

C M E R - 2 0 0 8

SOUTHERN WATER SERVICES

2008 Capital Maintenance Econometric Return to the Water Services Regulation Authority

Table Commentaries



Table CM1

Table CM1 - Water Resources and Treatment (WR&T) 2002-03 Explanatory Factors**Line 1 – Total Number of Dams and impounding reservoirs**

This should be stated as 7 to include bankside storage at Eccles Lake (for Burham WSW) of 545MI and at Sandown WSW of 5MI, seemingly omitted from FBP04 Line C11.

Line 2 – Total capacity of dams and impounding reservoirs

The storage capacity is 43,210MI allowing for additional storage as line 1.

Line 3 - Total length of raw water aqueducts.

Line nr	Description	JR03	JR03 Revised
3	Total length of raw water aqueducts	109	179.66

This should be stated correctly as 179.66 km. An examination of the GIS shows that some aqueducts have been entered into the record as “Trunk mains”. The revised length allows for this. It is noted that the GIS record does not include the length of aqueduct associated with the Medina-Yar transfer scheme on the IoW an estimated length of 6.076km has been allowed for this. The GIS records will be updated accordingly.

Length Raw mains	130.168	km
Less mains post 03	13.185	km
Add mains not correctly identified in GIS	56.601	km
Add estimated length for the Medina-Yar Scheme	6.076	km
Total	179.660	km

Line 4 - Total number of intake and source pumping stations

As download – no amendment.

Line 5 – Total capacity of intake and source pumping stations

Calculated as 53,956kw in accordance with records used for the audit at PR04 with correction at 2 sites. Yaliding increase from 1312kw to 6560kw, there are five pumps of 1312kw capacity at the station and only one was originally reported. Darwell increase from 899kw to 1007kw.

Lines 6, 7, 8

As downloaded data, previously subject to annual audit.

Line 9 – Gross MEA value of WR&T assets

The percentage allocation of water resources and treatment gross MEA value is consistent with that reported in the “Asset Inventory Return 1999”.

Lines 10 to 13 – Number of surface works.

The downloaded data show:

Table CM1

Line nr	Treatment Category	Size Band					Total
		1	2	3	4	5	
10	Simple disinfection & SW1	0	0	0	0	0	0
11	Nr of SW2 works	0	0	0	0	0	0
12	Nr of SW3 works	0	1	0	0	0	1
13	Nr of SW4 works	0	3	2	2	1	8

Note that this table does not include the count of surface works providing a bulk import to Southern Water. These data are consistent with the treatment and size category to calculate the DI in lines 14 to 17.

Lines 14 to 17 – Surface Water Treated

There is variation from JR03 due to the change in definition of treatment category, and the inclusion of phosphate dosing as W4. The calculated volume of water treated includes a very small volume associated with a bulk import (0.001MI/d).

Lines 18-21 – Number of groundwater works.

The data downloaded are:

Line nr	Treatment Category	Size Band					Total
		1	2	3	4	5	
18	Simple disinfection & GW1	8	11	4	1	0	24
19	Nr of GW2 works	3	12	6	2	0	23
20	Nr of GW3 works	0	2	0	1	0	3
21	Nr of GW4 works	0	11	13	17	2	43
	Total	11	36	23	21	2	93

This should be stated as:

Line nr	Treatment Category	Size Band					Total
		1	2	3	4	5	
18	Simple disinfection & GW1	7	7	5	1	0	20
19	Nr of GW2 works	0	5	3	1	0	9
20	Nr of GW3 works	0	2	0	0	0	2
21	Nr of GW4 works	1	22	15	19	6	63
	Total	8	36	23	21	6	94

In line with the reporting guidelines.

