Although there were 15% more desludgings than last year, more of these were carried out within 0-10 days than last year; in addition far fewer were carried out after the 30 day limit.

This is primarily due to planners now sending reports to the tanker team leaders and drivers every month to show which jobs have not been closed off. This keeps Gemini more up-to-date.

In general, the levels of customer satisfaction with the septic tank service have improved considerably over the last two years. A Promise report gives the number of complaints dropping steadily by 50% from April 2006 to March 2008, from 380 to 189.



Analysis and development have already begun with the Advanced Scheduling project which will generate efficiencies and faster response times in 2008/09.

There are also plans to modify Gemini reporting to allow better internal monitoring and simpler external reporting, and we hope to see progress on this in 2008/09.

Table B7 Customer Care – GMS Performance

General comments

The Customer Service Centre formed a new centralised team on the 1st April 2007 with the purpose of monitoring compliance with the Code of Practice in relation to Guaranteed Service Standards. Within the Code of Practice, the Guaranteed Service Standards scheme covers the most important services to our customers. It is also a key driver in customer service improvements which is a key area of focus for Scottish Water.

If Scottish Water fails to comply with Guaranteed Service Standards set out in the Code of Practice, the customer is entitled to a payment. Most of the payments are automatically paid when Scottish Water identifies non-compliance and a small number require our customers to make a claim for payment.

New processes and procedures are now in place to strictly monitor performance on all Scottish Water Guaranteed Service Standards. This has led to consistency of payments and eliminated duplicate payments. Information is now accurately captured and reports on process non-compliance are produced. Each notified failure is fully investigated with the assistance of the relevant parties in the regional areas and, if established that a failure has occurred, a payment will duly be issued to the customer.

In relation to internal sewer flooding, there has been a change to the process. The regional network analyst fully investigates each internal flooding and, on completion of the investigation form (F-Map), they will confirm if the customer is due a GMS payment. This has improved the system process to ensure that all customers who experience internal flooding receive their entitled Guaranteed Standard payment.

The Customer Service Centre also formed another dedicated team on the 1st April 2007 with the purpose of processing all ex-gratia claims received via a public liability claim against Scottish Water. On receipt of a claim, Scottish Water will fully investigate the details and, if established that a failure has occurred, an offer of ex-gratia will be given to the customer.

Where there were no failures against a standard we have applied N (non-applicable) as the confidence grade to the lines relating to payments against that standard.

B7.1-17 Interruptions to supply

There has been a significant decrease in payments for planned interruptions from the previous financial year and a slight increase for unplanned interruptions. Improved systems and processes have been introduced for recording details of interruptions enabling validation of claims from customers thereby improving accuracy. This progress has resulted in the improvement of confidence grade to an A for interruptions data. The effect of non-notification has resulted in the majority of GMS payments for planned interruptions.

There have been two unplanned interruptions to supply incidents that have resulted in a substantial amount of claimed payments:

The first incident was in the Tweed Region where there was a loss of supply for 24 hours. An Edinburgh City Councillor sent a letter to every property that would have been affected by the incident advising them to submit a claim to Scottish Water for a GMS payment in relation to an unplanned interruption, and many of them did.

The second incident was in the Tay Region where on two separate occasions there was a loss of supply for 12 hours. The local Community Council had a public meeting with the residents of the affected area advising them to make a claim to Scottish Water for a GMS payment in relation to an unplanned interruption, and many of them did.

B7.18-22 Sewer Flooding

Payments to non-domestic customers are now made to Business Stream rather than directly to the business involved. A new verification process, as explained in the general comments, above, has resulted in an increase in the number of payments to non-domestic customers.

B7.23-27 Request to change method of payment enquiries

This standard is wholly the responsibility of Business Stream.

B7.28-32 Other Billing/Charging/Metering enquiries

The three failures recorded in Table B4 line 4 are reflected in the number of payments in these lines.

B7.33-37 Written Complaints

The achievement of 100% compliance against this standard meant there were no payments recorded.

B7.38-42 Telephone Complaints where written response is requested

No failures were recorded against this standard.

B7.43-50 Keeping Appointments

Based on appointments made and kept by our Field Customer Advisors (FCA) and Network Service Operators (NSO) we have recorded 3,020 appointments made with five failures against the GMS. The reported compliance is based on five failures.

FCAs were operating to a different process to that of the NSOs. Amendments to the FCA process have been implemented during the year and they are now operating to the same process.

This change was to bring consistency in the way appointments were recorded and reported. This improved process consistency along with the introduction of corporate reports published by the IDR Business Reporting function has also seen the confidence grade for the compliance with appointments improve to A2.

B7.51-52 Ex Gratia Payments Made

There have been various incidents throughout the year with the majority relating to vehicle incidents. The majority of these are due to the condition of the roadway before or after we have carried out excavation work i.e. either potholes or sunken reinstatement.

B7.53-57 Water Ingress to Gas Mains

There were no failures reported against this standard.

B7.59-62 Meter Applications

No automatic payments were made as a result of failures against this standard but we made six payments to customers as a result of claims.

B7.63-67 Pressure - (Investigation)

There were no failures reported against this standard.

B7.68-72 Pressure (Instance)

There were six payments but only five failures due to a payment relating to a failure in the previous report year. On review, we believe that the A confidence grade for B7.68 and B7.69 was too high last year as the number of instances are simply a reflection of the number of payments. Therefore we have downgraded the confidence grade to a B so that it is aligned to that of the payments.

B7.73-77 Major Incident (Information)

There have been no incidents and no payments.

B7.78-82 Major Incident (Alternative Supply)

There have been no incidents and no payments.

B7.83-87 GMS Failure to make payments within 10 working days

There have been no failures against this standard.

Table B8 Other Service Indicators – Water and Sewerage Service

B8.1 Water Service – Distribution

The number reported this year is a slight increase on last year's number but is still below the ministerial target set of 204 bursts per 1000kms.

A small number of unreported bursts were reported from the Leakages Report last year. This year all bursts have been captured in WAMS.

An update to the asset inventory in GIS has led to a correction in the length of main used in the bursts per 1,000 km calculation. A data improvement project has resulted in additional water mains being corrected to show a status of abandoned which results in a net decrease in the overall length of mains. This small decrease in length results in a small increase in the bursts per 1,000km number calculated.

The trend of the reported bursts has continued to drop as in recent years, although the rate of the drop has decreased as the rate of ongoing investment in water infrastructure assets decreases compared with the previous investment period. The trend of the unreported bursts has increased from last year as activity has been increased to address leakage.

The data predominantly comes from the same source and uses the same approach and methodology as last year. There have been no significant improvements in the data and the confidence grade is therefore still reported as B3.

There has been a significant increase in the number of unreported bursts this year and it is possible that the number of unreported bursts may continue to increase in future years as a result of the focus on leakage and the ongoing active leakage management programme that is underway.

B8.2-9 Water Service – Water Treatment Works (Turbidity)

These lines report data relating to turbidity monitored for regulatory purposes at water treatment works.

Two data sources are used in the compilation of these lines:

1. Table 2 of DWQR Information Return for 2007. Analytical data for turbidity monitored for regulatory purposes at water treatment works originates from the Scottish Water Laboratory Information Management System (LIMS). Regulatory data is extracted from LIMS using processes established to enable compliance with the requirements of the DWQR Information Direction. Compilation of these lines requires extraction of the appropriate information i.e. turbidity monitoring at treatment works from this defined regulatory dataset.

2. Distribution Input (DI) data from a corporate spreadsheet. This details the volumes of water into supply from treatment works.

The LIMS (analytical) data component of these lines is of high quality, originating from a robust set of processes and systems which are subject to extensive quality control and audit procedures.

However, lines 8.3, 8.5, 8.7 and 8.9 are compiled using a combination of the LIMS data and Distribution Input data, so confidence grades for these lines are C4 set on the basis of both sources.

A large amount of data is excluded due to the criteria set. Of the 307 Scottish Water assets reported on, only 54 qualify for inclusion. This is because regulatory monitoring for turbidity at treatment works is based on the volume of water supplied. The higher the volume supplied by the works, the higher the sampling frequency. The 95% data in lines 8.2 to 8.5 therefore only relates to the larger volume treatment works.

B8.10-19 Sewerage Service

B8.10 – 11 Sewer collapses

The method used for calculating collapse figures this year is the same as previous years; essentially, using a selection of Work Order Standard Job numbers from the Ellipse data to select a number of jobs done which are assumed to be for the purposes of repairing collapsed sewers. A query is run which groups together jobs by postcode and a time span of 21 days. If a number of jobs occur in the same postcode and are within 21 days then they are counted as one job.

B8.12 – B8.14: Intermittent discharge (ID)

The GIS Harmonization, continued during 2007/08, highlighted incorrect or outdated information in the intermittent discharge asset inventory. The project involved consultation with asset owners with reference to Scottish Water's GIS wastewater infrastructure records and ID asset database, which resulted in a small increase in the overall number of IDs this year.

Consistent with AR07, SWOs and dual manholes were not included in the reported number for B8.12 and B8.13, but as they are in Scottish Water's delivery plan and will be included in line G8.12 (number of IDs improved) and G9.10 (number of unsatisfactory intermittent discharges), they are listed here in the table below. CSO & Combined CSO & EO structure types are detailed separately in the table below also, as specified in B8.12 & B8.13 line definitions.

Component	B8.12 Number (2008)	B8.13 Number (2008)
CSO & Combined CSO & EO	782	3084
CSO at WwTW, EO etc.	74	492
SWO	38	45
Dual Manhole	37	49
Total including SWO & Dual Manhole	931	3670
2008 B8.12 / B8.13 Total	856	3576

Overhang work from the Q&SII UCSO programme was completed on 8 UCSOs. 32 (29 net) UIDs were resolved this year in the Q&SIII UID programme. Combined, the two investment programmes removed 40 UIDs from the total number of unsatisfactory intermittent discharges. 3 UIDs removed from the UID total number in AR07 (Q&SIII UID programme) were added back into this year's total as it turned out post model audits that they were not resolved satisfactorily – one of these was a dual manhole and therefore not included in line B8.12. There were 61 additions (newly identified needs), including 3 dual manhole areas, and 8 removals (data errors) to the Q&SIII UID programme in total this year.

Additions and removals to the Q&SIII UID programme were due to better information provided by the UID studies. All of these changes have been agreed with the Regulators (SEPA/WICS) via

the OMGWG. It is anticipated that further additions and removals will be identified until all the UID catchment studies, both SR06 & SR10, are complete.

The Scottish Water Combined Sewer Outfall Corporate Satellite Application (CSA) was used as the source for the data on intermittent discharges for the 2008 Annual Return. This corporate application holds the most up to date and comprehensive data available. The system links to the corporate asset inventory held in Ellipse (our Work & Asset Management system). Records from the CSO CSA were matched to the output from the recent GIS Data Harmonization exercise to confirm which intermittent discharges exist & are operational. Those confirmed as non-existent were excluded in the final figures. Intermittent discharge types not incorporated in the Ellipse system (dual manholes and surface water outfalls) were appended to the core data to provide the complete number of IDs for inclusion in the commentary figures. The quality and quantity of the data is continually being improved by Drainage Area Studies (DAS), UID Studies and Operations/Area Strategic Planner knowledge.

B8.15-16 (& 19) – Sewer blockages

The method used for calculating blockages is based upon running a query on Promise. The query selects a single service resolution code which is “SS Sewer Backing up no Overflowing” and totals all the query returns.

B8.19 Equipment failures - We have recorded fewer incidents of equipment failures (repaired) against Scottish Water sewerage equipment in our Works & Asset Management System during the reporting year.

The reporting process has been refined from last year in that we now only record electrical, mechanical & instrumentation failures against equipment at Sewage Pumping Stations, CSOs and Storm Tanks. Previous reports included some failures of infrastructure assets such as manhole covers, sewers, etc. and also covered some sewage treatment assets.

Data covers all reactive work orders in the appropriate category and not all of these may have resulted in a physical repair or replacement of equipment. A few work orders may have instigated an investigation and report only and some may have resulted in a choke clearing or equipment re-setting rather than a repair.

B8.20-37 Sewage Treatment Works performance

It should be noted that these lines can be impacted by a number of factors out with Scottish Water’s control. These include changes to the regulatory monitoring plan (i.e. inclusion/exclusion from the annual sampling programme or an increase/ decrease in the frequency of sampling) and revisions/variations to the discharge licenses.

There has been a recognised improvement in serviceability performance. This can be attributed to improvements in operational practices and procedures, investment in assets through the capital programme (i.e. EC01 and WQ01 programmes) and capital maintenance.

An issue was identified in last year’s approach. Using the entire extract from the SEPA database resulted in the inclusion of sample results that were not used for compliance purposes (i.e. research and development samples and incident/complaint samples). This year only the samples used for regulatory purposes were extracted from the database.

One error has also been identified in last year’s submission. An error occurred whilst extracting data used to work out the probability calculations. This resulted in less works being reported.

The re-stated figures are as follows**:**

	Sewage treatment works – BOD performance		**Submitted AR07**	**Adjusted AR07**
B8.20	Number of STWs (Equivalent Population band 3 to 6)	nr	**126**	**156**
B8.21	Percentage of STWs where there are no BOD events forecast for the current year (Event: Max > 2)	%	**84.6**	**86.0**
B8.22	Percentage of STWs where there are no BOD events forecast for the current year (Event: 95%ile>1)	%	**87.8**	**88.4**
B8.23	Percentage of STWs where there are no BOD events forecast for the current year (Event: Mean>0.5)	%	**93.8**	**93.8**
B8.24	Number of excluded STWs	nr	**1857**	**1827**
B8.25	Total STWs	nr	**1983**	**1983**
	Sewage treatment works – SS performance			
B8.26	Number of STWs (Equivalent Population band 3 to 6)	nr	**90**	**119**
B8.27	Percentage of STWs where there are no SS events forecast for the current year (Event: Max > 2)	%	**90.2**	**92.0**
B8.28	Percentage of STWs where there are no SS events forecast for the current year (Event: 95%ile>1)	%	**88.9**	**89.6**
B8.29	Percentage of STWs where there are no SS events forecast for the current year (Event: Mean>0.5)	%	**94.9**	**94.8**
B8.30	Number of excluded STWs	nr	**1893**	**1864**
B8.31	Total STWs	nr	**1983**	**1983**
	Sewage treatment works – NH3 performance			
B8.32	Number of STWs (Equivalent Population band 3 to 6)	nr	**68**	**91**
B8.33	Percentage of STWs where there are no NH3 events forecast for the current year (Event: Max > 2)	%	**86.0**	**87.1**
B8.34	Percentage of STWs where there are no NH3 events forecast for the current year (Event: 95%ile>1)	%	**85.3**	**85.5**
B8.35	Percentage of STWs where there are no NH3 events forecast for the current year (Event: Mean>0.5)	%	**91.7**	**91.7**
B8.36	Number of excluded STWs	nr	**1915**	**1892**
B8.37	Total STWs	nr	**1983**	**1983**

The confidence grade for the data has been lifted from B2 to A3. The SEPA extract is from the corporate system and is available as a public register of information. All the Scottish Water data is corporately sourced.

Table B9 Security of Supply index (SOSI)

This is the second year of production of this table for Scottish Water. The SOSI is a standard UK methodology to provide an indication of the extent to which a water company is able to guarantee the provision of a planned level of service. From 2010 this indicator will be used as part of our Overall Performance Assessment (OPA) calculation.

The SOSI measure is used in England and Wales to assess a company's security of supply to its customers and also to track changes in the service offered to customers over time.

We have made a number of changes to our methodology for determining the supply demand balance. The changes were adopted for our Water Resource Plan 2008 (WRP08) by comparison with WRP07. The data presented in the B9 tables for the report year are consistent with WRP08 which uses 2006/07 report year base data. An adopted WRP08 update is planned for March 2009 which will incorporate 2007/08 data. The changes to our methodology are:

- Yield data has been re-assessed for all WRZs with a Low Flows yield estimate.
- Hysim-Aquator models have been re-run for several zones.
- The target level of service has now been standardised at 1 in 40 years for all zones.
- Updated the Headroom methodology to 2003 UKWIR methodology (from the 1998 method) for 20 priority WRZs.
- In WRP07, an assessment was made as to whether the average or peak week daily demand was most appropriate to represent the dry year critical period. In WRP08, 3 zones which have limited storage have been reassessed at 3 month peak critical period.
- 24 zones have been moved from average to peak critical period and 4 zones have moved from peak to average critical period due to reassessment of data.

Our critical period SOSI is currently negative (-26), implying that we have insufficient supply to meet demand. Indeed, our analysis shows that only 56% of the population is in surplus and the apparent implication is that 44% of the population is at risk of supply shortage. Nonetheless, it should be noted that the standard Supply Demand Balance methodology that we have applied results in the use of a number of uplift factors (outage, headroom and dry year demand allowance). Therefore, we do not consider the 29% of the population in Scotland which we calculate to have <-10% deficit to be at significant risk. Our focus for WRP08 has been on the 15% of the population with >-10% supply deficit.

Ongoing investment for leakage reduction, growth and water quality schemes is predicted to increase our SOSI score to 36 (Band D) by 2014. In WRP08 we are promoting further Supply Demand Balance investment which will result in our SOSI score increasing further to 93 which is in Band B by 2014.

Table B9.a (planned level of service) and Table B9.c (critical period level of service) have been completed and are consistent with our Water Resource Plan 2008 submission.

Table B9a Security of Supply index - Planned level of service

In this Table, the overall SOSI score has been calculated at dry year annual average. Due to the improvements described above, the SOSI score has improved from minus 28 to minus 19.

Table B9b Security of Supply index - Reference level of service

Table B9.b (reference level of service) has not been completed. A common reference Level of Service was adopted in England & Wales based on Ofwat Report: 1997 Reassessment of Water Company Yield. We have not modelled this reference Level of Service which would require significant re-working of all our yield estimates (>500 sources).

Table B9c Security of Supply index - Critical period level of service

In this table, the overall SOSI score has been calculated at dry year critical period. Due to the improvements described above, the SOSI score has improved from minus 51 to minus 26 score.

D Tables Base Information

Table D1 – D3 Workload Commissioned Assets

Tables D1-D3 record assets replaced or refurbished and new and enhanced assets commissioned in the Report Year 2007-08. These are based on Scottish Water's approved investment programme to meet requirements of legislative driven quality improvements, enhanced level of service, ministerial outputs and capital maintenance to ensure that the necessary level of service is maintained. The assets commissioned relate to projects from the Q&SII Conclusion and Q&SIII Programmes.

The asset data reported in D1 to D3 is directly input to the tables from aggregation of the project level data to the appropriate asset type, size band and financial fields.

Commissioned assets have been analysed and allocated to either 'asset replacement' or 'new and enhanced' as appropriate. Asset data on completed projects was obtained from Project Managers in Scottish Water Solutions and Capital Investment Delivery. They provided details of the assets commissioned through an Asset Data Capture Form for Tables D1-D3. Support Services data was obtained on individual proforma appropriate to the asset type. Financial information on project capital expenditure has been reconciled with the corporate financial management system.

New mains and sewers adopted through Developer Services projects are reported at the full value based on Developer Services estimate of total costs and not on the reasonable cost contributions paid to the developers. Data was provided at development site level on the new mains, sewers and pumping stations.

Mains and sewer rehab lengths and size band diameters were provided with the associated financial costs in rehab proforma by Capital Investment Delivery (CID). The lengths reported are the lengths in the year although the projects may be continuing in 2008-09 and the financial investment associated relates to the lengths delivered in 2007-08.

Data on changes to assets resulting from reactive work undertaken by Customer Operations was provided by Finance. A new report on capitalisation of reactive work drawn from WAMS and Peoplesoft has enabled a consistent approach to be taken across the eight operational regions. Work has progressed to improve the process for recording infrastructure reactive maintenance with fields to capture the length and diameter of all mains and sewer work progressed and address points captured for communication pipes replaced or refurbished. However, there were capitalised costs associated with mains and sewer replacement which were not attached to specific lengths and we have already taken steps to ensure that fuller compliance is achieved in future years. Significant progress was made in attaching Ellipse codes or plant codes to work on non-infrastructure assets and the financial investment reported relates to the assets which could be identified. We are undertaking further work to ensure that these fields are fully populated in future years.

We are working to amend the process for ensuring that work undertaken by Operations as part of the Quick Hits programme managed by Tactical Planning and Performance is recorded in a consistent format to enable full reporting of all assets within Tables D1 and D2. Similarly, health and safety work progressed by all parties will be recorded consistently, in the manner currently demonstrated by our CID team.

Work to meet the requirements of the Security and Emergency Measures Direction has been reported as enhancement of the assets in Table D1.

The DSEAR programme assets commissioned are reported as refurbishment of the assets in replacement tables D1 and D2.

Investment on air valves, which was not undertaken as part of the mains rehab programme is reported against line D1.18 in the replacement table in size band 1. The confidence grade for this data is reported as B3 due to the risk of inclusion of other valve types in the service request lists. Investment in manholes and chamber covers which was not associated with the mains rehab programme is reported against D1.18 in size band 2. Investment in street furniture is reported in D1.18 in size band 3.

Investment in manholes and chamber covers which was not associated with the sewer rehab programme is reported in D2.20 in size band 0 and street furniture is reported in size band 1.

D3.9 and D3.29 report on the telemetry outstations which have been commissioned through the telemetry programme and outstations specifically identified in the asset data returns from project managers. However, a number of replaced or upgraded telemetry outstations will have been included within the refurbishment or upgrading of assets which have been included in Tables D1 and D2. The lack of confidence in the above actions has led us to reduce the reported confidence grade for this submission.

D3.13 and D3.33 include laboratory equipment and investment undertaken at tenanted houses, including upgrades to the private water supplies.

The asset data on named projects being delivered by Scottish Water Solutions and Capital Investment Delivery was provided through proforma which used the current Ellipse data and are of similar quality to previous years.

The following are specific comments on individual lines as shown to support the changes in confidence grades reported in the tables if not covered in the above text:

- D1.1, D1.34 to D 1.38, and D1.42 & D1.46 – Reported as B3 as the Ellipse codes now provide an improved view of the sites involved.
- D1.51 – The improvement in the reported confidence grade is due to our scrutiny of the Ministerial outputs and the details of optants.
- D2.16 – Reported as A1 due to the confidence of the one asset site identified for sludge cake disposal.
- D2.34 & D2.35 – Reported as B2 due to improvements in the data provided following our ongoing reduction in the projects involved.
- D2.36, D2.37, and D2.42 – The B2 confidence grade reflects the reduction inn projects allowing a more focussed view on the data involved.
- D2.46 – The A1 grade reported is based on the lack of any assets utilising cake disposal in this reporting year.

Despite the above improvements a number of reductions in reported confidence grades are reported in the submitted tables, in particular, the following lines are affected;

- D1.13, D1.15, & D1.44 – Reported as B2 due to the level of accuracy of the reported Ellipse codes in some areas of the business on projects with multiple assets types involved, we would expect this to be a short term impact.
- D1.39 – Reported as B2 due to the increase in the number of project with GW1 enhancements.
- D2.3 – The reduction in Confidence grade reflects the lack of some work identifiers in a small number of the work orders involved. This increases the risk of some work activities being reported under a different line.

- D2.5 – The reported grade of B2 reflects the lack of assets reported in our previous submission compared with the current report year. There is still an estimate involved in the allocation of the size bands for this line which we are hoping to remove during the coming year.
- D2.10 & D2.11 – Due to the large increase in the number of assets reported the confidence grade has been reduced to B2 to reflect this expansion of risk across the waste water treatment plants involved.
- D2.39 – The reported B3 confidence grade is not changed from our previous submissions due to the numbers of assets involved across the 8 operational areas.
- D3.2 – The reduction in confidence grade arises from the zero value reported in our previous submission. This year we are reporting activity in this area and have therefore reported a reduced confidence.

Table D5 Activities – Water Service

D5.1-11 Mains – Asset Balance

Lines D5.1-D5.11 report the water mains asset balance at March 2008 and the number of communication pipes replaced in the Report Year.

The closing balance for water mains on line D5.8 is 55km lower than the opening value reported on line D5.1, which is consistent with the 47,218km reported in line H3.4 in 2006-07. In the course of 2007-08, a significant backlog of data from the Q&SII programme was entered into CIMS. In addition to new mains entered, the update on mains which have been replaced or renewed has increased the recorded length of abandoned mains, thereby reducing the net recorded length of mains in our closing balance for the report year. We have reported this correction to the length of abandoned mains in line D5.7a.

D5.2 and D5.3 Mains renewed and mains relined

The total length of mains renewed and relined is consistent with line D1.17 which reports the mains replaced as part of the Capital Investment Delivery Q&SIII Mains Rehabilitation Programme in 2007-08, lengths replaced by Reactive Operations capital maintenance lines, and lengths from named projects.

D5.4 Mains cleaned (total)

The 78.363km length reported has been derived from the length of flushing specified in 'cleansed' WAMS work orders of 65.76km plus 12.603km reported for swabbing and flushing as part of the Castlehill mains cleaning work packages through the capital programme. The B3 confidence grades reflect the robust processes used to derive these figures from our corporate systems.

D5.5 Distribution mains cleaned for quality

The length reported of 48.123km has been derived from the length of 35.52km reported against routine flushing codes and routine swabbing codes as these works are carried out for water quality reasons plus the 12.603km reported against Castlehill work packages. The B3 confidence grades reflect the robust processes used to derive these figures from our corporate systems

D5.6 New mains

The length of new mains is taken from line D1.47. This is a combination of the lengths adopted by Developer Services for new developments and lengths delivered as part of Q&SII and Q&SIII

projects where a number of WTW upgrades were delivered through maining out from adjacent WTWs.

D5.7 Mains abandoned

The length of mains abandoned reported equals the length of mains renewed taken from D5.2 above. It does not include any impact of improved information which we have included in D5.7a.

D5.7a Other changes

The length reported is the balancing value to bring the total changes in the year in line with the closing balance reported in D5.8. This balancing term includes work on reducing the backlog of completed projects updated on GIS, better information on the network, and corrections within the GIS system and other changes to the network. The GIS team is working closely with CID with an agreed process to ensure that the mains rehab programme is updated on GIS timeously, specifically flagging abandoned mains. These activities are reflected in the improved confidence grade reported.

D5.8 Total length of mains (closing balance)

The total length reported is consistent with line H3.4. The confidence grade reported reflects the source of this data and the processes utilised to produce the final value.

D5.9 Lead communication pipes replaced – quality

There is currently no programme of lead pipe replacement agreed with the Regulator for water quality improvements, although a total of 1515 pipes replaced at customers' requests were recorded in the year to March 2008. All of these lead pipes replaced are included against line D5.10. The number of pipes replaced at customer request is being recorded monthly within the water quality OAR thus reflecting the improved confidence grade.

D5.10 Lead communication pipes replaced - maintenance or other

A further 1,338 lead communication pipes have been reported as replaced through the Reactive Operations capital maintenance lines and CID Mains Rehabilitation Programme in addition to the Customer requested replacement total of 1515. As Reactive Operations report the address point and CID report the number of replacements against individual mains rehab projects, this allows an improved confidence grade to be reported against this line.

D5.11 Communication pipes replaced – other

1,197 communication pipes, of materials other than lead, have been replaced as part of the mains rehabilitation programme being progressed by Capital Investment Delivery and through work undertaken as part of the Reactive Operations capital maintenance lines. As Reactive Operations report the address point and CID report the number of replacements against individual mains rehab projects, this allows an improved confidence grade of B2 to be reported against this line.

D5.12-18 Water Resource Planning

770 additional district metered areas were created during the report year bringing the total at the end of March 2008 to 2,626. During the period 2008 to 2010 a further 259 DMAs are proposed, the majority in the north of the country.

The number of district meter areas with valid DMAs, Category 1, has increased by 752 to 2,174.

An additional 24% of the population was covered by DMAs during the report year. We are now reporting that 94% of the population served, are covered by DMAs. The target to achieve 96% of the population covered by valid district metered areas was amended in agreement with the Commission to 92% by March 2008.

The figures for the report year have been obtained from corporate reporting systems, principally Perform Spatial Plus. This has been reflected in the improved confidence grades in the table.

D5.16 Total percentage of population covered by valid district metered areas

This rose to 94% in the report year. We expect this increase to continue.

D5.17 Percentage of total connections covered by valid district metered areas

This is derived information from our records of the total number of communication pipes. This derivation relies on extracts from the corporate address server (CAS) and the works and asset management system (WAMS).

D5.18 Percentage Total Network covered by valid DMAs

The reported percentage of network covered by valid district metered areas is significantly less than the percentage of connections covered. This is because we have focussed our DMA programmes in the more densely populated areas of the country, where there are more connections per km of main.

Table D6 Activities – Waste water Service

D6.1-13 Critical/Non-Critical Sewers

Lines D6.1-D6.13 report changes to critical and non-critical sewers in the report year.

The total reported length of critical sewer has increased by 619.14km. This has arisen through a combination of (a) re-classification of 575km of previously non-critical sewers to critical sewers principally because of better information about the sewer depths; and (b) other new information, both based on data from Drainage Area Studies. The net length of non-critical sewer recorded has increased by 76.45km when compared to the 2006/07 reported value. Restating these lengths excluding the 575km reclassification gives an increase of 53.73km in critical sewers and an increase of 423.55km of non-critical sewers.

D6.1 Total length of sewers - opening balance

The opening balance is taken from AR07 line E7.8. The confidence grade reported on this line of B3 is consistent with line E7.8 for our AR07 submission.

D6.2 Total length of critical sewer - opening balance

The opening balance is taken directly from both AR07 line E7.13. and Line D6.8 which reflects the closing balance from the previous reporting year. The confidence grade reported on this line of B2 is consistent with the noted lines from our AR07 submission.

D6.3 New critical sewers added during the year

39.36km of new sewers were added this reporting year. This is consistent with the value reported in line D2.31. This comprises new sewers from Q&SII wastewater quality and first time provision

projects, Q&SIII flooding projects and Q&SIII Developer Services projects. These improved sources have allowed us to report an improved confidence grade for this line going forward.

D6.4 Critical sewers inspected by CCTV or man entry during the year

138.43km of inspections were recorded in the Report Year. These are made up from 41.6km WAMS CCTV and 1.9km of man entry reported through WAMS, and 94.9km from CCTV sewer survey data. The robust data sources utilised (IFOC CCTV project and the update from other project driven CCTV databases) allow an improved confidence grade to be reported.

D6.5 Critical sewers – renovated

0.22km of sewer renovations were reported as part of the Capital Investment Delivery sewer rehab programme in this report year.

D6.6 Critical sewers – replaced

10.78km of sewer replacement is reported in line D2.1 from the CID Q&S3 infrastructure programme but the renovated sewers require to be deducted to give the total replacement length of 10.56km as shown in this line.

D6.7 Abandoned "critical" sewers

0.019km of abandoned sewer is reported from CID as part of the sewer rehab programme in 2007-08 and 9.36km is reported from GIS teams due to operational activities. This gives a total value of 9.38km in this line.

D6.7a Other changes to "critical" sewers

This line reports the balance between the changes reported through the lines above to bring the total in line with the closing balance reported in D6.8 and in line E7.13. The majority of the difference reported is due to a re-classification of 575km of sewers to “critical”.

D6.9 New "non-critical" sewers

171.747km of new sewers are reported in line D2.32. These are principally new sewers through the Q&SIII Developer Services programme and new sewers from a Q&SII wastewater quality project. The total figure of 177.16km reported on this line includes 5.415km of new pumping mains to comply with WIC guidance requirements. We have reported an improved confidence grade for this line due to the general improvement in the process for collating the data required.

D6.10 "Non-critical" sewers – renovated

4.37km of sewer renovations are reported as part of the Capital Investment Delivery sewer rehab programme in the report year.

D6.11 "Non-critical" sewers – replaced

The 46.85km of sewer replacement reported for this line is a resultant of the CID sewer rehab programme, Reactive Operations sewer rehabilitation projects, and from wastewater quality projects, which including 4.37km reported as renovated in line D6.10. This reflects the overall value of 51.22km reported on line D2.2. This improved data collection has allowed us to report a higher confidence grade for this line.

D6.12 Abandoned "non-critical" sewers

1.227km of abandoned sewer was reported by CID as part of the sewer rehab programme in 2007-08 and 7.07km of abandoned sewer is reported from GIS.

D6.12a Other changes to "non-critical" sewers

This line reports the balance between the changes reported through the lines above, including the 575km re-classification to critical sewers, to bring the total in line with the closing balance reported in D6.13 and E7.8. Long sea outfalls have been removed from the length of sewers reported. The length of lateral sewers is a statistical calculation based on property types. No change in the confidence grade is being reported.

D6.14-19 Studies

D6.14 Number of sewage drainage areas

The number of drainage areas has not altered from last year. The confidence grade reported however reflects the change to our overall activities in this area.

D6.15 Total Drainage area studies identified for study in the current programme.

The number of drainage areas identified for study within the Q&SIIIa programme is 68. For the report year, this line has been taken as the number of sewage drainage areas where a new study is being created or updated as part of a capital scheme design or the model maintenance programme. Due to this change in focus we have reduced the confidence grade for this line to reflect the flexibility involved.

D6.16 Drainage area studies ongoing in the current programme

Of the 68 studies reported in D6.15, 56 are currently ongoing and a further 12 are planned for the remaining period. Due to this change in focus we have reduced the confidence grade for this line to reflect the flexibility involved.

D6.17 – D6.19 Drainage area studies complete

We have taken these lines to refer to studies completed for the current investment period (Q&SIIIa), and therefore report it as zero. If this were taken as the number of studies completed since the start of the previous investment period this number would be 135. Due to this change in focus we have reduced the confidence grade for this line to reflect the flexibility involved.

Table D7 and D8 Capital Maintenance Expenditure

D7 reports capital maintenance investment on wastewater assets and D8 reports capital maintenance investment on water assets in the Report Year. With the exception of Management and General, the investment is reported against operational regions.

We have completed these tables to show the expenditure in each of the eight operational regions:

Region 1 – Ness
Region 2 – Don
Region 3 – Forth
Region 4 - Tay
Region 5 – Ayr
Region 6 – Clyde
Region 7 – Nith
Region 8 - Tweed

Scottish Water reorganised into eight operational regions during 2006/07 and this is the first report year to use the revised regional boundaries. AR07 reported against the 4 operational areas, North West, North East, South East and South West.