Table CM1

The treatment categories appear to have changed due to UV treatment and Phosphate dosing being classified as W4, these changes in treatment category are explained below:

Works Name	JR03	Restated JR03	Comments
	2	4	Phosphate dosing and UV
	GW	4	Phosphate dosing
	2	4	UV
	2	4	UV
	2	4	UV
	GW	4	Phosphate dosing
	2	4	UV
	4	-	Included with Luddesdown Greensand
	2	4	UV
	2	4	Phosphate dosing
	GW	4	GAC
	2	4	UV
	2	4	UV
	2	4	UV
	GW	4	UV
	2	4	Phosphate dosing
	3	4	Phosphate dosing
	2	4	UV
	2	4	UV
	2	4	Phosphate dosing
	2	4	Phosphate dosing
	-	4	Separated from Newmarket C & D
	-	2	Omitted from JR03 in error

The capacities of the works has been reviewed and a number of errors have been identified. The revised capacities are consistent with those used in PR04 and earlier and subsequent June Returns. The revised capacities and the effects on the banding are shown in the table below:

Works Name	JR03	Restated JR03	Comments
	4	5	26.4MI/d
	2	3	5MI/d
	4	5	27.3MI/d
	3	4	11.5MI/d
	3	4	11.36MI/d
	3	2	1.5MI/d

Table CM1

Works Name	JR03	Restated JR03	Comments
	2	3	5MI/d
	2	3	6.55MI/d
	2	-	Included with Luddesdown Greensand
	3	2	4.5MI/d
	3	4	11MI/d
	3	4	10MI/d
	2	3	5MI/d
	1	2	1.7MI/d
	1	2	2.06MI/d
	2	3	5MI/d
	1	2	1.3MI/d
	4	5	27MI/d
	4	5	31.82MI/d
	-	2	Separated from Newmarket C & D
	-	3	Omitted from JR03 in error

The change in numbers is due to the removal of, [REDACTED] WSW being one works not 2 after addition of phosphate dosing and addition of extra works as [REDACTED] is 2 works (C&D and 1B) on different sites, not a single works and addition of [REDACTED] omitted at JR03 and subsequently for the PR04 submission. i.e. $93-1+2 = 94$.

Lines 22 to 25 Water treated at GW Works

The data are calculated to the same methodology as for the JR submission with treatment bands and sizes consistent with the revised lines 18 to 21 above. Some 0.6 MI/d of distribution input from bulk imports is included.

Confidence grades

Line nr	Confidence Grade	Justification for Reliability Band	Justification for Accuracy Band
1	A1	Based on full records	Count of assets
2	A2	Based on full records	Accuracy of calculation +/- 5%
3	B2	Based on GIS with correction of errors found on examination	+/-5% for estimate of Medina-Yar transfer
4	A1	Based on asset Inventory	Count of asset Inventory
5	A2	Based on asset Inventory	Individual pump duty may have been incorrectly recorded and in absence of validation +/-5% taken

Table CM1

Line nr	Confidence Grade	Justification for Reliability Band	Justification for Accuracy Band
6	B2	AS JR03 table 10	As JR03 table 10
9	B3	Based on full records but with some estimation	+/-10% based on the assumptions used.
10 to13	A1	Based on asset record	Count of Assets
14 to 17	A2	Based on asset record	DI measured +/- 5%. Consistent with DI accuracy
18 to 21	A1	Based on asset record	Count of assets
22 to 25	A2	Based on asset record	DI measured +/- 5%. Consistent with DI accuracy

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Table CM2 - Water distribution infrastructure (WDI) 2002-03 explanatory factors

Line 1

Based on the information contained in GIS. Data are not held in GIS on the internal lining of mains at the time of construction for the historic materials. Data are incomplete of in-situ relining, but the Company programme has not been significant against the total asset base. It is assumed that all Cast Iron and spun iron are unlined, except where otherwise identified post in-situ relining (151.23km). Ductile Iron mains are a mix of cement mortar lining (recent) and coated (older). A 50%/50%, unlined/lined ratio is assumed. All steel mains are taken as lined.

- Total length non ductile iron 8032.21
- Less Length lined 151.23
- Total length Ductile Iron 1606.25
- 50% assumed as unlined 803.12

Total to line 1 – **8684.10**

Lines 2 to 6

There are no amendments to the downloaded data.

Confidence grades

Line nr	Confidence Grade	Justification for Reliability Band	Justification for Accuracy Band
1	B3	Based on historic records but generally not validated information from GIS	+/-10% based on the assumptions used.
2	B2	Based on a sound system with minor shortcomings	+/-5% based on the assumptions used.
3	A1	Based on full records	+/-1% based on the assumptions used.
4	B3	Based on historic records but generally not validated information from GIS	+/-10% based on the assumptions used.
5	A1	Zero input	
6	B3	Based on historic records	+/-10% based on the assumptions used.