Each project is assigned to one of the eight new operational regions and to a Unitary Authority in the Capital Investment Monitoring System. The Unitary Authorities map to the revised operational regions and each Unitary Authority is wholly contained within an operational region. Where projects are flagged as Scottish Water Wide because they span more than one operational region, they are reported proportionally according to the amount of work carried out in each relevant region. For projects where the detail is unavailable or would require a disproportionate amount of time and effort to ascertain, the cost of the project is spread evenly across the eight regions.

The financial values reported in D7 and D8 are based on the percentage of capital maintenance allocated to projects. A template was developed in the report year which allows Project Managers to confirm existing information and to split projects according to the Commission's asset types or Operational Region. The template includes a sub-category created from the Commission's Guidance for D7 and D8 which contains more detail than the required categories. A look-up automatically populates the category field. This was used by Scottish Water Solutions and Capital Investment Delivery for all of their projects. The returned templates were collated and used to allocate the capital maintenance projects to the correct regions and maintenance categories.

D7.37 and D8.28 - Management and General includes all support services. The telemetry outstations have been allocated to water and wastewater where the projects are delivering both. The other non-operational assets have been allocated to water and wastewater. The investment on fleet, IT, and offices/depots/control centres have been split equally between water and wastewater for reporting in D7.37 and D8.28. The Solutions Share Account has SM3 and WM3 drivers and therefore the value involved (£1.42m) is split between D7.37 and D8.28.

The confidence grades are reported as B3 because most of the information used is recorded at project level in the corporate database and was confirmed by Project Managers but there are areas where this confirmation was not available. While the quality of the data is considered to be greatly improved from AR07, it is recognised that there is further scope to ensure that all areas of the business provide a full split by Operational Region and Asset Type.

E Tables **Operating Costs and Efficiency**

General Comments

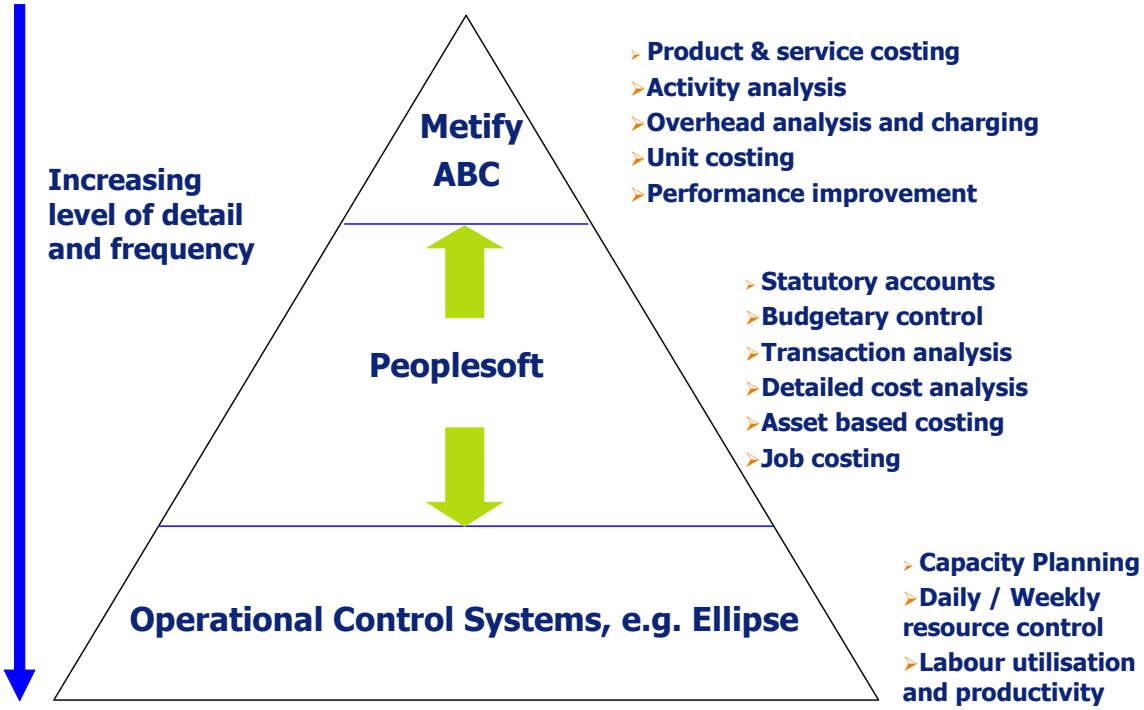
Methodology & Cost Allocation

Cost analysis in E Tables (E1, 2, 4, 6-10) was prepared using reports from Scottish Water's Activity Based Management (ABM) systems.

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

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

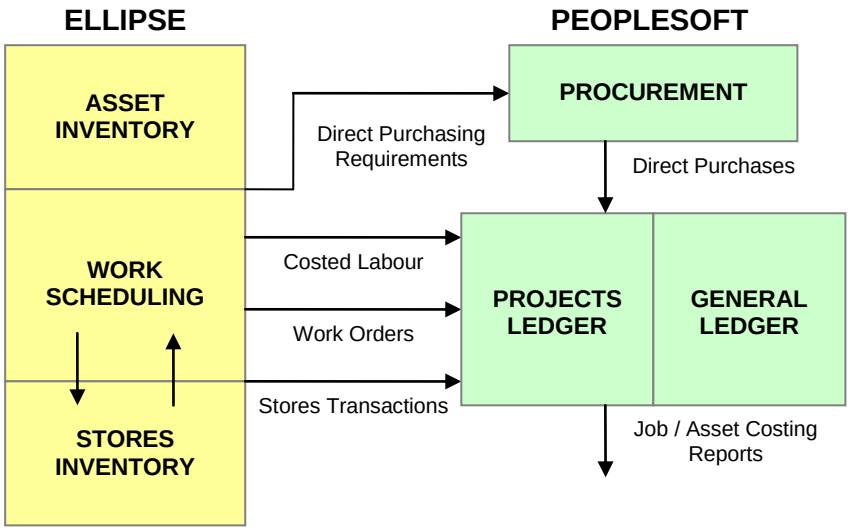
Activity Based Management data (financial and non financial) is captured in various corporate systems. The key systems which provide ABM analysis for E Tables are:



System	ABM Process Overview
Ellipse Works & Asset Management System	Ellipse is used to hold Scottish Water's Asset Inventory and to manage operational activity by individual job (work order), activity and asset. Time spent working on work orders is captured in Ellipse via timesheets, integrated mobile devices or laptops. Material issued to jobs from Stock is also captured by work order. Time and materials are then costed and interfaced to the Peoplesoft Financial System on a daily basis. See Overview diagram below.
Peoplesoft Financial & Procurement System	Peoplesoft is Scottish Water's primary financial and procurement system. The key modules utilised by Scottish Water are Procurement, Accounts payable, Projects, Timesheets, Billing, Accounts Receivable, General Ledger & Fixed Assets. Accounting separation within the Scottish Water Group has been enabled within Peoplesoft. Business Units are the highest level entity in Peoplesoft and are used to securely separate data and access to data and processes. Separate Business Units have been used to separate Business Stream from Scottish Water, and in turn Scottish Water Solutions. Cross-business unit transactions can only be made via inter-company invoicing. Within Scottish Water capture of activity based information within Peoplesoft has been maximised through the set up of our coding structure, systems and processes. Cost codes have been set up within Peoplesoft to capture and sub-analyse costs by: o Individual work order o Individual asset o Each capital or non regulated project o Each support department o Expense subjective (account) All costs are held in Peoplesoft, and costed either directly through Peoplesoft Procurement or operational costing through the Ellipse-Peoplesoft interface. Peoplesoft, therefore, provides comprehensive costing analysis, on a monthly basis, of the costs directly attributable (including some key support activity recharges) to each team, asset, zone, project, service and job.

Metify Activity Based Costing (ABC) System	Metify is an ABC system structured around Scottish Water's key (c.300) activities. ABC is run periodically (typically half-yearly) to cover all profit and loss expenditure. Peoplesoft feeds total expenditure directly into Metify. Where activity splits have already been captured, e.g. Ellipse effort by activity / asset, these are also fed directly into Metify. Costs are analysed by activity, and for each activity a non financial driver is captured. The non financial driver is the measurable factor which drives activity cost, or the level of resource consumption. In Metify these drivers are used to allocate costs to services. Output from Metify provides analysis of the full cost of services. These services have been structured to match E & M Table activity classifications, and therefore Metify output directly feeds these tables. Non financial driver data is collected from a variety of corporate systems and input to Metify.
Driver Data Systems	Examples of systems and drivers are: ○ LIMS – Lab tests processed and Samples taken ○ Oracle CRM – Customer calls and written contacts ○ Gemini – Waste movements ○ Ellipse – Number of jobs, manhours, stores issues, etc. ○ Peoplesoft – Number of invoices, purchase orders, customer bills

Ellipse / Peoplesoft Integration



Cost Allocation

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

Transfers between Separate Entity Associates

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

Transfers to Non Regulated Activities

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

Direct capture occurs where the function is wholly classified as Non Regulated, e.g. Business Development. Where Non Regulated activities are undertaken by Core resources, cost recharges are made.

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

Other direct staff such as Scottish Water Contracting charge costs via timesheets, or in the case of contractors directly, to individual projects. Each of these projects is classified as either Regulated or Non Regulated, and cost recharges between Regulated and Non Regulated are made accordingly.

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

Capitalisation Policy

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

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

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

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

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

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

Reactive Capital Expenditure

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

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

Expenditure on Leakage

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

Wholesale Cost Allocation by WICS Activity

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

The majority of operational costs are directly captured against the individual assets, either by direct charging, e.g. Power, Chemicals, or through Ellipse work orders as described in the Methodology section, e.g. labour costs. In 2007/08 90% of costs directly attributable to wholesale assets were charged to assets. The shortfall against 100% was due to some gaps in labour costing. These gaps are addressed, for the purposes of regulatory reporting, via activity analysis undertaken with team leaders.

Support Cost recharges for Fleet, IT and Property are transferred to teams on a regular basis, to reflect actual consumption of support costs.

ABC then calculates the fully allocated costs of wholesale activities, including all support activity costs.

Trading Results & Reconciliation

Business Stream is a fully owned subsidiary of Scottish Water. Scottish Water produces group consolidated accounts incorporating the results of Business Stream. E & M Table financials are produced for Scottish Water company only, excluding Business Stream.

To aid E & M Table year-on-year comparison, the table below summarises Scottish Water group consolidated results and Scottish Water company results.

		£m	Total £m	Core £m	Non Core £m
SW Group Statutory Accounts:					
	Cost of sales	579.5			
	Administration expenses	100.2			
SW Group Expenditure			**679.7**		
Less	SWBS		(19.5)		
SW Company Expenditure - per Table M1			**660.2**	**632.5**	**27.7**
Less	FRS 17 adjustment		(3.7)	(3.7)	-
SW Company Expenditure, excluding FRS 17			**656.5**	**628.8**	**27.7**
Add	SWBS support costs		4.1	4.1	-
SW Company Expenditure - per Tables M18W & 18WW			**660.6**	**632.9**	**27.7**

E & M Tables include the costs of Scottish Water (Regulated) and Scottish Water (Non Regulated).

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

(£m)	SW Company	Diff Board - M	M Tables Total	Diff M - E	E Tables Total	E1	E2	E3a
Employment	**150.8**							
Other	**136.1**		**288.2**		**260.9**	142.8	118.1	0.0
Opex	**286.9**	**(1.3)**	**288.2**	**27.3**	**260.9**	**142.8**	**118.1**	**0.0**
PFI	**127.5**	**(2.8)**	**130.3**	**0.0**	**130.3**	0.0	0.0	130.3
IMC	**90.0**	**0.0**	**90.0**	**0.0**	**90.0**	54.6	35.3	0.0
Depreciation	**160.8**		**153.2**		**152.6**	69.2	83.4	0.0
Grant Amortisation	**(1.1)**	**(0.0)**	**(1.1)**	**0.4**	**(0.9)**	(0.7)	(0.3)	0.0
Amort PFI	**1.6**		**0.0**		**0.0**			
Gain on assets	**(9.3)**		**0.0**		**0.0**			
Expenditure	**656.5**	**(4.1)**	**660.6**	**27.7**	**632.9**	**266.0**	**236.6**	**130.3**
Explained by								
Charges to SWBS for support		4.1						

The above table excludes Non Regulated expenditure from tables E1 and E2.

The line differences are table presentation differences explained as follows:

- £2.8m difference between our Board report and M Table is due to transfer of costs from Customer Operations for Intersite Sludge Tankering from Scottish Water wastewater treatment works to PFI works (£2.4m), terminal pumping station costs pumping to PFI works (£0.3m) and support costs for the PFI team (£0.1m).
- £4.1m of Scottish Water expenditure has been charged to Business Stream under Service Agreements. This cost has been netted off Scottish Water's expenditure in line with group inter-company transaction reporting. However, for the purposes of regulatory reporting this expenditure has been added back to report the full costs of providing these third party services.
- £27.7m Non Regulated expenditure is included in M Tables but now excluded from E Tables.

Trading Results

From a Regulatory cost perspective, nominal operating costs (i.e. excluding depreciation, PFI charges, FRS 17 pension charges and costs associated with non regulated activities) increased by £2.5m million to £259 million compared to £256.5 million in 2006/07. However, on a real, like-for-like basis Scottish Water's regulated operating costs reduced by £3m, a real reduction of 1.2%. The table below summarises this movement:

	2007/8 £m	2006/7 £m	(inc)/dec £m	(inc)/dec %
Regulated Operating Costs (Scottish Water only)	+259.0	+256.5	(2.5)	
CMA start up costs expensed	(2.0)	(1.5)	(0.5)	
Less retail non household (inc bad debt)		(6.7)	+6.7	
Atypical bad debt	+11.6	+6.0	(5.6)	
Leakage	(8.3)	(5.5)	(2.8)	
Non household septic tank emptying (Non Reg 06/07)		+0.8	(0.8)	
New Opex	(3.4)		(3.4)	
Like-for-like nominal costs	+256.9	+249.6	(7.3)	(2.9)%
Average inflation over year (4.13%)		+10.3	+10.3	
Like-for-like real costs	+256.9	+259.9	+3.0	+1.2%

The like-for-like operating costs for 2007/08 of £256.9 million include absorption of a £4.7 million, or 17% increase in power costs; inclusion of a full year of SEPA CAR charges imposed on abstraction (£1m), and above inflation rates increases of £1.2m (6%). Excluding the above inflation elements of these increases, underlying costs actually reduced, in real terms, by 3% year-on-year.

Non regulated operating profits increased by £1.2m from 2006/7, driven mainly by improvements in Contracting profits, which were up by £1.5m year-on-year. Non Regulated operating costs reduced by £0.6m from 2006/7. This was partly due to a re-classification of Non Domestic Septic Tank emptying (domestic septage) from Non Regulated to Regulated in 2007/8 (£0.6m 2007/08, £0.8m 2006/07).

Total operating expenditure excluding exceptional items (E1.20+E2.19-E1.17-E2.16), decreased by £21.9m to £260.9m (as detailed below).

	2007/08 £m	**2006/07** £m	**Variance** £m
Total operating costs – Water E1.20	142.819	160.253	+17.434
Total operating costs – Waste E2.19	118.119	122.587	+4.468
Exceptional costs – Water E1.17	0.000	0.000	+0.000
Exceptional costs – Waste E2.16	0.000	0.000	+0.000
	260.938	**282.840**	**+21.902**

In 2007/8 there was an atypical cost and an atypical cost reduction:

	£m
CMA set up costs under costs of regulation	(2.0)
Atypical Bad Debt release	11.6
Total Atypical	**9.6**

Functional Expenditure

Total functional expenditure (lines E1.10 & E2.09) increased by £12.7m (7.8%) from 2006/07 (as detailed below).

Analysis of functional expenditure –

	2007/08	2006/07	Variance
	£m	£m	£m
Total functional costs – Water E1.10	91.845	86.759	(5.086)
Total functional costs – Waste E2.09	84.483	76.811	(7.672)
	176.328	**163.570**	**(12.758)**

Direct employment costs (E1.1 & E2.1) increased by £(4.7)m (8.5%) from 2006/07 to £59.9m. Increases have been generated by inflationary, performance pay and pension increases of £(1.9)m (3.3%); additional leakage activity £(2)m; and additional network maintenance activities. The average headcount employed during the year was 3,557.

Direct power costs (E1.2 & E2.2) increased by £(5.3)m to £32.4m (19.4%), due, in the main, to increased tariffs effective from December 2006. Additional operating costs as a result of capital investment account for £(1.2)m of the increase. Net refunds / back-billing account for £(0.2)m of the increase, offset by a reduction in consumption generated by improved efficiency and leakage reduction.

Hired and contracted costs (E1.3 & E2.3) have increased by £(4.5)m (27.7%) to £20.8m. Water Service costs increased by £(0.8)m due, in part, to increased leakage detection and repair activity. Sewerage network maintenance activity costs have increased by £(3.7)m due to improved job capture and customer service improvements.

Spend on materials and consumables (E1.4 & E2.4) increased by £(2.6)m (19.5%) to £16.3m. Chemical costs have increased by £(0.5)m; due to price rises offset by cost-out initiatives and procurement efficiencies – net increase £(0.2)m, and operating costs as a result of new investment £(0.3)m. Increased R&M and leakage activity to improve customer service accounts for the majority of the remaining material increase.

SEPA costs (E1.5 & E2.5) increased by £(1.1)m (12.7%) to £10.1m. This increase is due to the full year effect of the introduction of CAR (Controlled Activity Regulation) charges £(1.0)m, which are applied for water abstraction; and inflationary increases £(0.1)m.

Other direct costs (E1.7 & E2.6) reduced by £2.4m (32.4%) to £5.1m mainly due to a reduction in insurance claim costs reflecting reduced liabilities.

General and Support costs (E1.9 & E2.8) reduced by £3.1m (8.9%) to £31.8m. The main reductions are the stranded lease provision included in 2006/7 figures £1.2m and other support activity expenditure £1m, partly offset by inflationary and performance pay increases £(0.4)m. There was a transfer of internal regulation costs from General and Support costs to Other Business Activities (see comments below).

Business activities

Total business activities spend (E1.14 & E2.13) have decreased by £5.1m from 2006/07 (as detailed below).

	2007/08	2006/07	Variance
	£m	£m	£m
Customer services (E1.11 & E2.10)	18.020	22.537	+4.517
Scientific services (E1.12 & E2.11)	10.826	13.088	+2.262
Other business activities (E1.13 & E2.12)	8.234	6.536	(1.698)
Total business activities (E1.14 & E2.13)	**37.080**	**42.161**	**+5.081**

Customer services costs have decreased, primarily as a result of the full year effect of business retail activity transferring to Business Stream £6.1m (£6.7m less bad debt of £0.6m), offset by additional costs of separation and wholesale revenue management, most notably additional vacant property surveys £(0.6)m, and inflationary increases on the council billing and collection service £(1.0)m.

Scientific services regulated operating expenditure reported in E1 and E2 has decreased by £2.3m. However, this is only partly due to actual cost reductions. In the main, the reduction is due to a shift in the mix of samples and tests from Opex to Capex. In future years, as this mix shifts back to Opex then the costs in E1 and E2 will increase.

Overall the cost of scientific activities has decreased due to reductions in support and central activities £0.8m. However, overall numbers of samples taken and tests analysed have increased by 14% and 11% respectively. The increase is all due to increased capital sampling. In fact absolute regulated operating sample and test volumes have reduced by 3%.

Scientific activity costs are allocated between Non Regulated, Regulated Capital and Regulated Operating, depending on activity, based on the number of samples taken, sample visits or tests analysed. The increase in proportion of capital activity has led to an increase in the proportion of scientific costs, including general and support activities, allocated to the capital programme (£1.5m) and a corresponding reduction in regulated operating expenditure.

The increase in capital sampling activity is due to the increased level and frequency of analysis required during the feasibility and design phases of Q&S3 project development, and specific projects such as the lead survey programme.

Other Business Activities costs have increased by £(1.7)m. In 2006/7 some internal regulation activity was included under Functional Expenditure (General & Support Costs) but has been included under Other Business Activities (E1.13 + E2.12) in 2007/8. This represents a change from last year. This would have had the effect of overstating Functional Expenditure (G&S) and understating Other Business Activities.

If 2006/7 were re-stated then the change in cost allocation would have transferred £1.0m from Functional Expenditure (General & Support) to Other Business Activities.

The actual underlying increase in Other Business Activities was therefore £(0.7)m. of which £0.5m was due to an increase in the contribution to the set up of the Central Market Authority from £1.5m in 2006/7 to £2.0m in 2007/8.

Rates

Local authority rates (E1.15 & E2.14) increased by £(1.9)m (6.8%) from 2006/07 mostly due to a 6% increase £(1.2)m in the charge for Water undertakings, and business rates increases as a result of capital investment £(0.6)m.

Doubtful debts

Total doubtful debt costs reduced by £2.5m to £14.3m, as detailed below.

	2007/08 Charge	**2006/07** Charge	**Variance**
Regulated	12.015	16.727	+4.712
Non Regulated	2.082	0.024	(2.058)
Third Party	0.168	0.000	(0.168)
	14.265	16.751	+2.486

Regulated doubtful debt (E1.16 & E2.15) increased by £4.7m.

The transfer of business retail activity to Business Stream removes the Non Household doubtful debt charge (£0.6m).

In 2006/7 there was an atypical release of household bad debt provision of £6.0m. In 2007/8 there was a further release of £11.6m.

There has been an increase in the bad debt provision on non regulated and regulated third party services. This is due to an increase in the value and the age of customer debt on these activities, combined with billing backlogs associated with the transfer sundry billing from Business Stream to Scottish Water.

Third party costs

In previous years Scottish Water reported Non Regulated activity costs within the total Third Party Costs lines (E1.19 & E2.18). Non Regulated activity costs have been excluded from E tables in 2007/8 on instruction from the Commission.

Third party costs (E1.19 & E2.18) have been allocated between core and non core in accordance with Regulatory Accounting definitions.

Third party costs consist of:

	2007/08 £m	**2006/07** £m	**Variance** £m
Non Regulated activities	0.000	27.576	+27.576
Core third party services	6.200	5.358	(0.842)
	6.200	**32.934**	**+26.734**

Above table reflects the removal of Non Regulated expenditure from tables E1 and E2.

In previous years Scottish Water classified Non Domestic Septic Tank Emptying as Non Regulated. Under the terms of the Sewerage (Scotland) Act 1968 Section 10, Scottish Water has a duty to empty a septic tank where it is reasonably practicable (other than those receiving Trade Effluent). This includes any septic tank from business customers with domestic septage (i.e. foul

water drained from activities such as drinking, cooking or washing). All of the Non Domestic Septic Tanks emptied by Scottish Water are in this category, and therefore In 2007/8 this activity was transferred from Non Regulated to Core Third Party Services.

There is therefore a movement of £0.8m (2006/7 expenditure) from Non Regulated to Core Third Party Services.

Removal of Non Regulated expenditure from E tables accounts for a £27.6m movement in E Table Third Party Services costs. For information, the other main movements in Non Regulated expenditure from 2006/7 were:

- £(0.5)m increase in Waste Services who have grown the breadth of services offered to customers and increased the number of sites that Scottish Water Waste Services operate from.
- £(2.2)m increase in bad debt provision on non regulated activity due to an increase in the value and age of the debt on these activities, combined with billing backlogs associated with the transfer of sundry billing from Business Stream to Scottish Water
- £2.2m reduction in other non regulated activity, mainly due to switch on infrastructure work from Scottish Water Solutions to in-house delivery

Core Third Party services costs have increased by £0.8m. The main reasons for this movement are:-

- £4.1m of Scottish Water expenditure has been charged to Business Stream under Service Agreements. This cost has been netted off Scottish Water's expenditure for the purposes of group reporting. However, for the purposes of regulatory reporting this expenditure has been added back to report the full costs of providing these third party services. This is split £2.7m operating expenditure and £1.4m capital maintenance. Therefore Core Third Party costs have increased by £(2.7)m.

  If 2006/7 were re-stated on the same basis then £1.7m should have been added into Core Third Party Services. Therefore the underlying increase in the cost of services to Business Stream was £2.4m being the full year effect of providing these services compared to 5 months in 2006/7. Costs for the first 7 months of the year would have been reported under retail general & support costs.

- Increase of £(0.6)m due to re-classification of Non Domestic Septic Tank Emptying;
- The cost of delivering New Connections was previously charged to Scottish Water's P&L and classified as Core Third Party Services. In 2007/8 accounting policy changed, and now costs and customer contributions are charged as Work in Progress in Scottish Water's balance sheet. This has the effect of reducing Core Third Party Services by £1.8m year-on-year;
- Other decreases in 3rd Party costs of £0.9m, mainly due to improved classification of customer connections activity costs.

Capital maintenance

Capital maintenance costs (E1.30 & E2.29) increased by £(18.0)m to £242.1m. This was partly due to adding back capital maintenance charged to Business Stream under service agreements £(1.4)m. However, the main reasons for the increase were a higher Infrastructure Maintenance Charge £(2.0)m to reflect the level of underlying investment, and the Non-infrastructure Depreciation impact of increased capital investment £(13.7)m.

Water/Wastewater Split of Costs

The proportion of functional expenditure to water activities was broadly consistent at 52% in 2007/08 and 53% in 2006/07, as detailed in the table below.

	2007/08	2007/08	2006/07	2006/07
	£m	%	£m	%
Water E1.10	91.845	52.1%	86.759	53.0%
Wastewater E2.09	84.483	47.9%	76.811	47.0%
	176.328	100.0%	163.570	100.0%

Of the £(12.7)m increase £(5.1)m in the year was in Water. These increases occurred as detailed below:-

- £(2.9)m (9.4%) increase in employment costs from 2006/07. This reflects the inflationary, performance pay and pension increases £(0.9)m, and increased leakage activity £(2.0)m;
- £(2.8)m (22.1%) increase in power costs is primarily due to increased tariff rates £(2.2)m which disproportionately affected some of the larger water pumping stations, new operating costs £(0.6)m, and net refunds / back-billing offset by a reduction in consumption enabled by improved efficiency and leakage reduction;
- £(0.9)m (14.7%) increase in hired and contracted costs is due, in the main, to increased leakage activity £(0.8)m;
- £(1.6)m (14.5%) increase in materials and consumables is due to: chemical price rises offset by cost-out initiatives and procurement efficiencies – net increase £(0.2)m, new operating costs (£0.3m) and increased network maintenance and leakage activity to improve customer service;
- £(1.0)m (47.3%) increase in SEPA charges due to the introduction of CAR (Controlled Activity Regulation) charges, which were applied for water abstraction part way through 2006/7;
- £1.9m (40.8%) decrease in other direct costs is primarily due to a reduction in insurance claim costs reflecting reduced liabilities;
- £2.2m (11.5%) reduction in general and support costs due to the stranded lease provision included in 2006/7 expenditure £0.7m, support activity efficiencies offset by pay increases, and a transfer of internal regulation activity to Other Business Activities

The remainder of the £(12.7)m increase in the year, £(7.7)m, was in Wastewater. Increases occurred in wastewater as detailed below:-

- £1.8m (7.4%) increase in employment costs from 2006/07 due to inflationary, performance pay and pension increases £(0.8)m, additional network maintenance activity to improve customer service, and treatment overtime and support to improve compliance;
- £(2.5)m (17.1%) increase in power costs is primarily due to increased tariff rates applied from December 2006 £(1.9)m and new operating costs £(0.6)m;
- £(3.6)m (36.0%) increase in hired & contracted costs on network maintenance activity due to improved job capture and customer service;
- £(1.1)m (37.7%) increase in materials and consumables mainly due to increased network maintenance activity;
- £(0.2)m (2.5%) increase in SEPA Charges, due to an inflationary increase;
- £0.5m (18.0%) decrease in other direct costs due to a reduction in insurance claim costs reflecting reduced liabilities;
- £0.9m (5.7%) reduction in general and support costs due to the stranded lease provision included in 2006/7 expenditure £0.5m, support activity efficiencies offset by pay increases, and a transfer of internal regulation activity to Other Business Activities.

Table E1 Activity Based Costing - Water Service

E1.0-10 Service Analysis - Water: Direct Costs

Table 1a

Water Resources & Treatment E1.10

Functional expenditure:	£m
2007/08	45.271
2006/07	43.187
	(2.084)

Water resources and treatment costs increased by £(2.0)m in 2007/08 compared with 2006/07. This increase occurred as follows:-

- £(0.5)m (3.7%) increase in employment costs from 2006/07 due to inflationary and performance pay increases £(0.3)m and new opex (£0.2m);
- £(1.0)m (13.4%) increase in power costs is primarily due to increased tariff rates applied December 2006 £(0.5)m and new operating costs (£0.5)m;
- £1.1m (35.6%) decrease in hired and contracted costs is due to reduced levels of reactive repairs;
- £(0.7)m (7.9%) increase in materials and consumables is mainly due to: chemical price increases offset by cost-out initiatives (e.g. delivery optimization) and procurement efficiencies - net increase £(0.2)m, and new operating costs – principally the new Milngavie WTW £(0.3)m;
- £(1.0)m (48.2%) increase in SEPA charges due to the full year effect of the introduction of CAR charges;
- £(0.5)m (37.1%) increase in other direct costs mainly due to an increase in costs of purchasing water for Belmore WTW (£(0.2)m) due to price increases and some prior year charges, and £(0.2)m for additional property maintenance costs at works to comply with health and safety requirements.
- £0.5m (6.5%) reduction in general and support costs due to support activity efficiencies.

Water Distribution E1.10

Functional expenditure:	£m
2007/08	46.574
2006/07	43.572
	(3.002)

Water distribution costs increased by £(3.0)m (6.9%), from 2006/07. This is analysed as follows:-

- Increased employment costs, contractor and material costs due to additional leakage activity £(2.8)m;
- Employment costs inflation, performance pay and pension increases £(0.6)m;
- Increased network maintenance to improve customer service;
- Power increase of £(1.8)m (35%) as a result of tariff increases which have disproportionately increased the costs of larger water pumping stations;
- Other direct costs decrease of £2.4m due to a reduction in insurance claim costs reflecting reduced liabilities;

- General and support costs reduction of £1.7m mainly due to reductions to the stranded lease provision included in 2006/7 figures £0.6m, other support activity expenditure £0.5m and a transfer of internal regulation costs from General and Support costs to Other Business Activities £0.5m.

It should be noted that the 'missing' confidence grade on line E1.10 is due to the cells being locked and should read as A2.

E1.11-20 Operating Expenditure

E1.11 - Customer Service costs allocated to water have reduced by £1.8m to £9.3m compared with 2006/07. Non household customer services costs decreased by £2.3m to £1.3m as a result of the full year effect of business retail activity transferring to Business Stream £2.6m, offset by increased market separation and wholesale revenue management activity £(0.3)m, most notably additional vacant property surveys. Household customer services costs have increased by £(0.5)m to £8.0m mainly due to inflationary increases in the council billing and collection services.

E1.12 - Scientific services regulated operating expenditure allocated to Water has decreased by £1.5m. There has been a slight shift from wastewater to water in samples (4%) and tests (2%). However, there has been an increase in capital samples and tests, which has been delivered with a lower overall scientific cost base. This has resulted in a proportionate shift from water (-9% samples, -6% tests) and wastewater (-5% samples, -3% tests) to capital (+14% samples, +9% tests). The increase in capital sampling is due to increased activity in support of the Q&S3 investment programme in the feasibility and design stage of projects, as well as specific projects such as the lead survey programme.

Scientific services regulated operating expenditure reported in E1 has decreased by £1.5m. However, this is only partly due to actual cost reductions. In the main, the reduction is due to a shift in the mix of samples and tests from Opex to Capex. In future years, as this mix shifts back to Opex then the costs in E1 will increase.

E1.13 - Other business activities allocated to water have increased by £(1.1)m to £4.3m compared to 2006/07. The main driver for this was an increase in payments to WICS of £0.4m allocated to water, partly CMA set up costs £(0.3)m. In 2006/7 some internal regulation activity was included under Functional Expenditure (General & Support Costs) but has been included under Other Business Activities (E1.13 + E2.12) in 2007/8. This represents a change from last year. This would have had the effect of overstating Functional Expenditure (G&S) and understating Other Business Activities.

If 2006/7 were re-stated then the change in cost allocation would have transferred £0.7m in Water from Functional Expenditure (General & Support) to Other Business Activities.

E1.15 - Local Authority Rates for water increased by £(1.4)m (7.4%) to £19.5m compared to 2006/07. This was primarily due to an increase in the Water Undertakings rates of £(1.2)m (6%).

E1.16 - Doubtful debts allocated to water reduced by £2.2m to £5.8m, partly as a result of the full year effect of the transfer of business retail activity to Business Stream (£0.2m), and a release of household bad debt provision £2.0m (£2.7m atypical).

E1.19 – Removal of Non Regulated expenditure from E1 table accounts for an £18.3m movement in E Table Third Party Services costs. For information, Non Regulated expenditure (Water) decreased by £0.7m to £17.6m in 2007/8.

Third party opex (regulated) allocated to water has reduced by £1.1m to £2.7m. The main movements year on year are:

- increase due to inclusion of services provided to Business Stream under service agreements £(1.4)m, which in 2006/7 were included under retail general and support for the period Scottish Water was responsible for business retail activity, and netted out of reported operating costs as inter-company transactions for the period Business Stream were responsible for activity;
- reduction due to change in accounting practice, and improved classification of new connections £2.7m;
- increase in recognition of 3rd party metering services £(0.3)m;

E1.21-22 Reactive and Planned Maintenance (included in Opex)

Water Reactive and Planned Maintenance (included in Opex) has increased by £(5.0)m on infrastructure due to improved job capture and increased network maintenance and leakage activity to improve customer service, and reduced by £0.9m on non-infrastructure due to less reactive repair work.

E1.23-30 Capital Maintenance

E1.23-30 - Depreciation is allocated between water and wastewater based on the asset information held in the fixed asset register. For other assets including IT, plant, machinery, vehicles and property, the total depreciation from the fixed asset register is allocated across all business activities (including other business activities) using ABM cost driver data, such as IT application users.

There has been an increase in the infrastructure maintenance charge (IMC) of £(2.0)m overall, of which £(1.8)m was attributable to wastewater. The infrastructure charge for 2007/08 is £90m with £54.7m, 61%, being attributed to water and £35.3m, 39%, being attributed to wastewater. The basis and split of the IMC charge is consistent with the Strategic Business Plan, SR06-10. In addition, this split is further supported by the analysis of actual infrastructure expenditure in the 2002-08 period. The analysis of actual base infrastructure reclassifications in the 2002 to 2008 period generates the same percentage split of water and wastewater.

There has been an increase in Non-Infrastructure depreciation charged to water of £(6.8)m reflecting the impact of capital investment projects going live.

There has been an increase in Third Party services depreciation chargeable to Water of £(0.5)m. This was partly due to adding back capital maintenance charged to Business Stream under service agreements £(0.7)m, e.g. IT applications and infrastructure utilised by Business Stream. This was partly offset by a reduction in capital maintenance allocated to new connections activity £0.2m.

Confidence Grades – Confidence grades on Table E1 remain consistent with 2006/7, with improvements on some lines (noted below).

Direct costs are, in the main, captured in the core corporate financial system, with labour costing feeds from the core corporate works management system. A high proportion of direct costs are captured by asset, hence the A2 confidence grade. There have been further improvements in the quality of direct cost capture during the year, particularly in power, which mean accuracy has improved, but not yet to the A1 band.

Employment cost, or labour cost analysis has improved again, compared to 2006/7, by way of direct cost capture, but also with improvements in the ABM process, whereby team time analysis

is taken direct from the corporate works management system, and only supplemented where gaps exist.

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

General & Support costs and Operating expenditure are generally allocated to regulatory activities on the basis of underlying activity and cost driver analysis. Accuracy depends primarily on the quality of cost driver data. During the year there have been some specific improvements to driver data, which have improved the quality of cost allocation. However, overall improvements have not been considered sufficient to merit a change from A2 to A1.

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

Capital Maintenance costs are generated directly from the Fixed Asset Register. Confidence grades remain at A2 reflecting the significant proportion of depreciation captured directly by asset. The only element of capital maintenance which requires significant cost allocation is support asset depreciation, e.g. IT, Fleet, Property. Support asset depreciation is allocated to regulatory activities on the basis of underlying activities and cost driver data. IT depreciation forms the majority of support asset depreciation. Further improvements in IT cost driver data have been made but not sufficient to enable an upgrading from A2 to A1.

Table E2 Activity Based Costing - Waste Water Service

E2.0-9 Service Analysis - Waste Water : Direct Costs

Table 2a

Sewerage E2.9

Functional expenditure:	£m
2007/08	37.266
2006/07	32.793
	(4.473)

Sewerage costs increased by £(4.5)m as outlined below:-

- £(0.2)m (1.5%) increase in employment costs from 2006/07 due, in the main, to inflationary, performance pay and pension increases;
- £(0.9)m (18.2%) increase in power costs was primarily due to increased tariff rates applied from December 2006 £(0.6)m and new operating costs £(0.3)m;
- £(3.5)m (91.8%) increase in hired & contracted costs due to increased network maintenance activities – mainly sewer repairs and sewer cleansing – to improve customer service;
- £(1.3)m (208.6%) increase in materials and consumables due again to increased level of network and maintenance activity – mainly sewer, CSO and pumping station repairs;
- £0.7m (38.0%) decrease in other direct costs was mainly due to a reduction in insurance claims liability;
- £0.7m (9.5%) decrease in general and support costs as a result of support cost reductions and transfer of internal regulation costs to Other Business Activities.

Sewage Treatment E2.9

Functional expenditure:	£m
2007/08	36.642
2006/07	34.845
	(1.797)

Sewage treatment costs increased by £(1.8)m from 2006/7 as outlined below:-

- £(1.5)m (15.4%) increase in employment costs from 2006/07 due to £(0.3)m inflationary, performance pay and pension increases, a £(0.5)m increase in overtime costs to safeguard and improve treatment compliance, and improved capture of treatment employment costs (£0.7m);
- £(1.4)m (16.9%) increase in power costs to £9.8m was primarily due to increased tariff rates £(1.0)m and new operating costs £(0.4)m;
- £0.6m (25.3%) decrease in hired & contracted costs due to improved allocation of contractors costs to sludge disposal £0.5m, previously charged to waste disposal;
- £0.3m (17.1%) decrease in materials and consumables due to improved allocation to sludge disposal £0.1m, previously charged to waste disposal; cost savings and a slight shift in the mix of work to repairs £0.2m
- £(0.2)m (3.3%) increase in SEPA costs mainly due to inflationary increases;
- £(0.2)m (24.3%) increase in other direct costs due to additional property maintenance costs and insurance claims;
- £0.5m (8.7%) decrease in general and support costs as a result of support costs reduction and transfer of internal regulation costs to Other Business Activities

Sludge Treatment E2.9

Functional expenditure:	£m
2007/08	10.575
2006/07	9.173
	(1.402)

Sludge treatment costs have increased by £(1.4)m from 2006/7 as outlined below:-

- £(0.1)m (6.0%) increase in employment costs due to inflation and new operating costs;
- £(0.1)m (12.1%) increase in power due to tariff increases and new operating costs;
- £(0.7)m (18.1%) increase in hired & contracted costs due to a combination of additional sludge from new sites coming on line, increased costs of treatment as a result of reduction in landfill and land reclamation outlets, and improved allocation of sludge disposal costs previously allocated to wastewater treatment;
- £(0.4)m (20.8%) increase in general and support costs due to a combination of improved identification of all fleet and support costs associated with tankers, and additional operating costs for new sites.

E2.10-19 Operating Expenditure

E2.10 - Customer Service costs allocated to wastewater have reduced by £2.7m to £8.7m compared with 2006/07. Non household customer services costs decreased by £3.2m to £1.1m as a result of the full year effect of business retail activity transferring to Business Stream £3.5m, offset by increased market separation and wholesale revenue management activity £(0.3)m, most

notably additional vacant property surveys. Household customer services costs have increased by £(0.5)m to £7.7m mainly due to inflationary increases in the council billing and collection services.

E2.11 - Scientific services regulated operating expenditure allocated to Water has decreased by £0.8m. There has been a slight shift from wastewater to water in samples (4%) and tests (2%). There has been an increase in capital samples and tests, which has been delivered with a lower overall scientific cost base. This has resulted in a proportionate shift from water (-9% samples, -6% tests) and wastewater (-5% samples, -3% tests) to capital (+14% samples, +9% tests). The increase in capital sampling is due to increased activity in support of the Q&S3 investment programme in the feasibility and design stage of projects, as well as specific projects such as the lead survey programme.

Scientific services regulated operating expenditure reported in E2 has decreased by £0.8m. However, this is only partly due to actual cost reductions. In the main, the reduction is due to a shift in the mix of samples and tests from Opex to Capex. In future years, as this mix shifts back to Opex then the costs in E2 will increase.

E2.12 - Other business activities allocated to water have increased by £(0.6)m to £3.9m compared to 2006/07. The main driver for this was an increase in payments to WICS of £(0.3)m allocated to wastewater, partly CMA set up costs £(0.2)m. In 2006/7 some internal regulation activity was included under Functional Expenditure (General & Support Costs) but has been included under Other Business Activities (E1.13 + E2.12) in 2007/8. This represents a change from last year. This would have had the effect of overstating Functional Expenditure (G&S) and understating Other Business Activities.

If 2006/7 were re-stated then the change in cost allocation would have transferred £0.3m in Water from Functional Expenditure (General & Support) to Other Business Activities.

E2.14 - Local Authority rates for waste water operational assets were captured directly at asset level in the general ledger. Costs charged to waste water increased by £(0.5)m (5.6%) to £9.8m, which is primarily the result of rates on new sites.

E2.15 - Doubtful debts allocated to water reduced by £2.5m to £6.2m, partly as a result of the full year effect of the transfer of business retail activity to Business Stream (£0.4m), and a release of household bad debt provision £2.1m (£2.9m atypical).

E2.18 – Removal of Non Regulated expenditure from E2 table accounts for an £9.3m movement in E Table Third Party Services costs. For information, Non Regulated expenditure (Wastewater) increased by £0.4m to £9.7m in 2007/8.

Third party opex (Regulated) allocated to wastewater has increased by £1.9m to £3.5m. The main movements year on year are:

- Increase due to inclusion of services provided to Business Stream under service agreements (£1.3m), which in 2006/7 were included under retail general and support for the period Scottish Water was responsible for business retail activity, and netted out of reported operating costs as inter-company transactions for the period Business Stream were responsible for activity;
- reclassification of non domestic septic tank emptying activity from Non Regulated to Regulated Third Party £(0.6)m.

E2.20-21 Reactive and Planned Maintenance (included in Opex)

Wastewater Reactive and Planned Maintenance (included in Opex) has increased by £(5.1)m on infrastructure due to improved job capture and increased network maintenance activity to improve customer service, and reduced by £0.9m on non-infrastructure due to less reactive repair work.

E2.22-29 Capital Maintenance

E2.22-29 - Depreciation is allocated between water and wastewater based on the asset information held in the fixed asset register. For other assets including IT, plant, machinery, vehicles and property, the total depreciation from the fixed asset register is allocated across all business activities (including other business activities) using ABM cost driver data, e.g. IT application cost split by users and their activities.

There has been an increase in the infrastructure charge of £(2.0)m overall, of which £1.8m was attributable to wastewater. The infrastructure charge for 2007/08 was £90m with £54.7m, 61%, being attributed to water and £35.3m, 39%, being attributed to wastewater. The basis and split of the IMC charge is consistent with the Strategic Business Plan, SR06-10. In addition, this split is further supported by the analysis of actual infrastructure expenditure in the 2002-08 period. The analysis of actual base infrastructure reclassifications in the 2002 to 2008 period generates the same percentage split of water and wastewater.

There has been an increase in Non-Infrastructure depreciation charged to wastewater of £(6.9)m reflecting the impact of capital investment projects going live.

There has been an increase in Third Party services depreciation chargeable to wastewater of £(0.9)m. This was partly due to adding back capital maintenance charged to Business Stream under service agreements £(0.7)m.

Confidence Grades – Confidence grades on Table E2 remain consistent with 2006/7, with improvements on some lines (noted below).

Direct costs are, in the main, captured in the core corporate financial system, with labour costing feeds from the core corporate works management system. A high proportion of direct costs are captured by asset, hence the A2 confidence grade. There have been further improvements in the quality of direct cost capture during the year, particularly in power, which mean accuracy has improved, but not yet to the A1 band.

Employment cost, or labour cost analysis has improved again, compared to 2006/7, by way of direct cost capture, but also with improvements in the ABM process, whereby team time analysis is taken direct from the corporate works management system, and only supplemented where gaps exist.

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

General & Support costs and Operating expenditure are generally allocated to regulatory activities on the basis of underlying activity and cost driver analysis. Accuracy depends primarily on the quality of cost driver data. During the year there have been some specific improvements to driver data, which have improved the quality of cost allocation. However, overall improvements have not been considered sufficient to merit a change from A2 to A1.

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

Capital Maintenance costs are generated directly from the Fixed Asset Register. Confidence grades remain at A2 reflecting the significant proportion of depreciation captured directly by asset. The only element of capital maintenance which requires significant cost allocation is support asset depreciation, e.g. IT, Fleet, Property. Support asset depreciation is allocated to regulatory activities on the basis of underlying activities and cost driver data. IT depreciation forms the majority of support asset depreciation. Further improvements in IT cost driver data have been made but not sufficient to enable an upgrading from A2 to A1.

Table E3 and E3a PPP project analysis

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

The following works form part of each scheme:

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

* Daldowie is a sludge treatment centre only.

E3.0-E3.3 Project Data

We continue to report lines E3.1-E3.3 with confidence grades B3, unchanged from AR07.

E3.1 Annual Average Resident Connected Population

The annual average population connected to PPP wastewater treatment works has increased by 1.9% from 2,029,467 to 2,067,991, consistent with the increase in the overall population.

E3.2 Annual Average Non-resident Connected Population

The annual average non-resident connected population has decreased slightly from 31,966 to 31,747 (-0.69%).

E3.3 Population Equivalent of Total Load Received

The population equivalent of total load received has increased from 3,284,840 to 3,336,555 (1.6%). This is in line with the increase in annual average resident connected population reported in line E3.1.

The population equivalent for nine of the works has fallen (ranging from -0.1% to -25.5%) and increased for the other eleven (ranging from 0.3% to 18.1%). This is largely due to a change in the method for estimating the unmeasured volume of water delivered and therefore the

unmeasured volume of sewage. This is now determined by examining the type of business and not by a function of the rateable value.

E3.4-8 Scope of works

E3.4 Sewerage

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

E3.5 Sewage Treatment - Only Daldowie does not include sewage treatment – it is exclusively a sludge treatment centre.

E3.6 Sludge Treatment

Permanent sludge treatment facilities

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

Temporary sludge treatment facilities

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

East Calder	Sludge dewatering, exported as cake
Peterhead	Sludge dewatering and lime stabilisation, exported as cake
Fraserburgh	During a period of seawater ingress which had an effect on some of the processes on site including the sludge dewatering processes, the saline sludge liquid was tankered off site and disposed of by injecting directly into land.

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

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

Fort William	Caol Transfer (118 l/s), Fort William WwTW(590 l/s).
Inverness	Allanfearn WwTW(50 l/s).
Hatton	South Balmossie (1,406 l/s), West Haven (110 l/s), Inchcape Park(241 l/s).
Nigg	Nigg WwTW (6,300 l/s).
Fraserburgh	Fraserburgh Inlet (195 l/s).
Lossiemouth	Duffus Junction (33 l/s), Moycroft (300 l/s).
Buckie	Nook (84 l/s), Shipyard (70l/s), Buckie WwTW (13 l/s).
Banff MacDuff	Craigfauld (552l/s), Banff MacDuff WwTW (222 l/s).
Seafield	A proportion of total flow is delivered via Marine Esplanade Terminal PS (1420 l/s).
Newbridge	A proportion of total flow is delivered via the Ratho Sewer Terminal PS (196 l/s).
Whitburn	A proportion of total flow is delivered via the Harrison Sewer Terminal PS (45 l/s).
Levenmouth	All flow delivered via terminal pumping stations; Methil M2 (125 l/s), Leven (212 l/s), Buckhaven (133 l/s), Levenmouth WwTW inlet FFT flows (1,650 l/s), Levenmouth WwTW inlet storm flows (2,347 l/s).

E3.8 Other - No plants in this category.

E3.9-14 Sewage treatment - effluent consent standard

E3.9-13 Effluent consent standards - Data obtained from the current SEPA consents.

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

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 CAR

E3.12 Ammonia consent – all CAR

E3.13 **Phosphate consent** – all CAR, consent is expressed as; 'Mean concentration of total phosphorous of any series of composite samples taken at regular but randomised intervals in any period of 12 months.

E3.14 **Compliance with effluent consent standards** – Compliance for BOD, COD, SS, Ammonia, and Phosphate is reported for each works, based on the total number of sample results and exceedances (upper and lower tier) for sanitary determinands (to the exclusion of other parameters that may be included in the SEPA consent Where effluent consent standard includes both CAR and UWWTD standards the tighter consent is 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 2007 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.

Notwithstanding the operational problems faced by the PFI Company at Seafield WWTW in respect of the failure of the Marine Esplanade Pumping Station in April 2007 the works remained fully compliant with the final effluent quality throughout the year.

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.
Faserburgh	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 GIS system, as built drawings, SEPA consents.

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

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

E3.22 Total length of sewer – Length of outfalls included in data unless noted otherwise in commentary. Where terminal pumping stations are located remote from a wastewater treatment works, the length of rising main connecting the terminal pumping station and wastewater treatment works is included.

E3.23 Total length of critical sewer – Unless stated otherwise, all PPP sewers (including relief sewers, rising mains and CSO outfalls) are deemed to be critical.

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

E3.24 Number of pumping stations – includes stormwater, combined and terminal pumping stations. Interstage and final effluent pumping stations forming part of a wastewater treatment plant are not included.

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

E3.26 Capacity of pumping stations (kw) - includes stormwater 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 wastewater pumping station containing a pump or pumps transferring wastewater forward within the downstream sewerage network. The transferred wastewater flow rate from the combined pumping station is the “FFT” rate, the generally accepted term used in design and SEPA consents. For the sake of clarity, where stormwater storage tank returns are pumped back into the sewerage system for onward flow, this shall be classed as a combined pumping station (as such flows become part of ‘FFT’). Does not include terminal pumping stations.

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

E3.28 Capacity of combined pumping stations (m3/d) - Maximum flow pumped forward per day. This excludes capacity of standby pumps.

E3.29 Number of stormwater pumping stations - stormwater pumping station means a network wastewater pumping station containing a pump or pumps transferring wastewater, containing stormwater, to a stormwater storage tank or storm overflow. The stormwater pumping station transfers wastewater in excess of “FFT”, the generally accepted term used in design and SEPA consents. For the sake of clarity, the function of the stormwater pumping station is to prevent and/or limit surcharging of the upstream sewerage system.

The following stormwater pumping stations are included:

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

E3.30 Capacity of stormwater pumping stations (m3/d) – Maximum flow pumped forward per day. This excludes capacity of standby pumps.

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
Nigg	Downies, Portlethen Village, Newtonhill Clifftop, Portlethen North, Nigg

Fraserburgh	Fraserburgh Inlet
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. Disposal of sludge from Allanfearn is not the responsibility of the PPP concessionaire. Scottish Water dispose of sludge from Allanfearn, and costs are reported in table E10. Allanfearn sludge volume is now reported in E10.

At Levenmouth the tonnage refers to sludge disposed at disposal location as the weighbridge wasn't granted a completion certificate until 20th March 08.

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 Daldowie (Rates only), MSI and AVSE, 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.

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 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

These are based on SEPA charges for 2007/08 provided by the PFI Companies.

Confidence grade for total charges for each site is A2, but because SEPA fees have to be split to take account of the sewerage, treatment and sludge elements the following confidence grades have been assigned:

	E3a.3	E3a.10	E3a.18	
Site	**N**	**T**	**S**	**Comment**
Fort William	A2	A2	N	Split provided by PFI Co, no sludge centre at works
Inverness	A2	A2	A2	Split provided by PFI Co
Hatton	A2	A2	A2	Split provided by PFI Co
Nigg	A2	A2	A2	Split provided by PFI Co
Persley	N	A2	N	Split provided by PFI Co, no sludge centre at works
Peterhead	N	A2	N	Split provided by PFI Co,no sludge centre at works
Fraserburgh	A2	A2	N	Split provided by PFI Co, no sludge centre at works
Lossiemouth	A2	A2	A2	Split provided by PFI Co
Buckie	A2	A2	N	Split provided by PFI Co, no sludge centre at works
Banff MacDuff	A2	A2	N	Split provided by PFI Co, no sludge centre at works
Seafield	N	B3	A2	Costs provided by PFI Co, no split was provided between sewerage and sewage treatment
Newbridge	N	B3	A2	Costs provided by PFI Co, no split was provided between sewerage and sewage treatment
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	B3	Split provided by PFI Co, sludge cost estimated
Dalmuir	N	N	N	SEPA fees paid by Scottish Water
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 Scottish Water
Inverclyde	N	N	N	SEPA fees paid by Scottish Water

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.

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

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

	E3a.5	E3a.12	E3a.20	
Site	**N**	**T**	**S**	**Comment**
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 cost against sludge as no sludge centre
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	N	No sewerage and no sludge centre at works
Daldowie	C4	N	C4	Sludge treatment only
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.

Confidence grade for total charges for each site is A1, but because SEPA fees have to be split to take account of the sewerage, treatment and sludge elements the following confidence grades have been assigned:

	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	A2	N	Treatment cost only (exotics)
Persley	N	N	N	SEPA charges paid by PFI Co
Peterhead	N	N	N	SEPA charges paid by PFI Co
Fraserburgh	N	N	N	SEPA charges paid by PFI Co
Lossiemouth	N	N	N	SEPA charges paid by PFI Co
Buckie	N	N	N	SEPA charges paid by PFI Co
Banff MacDuff	N	N	N	SEPA charges paid by PFI Co
Seafield	N	N	N	SEPA charges paid by PFI Co
Newbridge	N	N	N	SEPA charges paid by PFI Co
East Calder	N	N	N	SEPA charges paid by PFI Co
Blackburn	N	N	N	SEPA charges paid by PFI Co
Whitburn	N	N	N	SEPA charges paid by PFI Co
Levenmouth	N	N	N	SEPA charges paid by PFI Co
Dalmuir	N	A2	N	No sewerage and no 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 Costs

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.

E3a.15 Estimated terminal pumping cost

At all schemes the terminal pumping station costs are met by the Concessionaire and are included in the tariff rates. Accordingly, there is no data.

E3a.23-27 Total Cost Analysis

E3a.24 Total Scottish Water cost - Total of E3a.5-6, 12-13 and 20-21. Confidence grade for total charges is A1, but because Scottish Water PPP department costs have to be split across all sites a confidence grade of C4 has been allocated.

Site	07/08	06/07	Variance	Comment
Ft William	0.023	0.007	0.016	07/08 WRc site audit £0.02m
Inverness	0.434	0.252	0.182	07/08 WRc site audit £0.03m, increased rent £0.01m, 06/07 incl £0.01m accrual reversal, increased sludge costs £0.12m
Hatton	0.376	0.225	0.151	07/08 incl Consultants cost £0.06m, increased sludge cost £0.09m
Nigg	0.942	3.282	-2.340	07/08 incl additional legal/consultants fees £0.1m, 06/07 includes for Stonehaven: £1.8m Advance Works, £0.6m power infrastructure costs
Persley	0.029	0.010	0.019	07/08 WRc site audit £0.02m
Peterhead	0.041	0.018	0.023	07/08 WRc site audit £0.03m
Fraserburgh	0.038	0.006	0.032	07/08 WRc site audit £0.03m
Lossiemouth	0.331	0.233	0.098	07/08 Scottish Water Moycroft handover liabilities £0.04m, Outfall repairs £0.04m, additional legal/ consultants fees £0.01m, higher power costs £0.01m
Buckie	0.027	0.008	0.019	07/08 WRc site audit £0.02m
Banff/Macduff	0.026	0.011	0.015	07/08 WRc site audit £0.01m
Seafield	0.437	0.401	0.036	07/08 additional consultants fees £0.21m, lower sludge costs £0.18m
Newbridge	0.017	0.016	0.001	
East Calder	0.007	0.006	0.001	
Blackburn	0.004	0.003	0.001	
Whitburn	0.004	0.004	0.000	
Levenmouth	0.101	0.045	0.056	07/08 additional legal fees £0.05m
Dalmuir	0.567	0.504	0.063	07/08 reduction insurance £0.01m, increase legal/consultants £0.05m, SEPA £0.02m
Daldowie	1.631	0.781	0.850	07/08 incl ops re-charge £0.14m, additional legal/consultants fees £0.04m, increased sludge costs £0.65m
Meadowhead	0.488	0.505	-0.017	07/08 additional legal/consultants fees £0.03m, reduced terminal pumping costs £0.05m
Stevenston	0.195	0.106	0.089	07/08 additional legal/consultants fees £0.09m
Inverclyde	0.112	0.114	-0.002	07/08 additional consultants fees £0.04m, reduced terminal pumping costs £0.04m
TOTAL	**5.830**	**6.537**	-0.707	

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 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	07/08	06/07	Variance	Comment
Ft William	2.941	2.810	0.131	07/08 higher flows
Inverness	6.040	5.531	0.509	07/08 higher flows
Hatton	19.480	15.497	3.983	07/08 higher flows £0.9m, 06/07 incl agreement on infiltration variation mechanism released £2.2m, release of £1.0m provision on KGV claim
Nigg	12.778	11.010	1.768	07/08 higher flows £0.91m, increased rates rebate £0.04m, Cambi upgrade £0.1m, chemical dosing £0.08m, additional Stonehaven costs £0.77m, Tankering Re-charge £0.06m, accrual reversals £0.05m
Persley	2.265	2.191	0.074	higher flows
Peterhead	2.736	1.829	0.907	07/08 higher flows £0.31m, increased fishing season cost £0.59m
Fraserburgh	2.205	2.066	0.139	07/08 incl Tankering of sludge liquid £0.16m
Lossiemouth	3.137	4.192	-1.055	07/08 lower flows £0.09m, release of accrual £0.97m
Buckie	2.922	3.298	-0.376	07/08 release of accrual £0.38m
Banff/Macduff	2.800	3.265	-0.465	07/08 higher flows £0.13m, release of accrual £0.59m
Seafield	15.970	15.157	0.813	07/08 increased compliance with the contract £0.59m, lower sludge rebate £0.06m, reduced rates £0.03m, 06/07 incl release of accrual £0.41m (AVSE total)
Newbridge	2.265	2.173	0.092	
East Calder	1.300	1.245	0.055	
Blackburn	0.652	0.620	0.032	
Whitburn	0.831	0.790	0.041	
Levenmouth	9.132	15.864	-6.732	07/08 lower flows and inflation £3.09m, 06/07 includes claim provision of £4.7m, accruals reversal £1.2m and Necessary change costs £0.14m
Dalmuir	7.559	7.062	0.497	07/08 higher flows and rebates £0.07m, reduced rates £0.08m, provisions £0.51m
Daldowie	15.193	13.122	2.071	07/08 higher sludge volumes £0.94m, claims/contributions £0.5m, sludge trial £0.04m, release of accruals £0.89m, 06/07 incl ops re-charge £0.3m
Meadowhead	7.209	6.953	0.256	07/08 higher fees due to PADR tariff variation £0.42m, PADR variation costs £0.19m lower than 06/07, Oxygen dosing £0.42m, release of accruals £0.09m, 06/07 incl provision for claim £0.3m
Stevenston	3.901	3.560	0.341	07/08 higher fees due to higher flows and PADR tariff variation £0.19m, cost for Change No 1 £0.11m, additional claims provision £0.1m, release of accruals £0.06m
Inverclyde	3.177	3.029	0.148	07/08 higher fees due to PADR tariff variation £0.17m, screenings cost £0.03m, release of accruals £0.05m
TOTAL	**124.493**	**121.264**	**3.229**	

Seafield WWTW

Notwithstanding the operational problems faced by the PFI Company at Seafield WWTW in respect of the failure of the Marine Esplanade Pumping Station in April 2007 the works remained fully compliant with the final effluent quality throughout the year. In addition, contractual odour performance was improved in 07/08 with no odour related penalties being incurred compared with £165k in 06/07.

E3a.27 Public sector capital equivalent values – values were derived from the base model incorporated in a report to the Transport and Environment Committee on 21 June 2001 adjusted for inflation. At Daldowie the PPP cost was used in the absence of a PSCE value, similarly for Levenmouth and AVSE the values have been taken from the 2001/02 annual return.

E3a.28-29 Contract Information

E3a.28 Contract period - The period quoted is the Contract Period as defined in the Contract.

E3a.29 Contract end date - Contract end date is as defined in the Contract.

Table E4 Water Explanatory Factors - Resources and Treatment

E4.1-12 Source Types

E4.1-5 Source Types

There was a net reduction of 9 sources used from 2006/07 to 2007/08. This reduction has arisen principally because they supplied Water Treatment Works which were closed during 2007/08.

The distribution input and the breakdown by source type is comparable with last year. Overall distribution input (DI) has dropped by 1.1% from 2,296 to 2,271 Ml/d. The cause of this reduction is explained in the commentary for table A2.

Changes to the physical assets in operation over the year are broken down as follows:

2006/07 number of sources	380
Incorrect/No longer used	-4
Reductions due to WTW closures 2006/07	-12
Additions due to WTW openings 2007/08	+4
Additions due to site audits/new information	+1
Tributaries added	+2
2007/08 No. of sources	**=371**

The confidence grade in the reported number of sources is B2 because this number is extracted from our asset inventory which does not identify whether a source is a direct or indirect supply. The confidence grade for columns 110-180 (the average daily output of these sources) is C3, to reflect the works carried out in the water balance project.

As last year, we have completed columns 110 – 180 by assuming that, where multiple sources feed a WTW, the total average daily output comes only from the primary source, where DI is consistent with that reported in Table A2. The primary source is therefore allocated 100% of the DI and all other sources are allocated 0. This will improve over the next few years as the measurement and monitoring programme under the Q&S III investment driver WR5 is currently

producing a Monitoring Plan for each Operational Licence with the aim of installing the necessary measuring equipment to measure abstraction volumes.

E4.6 to E4.7: Scottish Water does not have any raw water exports or imports and correspondingly an A1 confidence grade has been entered for this line

E4.8 to E4.12*:* There are only minor changes to the proportion of distribution input reported by source type.

E4.13-14 Peak Demand and Pumping Head

E4.13 Peak Demand (Peak to Average Ratio)
This line reports the ratio A:B where -

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

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

The peak year of the last five was 2003/04. In that year, A was 2455.08 Ml/d and B was 2386.51 Ml/d. The peak to average ratio is therefore 1.029Ml/d.

There were no changes made to the process or methodology used to report this line and the confidence grade remains at C4.

E4.14 Average Pumping Head Data for Water Treatment Works (WTWs)

Distribution, Resource and Treatment operational in the Reporting Year
The average pumping head for resources and treatment has increased from 21.00m to 27.24m. This increase was due to a change in the process compared with the prior year. In previous years the figures were based on a mixture of actual and gap filling. In the reported year, site surveys were carried out to obtain actual data for almost 70% of the pumps. This represents 88% of the pumping carried out and the 12% balance of the data was estimated.

We recognise the new clarity provided in the definition by the Commission for the inclusion of pumping as part of the treatment process and the pumping of processed water into the overall pumping head calculation. We are unable to include this data in the overall pumping head calculation for this report year because we still have insufficient data. It is therefore likely that we are under-reporting our pumping head, although we cannot estimate the extent of this under-reporting.

The changes from the 2006/07 value are due to the following:

- Changes in the flow and lift data gathered for this year.
- Reduction in the number of pumping sites.

The table below shows the change in pumping head and the number of pumps between 2006/07 and 2007/08

	Pumping Head (m)	Number of Pumps
2006/07 Average Pumping Head	21.00	152
Removed pumps	-0.03	20
Additions	+1.31	9
Flow/Lift data gathered this year that supersedes historic data	4.96	
2007/08 Average Pumping Head	27.24	141

The confidence grade is reported as C3, driven principally by the C3 confidence grade for Distribution Input which is an inherent part of the calculation of pumping head.

E4.15-19 Functional costs by operational area

At the end of 2006/07, Scottish Water restructured its operational structure, from 4 areas to 8 regions. The new operational boundaries do not follow any of the previous boundaries. Therefore operational area variances cannot be calculated between 2006/07 and 2007/08.

Water resources and treatment costs are analysed by process type:-

	2007/08	**2006/07**	
Process Type	£m	£m	£m
SD : Simple Disinfection	1.895	2.100	+0.205
W1 : SD plus simple physical or chemical treatment	0.276	0.336	+0.060
W2 : Single stage complex physical or chemical treatment	5.341	4.320	(1.021)
W3 : Multiple stage complex treatment, excluding W4	31.178	30.396	(0.782)
W4 : Very high cost treatment Process	6.581	6.035	(0.546)
	45.271	**43.187**	**(2.084)**

Overall movements are explained in table E1.10 earlier in this commentary. Movements in individual works and switches between process types explain the increases and decreases by category. Some of the larger movements are:

- Increase in W2 due to new Milngavie works coming online in late October £(0.4)m;
- Increase in W3 due to new works £(0.3)m.

Analysis of water treatment works costs by size band:-

	2007/08	**2006/07**	
Size band	£m	£m	£m
<=1 Ml/d	6.231	5.796	(0.435)
>1 to <=2.5 Ml/d	2.451	2.707	+0.256
>2.5 to <=5 Ml/d	3.500	3.656	+0.156
>5 to <=10 Ml/d	3.995	3.410	(0.585)
>10 to <=25 Ml/d	8.572	8.220	(0.352)
>25 to <=50 Ml/d	7.067	7.619	+0.552
>50 to <=100 Ml/d	5.969	5.605	(0.364)
>100 to <=175 Ml/d	3.641	3.332	(0.309)
>175 Ml/d	3.845	2.842	(1.003)
	45.271	**43.187**	**(2.084)**

To allow comparison, previous years tables have been included

Treatment works	Small £m	Large £m	Total £m
2007/08	24.749	20.522	45.271
2006/07	23.789	19.398	43.187
	(0.960)	**(1.124)**	**(2.084)**

Costs have increased in size band <=1Ml/d by £(0.1)m due to new operating costs, and in size band >175Ml/d by £(0.4)m due to the new Milngavie WTW. Increased power costs at Balmore WTW caused an increase of £(0.4)m in size band >175Ml/d.

Costs which are directly attributable to abstraction and treatment are charged to the specific asset cost code in Peoplesoft, either via direct charging, or Ellipse timesheets or work orders. Of the £45.3m (E1.10) total resource and treatment costs, £36.9m (£41.9m less £5.0m distribution costs) of costs (81.6%) have been directly charged to assets in our corporate costing system.

The additional 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 doing.

Confidence Grades – Confidence grades on Table E4 are consistent with grades in E1 and related commentary.

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

E4.20-27 Water Treatment Works by Process Type

There were 6 fewer Water Treatment Works in operation during 2007/08 than in 2006/07 with 313 in operation during the year (down from 319). The constituents of the 313 reported here with the 298 operational WTW reported in the commentary to lines H2.1 – H2.8 as shown in the table below. Table H reports operational status as at 31 March 2008, whereas Table E reports all WTW that provided water into supply at any time during the report year.

The confidence grade for total volume distribution input (column 30) has increased from C4 to C3 as a result of the work carried out on DI as part of the water balance project.

Total WTW reported in Table H2, excluding redundant and decommissioned	**298**
WTW closed during the report year	+16
WTW Opened but not yet owned by Scottish Water	+1
WTW not feeding directly into supply	-2
Total WTW reported in line E4.25	**313**

The two WTW which are reported in Table H (and not in this Table E), are Flex and Lintrathen, WTW 1. They only operate as partial water treatment works and do not feed directly into the supply.

Table E guidance has been adopted for completing Table H (and allocated all W4 assets into category SW3 or GW3 for Table H). The breakdown of WTW by Process Type remains broadly similar to last year. The only changes to the numbers of WTW by process type have arisen as a result of operational changes in WTW in 2007/08.

There were no changes to the systems, process or methodology for the reporting of Water Treatment Works by size band. As before, we used an extract from Ellipse to identify the peak hydraulic capacity of each works and thereby allocated the works to a size band.

E4.28-39 Water Treatment Works by Size Band

Changes to the numbers of WTW by size band have arisen as a result of operational changes in WTW in 2007/08. Nine WTW changed size band of which the most major change included the upgrading of the New Kyle of Lochalsh WTW from 1.6 to 18.5 Ml/d (size band 1 to size band 4).

All 14 WTW no longer operational in 2007/08 (i.e. closed during 2006/07) were <= 10 Ml/d. Kinlochleven was replaced by a new WTW whereas the others have been mained out to larger regional schemes to improve efficiency or water quality.