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Compiled by: G. Tute

Table CM3 - Water Distribution non-infrastructure (WDNI) 2002-03 Explanatory Factors**Lines 1 to 5**

There are no amendments to the downloaded data.

Line 6 – Gross MEA value of WDNI assets

The percentage allocation of water distribution non infrastructure gross MEA value is consistent with that reported in the “Asset Inventory Return 1999”.

Line 7 and 8

The data are taken from the PR04 audit table. The downloaded data are consistent with this audit table and no changes are proposed for Line 7. The Line 8 figure is calculated from the data in the audit table.

Line 9 and 10

The data are taken from the PR04 audit table. The downloaded data are consistent with this audit table and no changes are proposed for Line 9. The Line 10 figure is calculated from the data in the audit table.

Line 11 and 12

The data are taken from the PR04 audit table. The downloaded data are consistent with this audit table and no changes are proposed for Line 11. The Line 12 figure is calculated from the data in the audit table.

Confidence grades

Line nr	Confidence Grade	Justification for Reliability Band	Justification for Accuracy Band
6	B3	Based on full records but with some estimation	+/-10% based on the assumptions used.
7, 9 & 11	A1	Based on full records. Count of assets.	+/-1% count of assets
8 & 10	A2	Based on records. Some records not validated	+/-5% as not all records validated.
12	B3	Based on records and site surveys. Some records not validated	Individual pump duty may have been incorrectly recorded and in absence of validation +/-10% taken

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Table CM4 - Water Management and general (WM&G) 2002-03 Explanatory Factors**Line 1- Potable water mains**

This is downloaded from PR04 Table C11 line 16. Note: as mentioned in the commentary for table CM1 line 3 – length of aqueducts, 56.601 km of aqueducts had been incorrectly identified as trunk mains. The total length of potable mains reported in line 1 should be restated as 13,338.40km to take this into account.

Line 2 – Total number of households billed for water

This is downloaded from JR03 Table 7 line 6 for 2003. The data for 2003 was taken from the company billing system.

Line 3 – Total number of non-households billed for water

This is downloaded from JR03 Table 7 line 10 for 2003. The data for 2003 was taken from the company billing system.

Line 4 – Gross MEA value of water management and general assets

The percentage allocation of water management and general assets gross MEA value is consistent with that reported in the “Asset Inventory Return 1999”.

Lines 5 – 7 Gross MEA value of vehicles, telemetry and computers

This data is downloaded from the FBP04 table C11a lines 21, 22 & 23 respectively.

Line 8 - % of system covered by telemetry

This data is downloaded from the FBP04 table C11 line 22 column 1.

Line 9 – Number of telemetry outstations

This data is downloaded from the FBP04 table C11 line 22 column 2.

Confidence grades

Line nr	Confidence Grade	Justification for Reliability Band	Justification for Accuracy Band
1	B3	Based on full records, with some estimation	+/-10% based on the assumptions used.
2	n/a	n/a	n/a
3	n/a	n/a	n/a
4	B3	Based on full records but with some estimation	+/-10% based on the assumptions used.
5 - 9	n/a	n/a	n/a

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Table CM5 – Sewerage Infrastructure (SI) 2002-03 explanatory factors

For an explanation of the sewerage areas please refer to the Table C6 commentary.

Line 1 – Total length of sewers

This length is taken directly from SEF03 Table 17a line 9 - Total length of sewers and is consistent with the data reported in the 2002-03 year column of Table 16 line 14 (line 21 in JR03).

Line 2 – Total length of “critical” sewers

This length is taken directly from SEF03 Table 17a line 14 - Total length of “critical” sewers and is consistent with the data reported in the 2002-03 year column of Table 16 line 15 (line 22 in JR03).

Line 3 – Total length of section 24 sewers

This length is taken directly from SEF03 Table 17a line 10 - Total length of section 24 sewers.

Line 4 – Total length of brick and masonry sewers

This length is taken from a report from the company sewer records, as the company does not have a “snapshot record” of the sewer lengths from 2003. No brick and masonry sewers have been constructed since 2003 and so this length remains current.