There were eight new WTW added during the year that replaced other WTW. These include six <= 1ML/d (size band 0) and the new Glenconvinth WTW = 4ML/d all in the Ness Region and the new Milngavie WTW = 240Ml/d (size band 8.

No change is being reported in the confidence grade as the methodology remains the same.

Table E6 Water Distribution

E6.0-6 Area Data

E6.1 Annual average resident connected population

Our methodology for allocating the population to the eight regions is the same as last year. We use population figures provided by the unitary authorities and projected GROS population estimates. Most unitary authorities are contained wholly within one operational region. However, three unitary authority areas (Argyll & Bute, Falkirk and Moray) cover more than one Scottish Water operational region. For these authority areas, we overlaid Ordnance Survey address points within the unitary authority boundaries on our operational region boundaries to assign address points to an operational region. Populations were then assigned to operational regions based on the split of address points. The confidence grade has increased from B2 to A2, reflecting the quality of data supplied for the WIC4 report.

E6.2 Total connected properties

The number of connected properties reported in line E6.2 is consistent with the total reported in line A1.10.

The commentary for line A1.9 contains details of the changes to the number of connected properties. The confidence grade has increased from B2 to A2 as a result of the quality of the WIC4 data.

For unmeasured household properties, we used the methodology described in E6.1 above to allocate households from unitary authorities to operational areas. For all other property types, the data from the corporate billing system (Hi-affinity) was allocated a spatial reference and then linked to the eight regions

E6.3 The volume of water delivered to households reported in line E6.3 is consistent with the total reported in line A2.12. The confidence grade remains unchanged at C4.

E6.4 The volume of water delivered to non-households reported in line E6.4 is consistent with the sum of lines A2.14 and A2.15.

There has been no change in the methodology from last year for allocating the volume of water delivered to measured non-domestic properties.

The volume of unmeasured non-household water delivered was allocated to the eight regions by taking the volume reported in A2.15 and allocating that volume of water delivered in the same proportions as the estimated unmeasured volumes.

The commentaries for lines A2.14 and A2.15 contain details of the changes we have made to our methodology for deriving the consumption of unmeasured non-household properties.

As the measured non-domestic data has been sourced from Scottish Water's billing system, the data has been spatially referenced to postcode level by mapping the corporate address point file to the addresses held within Hi-Affinity. Postcode boundaries together with water operational area (WOA) boundaries taken from the corporate GIS enabled the derivation of the number and associated water volumes delivered to non-domestic properties.

The confidence grade has increased as a result of the quality of the WIC4 data.

E6.5 Area

The total area reported this year is 79,761km^2, which is a decrease of 215 km^2 (0.3%) on the figure reported in AR07. Work carried out on the GIS system throughout the year, to improve the quality has identified minor revisions to the area polygons in the corporate GIS and an improvement in the methodology whereby the regional polygons were extracted from the corporate GIS into MapInfo and then queried to derive the figures.

The confidence grade of A1 reflects the fact that the boundaries were taken directly from the corporate GIS.

E6.6 Number of Supply Zones

During 2007/08 a process of review led to adjustments of the water supply arrangements that brought about a rationalisation of the Water Quality Regulation Zones from 354 to 344. This decrease in the number of zones continues the trend which started in 2003/04 when 394 zones were reported.

In the report year, the rationalisation was centred in the North West of the country. The changes in zones topology are tracked and recorded by the Water Quality Regulation Zone procedure and have a full audit trial.

E6.7-11 Distribution Cost

Water distribution costs increased by £3.0m (6.9%), from 2006/07. These are explained above under table E1 movement explanations. At the end of 2006/07, Scottish Water restructured its

operational structure, from 4 areas to 8 regions. The new operational boundaries do not follow any of the previous boundaries. Therefore operational area variances cannot be calculated between 2006/07 and 2007/08.

Confidence Grades – Confidence grades on Table E6 are consistent with grades in E1 and related commentary.

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

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

E6.12-21 Water Mains Data

E6.12 - E6.15

During 2007/08 there was no significant change in the value of Bands 1 – 4 compared with 2006/07. Due to the regional split, an element of judgement and extrapolation was introduced, which reflected by the confidence grade falling from A2 to B2.

E6.16 - Total Length of Mains
No significant change in the length of mains occurred in the reported year. The significant difference in the reported year was the change in the methodology. The eight Operating Regions are now reported using polygons created in the Scottish Water GIS system. Higher proportions of pipe are being allocated to regions by the polygon function, leaving less to be allocated by default.

Since the last Return, the backlog of records from the Q&SII programmes has been completed. A greater than normal length of mains abandoned is reported – many having been abandoned in previous years but only accounted for in this year. The Scottish Water GIS distribution pipe inventory was also subject to a logical linking infill process, infilling missing diameters between known values.

The net fall in inventory is due to pipes being abandoned from data improvement on legacy projects and a minor reporting error which occurred in the previous year. The Assessment is based on the Scottish Water GIS inventory which is derived from Table H3 Line 4. The inventory is reported from the GIS where the diameter field is populated to 99.1%, leaving only 430km of pipe elements not populated with diameter. The default value used to infill is DN150 falling into Band 1, which is in any case the largest band.

Bands coincide with nominal size bands for newer materials, which are based on external diameter and now coincide with Table H3 size bands.

Due to the regional split, an element of judgement and extrapolation was introduced, which reflected by the confidence grade falling from A2 to B2.

E6.17 Unlined Iron Mains

In 2007/08, the Q&SII records backlog was eliminated and GIS has been populated from trace length infill and rule bases reapplied. A slight reduction in the total length down from 14,209Km to 14,112km has been recorded.

The fall in unlined iron pipe is expected to continue as the Q&SIII programme gets underway. The report relies on population of the material and lining attributes in the inventory. Harmonisation of the legacy material and lining codes has yet to be implemented. 202km of Scottish Water GIS Potable Pipe was populated by the Infill material model and is defaulted to Unlined Spun Iron, constituting less than 1.5% of reported value. Off Inventory adjustment is less than 1.2%. The information available for pipe lining is not fully complete. GIS lining attribute signified as Bitumen and Unknown is included as unlined iron category. Ductile iron is assumed cement lined where lining is unknown and constitutes 1,850km.

E6.18 Potable Mains >300mm diameter

No significant change in the total length has occurred in the year. The report now follows the definition process rule of E6.14 plus E6.15 being pipes greater than 325mm. While the process of allocating mains to operating areas has not changed, the polygons are now the 8 operational regions.

Since AR07 the backlog of records from the Q&SII programme has been completed. A greater than normal length of mains being abandoned is reported – many being abandoned in previous years, but only being accounted for in this year. The Scottish Water GIS distribution pipe inventory was also subject to a logical linking infill process infilling missing diameters between known values.

Asset Stock has dropped by 1,439km from 5,261km reported in AR07. The change in diameter reference called for in Table E definition v11 process rule.

The Assessment is based on the Scottish Water GIS inventory which is derived from Table H3 Line 4. The inventory is reported from the GIS for pipes populated with diameter of which 430km is not populated. The default infill diameter used is DN150 with no adjustment for statistical spread.

This Size Band now coincides with Table H.

E6.19 Water Mains Bursts

The total number of bursts has increased in this reporting year from 7,822 to 7,958. This increase in the numbers is as a result of high profile activities being undertaken through the leakage projects underway within Scottish Water.

E6.20 Leakage Level

The reported leakage levels in each of the eight regions of Scottish Water has fallen.
These changes are described in the commentary in the water balance section of the A Tables above. The confidence grade as increased from C4 to C3 as a result of the water balance project.

E6.21 Low Pressure

The number of properties on the low pressure register significantly reduced by 24% from 7772 to 5907, predominantly through operational and asset improvements which Scottish Water introduced throughout the year. Please refer to Table B2 commentary for further detail.

E6.22-25 Pumping Stations

E6.22 Total Number of Pumping Stations in each distribution area operational in the reporting year

The total number of water pumping stations within the distribution system has increased for this reporting year from 507 to 520.

The number of pumping stations has changed due to the results of site surveys, changes to the method of supply and the GIS harmonisation project. The table below shows the change in the number of pumping stations recorded in the corporate asset inventory (Ellipse) as being operational during this year.

	Number of Pumps
2006/07 Number of pumps	507
Pumps removed	-11
Pumps added	+24
2007/08 Number of pumps	520

The details on the sites are taken from the Ellipse. A B2 confidence grade has been reported.

E6.23 Total Capacity of Pumping Stations in each distribution area operational in the reporting year

Scottish Water has a total capacity of 1,973,294 m^3/d, which is down from 2,573,989 m^3/d in 2006/07. The reduction in the total capacity was due to a review of the pumping stations and improvement of data on those sites. This review allowed Scottish Water to use the updated actual capacity, which drove the change in both the confidence grade and total capacity reported.

E6.24 Total Capacity of Booster Pumping Stations in kW for each distribution area operational in the reporting year

The total capacity of booster pumping stations in kilowatts has increased for this reporting year from 28,452 kW to 30,926 kW, an increase of 2,474 kW.

There has been no change in the methodology for determining the design capacity (in kW) of distribution pumping stations. The change is as a result of the closure of 11 sites and the opening of 24 sites. The site surveys have had an impact on the coverage of known capacities. This increased confidence grade from C4 to C3 is a result of site surveys carried out to establish capacities of the pumps at major sites.

E6.25 Average Pumping Head

The total average pumping head for distribution pumping stations has decreased in this reporting year from 34.13 to 28.84m. This is a decrease of 5.29m.

The average pumping head now uses flow and lift data collected from site surveys and/or measured values for 2007/08. This represents 84% of the total data set, which includes flow, lift and power output. There has been no change to the methodology used to fill gaps in data

We have used site surveys and measured data to demonstrate the strong correlation between Work Done (i.e. pumping x D.I.) and the electricity consumed for pumping stations. Therefore we have reasonable confidence in use of electricity consumption to estimate pumping head for the sites where we currently have no measured lift or flow.

The changes from the 2006/07 value are due to the following:

- Changes in the flow and lift data gathered for this year
- Reduction in the number of pumping sites
- Improvements in our methodology for inferring information where we do not know explicitly the head generated by a pump, using information about electricity consumption at the site

No inter-stage pumping has been included in the pumping head reported in these lines.

The confidence grade increased from C4 to C3 due to the change in DI

E6.26-29 Service Reservoirs & Water Towers

There was a decrease from 2006/07 to 2007/08 of 109 service reservoir and 3 water towers. The total capacity of service reservoirs was reduced by 259.751 Ml (6.7%).

Although on balance there were 109 fewer service reservoirs reported this year, 15 new service reservoirs were commissioned and 8 service reservoirs were re-commissioned during the year, and these offset the decommissioning and data review figure of 132 service reservoirs.

The decrease from 28 to 25 water towers reported was due to a data review exercise. This did not have any noticeable effect on the overall capacity of water towers (reduced by 0.75 Ml in total).

The confidence grade increased from B3 to B2 as a result of the review carried out for table H.

Table E7 Wastewater Explanatory Factors – Sewerage & Sewage Treatment

E7.1-7 Population

E7.1-4 & E7.6-7 confidence grades remain unchanged from AR07

E7.1 Annual average resident connected population

The annual average resident connected population has increased by 877 to 4,708,679. The increase reflects the addition of the average population of transient (tourists) and population in prisons etc.

There has been no change in the confidence grade in the reported year.

E7.2 Annual average non-resident connection population

The reported non-resident connected population has increased by 1,500 to 98,100.

Tourist population this year has been determined on the basis of average bed spaces multiplied by a monthly occupancy factor. In previous years, we adjusted this value to correspond with the total bed space nights figure supplied by Visit Scotland. This new methodology has led to a reduction of 14% in the non-resident population reported.

Improvements have been made in the reported year to the sewered areas held in GIS. Updated sewered areas, which cover a larger part of the country, were used in determining whether a tourist type of property was connected to the wastewater network. Updated boundaries were used and this led to an increase in the number of tourist properties assumed to be connected to the wastewater network.

E7.3 Volume of sewage collected (daily average)

The Volume of sewage collected increased by 183.4 Ml/d (4.2%) to 4,581.1 Ml/d. This was as a result of a review of the boundaries within the GIS system to determine the stormflow component of the volume sewage generated. This identified a greater drained area which, in turn, led to greater stormflows.

The average daily volume collected has been calculated as the flow which arrives in a Scottish Water 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 2006/07 and has been applied consistently across Scotland. It uses data sets for rainfall, connected properties and sewered areas consistent with the wastewater element of the Annual Return.

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

Dry Weather Flow: A factor has been established which 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 were analysed with a known connected property count to establish a range of flow per connected property factors. 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 which are collected by the wastewater network but does not necessarily relate to the flows which arrive at treatment sites as some flows will be lost to overflows and other flows collected by storm sewers will be discharged without treatment.

E7.4 Total connected properties

The total connected properties figure has increased by 13,902 to 2,393,540. This is as a result of work carried out on the sewerage areas within the GIS System. As part of this exercise a number of properties were identified which need further investigation to establish if they are truly connected to the network. The confidence grade remains the same at B2.

E7.5 Area of sewerage district has changed very slightly with an overall increase of 146km2 across Scotland.

The area of sewerage district has changed as a result of extracting a new set of boundaries from the corporate GIS allowing a fuller analysis than in previous report years.

The confidence grade of A1 reflects the fact the boundaries were taken from the corporate GIS.

E7.6 Drained area increased by 324km2 to 1,919km2 as a result of new developments being added to the network. Key areas of ongoing development are regeneration projects within Glasgow, Fife, Aberdeenshire, South Lanarkshire, North Lanarkshire and Highland areas. Increased capacity projects have allowed development in the Highland area.

A number of minor alterations to some of the sewered area boundaries were undertaken this year to gain a better count of connected properties. However, it remains the case that further improvements are required to improve the assessment of connected properties and to reflect the addition of developments on the periphery of the sewerage networks and to address sewered areas which are currently missing from a number of small networks. The confidence grade remains the same at B2.

E7.7 Annual precipitation

Precipitation decreased by 131mm (7.4%) to 1,649mm.
During the reporting year we experienced less rainfall than the previous year. There were some notable periods of low rainfall with the former Tay River Protection Board area receiving 39% of the long term average rainfall in September 2007. The confidence grade remains the same at B3.

E7.8-14 Sewerage Data

E7.8 Total Sewer Length

The overall length of sewers reports the total length of Critical Sewers, Non-Critical Sewers and Rising Mains at 49,763km for AR08. There is a minor change in asset length methodology: long sea outfalls are no longer reported in line H4.1, so are excluded from Line E7.8.

Long Sea outfalls pipe elements have been identified in the GIS so they can be excluded from evaluation in Line H4.1 to avoid double counting.

The input of IFOC records under IIP40 Infra Surveys – GIS Update programme was completed in October 2007. The effect of this programme is to bring onto the inventory missing asset stock and attributes of sewers surveyed previously.

The total inventory has risen this year by 696 km (1.4%), which is an increase in Lateral Sewer length of 567 km and a rise in main sewer stock of 129 km. The manhole data input from the backlog of DAS survey data increased asset stock. The missing inventory identified in 2006 has not been addressed so no reduction in off-inventory adjustment has been made yet.

The information comes from Table H4 reporting. It comprises GIS inventory (32,452km), an Off-Inventory addition of missing sewers (1,000km) and a statistical calculation of lateral sewer length from unit length connections by dwelling (16,312 km).

This figure is carried to Table B8 for sewer and choke incidence and table D6 as part of the sewer asset balance and table 3.2 for SR10 The confidence grade remains the same at B3.

E7.9 Total Length of Lateral Sewers

The overall length of lateral sewers is reported at 16,312km for AR08. There is a minor change in lateral sewer length methodology over AR07. The calculation is based on the connected premises spread in the same ratio as Ordinance Survey Address Point References (OSAPRs) within 70m of the sewer network, over 8 operational regions. CACI house type proportions by regions are also calculated. The confidence grade remains the same at C4.

The number of connected premises and their allocation to operational regions has increased by 3.5% over AR07, leading to a change in calculated asset stock. The reported lateral sewer inventory has increased by 567 km or 3.5% over AR07. The calculation of inventory relies on the served premises reported. This figure seems quite volatile, rising every year.

The derivation of premises served and the allocation to region is reported elsewhere so may explain the reason for the wide swing by region. Unit lengths of lateral sewer are derived from a 2004 survey and checked for order in 2006 by desk study. The figure uses dwellings/premises rather than Ordnance Survey property seeds. The statistical sample size is not large enough for high confidence. As the figure is derived from estimates of premises and dwellings served from council records, then the confidence value is dependent on this figure.

E7.10 Total Length of Combined Sewers

The overall length of Combined Sewers is reported at 17,344km. There has been no change in asset length methodology. The IFOC investigations added surveyed sewer data to the Inventory during the report year, some of which is legacy data containing combined sewers. The input of backlog Drainage Area Studies records began in February 2008.

The reported inventory is a rise of 33km or 0.19% over AR07. This is the first year of reporting by the 8 Operational Regions.

As sewers are constructed as separate foul and storm sewers for new builds, any rise in combined sewers experienced would come from legacy records 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. As the off-inventory estimate is based on development backlogs of the 1960's, no off-inventory allowance is made for combined sewers. The confidence grade remains the same at B2.

E7.11 Total Length of Separate Storm Sewers

For AR08, the overall length of Separate Storm sewers is reported as 8,126km. The update of development inventory onto the asset stock has increased the reported figure. Inventory has risen by 44km or 0.54% over AR07. This rise is in line with gradual growth of inventory before the backlog programmes suggesting a reversion to a natural rise in inventory from development.

There has been no change in asset length methodology or basis of apportionment by Scottish Water GIS polygon areas. The figure is derived from a record inventory with known gaps in asset stock. However, sewer usage is populated to high levels. A 500km off-inventory adjustment is included in the reported figure from the off-inventory figure. The confidence grade remains B2.

E7.12 Total Length of Sewers > 1000mm

We report 809 km as the overall length of sewers greater than 1000mm for the report year, an increase from 798 km last year. The input of manhole survey records and DAS model records was completed as part of the IIP40 Infra Surveys GIS Update programme and this has led to increases in the recorded length. The confidence grade has improved from B3 to B2 as a result of the work outlined above.

There has been no change in the asset length methodology. The figure is derived from a record inventory with known gaps in asset size attribute Infill rule bases or missing inventory adjustments do not influence this size band.

E7.13 Total Length of Critical Sewers

The overall length of Critical Sewers is reported at 11,456km for AR08. Reported areas are now Scottish Water GIS Operational Region polygon areas. The input of improved manhole records was completed, and has led to 575km Non-Critical sewer being reclassified as Critical by virtue of revised depth attributes. The rise in reported inventory over the previous Return is 619km or 5.7%. The confidence grade has reduced from B2 to B3 to reflect the small amount of data infill.

Critical Sewers have risen due to improved depth attribute data from loading legacy DAS data and a natural rise from development.

The figure is derived from Table H4 analysis of a recorded inventory with known gaps. An off-inventory adjustment of 50km adds 0.4% to asset stock. The classification of critical sewers uses the ARc methodology for asset size, material, depth and proximity to particular features. A revised proximity analysis was deferred until missing inventory is present to maximise value from the analysis.

E7.14 Total Sewer Collapses

The total number of sewer collapses reported in AR08 is 2,373, down from 2,754. The IFOC initiative tackled some of the recurrent problems, this led to a decrease in repair activity. This combined with high levels of compliance reporting and accurate data capture as significantly improved the confidence in the data, this is reflected in the increase in the confidence grade from B3 to A2

Sewer collapses with indistinct location have dropped to 39 (1.6%) and are allocated by proportion as in AR07. This decrease is a result of improved data on locations. WAMS and PROMISE data quality continues to improve. There is no change in collapse assessment methodology.

E7.15-23 Pumping Stations

E7.15 Total number of pumping stations

A pumping station is defined as an individual site (i.e. not an individual pump). It includes foul, combined and storm pumping stations situated at treatment works, but excludes interstage pumping. Scottish Water is reporting 1,896 waste water pumping stations which is an increase from the 1,839 reported last year.

The table below shows the change in the number of pumping stations recorded in the Ellipse as being operational during this year.

	No. of Stations
2006/07	1,839
Decommissioned Stations	-15
Additions	+72
2007/08	1,896

The number of pumping stations is based on the number of sites held in the corporate asset inventory. The method of determining the number of pumping stations is the same as last year. Based on this, the confidence grade remains B3 as per the previous year.

E7.16 Total Capacity of pumping stations(m3/d)

Scottish Water is reporting a total capacity of 12,109,231 m3/d for waste water pumping stations which is a decrease on the value reported last year of 12,516,404 m3/d. The reduction in the reported capacity, reflects the data improvements that were recorded as part of the pumping head audits.

The change in the design kW ratings of pumping stations due to site surveys has altered the average values of capacity by size band used to estimated the missing data. The methodology

used to determine the capacity of pumping stations is the same as last year and the confidence grade remains the same at C4.

E7.16a Total capacity of pumping stations (kw)

Scottish Water is reporting a design capacity of 74,203 kW which is an increase from the 73,528 kW reported last year.

There has been no change in the methodology for determining the design capacity (in kW) of pumping stations and the confidence grade remains the same at C4. This year 185 (10%) of the pumps did not have a kW rating.

E7.17 Average pumping head

The figure reported in the Total Column is the average pumping head required in the whole of the region. The dynamic pumping head is reported i.e. includes friction loss

Scottish Water is reporting an average pumping head of 19.28m which is a reduction on the reported value last year of 20.66m.

This change is due to the following:

- Changes in the design kW ratings of the pumping stations recorded in the corporate asset inventory due to site surveys.
- Use of 2007/08 site survey data.
- An increase in the total volume of sewerage collected.

The pumping head calculation in 2007/08 uses the total volume of sewerage collected as the denominator of the pumping head formula. The decrease in the pumping head is due to the following changes:

- Changes in the design kW ratings of the pumping stations recorded in the corporate asset inventory due to site surveys.
- Changes in the value of flow used as the denominator in the pumping head calculation.
- Use of 2007/08 site survey data.
- An increase in the total volume of sewerage collected.

The confidence grades for this year are the same as those of 2006/07, given the level of confidence in the data collected, the volume of data collected and the fact that the denominator in the equation is the Volume of Sewage Collected which has a C4 confidence grade.

E7.18 Total number of combined pumping stations

Scottish Water is reporting 1,065 combined waste water pumping stations which is a decrease from the 1,070 reported last year.

The table below shows the change in the number of pumping stations recorded in Ellipse as being operational during this year.

	No. of Stations
2006/07	1,070
Decommissioned Stations	-7
Additions	+2
2007/08	1,065

The number of pumping stations is based on the number of sites held in the corporate asset inventory. The overall methodology for determining the number of pumping stations is the same as last year and the confidence grade remains the same at B3

E7.19 Total capacity of combined pumping stations

Scottish Water is reporting a total capacity of combined waste water pumping stations of 8,410,786 m3/d. This is a decrease on the value reported last year of 8,815,555 m3/d.

This change in the total capacity is due to changes in design kW ratings of the pumping stations recorded in the corporate asset inventory as a result of site surveys.

The methodology used to determine the capacity of pumping stations is the same as last year. The confidence grade remains C4 as last year

E7.20 Total number of storm water pumping stations

Scottish Water is reporting 38 storm water pumping stations which is the same as reported last year.

The overall methodology for determining the number of pumping stations is the same as last year and the confidence grade remains the same at B3. The number of pumping stations is based on the number of sites held in the corporate asset inventory.

E7.21 Total capacity of storm water pumping stations

Scottish Water is reporting a total capacity of storm water pumping stations of 547,901 m3/d. This is a decrease on the value reported last year of 559,372 m3/d.

The methodology used to determine the capacity of pumping stations is the same as last year and the confidence grade remains the same at C4. The design capacity of the pumping station is a surrogate for the actual capacity.

This change in the total capacity is due to:

- Changes in design kW ratings of the pumping stations recorded in the corporate asset inventory as a result of site surveys. This has therefore altered the values used to estimate the capacity of pumping stations where there was no record.

23% of the storm water pumping stations had their design capacities recorded in the corporate asset inventory.

E7.22 Number of Combined Sewer Overflows

The total number of CSOs in the sewerage system is reported as 3,502, from 4,375 in AR07 Extensive work on the refinement of data within the CSO Tactical Application has led to a decision to exclude an off-inventory addition from un-harmonised inventory in GIS. This has led to a drop in inventory reported in Table H4 line 4 and its impact on Table E7. The confidence grade remains the same at A3

E7.23 Number of Combined Sewer Overflows (screened)

A significant reduction in the number of combined overflows occurred in the year, down from 840 to 696

The drop of 144 reflects the works carried out during the year in the through harmonisation of the asset stock. The speculative assessment of screen CSOs has been replaced by a data approach.

The definitions of CSOs in Tables B, E and H are different and not directly comparable. The confidence grade has increased from B3 to A3, reflecting the work carried above.

E7.24-25 Sewerage Treatment Works

E7.24 Number of sewage treatment works

The total number decreased by 88 (4.5%) to 1,875 from 1,963. Through the year a consolidation process of combing a number of communities into larger works has been carried out. Furthermore the number of sewage treatment works has fallen with the redirection of sewage from decommissioned sea outfalls to existing treatment works.

E7.25 Total load

The load decreased by 6,693 kg BOD/d (2.3%) to 233,738 kg BOD/d. In the report year, a number of components of this total load have reduced (eg Trade Effluent) and others (eg population) have increased leading to a small increase in the total load.

Table E8 Wastewater Explanatory Factors – Sewage Treatment Works

E8.1-10 Treatment Categories

E8.10: Small sewage treatment works with ammonia consent <=5 ml/l
The number remains unchanged at 47. This is the same as the previous report year

The Water Balance Team has been looking at the unmeasured water (UW) volumes. They developed values for UW based on the type of businesses rather than the Rateable Value. These volumes have been used in the works loads calculations. Investment in new and upgraded sewage treatment facilities has led to a reduction in the number of works and an improvement in the quality of discharges. This is particularly evident in the number of works that provide little or no treatment, such as those where unscreened discharges were made to sea, which have been significantly reduced this year.

E8.9 & E8.10

No significant changes have occurred in the year. E8.9 saw a increase of 1 and E8.10 saw no change from last year.

E8.11 – 20 Loading

E8.18: Total load received

The total load decreased by 6,661 kg BOD/d (2.9%) to 226,543 kg BOD/d.

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

The total load increased by 386 kg BOD/d (4.9%) to 8220 kg BOD/d.

E8.21-30 Compliance

The percentage compliance has been calculated on the basis of SEPA results. The methodology is the same as last year and, in the case of two-tier consents, all failures have been counted, not just upper-tier failures. Works 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 2007/2008.

Where the cells in this section are listed as 0 and AX confidence grade, this means that no works in that category and size band has been sampled.

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

The total load increased by 32 kg BOD/d (0.3%) to 10,136 kg BOD/d

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

The Water Balance Team has been looking at the unmeasured water (UW) volumes. They have come up with new values for UW which are based on the type of business rather than the Rateable Value. These volumes have been used in the works loads calculations.

This year we have included the UWWTD failing works in this table. Fiscal year results have been used and where the status of a works is under review it has been taken as failing. Brechin, Dyke and Livingston fall into this category. If these works are subsequently classified as not failing then the changes to the table would be as follows:

E8.25 (Tertiary B1) would change from 75.0 to 87.5 (Brechin)
E8.22 (Sec Activated Sludge) would change from 82.1 to 85.7 (Dyke)
E8.25 (Sec Biological) would change from 87.5 to 90.0 (Livingston) Compliance has marginally improved.

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

Compliance has marginally deteriorated, in Sec Active and Sec Biological

E8.31-42 Costs

Costs which are directly attributable to treatment are charged to the specific asset cost code in Peoplesoft, either via direct charging, or Ellipse timesheets or work orders. Of the £36.6m (E2.9)

total wastewater treatment costs, £33.8m (£34.6m less £4.1m sludge costs plus £1.2m terminal pumping) of costs (92.1%) have been directly charged to assets in our corporate costing system.

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

The costs of treating and disposing of sludge are contained within Table E10 Sludge Treatment and Disposal.

Analysis of sewage treatment costs by size band:-

	Septic tanks	**Primary**	**Secondary**	**Tertiary**	**Sea Outfalls**	**Total**
Small treatment works	£m	£m	£m	£m	£m	£m
2007/08	2.708	1.356	17.803	3.879	0.676	26.422
2006/07	2.549	1.281	16.918	4.259	0.869	25.876
	(0.159)	**(0.075)**	**(0.885)**	**+0.380**	**+0.193**	**(0.546)**

	Septic tanks	**Primary**	**Secondary**	**Tertiary**	**Sea Outfalls**	**Total**
Large treatment works	£m	£m	£m	£m	£m	£m
2007/08	0.000	0.000	9.219	0.843	0.159	10.220
2006/07	0.000	0.000	7.971	0.993	0.005	8.969
	+0.000	**+0.000**	**(1.248)**	**+0.150**	**(0.154)**	**(1.251)**

	Septic tanks	**Primary**	**Secondary**	**Tertiary**	**Sea Outfalls**	**Total**
Total treatment works	£m	£m	£m	£m	£m	£m
2007/08	2.708	1.356	27.021	4.722	0.834	**36.642**
2006/07	2.549	1.281	24.889	5.252	0.874	**34.845**
	(0.159)	**(0.075)**	**(2.132)**	**+0.530**	**+0.040**	**(1.797)**

Overall movements are explained in table E2.9 earlier in this commentary. Movements in individual works and switches between process types explain the increases and decreases by category. Movements which do not follow the profile of the overall movements are explained as follows:

- A movement of works from small tertiary class to small secondary class (£0.3m);
- Galashiels has moved from large to small tertiary (£0.1m);
- West Barns has moved from small to large sea outfall (£0.1m);

Confidence Grades – Confidence grades on Table E8 are consistent with grades in E2 and related commentary.

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

Table E9 Large Sewage Treatment Works Information Database

E9.0-1 Works Size

E9.0 Name

There are 21 large non-PPP sewage treatment works. This is the same as last year, however, Galashiels is no longer classified as a large sewage treatment works and West Barns now meets the classification.

E9.1 Population equivalent of total load received

The population equivalent of each works and the net and percentage changes in each is shown in the table below.

	AR07	AR08	Change	% Change
Allers	53,484	56,643	3,159	5.91%
Alloa	40,991	41,838	847	2.07%
Ardoch	67,235	70,063	2,828	4.21%
Bo'Ness	28,587	26,453	-2,134	-7.46%
Carbarns	48,535	48,865	330	0.68%
Dalderse	89,019	97,414	8,395	9.43%
Daldowie	297,952	281,871	-16,081	-5.40%
Dalmarnock	372,004	307,616	-64,388	-17.31%
Dunfermline	83,516	87,071	3,555	4.26%
Dunnswood	34,321	33,302	-1,019	-2.97%
Erskine	76,164	81,061	4,897	6.43%
Hamilton	64,663	66,501	1,838	2.84%
Kinneil Kerse	46,018	43,095	-2,923	-6.35%
Kirkcaldy	60,839	60,315	-524	-0.86%
Laighpark (Paisley)	211,960	186,274	-25,686	-12.12%
Perth	87,403	101,520	14,117	16.15%
Philipshill	66,116	63,762	-2,354	-3.56%
Shieldhall	527,702	490,313	-37,389	-7.09%
Stirling	71,950	74,481	2,531	3.52%
Troqueer	54,219	47,727	-6,492	-11.97%
West Barns	0	30,475	30,475	100.00%
Galashiels	37,087	0	-37,087	100.00%
Total	**2,419,766**	**2,296,660**	**-123,106**	**-5.09%**

The total population equivalent decreased by 123,106 (5.09%) to 2,296,660.

Large SWT are defined as those which receive an average loading in excess of 1500kg BOD/day and is roughly equivalent to a population of 25,000. Due to operational changes West Barns was added and Galashiels was removed from the list for the reported year. The confidence grade remains the same at B3

E9.2-7 Compliance

E9.2 Suspended solids content

A new standard of 100mg/l has been introduced at Dalderse and the consents at Ardoch and Laighpark (Paisley) have been increased to 100mg/l. All other works' consents remained as they were.

E9.3 BOD consent

The standards at Bo'ness and Kirkcaldy have been withdrawn and the consent at Ardoch has been increased to 75mg/l. All other works' consents remained as they were.

E9.4 COD consent

All works' consents remain at 125mg/l.

E9.5 Ammonia consent

A new standard of 25mg/l has been introduced at Dalderse. All other works' consents remained as they were.

E9.6 Phosphate consent

No standards have been set for any of the works' consents.

E9.7 Compliance with effluent consent standard

Hamilton increased its compliance significantly from 74% to 96% and another seven works marginally increased their compliance. The compliance at three works marginally decreased, Allers, Laighpark and Perth.

We have used the financial year results from SEPA to determine the compliance for each works. This is an improvement over last year where the calendar year results were used.

E9.8-14 Treatment Works Category

This information is held in the Ellipse corporate database.
Treatment Works Category – West Barns is a preliminary treatment only site therefore the treatment types have been left as 0.

Again we are reporting 21 large works but there are 22 in table E8. The works not reported in table E9 is the Meadowhead outfall which takes a trade effluent flow from an SKB factory.

E9.15-19 Works cost

Analysis of functional costs for large sewage treatment works:-

	2007/08	2006/07	Variance
	£m	£m	£m
Daldowie	0.843	0.869	+0.026
Galashiels	n/a	0.124	+0.124
Tertiary treatment	**0.843**	**0.993**	**+0.150**
Allers	0.255	0.205	(0.051)
Alloa	0.288	0.162	(0.126)
Ardoch	0.427	0.385	(0.042)
Bo'ness	0.176	0.194	+0.018
Carbarns	0.271	0.280	+0.009
Dalderse	0.501	0.323	(0.178)
Dalmarnock	0.885	0.852	(0.034)
Dunfermline	0.159	0.308	+0.150
Dunnswood	0.235	0.283	+0.048
Erskine	0.366	0.319	(0.048)
Hamilton	0.470	0.239	(0.231)
Kinneil Kerse	0.392	0.386	(0.006)
Kirkcaldy	0.471	0.608	+0.137
Laighpark (Paisley)	0.748	0.818	+0.071
Perth	0.251	0.273	+0.023
Philipshill	0.240	0.170	(0.070)
Sheildhall	2.351	1.681	(0.670)
Stirling	0.527	0.236	(0.291)
Troqueer	0.205	0.248	+0.043
Secondary treatment	**9.219**	**7.971**	**(1.248)**
West Barns	0.125	n/a	(0.125)
Preliminary treatment	**0.125**	**n/a**	**(0.125)**
Total large treatment works	**10.187**	**8.964**	**(1.223)**

The number of treatment plants classified as large works is the same as 2006/7, but Galashiels has been re-classified as small, and West Barns from small to large.

The majority of works increases follow the overall pattern of wastewater treatment with significant increases in power and employment costs. However, there have been some movements between works due to shifts in allocation of support activity. Each works now sits within one of the 8 operating regions, each of which is managed by a different regional team each with a different overhead and support structure. This has led to slight changes in the costs charged to each works, which explains most of the year-on-year reductions.

Confidence Grades – Confidence grades on Table E9 are consistent with grades in E2 & 8 and related commentary.

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

Following analysis of these residual general and support costs, Scottish Water feels that it now has a more appropriate allocation basis to asset.

Employment cost, or labour cost analysis has improved since 2006/7, by way of direct cost capture, but also with improvements in the ABM process, whereby team time analysis is taken direct from the corporate works management system, and only supplemented where gaps exist.

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

E10.1-2 Sludge Volumes

E10.1 Resident population served

Scottish Water undertook a wholesale review of the sewered areas which underpin the tables line E10.1. This work reviewed and more accurately reallocated the populations to their relevant disposal categories. Our reported overall population decreased by 16,920 (0.6%) from 2,684,700 to 2,667,805.

Following the WIC Audit a minor error was highlighted whereby all Scottish Water treatment works which included raw outfalls that do not generate sludge were included. This gives a smaller total population going to the different recycling routes. We again report the population treated at Scottish Water works that have their sludge treated at PPP Sludge Treatment Centres. This explains the anomaly in reporting a population going to the 'Other' route but no Scottish Water sludge. This is the population in Scottish Water works whose sludge goes to Seafield which recycles some sludge to industrial crop (Biodiesel). The confidence grade remains the same at C3.

E10.2: Amount of sewage sludge

Overall amount of sewage sludge increased by 1.9 ttds (9%) to 23.8 ttds. In line with the Reporter's recommendations the sludge treated from the Inverness PFI works have been added this year.

This year all of the sludge data was taken from GEMINI which gives a more accurate value for the amount of sludge disposed of through Scottish Water Sludge Treatment Centres. Enchanced treatment at larger sites led to more sludge being recycled to agriculture with a reduction in the amount going to landfill and land reclamation.

Excluding the Inverness sludge, there was a slight reduction in the total amount of Scottish Water sludge this year. There is uncertainty as to what extent this is due to better data (using GEMINI) and what is due to weather (wet summer leading to more load being lost through overflows).

Scottish Water incurs costs associated with the transportation of sludge from its own sewage treatment works to PPP sludge treatment centres (£2.4m).These costs have been reported within E3a.20 with the corresponding sludge loads in reported in E3.

E10.3-11 Sludge Treatment and Disposal Costs

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:-

	2007/08	2006/07	Variance
	£m	£m	£m
Farmland:			
Untreated	0.000	0.000	+0.000
Conventional	2.807	1.669	(1.138)
Advanced	5.792	4.622	(1.170)
Landfill	0.849	1.079	+0.230
Incineration	0.000	0.000	+0.000
Composted	0.129	0.156	+0.027
Land reclamation	0.998	1.648	+0.650
Other	0.000	0.000	+0.000
Total	**10.575**	**9.173**	**(1.402)**

Sludge treatment costs increased by £(1.4)m from 2006/07. The change in costs by route has been affected by the following main factors:

- Loss of land available for disposal to land reclamation, and increase in disposal to farmland advanced. This increases the cost of treating and transporting sludge due to the requirement to lime the sludge at Dunfermline, Perth, Kinneil Kerse, Girvan and Fife (previously composted) sites.
- Significant reduction in landfill volumes due to the cessation of the Troqueer outlet (now composted) and closure of the Selkirk sludge conditioning center. However, the overall unit cost of landfill disposal has increased significantly, predominately as a result of the increased cost at Lerwick due to the new sludge treatment works, exacerbated by the lower landfill volumes;
- New operating costs and additional sludge coming online at new works;
- Overall, unit costs have increased. This is due, in part, to improved identification of sludge disposal costs previously charged to wastewater treatment; and partly due to increased route costs explained above.

Confidence Grades – Sludge cost analysis by ultimate disposal route requires analysis of all sludge treatment, tankering and disposal costs by works, linked to intermediate works (where applicable) and ultimate disposal route. Certain costs are clearly captured by works with identified disposal route. However, certain costs are not fully captured directly against sludge. The main areas of difficulty are inter-site sludge tankering and sludge treatment / conditioning at dual function works (sludge / wastewater treatment). Table E10 is completed on the basis of a combination of: ABM analysis, direct cost capture by asset, and Scottish Water sludge model analysis. The confidence grades remains at B3.

Table E11 Management and General

E11.1-4 Employee Numbers

The employee numbers reported in E11 exclude FTE's associated with capital work, third party services and PFI. This ensures consistency with the costs reported in tables E1b and E2b.

The following reconciles E11 staff numbers to the annual accounts for 2007/8 and 2006/7:

	2007/08 FTE's	2006/07 FTE's	Variance FTE's
Direct operations	1,095	983	+112
Indirect operations (General and support)	563	621	(58)
Other (incl hired and contracted)	657	751	(94)
Total employee numbers per E11	**2,315**	**2,354**	**(39)**
Staff involved in capital & transformation projects	849	721	+128
Staff associated with PFI	8	7	+1
Statutory waste and wastewater services	**3,172**	**3,083**	**+89**
Staff associated with third party activities	221	240	(19)
Staff seconded to Scottish Water Solutions	163	209	(45)
Part Year SWBS	0	(77)	+77
Total FTE's per Statutory Accounts ex SWBS	**3,557**	**3,455**	**+102**

The average number of employees during the year increased by 102 to 3,557 reflecting additional staff required to deliver customer service improvements, in particular direct staff on leakage, and the in-house delivery of the capital programme.

Confidence Grades – Employee numbers are taken directly from the payroll system. Confidence grade for absolute employee numbers is A1. However, in Table E11, employee numbers must be split by activity and direct / indirect. These classifications are not held in the payroll system. Employee numbers are split against these classifications on the basis of ABM employment cost analysis. Confidence grades are assessed as B2, consistent with 2006/7.

E11.5 –20 Management and General Assets

The same methodology as AR07 has been applied to categorise assets into water and wastewater. Details for individual lines are contained in the commentary for the related table, H6, from which the information for E11 lines 5-20 is derived.

E11.5-14

Building surveys carried out in 2007 and 2008 have improved the accuracy of the building areas for some assets.

Control centre area was split between water and wastewater as advised in the WIC Line definitions. It was double counted in AR07.

The confidence grade remains the same for the number of depots and area of depots at B4. The confidence grade remains the same at C3 for the Area of Control Centres.

Miscellaneous E1&2 Commentary

E table guidance requests commentary on the following 2 items:

Pension Contributions

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

The administering authority for each scheme is required to conduct a triennial valuation of the assets and liabilities of each scheme in line with LGPS regulations. The purpose of the valuation is to review the financial position of the fund and specify the employer contribution rates for the next 3 years. The last valuation was carried out as at 31 March 2005 and the next valuation will be carried out as at 31 March 2008 and will set Scottish Water's contribution rate for the three years from financial year 2009/10.

The contribution rate for each fund is based on the current service cost and the funding position of each fund at the valuation date. The average funding level of the 3 schemes at 31/3/05 was 89%. Therefore, the Employer contribution rates shown below include an element to reduce the deficit on each fund.

	04/05	05/06	06/07	07/08
Contribution (%)				
Aberdeen	15.30	15.90	16.50	17.10
Edinburgh	17.70	18.90	20.10	21.30
Glasgow	14.40	15.00	15.90	17.70
Average Number of Members				
Aberdeen	1,103	1,033	957	960
Edinburgh	1,053	1,011	997	1,034
Glasgow	1,432	1,429	1,393	1,358

The average contribution rate has increased from 15.65% 2004/5 to 16.4% 2005/6, 17.32% 2006/7 and 18.70% in 2007/08. In Tables E1 & 2, the increase in contributions has caused a £0.8m increase in pension costs, excluding the effect of salary inflation.

Charitable Donations

There have been no donations to charitable trusts or other funds assisting customers with payment difficulties in the year.

G Tables Base Information

Tables G1 – 6: Summary

Tables G1 – 6 present Scottish Water's Q&SII and Q&SIII investment programmes showing the prior years' expenditure, the actual expenditure in the Report Year and forecasts for future years. Scottish Water successfully delivered £625.3m of investment ahead of the revised forecast £620m profile approved by the Board in August 2007.

The Q&SII programme delivered £64.5m of investment. The gross forecast outturn is £2,216.4m and the net forecast outturn is £2,210.6m including the overhang value of £321m net of £5.8m contributions. This is the current view of investment required to deliver the Q&SII service and legislative objectives. The main focus of investment in 2007/08 has been legislative driven quality improvements.

£560.8m of investment has been delivered this year on the Q&SIII programme, including completion projects. Expenditure in 2007/08 delivered a number of water and wastewater quality projects and over 51% of the programme is now under construction or beyond. There has been considerable progress on the UID and Water Resources strategic studies, feasibility, design and progression to construction on water and wastewater quality projects. Capital maintenance investment on infrastructure, non-infrastructure and management and general accounts for 50% of the total.

The total forecast expenditure including the Q&SII Conclusion Programme remains within the final determination allowance for the 2006-10 period.

The Q&SII Completion Programme is based on Version 3.6.3 of the WIC 18 Baseline Programme submitted to the Water Industry Commission Scotland (WICS) in September 2006 and is reported at project level in G5. The main focus of investment in 2007/08 has been legislative driven quality improvements. All Q&SIII Development costs and the Q&SIII funded element of the Q&SII Completion projects are reported in G6 in line with WIC requirements and the quarterly Capital Investment Returns.

The Q&SIII Programme is based on the Table K submission with disaggregation of projects from programme funding lines for capital maintenance and enhanced level of service.

All Q&SII projects are reported in G5 and all Q&SIII projects reported in G6.

Berkeley Consulting reviewed Scottish Water's Draft Guidelines for Capital Expenditure Allocation and confirmed the Asset Categories, the Purpose Categories and the Principle of Proportional Allocation. This included cross referencing of the Draft Guidelines to Capex 3 forms and a review of 875 projects – 375 Q&SIII projects and 500 Q&SII projects. This report provided Scottish Water with greater confidence that the proportion of projects allocated to capital maintenance is appropriate and the confidence grades on the capital maintenance elements have been improved from B3 to B2 in the current report year.

Changes to the percentage allocation of drivers for Q&SIII and output codes for Q&SII have resulted in changes to the summary level data feeding through in 2006/07 columns in AR08. Changes to the approved value for opex impact will also result in changes to the opex impact reported in 2007/08.

The forecast investment for 2007-08 in AR07 was based on the monitored forecasts and the out-turn investment in 2008-09 does not align with the original forecasts.

For the Q&SII programme, a risk adjustment of £22m had been applied in the Q4 2006-07 CIR to reduce the total 2007-08 forecast from £80.8m to £58.8m. The programme risk was added back into 2008-09 and 2009-10. This adjustment was to allow for risks of delay as a result of third party issues around land purchase, planning and consents; definition of growth requirements; and construction issues. As this programme line was not held in the Capital Investment Monitoring System, it did not feed through to Table G5. Investment in 2007-08 was ahead of Scottish Water target with acceleration of investment on a number of projects and increased investment costs on a number of projects. No adjustment was made to the Q&SII Programme future forecasts in Q4 2007-08 CIR.

Within the Q&SIII programme, the forecast investment reported in AR07 was not achieved in certain areas for a number of reasons. A number of flooding projects were put on hold due to the unit cost per property being above the programme level until further investigations were progressed. The majority of these projects have now been stopped or released to progress to detailed design or construction. Similarly, a number of growth projects are being held pending decisions on which projects will progress. There were delays on the progression of a number of the more complex quality projects which reduced the investment achieved. Acceleration of the infrastructure renewal programmes and non-infrastructure capital maintenance enabled the spend profile to be achieved. An adjustment to the 2008-09 monitored forecasts of £31.7m has reduced the forecast investment against capital maintenance in G6 in 2008-09 but this programme adjustment may materialise against other programme lines. The programme adjustment is added back in 2009-10.

The MEAV project, to re-assess the value of Scottish Water's asset stock, has recently been completed but further work is required to establish the impact of Q&SIII projects on Scottish Water's Gross MEAV. This will be incorporated into AR09; the current return is based on the original Table K methodology of including the investment on quality and growth.

As there was less than £100 allocated to CS2 projects in the Q&SII programme and there has been no investment on CS1, no detail is provided on the nature of the investment or customer service it has brought in this return, as required by the Table G Guidance. The Q&SII Spend to Save and Transformations programmes were completed in 2005-06 and therefore no detail of the programme is included in this year's return. There is no equivalent programme for Q&SIII.

A list of of the Q&SII projects where WM3 and SM3 have been used as both purpose and output codes in G5 is included in Appendix 2.

Within Table G6, WSI, WSNI, WWI and WWNI have been used as drivers for support services for vehicles, plant, offices, depots, labs, Estates (non-operational sites), Telemetry (non-operational sites projects) and IT investment. Details are shown in Appendix 3.

Table G1 Summary Water Service

Where no line comment is given, the data is derived from Tables G3a and G4a or calculated from the drivers in G5 and G6

As there was less than £100 allocated to CS2 projects in the Q&SII programme, no detail is provided at project level.

G1.1-6 Base Service Provision/Capital Maintenance

G1.1 – Base operating expenditure is calculated from the total operating expenditure (Table E1.20 water opex for AR08) by deducting new opex resulting from capital investment to reflect the total opex, had the investment not progressed. We have stated all operational expenditure

against Q&SIII and have entered a confidence grade of B2 as a result. Future years' base operating expenditure is not yet known and is reported as DX.

G1.3 - Maintenance non-infrastructure (gross of grants and contributions) is the gross value calculated from G5 and G6 as contributions are not credited to the projects.

G1.4 - Maintenance non-infrastructure - grants and contributions. There were no grants or contributions to Q&SII or Q&SIII capital maintenance projects in the Report Year. No forecasts are shown for future years as there are no confirmed grants or contributions.

G1.5 - Maintenance non-infrastructure (net of grants and contributions) is calculated from G1.3 and G1.4 and equals the gross value for both Q&SII and Q&SIII.

G1.7-8 Quality Enhancements

G1.8 – Quality 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. The value in the Report Year and future years is calculated from the acceptance (beneficial use) date resulting in expenditure being split proportionately across two years depending on where the acceptance date falls.

G1.9-10 Enhanced Service Levels

G1.10 - Enhanced service 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. The value in the Report Year and future years is calculated from the actual or forecast acceptance (beneficial use) date resulting in a split at project level across two years. For Q&SII, opex impact from the SEMD projects is reported against Enhanced Level of Service, although the projects are reported with capital maintenance drivers, as there is no place to report opex from capital maintenance projects. For Q&SIII, any opex impact from capital maintenance projects is also reported against Enhanced Level of Service.

G1.11-12 Growth (Supply/Demand Expenditure)

G1.12 Growth additional operating expenditure
Additional operating expenditure is calculated through analysis of the proportion of capital spend allocated to quality, enhanced level of service or growth. The value in the Report Year and future years is calculated from the acceptance (beneficial use) date resulting in expenditure being split proportionately across two years depending on where the acceptance date falls.

G1.13-14 New Outputs/Obligations since the final determination

Four water quality projects are considered as new obligations and are included against these lines. This includes one project where there was expenditure in 2006/07 which was not reported against this line in AR07. Confirmation of the value of these projects will be determined at Capex 3 and confirmed through the logging up process with the Regulators. The opex impact is calculated and split proportionately across two years depending on where the acceptance date falls.

The four projects are: 30437 Langholm WTW – Upgrade, 31094 Torrin WTW – Upgrade, 31595 Ullapool WTW – Upgrade and 36453 Blairnmarrow WTW - Quality Enhancement.

G1.15-19 Grants and Capital Contributions

Four security grants received in 2007/08 are reported against the Q&SII Programme plus one customer contribution towards an infrastructure project completed in previous year. The infrastructure charge income is reported as contribution against Q&SIII programme, together with a grant from the Scottish Government. No future grants or contributions are reported as these are not confirmed and as such, future year forecasts are given a confidence grade of DX to reflect this. The contributions reported in 2006/07 have been amended as there have been a number of refunds advised by Finance or the contributions have been credited to the projects.

G1.20 Adopted Assets, Nil Cost Assets

The value reported against Q&SIII relates to our estimated asset value of the water mains adopted after deducting the reasonable cost contributions payable to the developer. Confidence grades for Q&SIII for future years are given a confidence of grade of DX as there is no information available on any future adopted or nil cost assets. It is not expected that there will be any future adopted or nil costs assets from the Q&SII programme.

Table G2 Summary – Wastewater Service

Where no line comment is given, the data is derived from Tables G3b and G4b or calculated from the drivers in G5 and G6. DX confidence grades have been applied as per G1.

G2.1-6 Base Service Provision/Capital Maintenance

G2.1 – Base operating expenditure is calculated from the total operating expenditure (Table E2.19 wastewater opex for AR08) by deducting new opex resulting from capital investment to reflect the total opex had the investment not progressed. We have stated all operational expenditure against Q&SIII.

G2.3 Maintenance non-infrastructure (gross of grants and contributions) is calculated from G5 and G6 as contributions have not been credited to the projects.

G2.4 - Maintenance non-infrastructure
There were no grants or contributions received for maintenance projects in Q&SII or Q&SIII in the Report Year. No forecasts are shown for future years as there are no confirmed grants or contributions.

G2.5 - Maintenance non-infrastructure (net of grants and contributions) is the gross value as there were no grants or contributions.

G2.7–8 Quality Enhancements

G2.8 – Quality 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. The value in the Report Year and future years is calculated from the acceptance (beneficial use) date resulting in expenditure being split proportionately across two years depending on where the beneficial use date falls.

G2.9-10 Enhanced Service Levels

G2.10 - Enhanced service 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. The value in the Report Year and future years is calculated from the actual or forecast acceptance (beneficial use) date resulting in

split at project level across two years. For Q&SII, the opex impact from the DSEAR Programme is reported against Enhanced Level of Service although the capex investment is reported against capital maintenance drivers as there is no place to report opex from capital maintenance projects. Opex impact from Q&SIII capital maintenance projects is also reported against Enhanced Service Levels.

G2.11-12 Growth (Supply/Demand Expenditure)

Additional operating expenditure is calculated through the analysis of the proportion of capital spend allocated to quality, enhanced level of service or growth. The value in the Report Year and future years is calculated from the actual or forecast acceptance (beneficial use) date resulting in split at project level across two years.

G2.13-14 New Outputs/Obligations since the final determination

Two first-time provision projects and the Customer Charging - Area Based Drainage Banding requested by Scottish Government are reported against these lines. Two further UIDs have been identified but are not currently forecasting and will be included in future returns. Confirmation of the value of these projects will be determined at Capex 3 and confirmed through the logging up process with the Commission. There is no opex impact reported for these projects.

G2.15-19 Grants and Capital Contributions

Two European Regional Development Fund grants received in 2007/08 are reported against the Q&SII projects at Ullapool and Portree. Three customer contributions were received towards wastewater quality projects. The infrastructure charge income is reported as contribution against Q&SIII programme. No future grants or contributions are reported as these are not confirmed. The contributions reported in 2006/07 have been amended as there have been a number of refunds advised by Finance or the contributions have been credited to the projects.

G2.20 Adopted Assets, Nil Cost Assets

The value reported against Q&SIII relates to our estimate of the asset value of the sewers adopted after deducting the reasonable cost contributions payable to the developer. A septic tank and reed bed were also adopted in 2007/08. Confidence grades for Q&SIII for future years are given a confidence of grade of DX as there is no information available on any future adopted or nil cost assets. It is not expected that there will be any future adopted or nil costs assets from the Q&SII programme.

Table G3a Q & S II Delivery – Water Service

All cells are calculated from the outputs reported in G5. There are small negatives against G3a.2 (rounding has removed negative value) and G3a.3 due to finalisation of total costs on a number of mains rehab projects. The negative value reported against G3a.7 is due to the in-year movement on the pain/gain share account with Solutions in 2007/08 following finalisation of the efficiency position on projects funded from additional items.

Table G3b Q & S II Delivery – Wastewater Service

All cells are calculated from the outputs reported in G5. The negative value against G3b.26 is due to agreement regarding supplier liability resulting in payment to Scottish Water, offset by investment on other projects. A negative total is reported against G3b.2 as the finalisation of costs on sewer rehab projects reaching Capex 5. The negative value reported against G3b.4 is due to the in-year movement on the pain/gain share account with Solutions in 2007/08 as the Share Account is reported as 50% wastewater and 50% water.

Table G4a Q & S III Drivers – Water Service

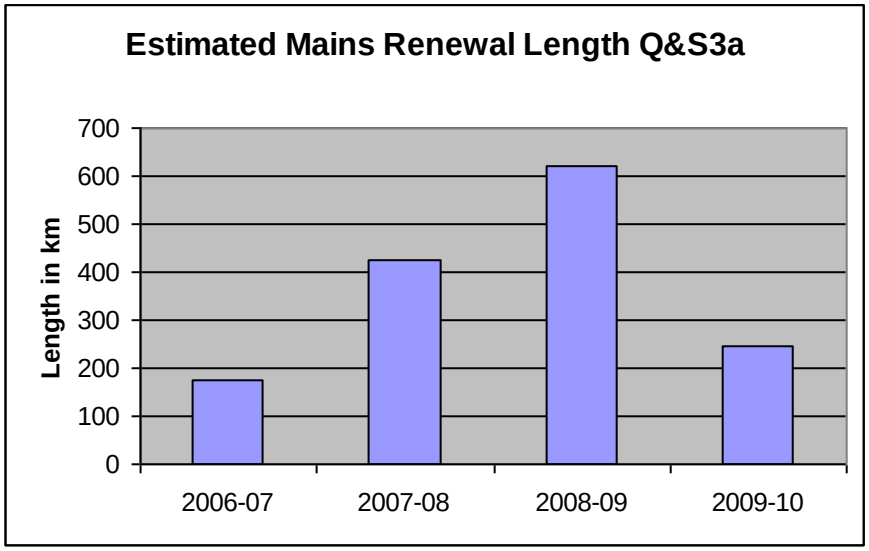
G4a.1 Base operating expenditure

This is calculated from Water opex reported in Table E1.20 with the value reported in G1.1. DX confidence grades have been added to the forecasts as explained in G1.

G4a.2 – G4a.42 are all calculated from the drivers against the projects reported in table G6.

G4a.28 the studies relating to reservoirs operate with agreed best practice [WR2] includes any work required for WR3 and WR4.

G4a.2 Infrastructure Renewals - the graph below indicates the Estimated Forecast by year for the Mains Rehabilitation Programme. This does not include the additional lengths that will be delivered as part of the Water Quality iron and manganese programme in 2008-10.



G4a.39b Introduction to Competition – the investment against this line has been to enable the development and implementation of business separation between Scottish Water and Business Stream, to support full market opening, including interfacing with the CMA, and to establish a wholesale function.

G4a.45 – G4a.46 New outputs/obligations since the final determination

Four water quality projects, Torrin, Ullapool, Blairnamarrow and Langholm are considered as new obligations and are included against these lines. Torrin had expenditure in 2006/07 which was not reported against this line in AR07. Table K funding has been deducted from the forecasts reported as new obligations. Confirmation of the value of these projects will be determined at Capex 3 and/or confirmed through the logging up process with the Commission. The opex impact is calculated and split proportionately across two years depending on where the acceptance date falls.

Table G4b Q & S III Drivers – Wastewater Service

G4b.1 Base operating expenditure is calculated from Wastewater opex reported in Table E2.19 with value reported in G2.1. DX confidence grades have been added to the forecasts as explained in G2.

G4b.2 – G4b.48 are calculated from the drivers against projects in G6.

G4b.49 – G4b.50 New outputs/obligations since the final determination
Two first time provision projects - Tobermory Ledaig and Investigation of Potential FTP Provision at Lochawe, Connel/Nth Connel, Newtonhill, Carlogie & Clayholes and the Customer Charging - Area Based Drainage Banding requested by Scottish Government are reported against these lines. Two further UIDs have been identified but are not currently forecasting and will be included in future returns. Confirmation of the value of these projects will be determined at Capex 3 and confirmed through the logging up process with the Commission. There is no opex impact reported for these projects.

Table G5 Project Analysis Q & S II – Actuals & Forecast – Water & Wastewater

Commentary on G5 is column by column.

Column 1 - Project Number – This is the unique number which identifies the project within the capital investment programme and CIMS.

Column 2 – Project Name – This is the title defined by Scottish Water and is taken directly from the capital investment programme and CIMS. The only exceptions are the projects which have been rolled to programme groups for reporting and start with '400' numbers.

Column 3 – Water/Wastewater - All projects are shown as water or wastewater except three which are classed as general. These include the Solution Share Account and Scottish Water Overheads.

Columns 4 & 5 – Quality and Regulatory Output Sign-off Required – All projects identified as having quality drivers or as requiring DWQR or SEPA sign-off for quality outputs are shown in these columns.

Column 6 – Accountability – All projects are identified as being delivered by Scottish Water, Scottish Water Solutions as part of the Allocated programme or by Scottish Water Solutions as part of the Managed programme.

Columns 7 & 8 – Programme Group and Funding Category – These are reported as held in CIMS.

Column 9 – Q&SI Project – This reports projects which were part of Q&SI planned carry-over to Q&SII and excludes projects which were not included in the original WIC 18 programme.

Columns 10 – 14 and 16 - Actual Expenditure - The actual expenditure by year is held in CIMS and is reconciled with the corporate financial system.

Column 15 – Q&SII Period Expenditure –This is the sum of the expenditure from 2002-06 calculated within the WIC Reporting Database.

Columns 17 – 2007/08 Actual Expenditure – This is the value held in CIMS for investment in the Report Year and has been reconciled with the financial system.

Columns 18 – 19 – Future forecasts for 2008-10 are held within CIMS.

Column 20 – Post 05-06 Expenditure Total – This is the sum of the actual expenditure in 2006-08 and the forecast expenditure for 2008-10 calculated in WIC Reporting Database.

Column 20a - Post 09-10 Expenditure (£m) – This reports the forecasts beyond March 2010 to complete investment on Q&SII projects. The majority of the forecasts relate to Campbeltown, Dunoon and Invergordon which have all been delayed due to land, planning and consents issues.

Column 21 – Q&SII Project Total – This is the sum of the pre 2002-03 investment, the 2002-06 investment, investment forecast for 2006-10 and the investment continuing beyond March 2010.

Columns 22 – 24 – WIC 18 Data – This data is held within the WIC Reporting Database and is as reported in the Q4 Capital Investment Return.

Columns 25 and 26 – Grants and Contributions Infrastructure and Non-infrastructure - This reports the actual or forecast values of grants and contributions received or expected to be received in the Q&SII programme.

Column 27 – Total Changes in operating costs - The information on changes in operating costs has been derived from a number of sources. These include opex costs of existing assets, operational experience and use of manufacturers' data where Scottish Water has limited or no experience of operating certain treatment processes. The impact of new investment takes account of changes in staffing levels, rent and rates, power costs, chemicals and other consumables, monitoring and sampling costs. A number of projects are reporting the actual opex which has been released and others are based on the most recent Capex approved value from Capex 4, Capex 3 or Capex 2 approvals. Where the project opex had been revised as part of the Business Planning process in 2005-06, it has retained that value unless there has been subsequent Capex approval.

Column 28 – CIMS Status Code - The project status code is taken from the pre-determined set of codes which reflect the current stage of the project. Progress on projects is updated monthly through CIMS and status codes are adjusted to indicate the milestones which have been achieved. S12 is used where SEPA or DWQR Regulatory Sign-off of outputs on quality projects has been received. As agreed, S4 has been used to identify projects which were stopped prior to construction or were not able to progress to beneficial use. Projects which had a regulatory output in Version 3.6.3 of the WIC 18 Baseline Programme which is being delivered through a different project are not shown as S4 and will be shown as S8 if the output has not yet been delivered. A number of projects have been confirmed as having received Capex 5 or 6 approval but were not reported as S13 in Q4 CIR. These are included with their actual dates in Column 32 and the status code has updated to S13. These will be corrected in Q1 CIR.

Columns 29 – 32 – Capex Stages - A number of projects did not receive Capex 2 approval as they went straight from Capex 1 to Capex 3. These are being reported with the Capex 3 approval date. Where projects pre-date the introduction of Capex 5 and have a handover date, the handover date has been reported against Capex 5 dates. A number of projects have received Capex 6 approval without Capex 5 and these are reported with the Capex 6 approval date. Planning approval is only shown where a project has, or requires to obtain, planning approval.

Columns 33 – 52 Drivers and Driver % Allocation - The Q&SII Purpose codes from Appendix A of the Table G Guidance documentation are reported against these columns. The proportional allocation between purpose codes is in line with the methodology used in previous years. The output measures were considered first and a percentage split allocated on the basis of the number of outputs. However, where better information was available on the split between outputs, this has been reflected in G5. Investment to meet SEMD and DSEAR requirements are reported against WM2 and SM2 respectively.

Columns 53 – 72 Output and Output % Allocation - The Q&SII output codes from Appendix A of the Table G Guidance documentation are reported against these columns. Each output has received a % allocation in line with the total number of outputs. Where better information was

available on the split between outputs, this has been reflected in G5, for example, a small proportion has been applied to recognise sewer or mains rehab and growth within projects. These have also been updated to include any changes resulting from the output from the analysis of projects reviewed as part of the commission to Berkeley Consultants.

Table G6 Project Analysis Q & S III – Actuals & Forecast – Water & Wastewater

Commentary on G6 is column by column.

Column 1 - Project Number – This is the unique number which identifies the project within the capital investment programme and CIMS. Programme holding lines and Programme Risk lines start with 400

Column 2 – Project Name – This is the title defined by Scottish Water and is taken directly from the capital investment programme and CIMS. The only exceptions are the Programme holding lines and Programme Risk lines which start with 400 numbers.

Column 3 – Water/Wastewater - All projects which can be identified as water or wastewater are shown in this column. A number of Management and General projects are reported as General and show the split between water and wastewater in the driver columns.

Column 4 - Technical Expression – Projects which form part of the DWQR, SEPA, Scottish Government or WICS technical expressions are flagged in this column.

Column 5 - Accountability – All projects are identified as being delivered by Scottish Water or Scottish Water Solutions. Projects which form part of the Design and Manage Programme are reported against Solutions.

Column 6 - Programme Group – Each project reports the group held in CIMS.

Columns 7 & 8 - Project Classification – The first column reports the primary classification as quality, growth, enhanced or base with the second column identifying a number of projects as general where they are delivering base investment but are not flagged as water or wastewater.

Columns 9 – 11 - Infra IRE, Non-IRE and Non-Infra Proportions of Projects - The forecast reported against Infra IRE is the proportion of the project based on the allocation to infrastructure maintenance drivers. The forecast against Non-IRE is the proportion of the project allocated to infrastructure, excluding capital maintenance. The forecast against Non-Infra is the proportion of the project allocated to Non-infrastructure drivers.

Column 12 - Current Project Status Code - The project status code is taken from the pre-determined set of codes which reflect the current stage of the project. Progress on projects is updated monthly through CIMS and status codes are adjusted to indicate the milestones which have been achieved. S12 is used where SEPA or DWQR Regulatory Sign-off of outputs on quality projects has been received on Q&SII Completion Projects. S10 has been used where Acceptance has been achieved. Where there is a regulatory output, Acceptance will trigger preparation and submission of the output to the Quality Regulators for sign-off. Projects which have achieved Capex 5 are reported as S13. Project requiring regulatory sign-off will not receive Capex 5 approval until confirmation of the output(s) sign-off has been obtained. As agreed, S4 has been used to identify projects which were stopped prior to construction or were not able to progress to beneficial use.

Columns 13 – 16 – Milestone Dates – These are reported from CIMS from March 2008 monitoring. Until the UID strategic and water body studies are complete, the requirement for planning approval cannot be assessed and forecast dates will be added where applicable once

the individual projects are promoted. As projects requiring sign-off from the Quality Regulators will not be approved at Capex 5 until confirmation of sign-off has been received, the actual or forecast date will be after the sign-off actual or forecast reported in Q4 CIR.

Column 17 – Local Authority – These are reported from CIMS. Projects covering more than one local authority area are reported as Scottish Water Wide.

Columns 18 – 25 – Financial Profiles – The actual expenditure pre 2006/07 and in 2006-08 is held in CIMS and has been reconciled with the corporate financial system. Forecast expenditure on individual projects is held in CIMS. The holding lines hold the balance of funding which has still to be disaggregated.

Column 26 – Table K Budget Allocation - This data is held within the WIC Reporting Database and is as reported in the Q4 Capital Investment Return. Table K budgets are updated from Capex 3, Capex 4 and Capex 5 approvals.

Columns 27 – 30 - Grants and Contributions Infrastructure and Non-infrastructure -The Infrastructure Charge income received is reported against Infrastructure contributions in the Report Year. No future infrastructure charge income is reported as the values are not yet known. However, it should be noted that the full value of infrastructure charge income anticipated over the 2006-10 period is reported as a negative forecast at project level in 2008-10.

Columns 31 – 32 Impact of Project on Scottish Water Gross Modern Equivalent Asset Value -
The application has been based on methodology applied in Table K pending the MEAV project being applied to capital projects in future years.

Column 32 Impact of Project on Opex - The reported opex is based on Capex 3 or 4 approved values, Capex 2 approved values or the baseline opex identified in Table K. Projects which are not progressing have been reduced to zero.

Column 33 – 36 – Proportion of Capital Maintenance Element - The values reported are based on the percentage allocation against capital maintenance for all projects.

Column 37 – Population equivalent released from development constraints where applicable - Values are only reported against projects where the strategic capacity outputs population has been claimed and the balance for Water and Wastewater strategic capacity is reported against 30202 and 30203 respectively.

Column 38 – Regulatory Sign-off Required – Projects identified within Q&SIII Database as requiring sign-off are shown in these columns. The total number is different from the numbers reported in Q4 CIR as the rolling programme quarterly or monthly outputs sub-projects are not included.

Columns 39 – 58 Drivers and Driver % Allocation - The Q&SIII Driver codes from Appendix B of the Table G Guidance documentation are reported against these columns. The proportional allocation between driver codes is in line with the methodology used in Table K. Where better information was available on the split between drivers, this has been reflected in G6. These have also been updated to include any changes resulting from the output from the analysis of projects reviewed as part of the commission to Berkeley Consultants.

Columns 59 – 88 Output and Output % Allocation - The Q&SIII output codes from Appendix B of the Table G Guidance documentation are reported against these columns. The Drinking Water Quality outputs are reported as population equivalent, and EC11 is reported as number of sites made compliant with standards, as per Table K submission.

Table G7 Q&S II Output delivery

G7.1-9 Progress with Q&S II Outputs

The Scottish Water target for March 2008 was to deliver 99% of the Q&S2 programme. The quarterly targets for 2007/08 reported in AR07 related to the stretch targets set by the business to ensure that the overall outputs were achieved and not the quarterly targets to meet the 99% overall target. These have been amended in the AR08 submission in line with the business targets which have been reported in the quarterly Capital Investment Return (CIR).

The delivery of the outputs is summarised in the table below.

Outputs	Output Description	Unit	Outputs Delivered at March 2008	Revised Targets at March 2008	% Target Delivered
DW-FT	Properties receiving First Time Provision of Water	Nr	408	408	100%
DW-P	Removal of Properties from the Poor Pressure Register	Nr	1391	1391	100%
DW-WQ	Drinking water drivers addressed	Nr	579	594	97%
WM-R	Mains Rehabilitated	km	3051	3051	100%
WW-C	Continuous Discharges Removed	Nr	560	585	96%
WW-FR	Removal of properties from 'at risk' Flooding Register	Nr	829	829	100%
WW-FT	Properties receiving First Time Provision of Sewerage	Nr	667	667	100%
WW-R (km)	Sewers Rehabilitated	km	409	409	100%
WW-UCSO	Unsatisfactory Combined Sewer Overflow	Nr	421	429	98%
					99%

- The target for DW_WQ has been adjusted to account for outputs which should have been removed at Ballater in the Version 3.6.3 of the WIC18 submission and the Lead output at Blackpark has been removed by DWQR. It is expected that the outputs at Shieldaig (2) will be removed due to water resource issues. This project is included in the 594 target above but is not included in the total outputs forecast in G7.3 which total 592
- There is no funding available to progress the Loch Ryan project so the 4 WW_C outputs have been removed from the target
- Scottish Water has still to deliver the outstanding flooding projects at Creetown and Campbeltown from the original flooding programme which will deliver a further 26 outputs. However, as reported in AR07, two projects with 24 outputs were accelerated to deliver in 2006/07 outputs to ensure the target was achieved with a total of 830 properties removed from the Flooding Register against the target of 829. A total of 37 projects (excluding WIC16) remain to be delivered, 24 of which are forecast to deliver in 2008-09,and a further 10 in 2009-10. Two wastewater quality projects, the Dunoon Sewerage Scheme and Invergordon WWTP, are currently forecasting delivery after March 2010, together with Campbeltown flooding project.

G7.10-12 WIC 16 in progress

The Capital Investment Report at March 2007 lists 61 WIC16 projects. The following table reflects the movement in the programme which results in 53 projects being expected to deliver by March 2010.

WIC 16 Projects	
Capital Investment Report	**61**
less redundant	**-2**
Inverurie & Port Elphinstone	
Almond Valley (Huntingdown)	
less School Closures/Community Request	**-6**
Braeside of Savoch School	
Cairnorrie School	
Corgarff School	
Ythanwells School	
Brideswell Housing	
Scoraig	
Annual Return	**53**

A number of the removals were included in the the total delivered to March 2007 and the school closure projects will be submitted to DWQR for sign-off. Of the current total of 53 projects, 49 have been delivered to March 2007/08, 3 will be delivered in 2008-09 and 1 in 2009-10.

We have included below a WIC16 reconciliation list:

	Acode	Description	Status	Comments	Current Status	Additional Comments
	9185	Braeside of Savoch School	S	School closed	Active	School Closed but claimed
	9186	Cairnorrie School	S	School closed	Active	School Closed but claimed
	9187	Corgarff School	S	School closed	Active	School Closed but claimed
	9193	Ythanwells School	S	School closed	Active	School Closed but claimed
	9194	Brideswell Housing	S	School closed	Not Active	Removed from programme - did not progress to Capex 3
	9199	Inverurie & Port Elphinstone	S	Removed	Not Active	Removed - delivered by another scheme
	9212	Earlston	S	Delivered WIC 18	Not Active	
	9228	Duns	S	Delivered WIC 18	Not Active	
	9230	Killearn	S	Delivered WIC 18	Not Active	
	9237	Drymen	S	Delivered WIC 18	Not Active	
	9238	Fintry	S	Delivered WIC 18	Not Active	
	9639	Scoraig	S	Stopped - stakeholder intervention	Active	School Closed but claimed
1	9183	Ardallie School			Active	
2	9184	Arnage School			Active	
3	9188	Drumblade School			Active	
4	9189	Easterfield School			Active	
5	9190	Glass School			Active	
6	9192	Towie School			Active	
7	9196	Drongan			Active	
8	9197	Kintore			Active	
9	9198	Westhill			Active	
10	9200	Coldstream			Active	
11	9202	Laurencekirk			Active	
12	9204	Plean			Active	
13	9205	Westfield			Active	
14	9207	Almond Valley (Huntingdown)			Not Active	Removed
15	9208	Newmacher			Not Active	Removed - delivered by another scheme
16	9209	Thornhill			Active	10235 Thornhill was a duplicate project not progressed
17	9210	Cockburnspath/Cove			Active	
18	9211	Methven			Active	
19	9213	Newtown St Boswells			Active	
20	9214	Pitlochry (Dysart Brae) off Atholl Rd			Active	
21	9215	Weem		Added	Active	
22	9216	Brora		Added	Active	
23	9217	Drum			Active	
24	9218	Howgill			Active	
25	9219	Islesteps			Active	
26	9220	Kilmany			Active	
27	9221	Stenness			Active	
28	9222	Turnberry			Active	
29	9223	Cultercullen			Active	
30	9224	Melrose			Active	
31	9225	Doune			Active	
32	9226	Callander			Active	
33	9227	Balfron			Active	
34	9229	Buchlyvie			Active	
35	9233	Innerleithen			Active	
36	9234	Lauder			Active	
37	9236	Gargunnock			Active	
38	9243	Coach Road, Couper Angus			Active	
39	9244	Strathblane			Active	
40	9245	West Linton			Active	
41	9631	Logie School			Active	
42	9634	Kilninver Primary			Active	
43	9636	Kilmodan Primary			Active	
44	9637	Rousay			Active	
45	9638	Lismore Primary			Active	
46	9640	Straloch Primary			Active	
47	9641	Gatehouse of Fleet			Active	
48	10234	Ayton			Active	9203 Ayton was a duplicate project which is not active
49	11557	Terregles		Added	Active	
50	706	WIC16 Development Constraints			Active	

G7.13-17 Progress with Quality and Standards II sign-off

In total 1,129 projects have been completed requiring regulatory sign-off against a total of 1,166 projects to be delivered as at March 2008. Of these, 1,101 have been submitted and 981 signed off. These figures do not include WIC16 projects. The total number achieving sign-off to March 2007 has been updated from the 793 reported in AR07 to 796 due to better information and is in line with the 2007-08 Q4 CIR submission.

There are 12 backlog quality projects awaiting submission to the Regulators. 5 of these require remedial works which are being addressed via new projects and will be submitted upon completion of the new projects. The remaining 7 projects are legacy Q&SI projects or early Q&SII projects for which information has been hard to collate. This will be submitted during Q1 2008/09.

The submission of the delivered projects is assumed to be 3 months after the Beneficial Use date. Two projects are currently forecasting delivery after March 2010, namely 3,300 Invergordon and 1,243 Dunoon and therefore will be submitted for sign-off after March 2010. Regardless of submission of regulatory sign-off forms, final approval remains dependent on SEPA and DWQR agreeing the outputs have been delivered and the regulatory approval profile can only be estimated.

Table G8 Q & S III Ministerial Objectives and other outputs – Quality

The Annual Target for 2007/08 reported for Ministerial Outputs is the cumulative target to March 2008. The target by quarter for 2008-09 is the actual number in each quarter giving the cumulative total by March 2009 in the 2008-09 total target and the 2009-10 target is the cumulative total. With the exception of UIDs, the full target is reported by 2009-10.

G8.1 Customer Service

G8.1 Number of works where odour problem is addressed

Scottish Water delivered 8 outputs by March 2008 which was ahead of the revised target approved by OMG. All outputs require to be approved by the Environmental Health Officer of the appropriate Unitary Authority before Scottish Odour Steering Group sign-off can be obtained.

G8.2-11 Water Quality

G8.2 Improve drinking water quality for 1.5m people and G8.3 Improve disinfection control for 4m people

The outputs relating to the Drinking Water Quality and Disinfection projects are based on the revised methodology agreed with DWQR to reflect the population benefiting from work being undertaken to improve disinfection control or drinking water quality. The Actual Target for 2007/08 was 0.81m (0.84m delivered) for Water Quality and 0.79m (0.87m delivered) for Improved Disinfection Control. Whilst the targets for delivery show that all outputs should be delivered by March 2010, current forecasts indicate that Glencorse and Blackpark will not be completed until 2010-11.

G8.4 Number of lead pipes removed as a result of customer requests

No annual targets were set as this is a reactive programme of work dependent on customer requests. We have reported the actual number of outputs delivered during 2007/08. The values reported against the quarterly targets for 2008-09 and annual target for 2009-10 are indicative of the estimated numbers that that may be removed. As a result we have applied a confidence grade of C3 to future years.

G8.5 Number of water resource zones with reduced abstraction

The Delivery Plan target to March 2008 was to deliver 5 sources but 21 were achieved and have all received sign-off from SEPA.

G8.6 – Number of water sources provided with flow monitoring and recording

As reported in AR07, it was agreed that the number of sources which require monitoring and recording to be installed should be reduced to 521 (from 574). During 2007/08 266 sources requiring flow monitoring and recording have been improved, bringing the total at March 2008 to

287. The 21 outputs submitted to SEPA prior to 31st March 2007 have been signed off, and a further 122 have been submitted by March 2008.

G8.7 Number of flood studies undertaken

The Flood Studies programme is now complete with 29 studies delivered against the original target of 20 and the Delivery Plan of 4 by March 2008. The methodology for sign-off was agreed with DWQR in early April and the studies should be submitted during Q1 2008-09.

G8.8 Number of backflow preventions devices installed

A total of 164 backflow prevention devices were installed by the end of March 2008, out-performing the Delivery Plan target of 110. All outputs delivered in 2007/08 will be submitted to DWQR for sign-off during Q1 2008-09.

G8.9 Number of cross-connections made redundant

The total target included for cross connections has been reduced to 5,200 (from 5,500) which is based on the current view that only 5,200 cross connections have been identified as available for delivery in this period. However, re-surveys will be progressed and any further connections found will be added to the programme.

G8.10 Number of sites with increased security

The target of 590 sites by March 2008 has been achieved with 594 sites delivered. Agreement on the methodology for sign-off has been agreed with DWQR and the outputs delivered in 2006-08 will be submitted for sign-off in Q1 of 2008-09 and quarterly thereafter.

G8.11 % of population covered with water safety plans

In alignment with the Delivery Plan, 26% of the population has been covered by Water Safety Plans.

The methodology is defined within the Drinking Water Safety Plan Guidance Manual. As the plans have been developed, there have been minor modifications made to this manual and to the format of the plans.

Most of the data contained within the plan has come from corporate data sources, expanded with assessment of specific risks which are identified through audits and workshops.

G8.12-17 Waste-water Quality

G8.12 Number of unsatisfactory intermittent discharges improved

Performance this year has outperformed the revised target set in Scottish Water's 'Revised' Delivery Plan (March 2007 Update). As with last year, several of the actual overflow UID outputs achieved differ from those identified in the original SR06 Technical Expression. Outputs delivered for 2006/07 have been reduced from 25 to 22. SEPA required further investigation work to confirm the output on one project and at the model audit two projects were deemed to require further work

During the report year, the various methodologies, processes and reporting templates previously agreed with SEPA and the Commission have continued to be used to support the delivery and sign-off of the SR06 UID Programme. The 'UID Output Principles' were also agreed with SEPA during this year. Additionally, Scottish Water has supported the WICS' Reporter Stage 4 Cost Audits, part of the 7 Stage Process governance for the Strategic UID Studies.

Delays in the delivery of the UID Catchment Studies from which the output is used to confirm UID needs and to identify solutions, both of which are agreed with SEPA and WICS (where required), has slowed our progress during 2006/07 and 2007/08. However, our forecasts of outputs in future years, as reported in our Revised Delivery Plan (March 2008 Update), now indicate that outputs achieved for 08/09 and 09/10 will largely be in line with our original projections. However, due to the nature of some of the schemes to be delivered in the Strategic UID catchments, we are reporting that there will be an overhang of some 32 outputs to September 2011.

It should also be noted that the UID Programme outputs are subject to change. Until sufficient study work is completed the actual extent of investment requirements and outputs to be delivered cannot be finalised. This applies to both the Strategic and Non-Strategic UID catchment studies. Such changes are formally recorded and approved using the agreed Change Process and are discussed by the OMG Working Group. It is currently known that significant changes (additions and removals) to the SR06 UID Programme will be required. Of those changes identified so far, only 18 removals and 28 additions (net change of 10) have been formally signed off by SEPA and Scottish Water as of 31 March 2008.

All 4 Strategic UID Catchment Studies have now been substantially completed and the actual number of 'Strategic' UIDs requiring improvement has been identified. It is currently anticipated that the completion of the remaining Non-Strategic UID catchment studies, accounting for approximately 20% of the original programme, will be completed by late summer 2008. Therefore there remains a level of uncertainty with the forecasts of outputs in future years.

The current outlook is that identified changes may result in an outturn programme of approximately 300 UID outputs. Therefore forecasts in this Annual Return have been based on the current outlook position.

G8.13 Number of waste water treatment works' discharges improved to meet new consent requirements

We delivered 11 outputs in the year 2007/08, meeting the revised target agreed by the OMG.

G8.14 Number of First Time Provision projects to meet environmental objectives in the Directions

We delivered 1 output this year 2007/08, ahead of the delivery plan. The OMG has agreed the removal of 5 projects from the target, and has added Tobermory which was delivered in March 08. The target for March 2010 is now 10.

G8.15 Number of waste water treatment works upgraded to meet existing consent requirements

Scottish Water delivered 6 outputs in the year 2007/08, in line with the revised target approved by the OMG. The programme has slipped due to uncertainties over the rules and scope of the programme. The programme will now deliver 8 projects in 2008/09 and the remaining 4 in 2009/10.

G8.16 Number of management and monitoring systems at works to meet IPPC Regulations

The OMG has approved the reduction in target from 61 sites to 1 site which has been delivered and achieved sign-off in 2007/08.

G8.17 Number of landfill sites contained, monitored and decommissioned

Out-performance was achieved with 10 outputs delivered to March 2008, ahead of the Delivery Plan target. Scottish Water has added the 5 additional outputs to the reported targets for 2008-09 and 2009-10 giving a total of 17 outputs compared to the refreshed Delivery Plan target of 12 outputs.

G8.18-23 Development Constraints

G8.18 – G8.19 Provide strategic capacity at water and waste water treatment works

The Delivery Plan targets for Strategic Water and Wastewater Capacity have been increased from the original Ministerial targets, reflecting the expectation that additional outputs can be delivered.

The outputs delivered to date at waste water treatment works are a combination of strategic capacity provided by construction and development enabled ahead of future investment. Where investment is planned, Scottish Water has allowed development to proceed either on the understanding that a greater operational risk may result in the short term or, where required, with the agreement of the relevant regulator.

The Water Strategic capacity outputs delivered to March 2008 are a combination of upgrades at specific sites, sustainable leakage reduction within a number of DMAs and enabled development ahead of future investment.

It has been agreed by the OMG Working Group that these outputs will be subject to validation by the Reporter to allow Scottish Government to sign-off. However, the process is subject to agreement by Scottish Government, Scottish Water and WICS.

G8.23 Properties relieved from development constraint

The figures for properties relieved from development constraint are calculated from the Population Equivalent growth provided at both water and wastewater treatment works divided by the average household occupancy rates. Projected average occupancy rates are published for each local authority in Scotland. The household occupancy rate for the 2010 Scottish average is 2.11. This figure is used for general calculation process. Properties relieved from development constraint are in line with Delivery Plan targets.

G8.24 Introduction of Competition

The business metering programme installed 26,058 meters by the end of March 2008 (in line with Q4 CIR). The cumulative target for the end of March 2009 was 36,500 meters.

G8.25-26 Additional Capital Maintenance Allowance

G8.25 SEPA priorities for capital maintenance expenditure (£20m)

There were no specific yearly output targets set for this investment other than the 4 year investment value of £20m by 2009/10. Scottish Water and SEPA have agreed a methodology for defining qualifying capital maintenance investment. This is predominantly for Wastewater Pumping Station improvements.

The investment reported to 2006/07 has been amended due to changes in the list of qualifying projects agreed between SEPA and Scottish Water. The investment to March 2008 was higher than estimated in AR07.

G8.26 DWQR priorities for capital maintenance expenditure (£10m)

The DWQR Exceptional Public Health Items funding is being used to promote additional schemes in the networks to address manganese and a programme of work is being agreed with them. Those schemes will augment the work already progressing.

G8.27-29 Leakage

G8.27 First pass Economic level of leakage estimated and presented to Commission

The milestone to present the Commission with the first pass ELL by 31 December 2007 was achieved.

G8.28 DMA coverage to include 96% of connected properties in Scotland

The target for DMA coverage was revised to 92% of connected properties with agreement of WICS. An additional 23.9% of the population was covered by DMAs during the report year bringing the total to 94.4%.

G8.29 Revised ELL presented to the Commission

Subsequent to first pass ELL determination, Scottish Water will further progress ELL determination with the intention of presenting a revised ELL by the end of December 2008.

G8.30-40 Water Resource Studies

G8.36 The Flow Gauging Strategy was produced and agreed with SEPA by 30 April 2007.

G8.37 – G8.39 These milestones were all delivered by 31 March 2008.

G8.40 The target for quantifying the costs for the remaining (complex) zones and presentation to the Commission is expected to be achieved. However, it is recognised that there is considerable work to do with a heavy programme of value management workshops over the coming months requiring a significant resource from both Scottish Water and SEPA.

G8.41-49 UID Strategic Studies

Strategic UID Studies are required in four catchments (Portobello, Glasgow, Meadowhead and Stevenston) to determine the optimum technical and cost effective integrated catchment solutions.

For such a large programme the original milestones stated in the Delivery Plan were extremely challenging. The situation was exacerbated by the fact that determining the UID solutions was reliant on complex catchment and river/coastal water quality modelling. The creation of new models has been necessary and this has also impacted on the programme.

We adopted a “parallel process” to mitigate the risk to timely completion of the technical studies, which allowed the models to be progressed and UID options refined as the quality of base data is improved. In terms of milestone completion, this approach has ensured that the four Delivery Plan Milestones due to date have been delivered on time.

The Value Management process was completed during May and reports were submitted on 31 May 2007. Daldowie South element of Glasgow was delayed due to lack of a hydraulic model but

the Value Management process for this element was undertaken during July/ August, with the Value Management report issued on 22 October 2007. Dalmarnock element of Glasgow had to be revisited due to deficiencies in the hydraulic model but the Value Management process repeated in December 2007, with the Value Management report issued on 4 February 2008.

The Value Management 2 workshop was delayed, primarily due to lack of availability of the stakeholders. The workshop was held on 2 & 3 October 2007. Additional investigation of a new technology option requested by SEPA/Commission's Technical Advisor impacted on the finalisation of the report, which was submitted on 30 October 2007.

The remaining UID Delivery Plan milestones require detailed design to be completed, competitive tenders received and all construction works to be completed within each of the four strategic catchments. In terms of these remaining original milestones, our programme now indicates that all of these will be achieved by the end of the Regulatory period apart from G8.49 'Construction complete at all UIDs in the Meadowhead and Stevenston catchments'. Although the majority of the UIDs will be delivered by the original milestone, the scale of the complex solution required for approx. 20 of the UIDs in the Meadowhead and Stevenston catchments (those associated with Workpackage 6 'Irvine Valley Trunk Sewer'), requires a significantly greater timescale to efficiently deliver. We have therefore introduced a new milestone for these.

Glasgow & Portobello Catchment

There are approximately 100 projects being delivered in Glasgow and Portobello catchments. Of this, some 50% are simple solutions and are currently programmed to be completed by 31 March 2009.

The remaining 50% are complex projects with typically large diameter pipelines and tunnels through major conglomerations of the central belt of Scotland. Delivery dates for these complex projects have been revised and are now programmed to be completed by 31 March 2010

Meadowhead & Stevenston Catchment

There are approximately 75 projects being delivered in Meadowhead and Stevenston catchments. Of these, 70% have simple solutions and are currently now programmed to be completed by 31st March 2010.

The remaining 20% of the projects relate to the Irvine Valley Trunk Sewer and are complex, forming a 12km transfer scheme comprising large diameter pipelines, tunnels and associated pumping stations and storm tanks. These complex projects are programmed to be complete by 30 September 2011.

For all Meadowhead and Stevenston projects detailed design will be complete and competitive tenders agreed by 31 March 2009.

The data contained in Table G8 shows further revision to the milestones for the strategic drainage area catchments. The dates relate to the completion of all work in the catchment, with the exception of the new milestone for Meadowhead/Stevenston 'Irvine Valley Trunk Sewer'.

G8.50–54 Progress with Quality and Standards III sign-off

The number of projects reported in the Q4 CIR as requiring sign-off, at March 2007, was calculated when the revised format for the Q&SIII CIR for Q1 was submitted in September 2007. This number was higher than the value reported in AR07. The current return has retained the values for 2006-07 reported in AR07.

The process for sign-off for water quality and environmental quality was agreed with DWQR and SEPA in 2006/07. The acceptance dates for all projects are held within the Capital Investment Management System and acceptance paperwork is submitted for each project; this is used as the trigger for preparing the output sign-off proforma for submission to the Regulators. Trackers are maintained for these areas and record the acceptance date, date of submission and date of sign-off.

Odour outputs are signed off by the Scottish Odour Steering Group.

Flow monitoring and abstraction outputs are signed off by SEPA.

Security and Flood Studies outputs are to be signed off by DWQR.

During 2007-08 there has been an increase in the number of projects reported as requiring sign-off as these are now aligned with the reporting for the OMG graphs with rolling programmes of work reporting in quarterly or monthly blocks of outputs.

The forecast for submission is based on allowing one month from the acceptance date for verification and preparation of paperwork and a further two months for sign-off by the Regulator. Where the outputs were not submitted within one month of acceptance or have not yet received sign-off from the appropriate Regulator, a future submission and sign-off date has been used.

Table G9 Q & S III Ministerial Objectives – Serviceability

G9.1-6 Water Serviceability Indicators (Annual Measure)

Data for Table lines G9.1 – G9.3 are for the calendar year 2007 and are extracted from the Laboratory Information Management System.

The zones in lines G9.1 and G9.2 are regulation water supply zones as defined in The Water Supply (Water Quality) (Scotland) Regulations 2001, i.e. an area designated for the purpose of the Regulations with a population of not more than 100,000 and in which all premises are supplied for domestic purposes from the same water source or combination of water sources.

G9.1 % of compliant zones for Iron
We achieved 90.1% compliant zones for Iron in 2007, outperforming against the annual target of 87.5%. This was also an improvement against the 2006 performance of 87.8%. The post 2009-10 target incorporates an estimate of the benefits resulting from planned improvements during 2010-14.

G9.2 % of compliant zones for manganese
Performance for compliant zones for manganese was 91% against the annual target of 94%. Achievement of this target is heavily reliant upon delivery of the SR06 investment to ensure compliance. We are completing all WQ investigations in the zones and are developing a detailed design of interventions that will reduce the risk of manganese failure as measured at the customer's tap. The DWQR Exceptional Public Health Items funding is being used to promote additional schemes in the networks and a programme of work is being agreed with them. Those schemes will augment the work already in progress. The post 2009-10 target incorporates an estimate of the benefits resulting from planned improvements during 2010-14.

G9.3 Number of microbiological failures at water treatment works
The target for 2007 was to achieve 90 or less microbiological failures at water treatment works. The number of microbiological failures at WTW out turned at 33, partly due to favourable weather conditions during the critical period of the year and partly due to recent water quality

improvements. This was also a significant improvement on the 2006 figure of 70. The post 2009-10 target has been maintained at the Delivery Plan target of 60 pending further analysis of the 2007 results and more information on 2008 results.

G9.4 Number of Properties on the Low Pressure Register

The overall number of low pressure properties has reduced by 24% from 7,772 to 5,907 predominantly through operational and asset improvements. Properties have also been added to, and removed from, the register through field work and customer contacts. Data improvement via detailed logging was also carried out. This resulted in an improved position with respect to the movement of properties on and off the register as 2,445 low pressure properties were added to the register during 2007/08 as a result of improved information, with a further 94 from asset deterioration and operational change. 2,738 were removed due to data cleansing and a further 1,035 removed through asset improvement and operational change. Targeted investment has improved pressure to 1,742 properties during the first two years of the programme (2006-2008).

G9.5 Number of Properties with Unplanned Interruptions > 12 hours

We continue to reduce the number of unplanned interruptions to customers which has improved our OPA performance. We have put in place a new process to allow the reporting of the root cause of interruptions and also continued to invest in water mains which historically have caused unplanned interruptions to supply. The downward trend in UITS > 12hrs is a result of continued Operations focus and targeted mains rehabilitation. The figure of 1,600 includes 98 overruns as reported in B2.24.

G9.6 Number of Bursts per 1,000km of mains

We achieved a figure of 169 bursts, outperforming against a target ceiling of 204. This figure was marginally above the figure achieved in March 2007. However, it should be noted that the increased focus on improving the leakage position is likely to result in a greater number of bursts being identified during 2008-09. The post 2009-10 target has been based on maintaining the Delivery Plan target of 204 due to proactive mains repairs to drive down leakage and the potential impact of a lower rehab rate during SR06.

G9.7-11 Waste Water Serviceability Indicators (Annual Measure)

G9.7 Number of Properties at Risk of Internal Flooding

The number of properties at risk of internal flooding at March 2008 was 563. This outperformed against the Delivery Plan target of 1500 and was also an improvement against the figure of 1042 achieved at March 2007.

G9.8 Number of Properties internally Flooded due to other Causes

The number of properties internally flooded due to other causes was 767 (this figure refers to all sewers) against a Delivery Plan target of 3438. This was also an improvement against the March 2007 figure of 1319. It should be noted that the figures used in G9.8 refer to all sewers whereas the figures in the B Tables relate to main sewers only (i.e. excluding laterals)

G9.9 Number of Failing Waste Water Treatment Works

The target for 2007 was to achieve 39 or fewer failing waste water treatment works. The number of failing works reported in the Quarter 4 CIR showed an out-turn figure of 31 at March 2008. However, this figure included two disputed cases. Since reporting the March '08 Actual in the Quarterly CIR, SEPA has accepted one of the disputed cases, reducing the actual to 30 which is what we have reported in G9. A decision is still to be reached on the second disputed case. This end of year out-turn figure is a significant improvement on the March 2007 figure of 47.

G9.10 Number of unsatisfactory intermittent discharges

During the report year, we continued to complete the delivery of Q&SII uCSO 'overhang' outputs - 38 (30 unique to Q&SII) and to continue delivery of Q&SIII UID outputs - 54 in 2006-08 (29 net in

report year). This has largely been in line with Scottish Water's 'Revised' SR06 Delivery Plan, March 2007 Update.

As reported last year, Scottish Water has reviewed the original 867 'baseline position' (Mar-06) for the number of UIDs as the figure was known to be inaccurate. Reasons for change include:

- changes to agreed UID list post setting of baseline figure (Feb-05)
- increase in the number of Q&SII uCSOs overhanging into Q&SIIIa
- exclusion of Dual Manhole UIDs from the determination of the baseline figure

We prepared a detailed report on the baseline position and the rules and definitions surrounding Intermittent Discharges (IDs) and combined sewer overflows (CSOs), etc. This report was subject to WICS Reporter audit in August 2007 and the Reporter's report was submitted to the Commission & OMGWG in November 2007.

As a result, we are reporting a revised Mar-06 baseline position of 965 and a Mar-08 position of 931.

Within this line, we have included Dual Manhole and Unsatisfactory Surface Water Outfall UIDs. This is to be consistent with Line G8.12 'Number of Intermittent Discharges Improved' which includes 12 of these UID outputs. However, it should be noted that within Line B8.12, such UIDs have been specifically excluded by WICS definitions.

It should also be noted that the Q&SIII UID Programme outputs are subject to significant change (removals and additions) as a result of the WICS 7 Stage Process and the agreed Change Process. This position has become significantly more certain during 2007/08 as the UID Catchment Studies have been completed and agreed with SEPA and WICS (where required). Together with other reasons for changes (e.g. Q&SII uCSO delivery), all future changes to this baseline figure will continue to be tracked and a full audit trail will be available for each change.

Further to the revision of the 'baseline' figure (i.e. Mar-06 position), actual and forecast performance has been determined as shown in Appendix 1 below. This shows how the post-09/10 target for 2014 has been derived.

There were 61 additions and 8 removals to the Q&SIII UID programme in total this year. In relation to the SR06 Technical Expression 37 of these additions, and all 8 of the removals have been formally agreed with the Regulators (SEPA/WICS) and confirmed by the OMGWG via the Change Process. The remainder of the changes will be formally agreed with the Regulators in due course. As all of the SR06, and SR10 UID Studies have yet to be completed, it is anticipated that significant further additions and removals will be identified until all the UID studies are complete.

G9.11 Number of pollution incidents

We have agreed with the Outputs Monitoring Group (OMG) that the targets would remain as set out in the Ministerial Directions [555] until 12 months of more robust data, which has been validated and agreed in conjunction with SEPA, has been recorded. This data will be for the year ending March 2008 and will be as reported by SEPA in its 2007/08 Table 1 Return to the Commission. This data will provide the basis of setting an appropriate baseline of Scottish Water's 'wastewater' pollution incident performance on which to reset the 'no deterioration' serviceability indicator target. Pollution incident recording and validation work remains ongoing with SEPA and current indications suggest a revised baseline may be significantly higher, around 1,000, than that notionally included in the Ministerial Objectives.

During this report year Scottish Water continued to record pollution incidents using definitions and procedures agreed with SEPA. We have worked closely with SEPA throughout the report year to agree new and/or improved processes to aid more robust reporting of pollution incidents arising from Scottish Water assets. We have also jointly undertaken close scrutiny of the pollution incident records for the report year such that Scottish Water's 'baseline' performance is more accurately understood and reflected.

Scottish Water and SEPA intend to agree the number of Pollution Incidents for the report year 2007 – 2008 on 21 May 2008 but the figure reported in AR08 has been updated from the 1066 reported in 2007-08 Q4 CIR to a more accurate figure of 941 based on our understanding of the draft position. It is likely that this Draft figure will require adjustment to align with that ultimately agreed with SEPA/ WICS.

As this is the first full year we have, in conjunction with SEPA, produced more robust data for this indicator, no comment can be made on trends. However, it is noted that there still remains a level of uncertainty with the accuracy of this serviceability indicator and hence the confidence grade of C4. Further data collection improvements are being implemented and we anticipate that we will be able to report an improved confidence grade in next year's Return.

Future years performance for the period 2008 to 2010 reflects Scottish Water's SR06 'no deterioration' target, and for post 2010 reflects the proposed SR10 Business Plan targets.

Appendix 1 Actual and Forecast Delivery of UIDs

	31 Mar-08 Baseline	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	Totals
Q&SII uCSO Outputs*		25	8	8	2	0	0	0	0	**0**	**43**
SR06 Outputs		22	32	91	125	13	19	0	0	**0**	**302**
SR06 Removals		0	8	21	0	0	0	0	0	**0**	**29**
SR06 Additions		0	61	107	0	0	0	0	0	**0**	**168**
SR10 Outputs						18	33	43	0	**15**	**109**
Nr of UIDs (incl SR10)	**965**	**918**	**931**	**918**	**791**	**760**	**708**	**665**	**665**	650	
Nr of UIDs (excl SR10)	**965**	**918**	**931**	**918**	**791**	**778**	**759**	**759**	**759**	759	
Notes:											
1. These are 'unique' overflows that do not also appear in the Q&SIII UID programme. Some overflows can appear in both programmes with the Q&SIII UID having an additional objective to that defined in Q&SII e.g. new quality driver giving rise to further improvements being required											
2. Cannot predict UID changes (additions/removals) from studies not yet study to reach the DRAFT Needs Assessment Report Stage											
3. No UID changes confirmed by SR10 UID Catchment Studies yet											

H Tables – Asset Inventory and System Performance

General comments

Scottish Water has made four principal changes to the methodology to derive the data for completion of the H tables. These changes result from the asset revaluation project which we undertook throughout 2007 to develop a methodology for Modern Equivalent Asset Valuation (MEAV). The four principal changes are summarised as:

- reporting only operational assets (functional & unit) (i.e. excluding redundant assets);
- change in valuation methodology (moving from EARC to MEAV);
- change in methodology of Net Valuation calculation;
- change in methodology for calculation of replacement period.

Reporting only operational assets (excluding redundant assets)

Our methodology, for this reporting year, has excluded all decommissioned and redundant assets from our reported inventory and valuations and we have reported no value in the relevant columns. We consider the modern equivalent of a redundant asset to be no asset at all.

Change in valuation methodology (moving from EARC to MEAV)

In previous years we presented Equivalent Asset Replacement Costs (EARC) in our Annual Returns to the Commission. The EARC was derived as a single cost of each function (e.g. the total cost of a water treatment works, or of a sewage pumping station) based on the technology that was present on site. We took no account of whether modern design would have provided different components, nor did we seek a cost for any component of the works. To comply with the Commission's guidance on the completion of the tables, however, we applied empirical algorithms to split the costs between the components on each site. Because different components have different lives (e.g. electrical equipment has a much shorter life than a civil engineering structure), the costs were allocated to the different life categories in the tables by those algorithms. Therefore, although we were presenting costs for the aggregate of asset components whose lives would expire within a given period, none of the asset components in that category had been individually valued.

For the MEAV this year we are completing the same tables but, in general, we have derived a value for each unit (component) at each works, rather than a single cost for the whole works. We have also taken into account modern design techniques and derived the value of the modern equivalent of an asset to perform the same function.

Change in methodology of Net Valuation calculation (non-infrastructure assets)

As a result of the revaluation project, a new method for calculation of Net MEAV was produced. We now use the commissioned date of the asset, where it is known, to derive the asset remaining life. If it is not known, we use a matrix based on condition grade and design life of the asset to allocate the remaining life of the asset. We are also using the design lives from our accounting system.

Change in methodology for calculation of replacement period

In previous submissions our methodology for calculating replacement period produced some unrealistic values. With this in mind, we have simplified our methodology for calculating replacement period. The method that we have implemented uses a matrix based on condition and performance to allocate the remaining life period. The matrix we use is as follows:

		Performance Grade				
		1	2	3	4	5
Condition Grade	1	A	A	A	A	B
	2	A	A	A	A	B
	3	A	A	A	B	B
	4	A	A	B	C	C
	5	B	B	B	C	D

where :-

A ≥10years
B = 6-10 years
C = 3-5 years
D = 1-2 years

We believe that the above matrix reflects the priorities to replace assets that are both in poor condition and performing badly.

Derivation of MEAV methodology

During 2007, we undertook a major project to derive a MEAV methodology that would be suitable for Scottish Water and the Commission. We engaged Jacobs UK Limited ("Jacobs") to advise us, as consultants experienced in similar valuations for English water companies. We developed a methodology and repeated the valuation of the asset base reported in the AR07 Annual Return (i.e. the asset base at 31 March 2007). That allowed us to identify the change in value of each asset class that resulted from the methodology, independent from the change in value that will arise each year from the change in the asset stock. We concluded the project in December 2007 having produced a MEAV for the AR07 asset base. We have applied this methodology to the AR08 (31 March 2008) asset base for this Annual Return.

In deriving our methodology we took into consideration: the true costs of a practical programme of asset replacement; the Regulatory Accounting Rules; the practicalities of completing the exercise; and a general alignment of the methodology with that used by other UK water companies.

1. The true costs of a practical programme of asset replacement
We have chosen a methodology that aligns the valuation of our asset base with the actual engineering basis on which assets are replaced or renewed. In general, not all the components of a site are replaced in their entirety at the same time. Rather, they are replaced at a unit level as each unit expires and we have valued the assets accordingly.

2. The Regulatory Accounting Rules
The Regulatory Accounting Rules (RAR) in Scotland that relate to current cost depreciation and MEAV are consistent with the equivalent Regulatory Accounting Guidelines issued by

Ofwat. These include the following (in section 1.9.4) for which the interpretation of the words "system" and "plant" are critical:

"MEAVs of the existing system in use, estimated on a plant-by-plant basis may seem an overestimate in that, starting from scratch, the system would probably be designed quite differently for example, with fewer, larger plant."

We have interpreted this requirement as if "system" refers to our raw water resources and distribution networks, and "plant" refers to both the site and the units within each site. Thus our methodology does not rationalise sites at all.

Section 1.9.4 continues

"However, except where there is a clear definition to redesign and rebuild the system in 'optimum' configuration, the MEAVs should be based on the actual system."

This requirement drives our methodology to site-level replacement only for assets that are clearly scheduled for complete replacement in our business plans. It supports the unit-level costing of assets on sites that are not being redesigned and rebuilt.

3. Practicalities
Valuing our assets without site- or unit-level rationalisation provides for a simple and practical method, although it involves processing high volumes of data. Modern equivalent units are costed; these costs are then applied to units that are deemed not to be modern. The condition and performance grades of the existing assets are then directly applied to the modern equivalents. Where the existing unit is deemed to be modern then the EARC (which is the same as the MEAV in this case) is applied.

4. Alignment with other UK water companies
Our methodology ensures that we are not out of step with the other UK water companies although, we believe, there may not be unanimous agreement between those companies.

Application of MEAV methodology

The application of the MEAV methodology differs for infrastructure and non infrastructure assets.

Infrastructure assets account for 83% of the total Gross MEAV. With the exception of dams and reservoirs, raw water intakes, outfalls, communication pipes and water meters, we have valued all infra-structure assets using per km rates differentiated by diameter, surface type, and infrastructure type (mains, sewer and rising mains).

Non-infrastructure assets account for 17% of the final gross MEAV. We have valued the majority of non-infrastructure assets by assessing the replacement asset at unit level (i.e. each component) and building up the value of the site based on the sum of the components. For some components, our cost curves have been derived based on a process stage and we have therefore derived a value for a set of components. For example, our cost curve for rapid gravity filters is based on the costs of filtration stages at water treatment works, rather than the cost of an individual filter. We have therefore valued the bank of filters at each works, rather than each filter.

Unit level or process level cost curves have been applied to all existing operational units. This is true even where recently completed (and thus modern) assets have accurate costs available at unit level for a specific site. This approach has been taken for two reasons:

- in general, we have no reason to believe that the cost of construction of a specific asset accurately reflects the central estimate of the cost of uniquely rebuilding the asset again in the future, due to a number of project specific factors (e.g. the contractor's efficiency, the weather, the possibility of programme-level costs or savings not applicable to a single project); and
- to use actual costs for modern assets precludes the use of those costs in deriving the cost curves to be applied to outdated (or modern with missing cost data) assets; this will degrade the accuracy of the cost curves to be applied to the majority of the units thus degrading the quality of the overall MEAV.

The primary source of the asset data used has been Scottish Water's asset inventory systems, primarily Ellipse and GIS. This has been supplemented by gap filling procedures where additional data is required. For example, if the capacity of each of the six individual filters on a works is not known, we infer the capacity of each filter to be one sixth of the works' capacity.

Inventory improvements during 2007/08

During the report year, we completed our programme of site surveys at unit level. The table below presents the number of Scottish Water operational functions that have been surveyed.

	Function Type								
	GWS Ground water source	RWP Raw water pumping	SDN Secondary dis-infection	SPS Sewage pumping station	STC Sludge treatment centre	STW Sewage treatment works	TWP Treated water pumping	TWS Treated water storage	WTW Water treatment works
Surveyed in 2005/06	**13**	**11**	**0**	**66**	**0**	**88**	**38**	**12**	**210**
Surveyed in 2007	**66**	**48**	**179**	**1736**	**21**	**812**	**438**	**1437**	**71**
Total surveyed	**79**	**59**	**179**	**1802**	**21**	**900**	**476**	**1449**	**281**

Scottish Water surveyed operational functions (2007)

We gathered information about each unit at each works, including:

- Unit type or description
- Number of each Unit
- Unit Tag Number(s)
- Operational status
- Year of construction or installation
- Year of decommissioning (if appropriate)
- Date of last major refurbishment and extent of refurbishment
- Condition and Performance grade (Buildings and Civil)
- Condition and Performance grade (Electrical & Mechanical)
- Reason for condition grades
- Reason for performance grades
- Confidence grades – (e.g. whether information was directly surveyed (A1) or advised by a knowledgeable local operator (C2))
- Operational observations
- Health and safety observations

In addition, we gathered evidence to support and validate the findings of the surveys and included video recording and photographs of the following:

- Location / Function entrance
- Panoramic views of the complete location
- A photograph or video sequence depicting each process stage
- Photographs that support the description of specific defects or grade assessments
- Photographs highlighting Health & Safety concerns

Asset surveys comprised a visual inspection of the assets only; no equipment was opened, altered or interfered with in any way and confined spaces were not entered (for Health and Safety reasons). The following units were omitted from the survey:

- Washwater and service water pumps;
- Recirculation pumps at biofilters;
- Lfting equipment.

The surveys did not capture information below unit level (e.g. information about individual pieces of equipment, such as pump motors, valves or actuators).

Table H1 Summary

Comparison of gross valuations for 2006/07 and 2007/08

		2006/07		2007/08		Change in gross value 06/07 - 07/08	
Line ref.	Asset type	Gross value £m	Gross value £m less redundant and decom-missioned	Gross value £m	% of gross value	£m	%
H1.1	Water treatment works	2,349.01	1,870.85	1,870.39	5.2%	-0.46	0%
H1.2	Water storage	985.16	754.06	938.67	2.6%	184.62	24%
H1.3	Water pumping stations	219.51	171.47	219.85	0.6%	48.37	28%
H1.4	Water resources	4,697.54	3,520.71	2,476.23	6.8%	-1,044.49	-30%
H1.5	Water mains	8,129.03	8,129.03	9,080.16	25.1%	951.14	12%
H1.6	Sewers	11,323.80	11,323.80	18,017.55	49.7%	6,693.75	59%
H1.7	Sewer structures	538.77	538.77	363.19	1.0%	-175.59	-33%
H1.8	Sea outfalls	398.29	398.29	311.85	0.9%	-86.44	-22%
H1.9	Sewage pumping stations	295.07	289.35	730.34	2.0%	440.99	152%
H1.10	Sewage treatment works	1,175.43	1,031.55	1,992.68	5.5%	961.13	93%
H1.11	Sludge treatment facilities	159.21	125.99	61.19	0.2%	-64.79	-51%
H1.12	Support services	191.79	188.54	183.93	0.5%	-4.61	-2%
	Total	**30,462.60**	**28,342.41**	**36,246.02**	**100.0%**	**7,903.62**	**28%**

The Gross Valuation in 2006/7 was reported at £30.5 billion. This included valuations for our decommissioned and redundant assets. In this year's report we have excluded these assets from our valuations and only valued operational assets.

Our reported valuation this year is £36.2 billion, a rise of 28%, £7.90 billion from the valuation last year excluding the decommissioned and redundant assets.

The changes which incorporate a variance of +/- £200m or +/- 30% in any one asset category are summarised in the table below. The reasons for each of these changes are set out in the paragraphs that follow.

Asset category	Change (£m)	Change (%)
Water resources	-£1,044	-30%
Water mains	+£951	+12%
Sewers	+£6,694	+59%
Sewer structures	-£176	-33%
Sewage pumping stations	+£441	+152%
Sewage treatment works	+£961	+93%
Sludge treatment facilities	-£65	-51%
Other	+142	-
Total	**+£7,904**	**+28%**

Water resources (-£1,044m; -30%)

We have reduced the valuation of our water resources assets by 30%. This arises almost entirely from the revaluation of our dams and impounding reservoirs as part of the MEAV project performed by Jacobs. Jacobs undertook a site by site desktop reassessment of the valuation of each asset, determining the principal quantities of each dam using record drawings as far as practicable. The previous EARC methodology had been simplistic and valued assets as a function of their yield (Ml/d) rather than the capacity and construction at the site. Over 75% of our dams and impounding reservoirs are in yield band 0 (< 10 Ml/d) and Jacobs identified that many of these are simple break tanks within the raw water systems. Jacobs applied a reduction in valuation of -47% to these very small assets, which accounts for the bulk of the overall reduction in the valuation of this asset category.

Water mains (+£951m; +12%)

The valuation of our water mains has increased by 12% in the report year. There was a negligible change (-55km) in the total inventory of water mains, as reported in Table D5. The increase in valuation has arisen principally through:

- Increase in on-costs included in our costings for installing water mains from 69.5% to 77.9%, consistent with our EES data (+8.4%)
- Increase in COPI (from 158 to 161) (+1.9%)
- Refinement of cost curves with additional data points and other minor changes (+1.7%)

The MEAV for water mains includes an immaterial sum for water meters (£42m) but the valuation for these assets has reduced markedly in the report year (-62%). Our previous EARC valuation applied a single value (£1,004) to each meter. Our MEAV methodology differentiates meters by size. Most of our meters are small diameter and our cost curves show a 20mm meter to be valued at £361.

Sewers (+£6,694m; +59%)

The valuation of our sewers has increased significantly and this accounts for the bulk of the increase in our overall MEAV for the report year.

The components of our sewer inventory and their valuations are shown below.

Sewer asset category	2006/07 gross value £m (EARC)	2007/08 gross value £m (MEAV)	Change (£m)	Change (%)
Critical sewers	£4,479.47	£7,207.54	+£2,728.07	+61%
Non-critical sewers	£6,675.62	£10,621.25	+£3,945.63	+59%
Sewage and sludge pumping mains	£168.71	£188.76	+£20.05	+12%
Total	**£11,323.80**	**£18,017.55**	**+£6,693.75**	**+59%**

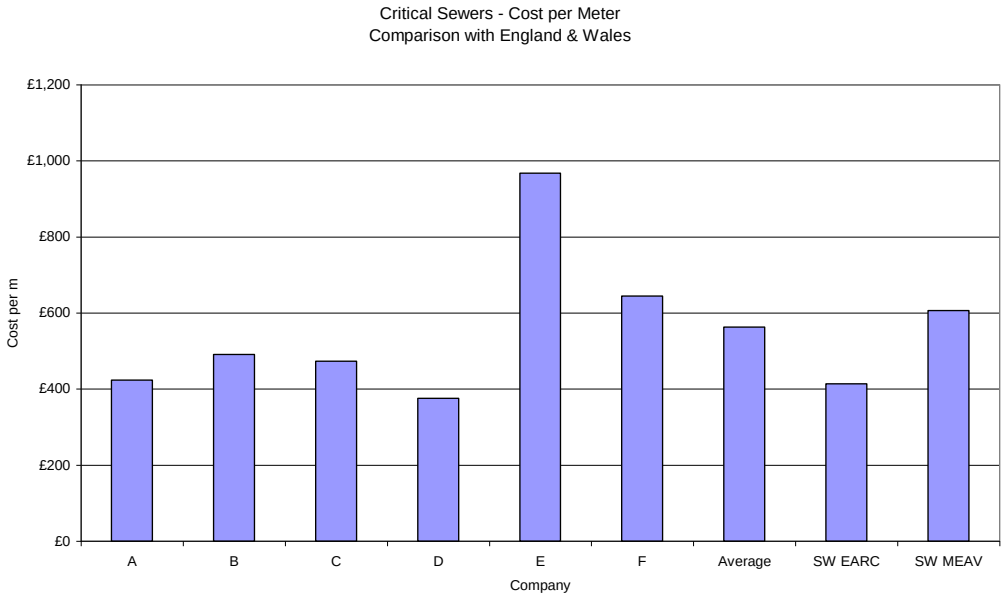
The increase in valuation arises from the analysis undertaken by Jacobs for our 2007 MEAV project. There are two principal changes that have been adopted: (a) assumptions of sewer depth; and (b) cost curves.

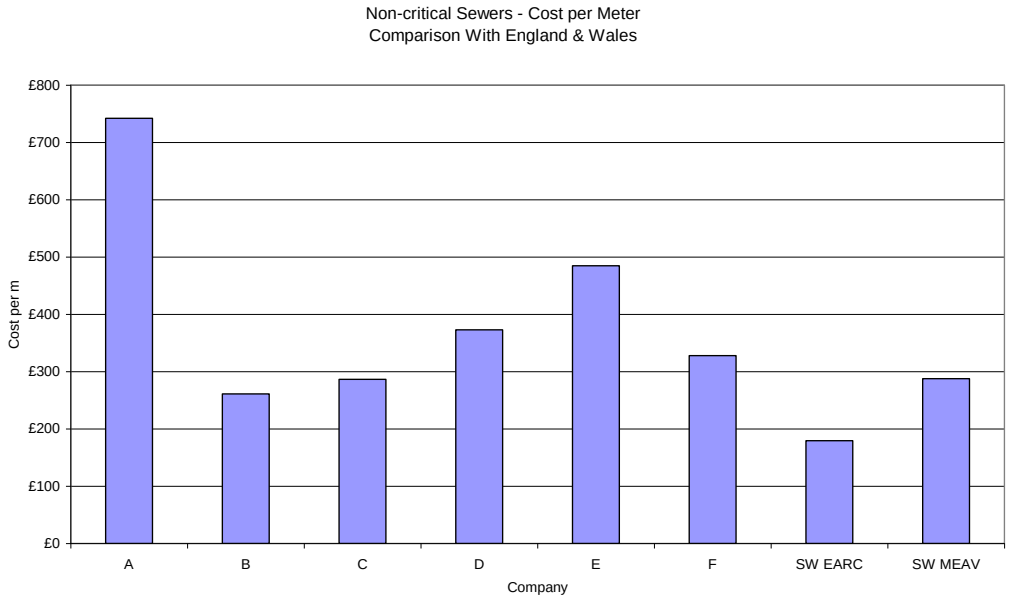
Assumptions of sewer depth
Our previous EARC methodology had applied some simple engineering assumptions to allow the valuation of sewers for which we did not know the depth. We assumed that all sewers were at 1.9m depth, unless we had depth data to the contrary.

Jacobs concluded that this assumption was unrealistic, especially for critical sewers. Instead, Jacobs developed a methodology that assigned sewers to depths in proportion to the depths of those sewers for which we do have robust depth data. Moreover, we now have data from Drainage Area Study manhole surveys which specify the depths of sewers at manholes, allowing us to increase the proportion of sewers with known depths.

Cost curves
Moreover, Jacobs adopted new cost curves for critical and non-critical sewers from our Engineering Estimating System (EES). As a result, sewers of previously known depth increased in value by approximately 40%; sewers with previously unknown depth increased in value by approximately 76%.

The increased valuations implicit in the sewer cost curves are therefore critical to the overall valuation of this very large component of the overall MEAV. We therefore asked Jacobs to compare the valuations of our sewers with other UK water companies. The two graphs below are extracted from Jacobs' report to us and show the results of these comparisons.





For critical sewers, Scottish Water's MEAV costs are the third highest of the seven data sets available and close to the average. For non-critical sewers, Scottish Water's MEAV costs lie very close to the average.

The graphs above are drawn from Jacobs report of December 2007, based on the AR07 asset inventory and valuations at Q1 2007 prices. The total valuation of sewers in that report was £17,451.08m. Our MEAV valuation reported here for 2007/08 (the report year) is £17,965.53m, an increase of 3%, consistent with changes to our reported asset stock over the report year and with COPI inflation.

Jacobs reviewed the EES cost curves. For non-critical sewers, Jacobs noted: *"Non-critical sewers are generally less than 600mm [diameter] and we have no real concerns about the EES cost curves at these diameters……"* For critical sewers, Jacobs noted that half of the sewers have depths between 2m and 4m and that *"…the EES cost curves for sewers of 2-4m depth have over 200 data points between them and these have been used to develop robust cost curves reflecting Scottish Water costs. Jacobs have no reason to doubt the validity of these and consider this a sound basis for valuation, even though they are higher than the Ofwat cost base."*

We conclude that our previous EARC valuation materially undervalued our sewers by (a) undervalued cost curves; and (b) erroneous allocation of sewers of unknown depth to a depth of 1.9m, when a more appropriate allocation is pro rata to the known depths of other sewers.

Update:

Our initial submission (June 2008) omitted the valuation of sewer pumping mains laid in grassland, thereby undervaluing the assets by approximately £52m. We have corrected that omission in the September 2008 resubmission of the tables.

Sewer structures (-£176m; -33%)

The Jacobs MEAV project largely substantiated our costings of sewer structures, concluding that a 5% reduction in costs would be appropriate. However, during the report year (and hence not included in the Jacobs report) we have reviewed our inventory and identified a net reduction of 800 combined sewer and emergency overflows. In previous years we have applied an off-inventory adjustment to reflect our uncertainty about the completeness of the inventory. However, as our confidence grows in our inventory, through asset surveys and improved business processes, we have been able to cease this process and rely on our corporate systems alone for inventory data.

Sewage pumping stations (+£441m; +152%)

This asset category shows the highest proportionate increase in value in the report year. We conclude from the Jacobs report that our previous EARC methodology materially undervalued these assets. The principal undervaluations arose in:

- Sewage pumping (+£212m)
  Jacobs reported noted: "*A significant factor in the increase of the MEAV over the EARC…is sewerage pumping. To validate the EES cost curve values used for the MEAV, a comparison was made to valuations for sewage pumping using TR61 cost models and a high level of consistency was demonstrated. Therefore we conclude that the EARC valuation was understated."*

- Process buildings (+£58m)
  Jacobs reported noted: "…w*hen looking at the sewerage service overall, the MEAV valuation, where dimensions are available on Ellipse (211 assets) is £75m, compared with the EARC of £15m, an increase of £60m (400%). This implies that the EARC was an undervaluation as the MEAV is based on the actual floor area and EES Cost Curve. Where the infill procedure has been used, the MEAV of £137m has increased by £107m from the EARC of £30m, over 350%, but in line with the increase where dimensions are available."*

- Storm water tanks (+£30m)
  The previous EARC methodology made no attempt to value the individual tanks at each sewage pumping station. Instead it assumed a generic proportion of costs for

storm water tanks. Jacobs reported: *"Almost all the [MEAV] valuation has been based on Jacobs infill methodology, using the conversion factor as described in the Technical Approach. When compared to the EARC at unit level, the MEAV shows far more consistency with the size of the works which is as one would expect."*

- Power (-£26m)
  Likewise, our EARC methodology had assumed a generic proportional cost for power supply to every pumping station. Jacobs' methodology applied a specific cost dependent on the site specific arrangements, resulting in a reduction of £26m in the valuation of power supply equipment at sewage pumping stations.

Sewage treatment works (+£961m; +93%)

The increases in the valuations of the sewage treatment works arise from increases in the valuations of a number of components, including sewage pumping and process buildings which, together, account for about half of the increase in valuation. We describe the reasons for the increases in those components under 'sewage pumping stations' above.

In addition, Jacobs identified a significant undervaluation of rotating biological contactors. We had had no cost curve previously for these assets and Jacobs applied the membrane filters cost curve as an approximation which their process specialists deemed to be appropriate. The resulting costs were an order of magnitude higher than the previous EARC values.

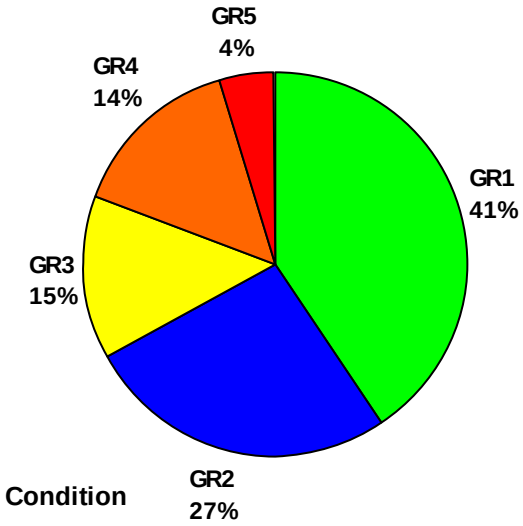
Since Jacobs concluded their work, we have continued to refine our cost curves and some have changed materially. In particular, the cost curve for septic tanks now has more data points and the revised curve has led to an additional £63m on the MEAV valuation above that identified by Jacobs.

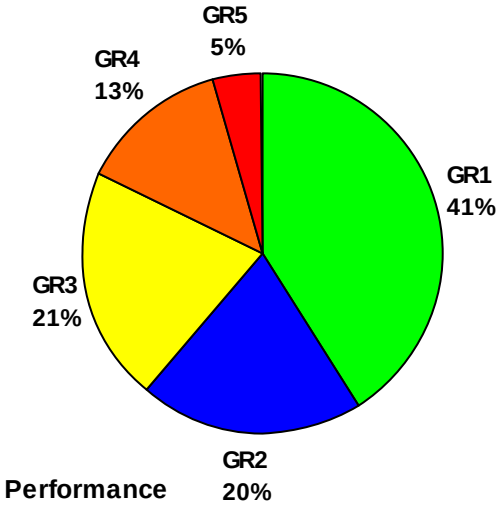
Sludge treatment facilities (-£65m; -51%)

Jacobs identified a number of components within sludge treatment facilities for which the assumed EARC costs were unreasonably high and which have been reduced materially for MEAV. In particular, sludge pressing valuations have reduced by over £30m. The valuation of sludge tanks has reduced by £19m. Jacobs noted that comparison with England & Wales is difficult because of the limited number of sludge treatment centres and the large variety of disposal types but confirmed that the MEAV is more in line with current practice than the EARC valuations we had used previously.

Value by condition and performance grade

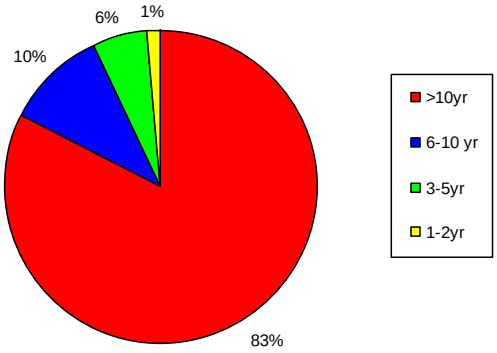
The pie charts below show the proportion of the gross valuation of the assets by condition and performance grade. The proportion that is in the poorest grades, 4 and 5, is 18% by condition grade and 18% by performance grade.





Summary of Gross MEAV by replacement period

Replacement Period	Gross Valuation (£m)
>10yr	£29,869.60
6-10yr	£3,752.31
3-5yr	£2,047.24
1-2yr	£460.65
Total	£36,129.80



In the table above, the gross valuation has been quoted at £116.22 million less than the total gross MEAV of £36,246.02 reported in Table H1. Lines H3.8 of table H3 (water meters) and lines H6.4 – H6.7 of table H6 (support services) do not have cells to report the asset condition and performance by gross MEAV and these assets are excluded from the reports by replacement period. The format of the tables therefore requires that there is a difference in the total valuations. The difference is reconciled in the table below.

Assets	Line ref.	Gross Valuation (£m)
Assets valued by replacement period	(As above)	£36,129.80
Water meters	H3.8	£41.93
Vehicles and plant	H6.4	£31.29
Telemetry systems	H6.5	£17.29
Information systems	H6.6	£11.59
Other non-operational assets	H6.7	£14.12
Total	H1.1 – H1.12	£36,246.02

Changes in Confidence grades

On line H1.5, of section 1 and 2 there has been a reported increase in CG from C4 to B4. The data used to generate cost functions for water mains is based on up to date data and the improvement in the grade reflects our use of our corporate EES system for valuation.

On lines H1.1 – 1.12, of section 4 and 5 there has been a reported increase in CG from D6 to C5. The increase in CG reflects the change in the methodology for the calculation of replacement period which produces more realistic values compared to our previous methodology.

Table H2 Water Non Infrastructure

H2.1-8 Water Treatment Works

The total number of Water Treatment Works in this reporting year is 298. This is an overall reduction of 236 from the 534 reported in 2006/07. To clarify the position with operational assets, as distinct from the change in our methodology to exclude redundant and decommissioned assets, we summarise below the net reduction in the number of operational works:

Status	2005/06	2006/07	2007/08	Change
Operational	316	305	297	-8
Emergency	3	1	1	0
Work In Progress	4	1	0	-1
Total	323	307	298	-9

In this financial year we have abandoned 16 and commissioned a further 7 water treatment works, one of which includes the new Milngavie Water Treatment Works.

Condition and Performance

The tables below show that the overall percentage of total gross value being banded in condition grades 4 and 5 has reduced while the value banded in performance grades 4 and 5 has increased since 2006/07.

Condition percentage and value in Grade 4 & 5 Grade 4 & 5

2005/06	2006/07	2007/8	Change
£150.3m	£144.6m	£106.7m	-£37.9m
8%	6%	6%	-0.5%

Performance percentage and value in

2005/06	2006/07	2007/8	Change
£212.9m	£160.7m	£138.3m	-£22.4m
11%	7%	7%	0.6%

Changes in confidence grades

On line H2.7, of section 0, there has been a reported increase in CG from B4 to B2. This is due to the improvement in the coverage of our knowledge of design capacities of our water treatment works through the complication of our site surveys programme.

H2.9-10 Water Storage

The total number of Water Storage assets, in this reporting year, is 1458. This is an overall reduction of 639 from the 2097 reported in 2006/07. To clarify the position with operational assets, as distinct from the change in our methodology to exclude redundant and decommissioned assets, we summarise below the net reduction in the number of operational water storage assets:

Status	2005/6	2006/7	2007/8	Change
Operational	1555	1519	1444	-75
Out of service	32	9	11	2
Emergency	4	1	1	0
Work In Progress	2	1	2	1
Total	1593	1530	1458	-72

The number of operational water storage assets has reduced significantly following a review of our Regulatory water quality sampling programme. We have identified and removed a number of assets that had been recorded as a separate asset but which, following investigation, the operator confirmed to be a separate compartment within an asset already on the register.

Update:

Our initial submission incorrectly reported the asset banding in section 0 “summary of asset stock” of line H2.9. Although the total has not changed we have corrected the numbers reported in each band in the resubmitted tables. This error does not affect other sections of this line.

Asset valuation

The asset valuation for water storage for the reporting year has fallen from £985.2 million to £938.7 million, a reduction of 5% from the previous year. Although there has been a 5% reduction in the valuation, the decrease by 639 assets means that the unit valuation of the operational assets has increased marginally.

Condition and Performance

The tables below show that the overall percentage of total gross value being banded in condition and performance grades 4 & 5 has not increased significantly since 2006/07.

Condition percentage and value in Grade 4 &5 Grade 4 & 5

2005/06	2006/07	2007/08	Change
£77.7m	£33.4m	£34.8m	£1.4m
8%	3%	4%	0.3%

Performance percentage and value in

2005/06	2006/07	2007/08	Change
£66.4m	£35.9m	£37.1m	£1.2m
7%	4%	4%	0.3%

Changes in confidence grades

On line H2.9, of section 0, there has been a reported increase in CG from B3 to B2. This is due to the improvement in the coverage of our knowledge of design capacities of our water storage assets through the completion of our site surveys programme.

H2.11-23 Water pumping stations

The total number of Water Pumping stations in this reporting year is 663. This is an overall reduction of 358 from the 1021 reported in 2006/07. To clarify the position with operational assets, as distinct from the change in our methodology to exclude redundant and decommissioned assets, we summarise below the net reduction in the number of operational water pumping stations:

Status	2005/6	2006/7	2007/8	Change
Operational	647	640	636	-4
Out of service	7	8	8	0
Emergency	28	19	18	-1
Work In Progress	2	2	1	-1
Total	684	669	663	-6

Asset valuation

The asset valuation for the reporting year has risen slightly from £219.5 million to £219.8 million from the previous year. Although there has only been a very small rise in the valuation, the reduction of 358 assets means that the unit valuation per asset has increased. We believe that the EARC was under estimating the value of our Water Pumping stations as the MEAV is valuing assets at a more detailed level.

Condition and Performance

The tables below show that the overall percentage of total gross value being banded in condition and performance grades 4 & 5 has reduced since 2006/07. With the completion our of programme of site surveys at unit level, more up to date data has reduced the percentages of assets in condition and performance grade 4 & 5.

Condition percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£25.5m	£14.8m	£7.5m	-£7.3m
10%	7%	3%	-3.3%

Performance percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£31.1m	£16.3m	£12.6m	-£3.7m
12%	7%	6%	-1.7%

Changes in confidence grades

On line H2.11, of section 0, there has been a reported increase in CG from B4 to B3. This is due to the improvement in the coverage of our knowledge of design capacities of our water pumping stations through the completion of our site surveys programme.

Table H3 Water Infrastructure

H3.1 Water Resources - Dams & Impounding Reservoirs

The total number of Dams & Impounding Reservoirs in this reporting year is 246. This is an overall reduction of 114 from the 360 reported in 2006/07. This reduction is because we are now only reporting operational Dams & impounding reservoirs.

Condition and Performance

The tables below show that the overall percentage of total gross value being banded in condition and performance grades 4 & 5 has increased since 2006/07. The significant movement in the percentages in Condition and Performance grades 4 & 5 is due to a reassessment of the data on condition. The change in the valuation method has meant that the valuation is produced at a principal quantities level and summated to a site level. This method of valuation has meant that the data on condition and performance needed to be summarised to this level. We averaged the condition and performance data for each unit on a site to produce a combined condition and performance grade for each site. This has caused the increase in the percentage of assets in condition and performance grades 4 & 5.

Condition percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£329.9	£338.7m	£109.8m	-£228.9m
10%	10%	8%	-2%

Performance Percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£125.1m	£115.5m	£97.1m	-£18.4m
4%	3%	7%	4%

Change in Confidence grades

On line H3.1, of section 1, there has been a reported increase in CG from C5 to C4. This is due to the change to the methodology which has improved the accuracy of the valuations of the Dams & impounding reservoirs, but takes into consideration the use of historic information in our assessment.

H3.2 Water Resources – Raw Water Intakes

The total number of raw water intakes in this reporting year is 369. This is an overall reduction of 256 from the 625 reported in 2006/07. This reduction is because we are now only reporting operational raw water intakes.

Asset valuation

The asset valuation for the reporting year has fallen significantly from £122.2 million to £22.9 million, a decrease of 81% from the previous year. The net change in the operational asset valuation has decreased by £42.1 million from the £65.0 million reported previously. The fall in the valuation of operational raw water intakes is due to the change to the valuation methodology.

For the MEAV methodology, costs have been determined for a representative set of modern equivalent assets. The costs have been developed by Berkeley Consultants who have estimated the structure cost on the basis of labour, plant and materials only. Included in the cost of the intake are concrete costs of the weir and the intake chamber, as well as all screens and valves and contractors preliminaries. These costs are for typical assets and the yields covered by the set correspond to the range of yields in the asset inventory. Costs for modern equivalent assets have been plotted on a graph against yield. A best fit line has been

added using regression. The equation describing this line has been determined and the final costs are determined by applying the equation of the cost curve to the asset inventory. The yield is used as the yardstick and this is infilled where it is unknown.

Condition and Performance

The tables below show that the overall percentage of total gross value being banded in condition and performance grades 4 & 5 has increased since 2006/07. The significant increase in the percentage in Condition grades 4 & 5 is due to a reassessment of the data on condition, similar to the change explained for dams & impounding reservoirs. Like the dams & impounding reservoirs, the change in the valuation method has meant that the valuation is produced at a principal quantities level and summated to a site level. This method of valuation has meant that the data on condition and performance needed to be summarised to this level. We averaged the condition and performance data for each unit on a site to produce a combined condition & performance grade for each site. This has caused the increase in the percentage of assets in condition and performance grades 4 & 5.

Condition percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£7.8m	£9.9m	£4.8m	-£5.1m
6%	8%	21%	13%

Performance Percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£6.9m	£9.1m	£3.6	-£5.5m
6%	7%	16%	8%

H3.3 Water Resources – Raw Water Aqueducts

The total length of Raw Water Aqueducts in this report year is 1,780km. This is a reduction from the 1,832km in 2006/07. This 3% reduction arises principally from records being updated as part of ongoing maintenance of the GIS system.

Asset valuation

The asset valuation for the report year has decreased from £1,225 million to £1,112 million. This decrease can be explained by the change in valuation methodology and the reduction in the reported total length of Raw Water Aqueducts.

Condition and Performance

The tables below show that the overall percentage of total gross value being banded in condition and performance grades 4 & 5 has reduced significantly since 2006/07. This reduction results principally from the change to the methodology for the calculation of residual life. The asset condition grading has been revised such that pipes with no residual life assessments are condition graded 5, those with life under ten years, grade 4, 10-25 years Grade 3; 26-40 years grade 2 and others grade 1.

Condition percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£585.9m	£476.1m	£229m	-£247.1m
50%	39%	21%	-18%

Performance percentage and value in Grade 4 & 5

2005/06	2006/07	2007/8	Change
£429.9m	£458.2m	£178.4m	-£279.8m
37%	37%	16%	-21%

Changes in Confidence grades

On line H3.3, of section 0, there has been a reported increase in CG from B3 to B2. This increase is due to the reduction in the use of infilled information. The use of historic information still limits this grade to a B category.

Furthermore, in Section 1, there has been a reported increase in CG from C4 to B4. This increase is due to the use of more up to date cost functions combined with improved asset data in the production of the asset valuations.

H3.4 Water Mains – Mains Potable

The total length of potable mains in the report year is 47,163km. This is a decrease from 47,218km in 2006/07. This slight reduction is principally due to records being updated as part of ongoing maintenance of the GIS system.

Condition and Performance

The tables below show that the overall percentage of total gross value being banded in condition and performance grades 4 & 5 has reduced since 2006/07. This reduction results principally from the change to the methodology for the calculation of residual life. The asset condition grading has been revised such that pipes with no residual life assessments are condition graded 5, those with life under ten years, grade 4, 10-25 years Grade 3; 26-40 years grade 2 and other s grade 1.

Condition percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£2,320.8m	£1,934.5m	£1,130.0m	-£804.5m
34%	27%	14%	-13%

Performance percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£1,222m	£1,316.8m	£1,305.1m	-£11.7m
18%	18%	16%	-2.3%

Change in Confidence grades

On line H3.4, of section 1, there has been a reported decrease in CG from B3 to B4. This reduction is due to the use of historic information within the cost functions.

H3.5 Mains other

Asset Stock

The total length of other mains in the report year is 148.2km. This is an increase of 8.9km from the 139.3km in 2006/07.

Condition and Performance

The tables below show that the overall percentage of total gross value banded in condition and performance grades 4 & 5 has reduced since 2006/07.

Condition Percentage and value in Grade 4 & 5

2005/6	2006/7	2007/8	Change
£4.5m	£4.2m	£4.3m	£0.1m
37%	25%	24%	-1%

Performance Percentage and value in Grade 4 & 5

2005/6	2006/7	2007/08	Change
£6.1m	£6.4m	£6.2m	-£0.2m
36%	37%	34%	-3%

Change in Confidence grades

On line H3.5, of section 0, there has been a reported increase in CG from B4 to B3. This increase is due to the reduction in the use of infilled information. The use of historic information still limits this grade to a B category.

Furthermore, in Section 1, there has been a reported decrease in CG from B3 to B4. This reduction is due to the use of historic information within our cost functions.

H3.6 Communications Pipes (Lead)

Asset Stock

The total number of lead communications pipes in the report year is 789,468. This is an increase of 9417 from 2006/07. This 1% rise is due to: (a) the updating of the communications pipe inventory to the more recent address point data and age basis for housing stock; (b) the effect of lead surveys (i.e. physical site inspections) which have also reduced the inventory; and (c) our lead replacement scheme, which has replaced customers' lead communications pipes at their request.

Asset valuation

The asset valuation for the report year has increased from £330.6 million to £331.4 million. This rise is explained by the rise in the number of lead communication pipes but offset with the use of more up to date cost functions.

Condition and Performance

It can be seen from the tables below that we continue to consider all lead communications pipes to be in condition grade 4 or 5 (because they should be replaced).

Condition percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£387.4m	£330.7m	£331.4	£0.7m
100%	100%	100%	0%

Performance percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£2.4m	£12.7m	£13.7m	£1m
1%	4%	4%	0.1%

Changes in confidence grades

On line H3.6, of section 1, there has been a reported increase in CG from C5 to C4. This increase is due to a slight reduction in the use of historic information. Although there is a slight reduction, the cost function is predominantly based on historic information which still limits this grade to a C category.

H3.7 Communications Pipes (other)

The total number of other communications pipes (i.e. not lead) in the report year is 1,079,749. This is an increase of 73,708 from the 1,006,041 in the previous reporting year. This 7% increase is mainly the consequence of the more up-to-date address point data.

Asset valuation

The asset valuation for the report year has increased from £426.1 million to £453.2 million. This 6% increase results from the increase in the reported number of other communications pipes, together with the change in the valuation methodology.

Condition and Performance

The tables below show that the overall percentage of total gross value banded in condition and performance grades 4 & 5 has reduced by 1% since 2006/07 based on condition grade but increased by 3.4% based on performance grade.

Condition percentage and value in Grade 4 & 5

20050/6	2006/07	2007/08	Change
£60.2m	£50.4m	£49.2	-£1.2m
18%	12%	11%	-1%

Performance percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£52.9m	£34.8m	£52.3m	-£17.5m
16%	8%	12%	3.4%

Changes in confidence grades

On line H3.7, of section 1, there has been a reported increase in CG from C5 to C4. This increase is due to a slight reduction in the use of historic information. Although there is a slight reduction, the cost function is predominantly based on historic information which still limits this grade to a C category.

H3.8 Water Meters

The total number of water meters in this reporting year is 111,063. This is an increase of 508 from the 110,555 in the previous reporting year. This slight increase is mostly due to the programme of meter installation for non-household properties.

The installation of meters for non-household premises that were previously unmetered is greatly offset by our removal from our inventory of many 'not billed' meters, as reported in our commentary to Table P. For the report year, we removed all of the 'billed no charge meters' as they do not generate any revenue and cause the calculation of revenue to be erroneous. Of the total reduction in the meter profile, 2,254 are accounted for by this reason.

Changes in confidence grades

On line H3.8, of section 1, there has been a reported increase in CG from C5 to B4. This increase is due to a reduction in the use of historic information.

Table H4 Wastewater Infrastructure

H4.1 Sewers – Critical Sewers

The total length of Critical Sewers in the report year is 11,456km, an increase of 619km from the reported length in 2006/07. The increase has been caused by the reclassification of non-critical sewers to critical sewers, largely resulting from improvement in data from drainage area studies giving better information about sewer depths.

Condition and Performance

The tables below show that the overall percentage of total gross value being banded in condition and performance grades 4 & 5 has increased since 2006/07. Further information from our CCTV surveys has caused this increase.

Condition percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£395.7m	£393.5m	£1,029.2m	£635.7m
9%	9%	14%	5.5%

Performance percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£590.1m	£705.7m	£1,319m	£613.3m
14%	16%	18%	2.5%

Change in Confidence grades

On line H4.1, of section 1, there has been a reported increase in CG from C5 to B4. This increase is due to a reduction in the use of historic information in the production of the cost functions used to value the assets.

H4.2 Sewers – Non Critical Sewers

The total length of Non Critical Sewers in the report year is 37,359km, an increase of 73km from the 37,286km in 2006/07. This 0.2% increase can be explained by the improvement in data from drainage area studies, which significantly increased the total reported length of sewer, offset by the [575]km of sewers that have been classified from non-critical to critical sewers.

Condition and Performance

The tables below show that the overall percentage of total gross value being banded in condition and performance grades 4 & 5 has increased since 2006/07, because of the improved information we have from CCTV surveys and drainage area studies.

Condition percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£1,387.1m	£1,412.9m	£3,014.3m	£1,601.4m
22%	21%	28%	7.2%

Performance percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£1,273.7m	£1,384.1m	£2,739.9m	£1,355.8m
20%	21%	26%	5.1%

H4.3 Sewers – Sewage and sludge pumping mains

The total length of sewage and sludge pumping mains in the report year is 948km, an increase from the 944km in 2006/07. This 0.4% increase results from the addition to our inventory of information from new site developments, as well as other infrastructure inventory data improvements.

Condition and Performance

The tables below show that the overall percentage of total gross value banded in condition and performance grades 4 & 5.

Condition percentage and value in Grade 4 & 5
Grade 4 & 5

2005/06	2006/07	2007/08	Change
£117.4m	£123.1m	£127.8m	£4.7m
77%	73%	68%	-5%

Performance percentage and value in

2005/06	2006/07	2007/08	Change
£22.4m	£26.6m	£31.3m	£4.7m
15%	16%	17%	1%

Changes in Confidence grades

On line H4.3, of section 0, there has been a reported reduction in CG from A2 to B4. This reduction is due to the increase use of infilled information.

Furthermore, in Section 1, there has been a reported increase in CG from C5 to B4. This increase is due to the use of a more up to date cost function combined with suitable asset data.

H4.4 -5 Sewer Structures

The number of combined sewer and emergency overflows in the report year is 4,303, a net reduction of 800 from 2006/07. This reduction is due to the removal of off inventory assets that had been recorded in previous submissions. The number of other sewer structures is 312, unchanged from 2006/07.

Asset valuation

The asset valuation for the reporting year has decreased from £538.8 million to £363.2 million. This 33% decrease is primarily due to the change in the valuation methodology and the reduction in the number of combined sewer and emergency overflows.

Condition and Performance

The tables below show that the overall percentage of total gross value banded in condition and performance grades 4 & 5 has increased by 0.4% since 2006/07 based on condition grade but reduced by 3.2% based on performance grade.

Condition percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£59.1m	£60.1m	£42.1m	-£18.0m
13%	11%	12%	0.4%

Performance percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£136.2m	£164.7m	£99.6m	-£65.1m
30%	31%	27%	-3.2%

Changes in Confidence grades

On line H4.5, of section 0, there has been a reported reduction in CG from C5 to D5. This reduction is due to the fact that the asset data used is based on limited historic information ultimately limiting the overall grade to a D5.

H4.6-7 Sea Outfalls

The number of Sea Outfalls in the report year is 1,419, unchanged from 2006/07. The number of Long Sea Outfalls is 35, unchanged from 2006/07.

Sea outfall type	2005/06	2006/07	2007/08	Change
Short sea outfall [406]	1,503	1,419	1,419	0
Long sea outfall [407]	31	35	35	0
Total	**1,534**	**1,454**	**1,454**	**0**

Update:

In our original submission (June 2008), we incorrectly reported the number of short sea outfalls in section 0 “summary of asset stock” of line H4.6. The total number of assets and numbers in each band has been corrected but the error has not affected other sections of this line.

Asset valuation

The asset valuation for the reporting year has decreased from £398.3 million to £311.9 million. This 22% decrease arises principally from the change in the valuation methodology.

Condition and Performance

The tables below show that the overall percentage of total gross value being banded in condition and performance grades 4 & 5 has increased by 1.9% since 2006/07.

Condition percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£44.2m	£46.2m	£42.0m	-£4.2m
12%	12%	13%	1.9%

Performance percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£44.2m	£46.1m	£42.0m	-£4.1m
12%	12%	13%	1.9%

Table H5 Wastewater Non-Infrastructure

H5.1-2 Sewage Pumping Stations

The total number of sewage pumping stations in this reporting year is 1896. This is an increase of 17 from the 1879 reported in 2006/07. With the change in our methodology not to report redundant and decommissioned assets, the net change in the number of operational pumping stations is summarised below:

Status	2005/06	2006/07	2007/8	Change
Operational	1828	1829	1883	54
Out of service	0	4	6	2
Emergency	0	0	1	1
Work In Progress	2	6	6	0
Total	1830	1839	1896	57

Condition and Performance

The tables below show that the overall percentage of total gross value being banded in condition and performance grades 4 & 5 has increased marginally since 2006/07.

Condition percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£19.4m	£17.6m	£46.6m	£29m
7%	6%	6%	0.4%

Performance percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£27.5m	£24.3m	£72.0	£47.7m
9%	8%	10%	1.7%

Changes in Confidence grades

On line H5.2, of section 0, there has been a reported reduction in CG from B3 to B4. This reduction is due to the increase in the gap of our knowledge on capacities of sewage pumping stations. This gap has increased due to the adoption of sewage pumping stations from private developers that have not supplied information on the capacities of pumps.

H5.3-7 Sewage Treatment Works

Asset Stock

The total number of sewage treatment works in this reporting year is 1870. This is an overall reduction of 147 from the 2017 reported in 2006/07. With the change in our methodology not to report redundant and decommissioned assets, the net reduction in the number of operational pumping stations is summarised below:

Status	2005/6	2006/7	2007/8	Dif +/-
Operational	1860	1848	1863	15
Out of service	0	6	6	0
Work in Progress	0	0	1	1
Total	1860	1854	1870	16

Condition and Performance

The tables below show that the overall percentage of total gross value being banded in condition and performance grades 4 & 5 has reduced by 3% since 2006/07.

Condition percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£145.6m	£98.0m	£100.7m	£2.7m
13%	8%	5%	-3.2%

Performance percentage and value in Grade 4 & 5

2005/6	2006/7	2007/08	Change
£195.9m	£128.8m	£164.5	£35.7m
17%	11%	8%	-2.7%

H5.8-13 Sludge treatment facilities

The total number of sludge treatment facilities in the reporting year is 22, an increase of two sites from 2006/07.

Status	2005/06	2006/07	2007/8	Change
Operational	21	20	22	2
Out of service	0	0	0	0
Emergency	0	0	0	0
Work In Progress	0	0	0	0
Total	21	20	22	2

Condition and Performance

The tables below show that the overall percentage of total gross value banded in condition and performance grades 4 & 5 has reduced by 1% since 2006/07 based on condition grade but increased by 4.7% based on performance grade.

Condition percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£11.3m	£6.8m	£2.0	-£4.8m
7%	4%	3%	-1%

Performance percentage and value in Grade 4 & 5

2005/06	2006/07	2007/08	Change
£10.0m	£6.0m	£5.2m	-£0.8m
6%	4%	8%	4.7%

Table H6 Support Services

H6.1-3 Buildings

There are 19 fewer depots in AR08 due to closures, lease terminations and better data. The lease has been terminated on Pentland Gait, which had a gross MEAV of £6.5m, resulting in 1 fewer office being reported. The number of Control Centres and Laboratories remains unchanged.

Building Type	2006/07	2007/08
Control Centre	1	1
Depot	74	55
Lab	5	5
Offices	11	10

Condition grade has been used to calculate the remaining life of the Non-operational Buildings, which all have a design life of 60 years. The remaining life was then used to calculate the Net MEAV, which overall has increased by £11.3m due to improved condition grade data recorded during building surveys carried out in 2007 and 2008.

Leased assets are not specifically excluded in the H6.1/2/3 line definitions (unlike H6.7). Therefore, to be consistent with last year's return, they have been included here. The following table details them, as some of the individual buildings have a high value.

BuildingName	Area	Building Type	Gross MEAV (£m)	Net MEAV (£m)
Riverside House Office	2130	Office	£6.621	£4.060
Watermark Office	8690	Office	£5.669	£4.573
Torridon House Office	1060	Office	£8.504	£3.570
Juniper House Laboratory	4360	Lab	£8.189	£6.606
Fraserburgh Area Office & Depot	1416	Depot	£0.607	£0.137
Kilmory Depot	1416	Depot	£0.567	£0.238
Gremista Depot	1416	Depot	£0.567	£0.238

Changes in confidence grades

On line H6.1, of section 0, there has been a reported increase in CG from B3 to B2. This increase is due to better information from our building surveys carried out this reporting year.

H6.4 Vehicles & plant

The total number of reported vehicles has increased from 1445 to 1510, resulting in a Gross valuation of £31.289m. New valuations were used for the component assets to reduce the number of values uplifted from the previous year's data.

Net values were calculated based on the age and design life of each vehicle or plant using the same method as AR07.

H6.5 Telemetry systems

3882 Telemetry outstations are reported, covering 3653 sites, which equates to 29.05% coverage of Scottish Water's operational sites. Relative to the previous year's return, this

shows a 1.5% increase in telemetry coverage as a result of new equipment installed during the year.

As no individual telemetry costs were available, gross MEAVs were based on the same standard unit valuation as used in last year's return.

Net MEAVs were based on remaining asset life calculated from a condition grade/remaining life matrix. All telemetry outstations were assigned a short (6-15 year) design life, as recommended in the WICS guidance for this asset type. Last year's return placed them in the very short (<5 year) design life but, despite this reclassification, the overall valuation has not changed considerably.

H6.6 Information systems

719 additional laptops and 13 workstations were reported this year, which increased the Gross MEAV by £1.928m. The Net MEAV has increased by approximately £1m, partly as a result of some assets being allocated a 5 year design life. This lifespan is specified in the reporting guidelines for the very short asset life category and affects the net value calculations. IT assets were allocated a 3 year design life in 2006/07, resulting in those over this age being assigned a zero net value, whereas in the report year, assets with a 5 year design life will still be considered to have a net value if they are over 3 years old.

H6.7 Other Non-Operational Assets

3 fewer houses are reported as being owned by Scottish Water this year and another 1 has been removed as a data error. Details of the 3 asset categories included in this line are detailed in the following table

Type of property	Count	Gross MEAV (£m)	Net MEAV (£m)
Houses	51	£5.304	£1.924
Farms and Grazing land	10	£7.811	£7.811
Sawmills	2	£1.000	£0.500
Total		**£14.115**	**£10.235**

Net MEAVs for houses were calculated from the asset condition and remaining life. 3 houses were classified as condition grade 5 and therefore assigned a nominal land value.

Farm and grazing land values were based on the valuations carried out for AR07.

P Tables - Tariff Basket Information

General Comments

Tariffs
The tariffs reported in this section are taken from the relevant Scheme of Charges. Household tariffs relate to end customers whereas non-household tariffs apply to Licensed Providers.

Trade effluent (wholesale) charges are composed of two parts: (1) Operating – based on the volume and strength of effluent discharged; and (2) Availability – based on the capacity (in terms of volume and BOD and SS loads) the company has been granted in its discharge consent.

The former charging schemes, on which capping is based, were purely based on the operational factors. A reduction in volume and/or change in strengths and/or the availability parameters can mean a customer's charges change from uncapped to capped. Changes in strength and/or availability parameters can lead to similar moves in the capping status.

Revenue
The revenue reported in the P tables is based on income earned in the report year through tariffs, based on the customer base and rateable value at a single point in time. The reported revenue differs, therefore, from the revenue disclosed in the financial tables as this includes the revenue from both in-year billing and prior year accrued revenue.

Voids
There is no change to the way that voids are reported from 2006/07.

Table P1 Water Service – Unmeasured Domestic

The confidence grades in Table P1 have increased from B2 to A2 as a result of the data being sourced from the complete WIC4 report for 2007. Previously this data was estimated based on the WIC4 report for 2004.

P1.1-50 Household Properties - billed unmeasured

Connected and billed household properties
The derivation of the household property numbers is explained in the commentary to line A1.1.

P1.38 – P1.46, P5.38 – P5.46

As with last year the number of households with a new discount of up to 25% is sourced directly from WIC4. The resulting band D equivalents are reported in lines P1.38 – P1.46 and P5.38 – P5.46.

P1.47, P5.47

The number of billed households (including exempts) is sourced from the complete WIC4 report for 2007. Previously this data was estimated based on the WIC4 report for 2004.

The effects are seen in an increase to the number of band D equivalent properties of 28,000 to about 1,908,000 by comparison with last year's Annual Return report year+1 forecast. This represents an increase in new households billed as well as properties that were, in the past, connected but not billed.

P1.52, P5.52

Total Revenue has increased by £17.4m, £4.8m ahead of that forecast in last year's Annual Return. Again, this reflects household data sourced directly from WIC4 for the report year as described in the general comments to Table A.

Table P2 Water Service - Unmeasured Non-Household

P2.1-6 Non-household Properties – billed on unmeasured basis

The changes in the numbers of non-household properties are described in the commentary to Table A1.3. A small number of customers took the option to move to a meter as a result of the full business metering project ahead of the expected timescales.

P2.7-8 Rateable Value Base

This part of the P tables details the Rateable Value for unmeasured non-household properties connected for water services as recorded by Scottish Water.

P2.7 Gross RV for properties paying standard charges decreased from £421.76m to £417.89m (0.92%). The reduction is a function of the number of connected billed properties. The average rateable value per property has not significantly altered compared with the prior year.

P2.8 Net RV for properties receiving relief from charges remains constant at 0.

Table P3 Water Service - Measured Household

P3.1-7 Household Properties - billed on measured basis: tariff meters

A reduction of 65 properties is recorded when compared with the prior year, 2 in the meter banding of >20 <=25mm and the balance in the <=20mm band as reflected in line A1.2

P3.8-11 Volumes - Measured Household Properties

The decrease in billed volume from 116,715m^3 to 64,553m^3 is principally due to the decrease in the number of properties and the volume used by properties compared with 2006/07 and the reduction of water used overall.

Table P4 Water Service - Measured Non-Household

P4.1-18 Non-household tariff meters

Line Ref	Non-household Tariff Meters	2006/07	Report Year 2007/08	Change	% Change
P4.1	<=20mm	69,424	65,362	-4,062	-5.85%
P4.2	>20 <=25mm	9,876	9,315	-561	-5.68%
P4.3	>25 <= 40mm	1,199	1,204	5	0.42%
P4.4	>40 <= 50mm	1,016	1,011	-5	-0.49%
P4.5	> 50 <= 80mm	302	265	-37	-12.25%
P4.6	>80 <= 100mm	90	85	-5	-5.56%
P4.7	>100 <= 150mm	22	19	-3	-13.64%
P4.8	>150 <= 200mm	3	4	1	33.33%
P4.9	>200 <= 250mm	0	0	0	0.00%
P4.10	>250 <= 300mm	2	1	-1	-50.00%
P4.11	>300 <= 400mm	0	3	3	0.00%
P4.12	> 400 <= 450mm	0	0	0	0.00%
P4.13	>450 <= 600mm	0	0	0	0.00%
P4.14	Other meters	39	38	-1	-2.56%
P4.15	**Total number of tariff meters**	**81,973**	**77,307**	**-4,666**	**-5.69%**

The greatest reduction in the number of billed meters is within the 25mm meter sizes and below. This trend is most notable in the less than 20mm sizes where significant proportions of meters 'not billed' were decommissioned in the report year.

For the report year, Scottish Water removed all of the 'billed no charge meters' as they do not generate any revenue and cause the calculation of revenue to be erroneous. Of the total reduction in the meter profile, 2,254 are accounted for due to this reason. This work was carried out to address queries raised by the Commission in the 2006/07 Annual Return.

P4.19-29 Water volumes - Measured Non-household Properties

The billed measured volume of 146,806,558m^3 to non-households represents a 6,369,105m^3 (4.16%) reduction from prior year. The main areas of reduction are in >250 Ml/yr, LUVA and <= 100 Ml/yr, meters > 20mm, standard tariff (including LUVA) which saw a reduction of 2,404.432m^3 and 2,353,103m^3 respectively.

Within the 250 MI/yr LUVA band, two properties have recorded a drop of 1,677,864 with the balance of the 2,404,432 being spread amongst the remaining properties. Within the greater than 250mm, two properties have seen a total reduction of 1,382,9984m^3, but this has been partly offset by increases in other properties.

Line Ref	Volumes - Measured Non-household Properties	2006/07	2007/8 Report year	Change	% Change
P4.19	First 25m^3 pa - meters of diameter <= 20mm	1,452,499	1,441,844	-10,655	-0.73%
P4.20	Volume over 25m^3 pa, meters of diameter <= 20mm	35,652,806	35,668,709	15,903	0.04%
P4.21	<= 100 Ml/a, meters > 20mm, standard tariff (including LUVA)	55,664,371	53,311,267	-2,353,103	-4.23%
P4.22	>100 <= 250 Ml/a, standard tariff	1,190,747	1,519,819	329,072	27.64%
P4.23	> 250 Ml/a, standard tariff	1,031,938	457,696	-574,242	-55.65%
P4.24	>100 <= 250 Ml/a, LUVA rate	7,182,491	6,897,169	-285,322	-3.97%
P4.25	> 250 Ml/a, LUVA rate	25,800,321	23,395,889	-2,404,432	-9.32%
P4.26	<= 100 Ml/a, non-standard rate	3,012,645	3,149,903	137,258	4.56%
P4.27	>100 <= 250 Ml/a, non-standard rate	1,945,927	2,105,342	159,415	8.19%
P4.28	> 250 Ml/a, non-standard rate	20,241,918	18,858,920	-1,382,998	-6.83%
P4.29	**Total**	**153,175,663**	**146,806,558**	**-6,369,105**	**-4.16%**

Table P5 Wastewater Service - Unmeasured household

The movements in table P5 have been outlined in the commentary to table P1.

The confidence grade has increased from B2 to A2 as a result of data being sourced from the complete WIC4 report for 2007. Previously this data was estimated based on the WIC4 report for 2004.

Table P6 Wastewater Service - Unmeasured Non-household

P6.1-6 Water volumes - Unmeasured Non-household Properties

The main changes in the number of unmeasured non-household properties have been outlined in the commentary to lines A1.8 and A1.9.

A decrease in the void properties was a result of preparation for the opening of the retail market and the migration of non-household property data to the CMA. As part of the preparation CCML was engaged to survey all the properties with unknown status on the database. These included some properties that had been flagged as void but for which the status was questionable.

Table P7 Wastewater Service - Measured Household

P7.1-7 Measured household connected properties

The number of measured household properties has dropped from 222 to 180, all within the 20mm band.

P7.8-11 Volumes - Measured household Properties

The reduction in wastewater volume is related to the reported reduction in the water volume. The largest reduction was in the volume over 23.75m^3 pa, meters <=20mm which saw a 6,853m^3 (43%) reduction compared with 2006/07. This was due to both a reduction in the number of properties and in the volume used by properties in the year.

Table P8 Wastewater Service - Measured Non-Household

P8.1-18 Non-household Tariff Meters

The overall number of meters for properties with wastewater service decreased from 60,126 to 56,880. This reduction was caused by the exclusion of meters that do not generate any revenue. This exclusion was performed in response to a question raised by the Commission concerning AR 2006/07 and accounts for 1,514 of the total reduction in the number of meters.

Line Ref	Non-household Tariff Meters	2006/07	2007/8 Report year	Change	% Change
P8.1	<=20mm	51,123	48,932	-2,191	-4.29%
P8.2	>20 <=25mm	6,983	6,270	-713	-10.21%
P8.3	>25 <= 40mm	948	874	-74	-7.81%
P8.4	>40 <= 50mm	772	622	-150	-19.43%
P8.5	> 50 <= 80mm	206	139	-67	-32.52%
P8.6	>80 <= 100mm	63	26	-37	-58.73%
P8.7	>100 <= 150mm	12	0	-12	-100.00%
P8.8	>150 <= 200mm	1	0	-1	-100.00%
P8.9	>200 <= 250mm	1	0	-1	-100.00%
P8.10	>250 <= 300mm	1	0	-1	-100.00%
P8.11	>300 <= 400mm	0	0	0	0.00%
P8.12	> 400 <= 450mm	0	0	0	0.00%
P8.13	>450 <= 600mm	0	0	0	0.00%
P8.14	Other meters	16	17	1	6.25%
P8.15	Total number of tariff meters	60,126	56,880	-3,246	-5.40%

P8.19-23 Wastewater volumes - Measured Non-Household Properties

The overall decrease of wastewater volume of 6.1% is principally due to the reduction in water volume reported under lines P4.19 – P4.29 above, because it is assumed that 95% of all water taken is returned to the sewer.

Line ref.	Unmeasured non-household Waste Water	2006/07 m^3	2007/8 Report year m^3	Change m^3	Change %
P8.19	First 23.75m^3 pa - meters of diameter <= 20mm	1,104,831	986,666	-118,165	-10.7%
P8.20	Volume over 23.75m^3 pa, meters of diameter <= 20mm	20,622,085	17,951,699	-2,670,387	-12.9%
P8.21	Volume for other meters, charged at standard tariffs	25,043,796	26,023,448	979,653	3.9%
P8.22	Volume charged at non-standard rate	1,731,583	582,566	-1,149,016	-66.4%
P8.23	**Total**	**48,502,295**	**45,544,380**	**-2,957,915**	**-6.1%**

Table P9 Wastewater Service - Measured Household

P9.1-50 Property Drainage for Household Properties Billed Measured

P9.37 – Total number of households billed for property drainage has decreased from 200 to 163 reflects the reduction in the number of properties connected to the waste network.

P9.51-100 Roads Drainage for Household Properties Billed Measured

P9.87 – Total number of households billed for roads drainage has decreased from 212 to 172 reflects the reduction in the number of properties connected to the waste network.

Table P10 Unmeasured and Measured Non-household: Surface Water Drainage

P10.1-8 Non-household Properties - billed on unmeasured basis

The total number of surface water drainage billed properties of 222,966 is a slight reduction of 438 from 223,404.

P10.9-12 Rateable Value Base

The Properties and Roads rateable values increased from £2,659m to £2,721m and from £2,767m to £2,838m respectively. This reflects work carried out by the Premises Validation Team and Business Stream to review all rateable values used within Hi –Affinity.

Table P11 Wastewater Service – Trade Effluent

P11.1 Number paying standard rates

The number of customers paying published tariffs has increased significantly from 630 last year to 799 this year. This is because only those customers who received a cap in excess of £0.10 did not pay published tariffs. This is in accordance with the WICS determination on which customers would see caps removed over a 3 year period.

P11.2 Number paying non-standard rates

There are no customers paying non standard rates.

P11.4 Void Properties

There are no void TE properties as these are either closed or paying NDWW rates. In either case, these would be reported elsewhere.

P11.5 Chargeable daily volume – standard rate

The chargeable daily volume has fallen from 45,538m³/d in AR07, to 40,720m³/d in AR08. This reflects the drop in the property numbers.

P11.6 Settled Biological Oxygen Demand (sBOD) charged at standard rate

Reflecting this, the sBOD load charged has also fallen from 21,683 to 11,769kg/d. The loads have also dropped which reflects the reduction in the property numbers.

P11.7 Suspended Solids (TSSI) charged at standard rate

The TSS load has also fallen since AR07 from 9,715 to 8,570kg/d.

P11.11 & P11.12
Settled Chemical Oxygen Demand (Os) and Total Suspended Solids (Ss)

Both Os and Ss remain at 350mg/l and 250mg/l respectively as set out by normal industry standard.

P11.13 Actual Volume Discharged (AVD) – standard rate

The actual volume discharged has fallen compared with AR07, despite an increase in the numbers reported. This is due to changes in the combination of properties discharging which pay standard and capped rates.

P11.14 Strength adjusted volume for settled COD – standard rate

Similarly, the strength adjusted volume (SAV) for sCOD has fallen, but by a higher proportion. This would reflect lower strength effluent being discharged and reflects the decrease reported at A1.39.

P11.15 Strength Adjusted Volume for suspended solids – standard rate

The SAV for TSS has also fallen, but this is in proportion to the reduction in volume.

P11.19 – P11.22 & P11.27 – P11.30

P11.19 and P11.27 are the 2007/08 retail rates, depressed by 10.6% to give the wholesale rate. All dischargers pay Ra and Ro. Not all dischargers paying published rates receive full treatment, but the formulae which calculate P11.35 – P11.38 assumes they do. Inserting the published rates for R, V, S and B into P11.19 – P11.22 & P11.27 – P11.30 would over estimate the actual amount of income received, so the rates for V, B and S have been amended such that the total in P11.39 is correct. The figures calculated at P11.35-P11.38 will be approximately correct. The rates calculated only apply to the specific availability and volumetric parameters stated in P11.5 – P11.18.

Table P12 Wastewater Service – Trade Effluent

P12.1 Number receiving harmonisation cap

The number receiving the harmonisation cap has been taken as those where the capping discount in 2007/08 was £0.10 or greater, in line with the assumption made for P11.1. The number receiving the harmonisation cap has fallen from 1059 in AR07 to 782 in AR08.

P12.2 Number receiving treatment cap

No customers received a treatment cap in 2007/08. A treatment cap is put in place when the level of treatment provided at a location changes.

P12.4 Void Properties

As P11.4, there are no void properties.

P12.5-6

These values have risen since AR07, despite the fall in customer numbers. This reflects changes made to the consents since AR07, and whilst there is not a direct link between availability and (strength adjusted) volume, it is consistent with the increases reported at P12.16 and P12.17. The strength adjusted volume reported at P12.18 has fallen whilst the availability load reported at P12.17 has increased.

P12.11 Customers that do not pay with reference to the Mogden formula

The number of customers who do not pay with reference to the Mogden Formula has fallen slightly since AR07, reflecting site closures.

P12.12 Total volume of customers that do not pay with reference to the Mogden formula

Volume discharged by non Mogden customers has fallen by around 9% to 16Mm³. This is reflected in the fact that customers have used less water in 2007/08 than they did in 2006/07.

P12.13 Total sBODl from customers that do not pay with reference to the Mogden formula

Despite the fall in volume, there has been a significant increase in sBOD load discharged as a result of the type of discharges being detailed within the year.

P12.14 Total TSSl from customers that do not pay with reference to the Mogden formula

Reflecting the fall in volume, the solids loads discharged have fallen by around 20%.

P12.15 Total Revenue from customers that do not pay with reference to the Mogden formula

Income for non Mogden customers has decreased by around 12% compared to AR07.

P12.16 Actual Volume discharged – harmonisation cap

AVD has increased by approximately 0.8Mm³

P12.17 Strength Adjusted volume for settled COD – harmonisation cap

The SAV for sCOD has increased by approximately 10%.

P12.18 Strength adjusted volume for suspended solids – harmonisation cap

The SAV for TSS is similar to that reported in AR07.

P12.22 – P12.25 & P12.30 – P12.33

Not all dischargers paying published rates receive full treatment, but the formulae which calculate P12.38 – P12.41 assume they do. Inserting the published rates for R, V, S and B into P12.22 – P12.25 & P12.30 – P12.33 would over estimate the actual amount of income received, so the rates have been amended such that the total in P12.42 is correct. The figures calculated at P12.38 and P12.40 will be approximately correct. The rates calculated only apply to the specific availability and volumetric parameters stated in P12.5 – P12.10 and P12.16 - P12.18.

The 2008/09 figure for P12.42 is based on the Schedule 3 percentages determined by WICS. It was not thought appropriate to split the 782 dischargers who receive a harmonisation cap into different numbers for 2008/09 depending on whether the discharger receives an S3 capping adjustment or an S3 treatment type adjustment, as some who receive the treatment type adjustment also receive the capping adjustment, so it is unclear into which category these would fall.