Line 5 – Number of combined sewer overflows

This number is taken directly from SEF03 Table 17a line 23 – Nr of combined sewer overflows.

Line 6 – Number of sewer collapses per 1000km

This number is calculated from SEF03 Table (17a line 15) / (17a line 9 / 1000) – sewer collapses per 1000km, see table below:

Area	Line 15	Line 9 / 1000	Collapses per 1000km
HE	45	4.012	11.2
HW	20	3.155	6.3
KE	23	3.551	6.5
KW	23	3.518	6.5
SE	39	2.957	13.2
SW	53	3.978	13.3
Total	203	21.171	9.6

Note the company total is 9.6 per 1000km.

Line 7 – Total connected properties

The number is taken directly from SEF03 Table 17a line 4 – Total number of connected properties. The overall number of properties is taken from the company billing system with the allocation to area based on prior data from the county planning teams.

Confidence grades

Line nr	Confidence Grade	Justification for Reliability Band	Justification for Accuracy Band
1	B3	Based on full records, with some estimation	+/-10% based on the assumptions used.
2	B4	Based on full records, with some estimation	+/-25% based on the assumptions used.
3	C4	Based on limited records and estimation	+/-25% based on the assumptions used.
4	B4	Based on full records for current year	+/-25% based on the assumptions used.
5	B3	Based on full records with some estimation	+/-10% based on the assumptions used.
6	B4	Based on records with some estimation	+/-25% based on the assumptions used.
7	A2	Based on full records, (Company billing system)	+/- 5% based the allocation of the properties to area based on historic county estimates

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Table CM6 - Sewerage non-infrastructure (SNI) 2002-03 explanatory factors**Sewerage areas**

Southern Water's wastewater operations area has been divided into six sewerage areas. These are: Hampshire East (including the Isle of Wight), Hampshire West, Kent East, Kent West, Sussex East and Sussex West. Generally the populations are concentrated in urban areas spread along the coast and around the major estuaries. However, approximately 30% of the population live in villages that are scattered over the rural areas that cover almost 90% of the region.

Hampshire East (including the Isle of Wight)

Geography: The Isle of Wight is dominated by two areas of high ground comprising chalk outcrops, with a broad plane of low elevation to the north of the island and rolling downland to the south of the island.

The Hampshire basin covers the majority of the mainland area and is a generally flat area close to sea level. The New Forest covers a large area in the west of the region.

Population: The largest population occurs in the Southampton and Portsmouth urban complex, which dominates the Solent coastline.

Hampshire West

Geography: The landscape is dominated by the chalk Hampshire Downs which cover the area, generally falling from the north down to the Hampshire Basin in the south and is predominantly rural farmland.

Population: The main urban area is Andover with the rest of the population spread across the rural area in small villages.

Kent East

Geography: The area has three main features, the chalk North Downs, the clay in Vale of Kent and sands and gravels in the Romney and Walland Marsh areas. The inland areas are predominately farmland.

Population: The main population is concentrated along the coastline in Folkestone, Dover, Deal, Ramsgate, Broadstairs, Margate, Herne Bay and Whitstable. The larger inland urban concentrations are Canterbury, Ashford, Faversham and Sittingbourne. The remainder of the population is spread over the rural area in small towns and villages.

Kent West

Geography: The area has three main features, the chalk North Downs which form a ridge across the county, the clay in Vale of Kent which forms a low laying plain and the sand and clay of the High Weald. The inland areas are predominantly farmland.

Population: The main population is concentrated in the towns of Chatham, Gillingham, Rochester, Gravesend, Aylesford, Maidstone, Tonbridge and Royal Tunbridge Wells. The remainder of the population is spread over the rural area in small towns and villages.

Sussex East

Geography: The area has three main features the sand and clay of the High Weald, the chalk South Downs which form a ridge across the county and the clay Vale of Sussex which is a low lying plain. The inland areas are predominantly farmland.

Population: the main population is concentrated in the Coastal towns of Hastings, Bexhill, Eastbourne, Seaford and Newhaven the inland urban areas are Lewes, Burgess Hill, Haywards Heath, East Grinstead and Crowborough. The remainder of the population is spread over the rural area in small towns and villages.

Sussex West

Geography: The area has three main features, the chalk South Downs, the clay Vale of Sussex and the Coastal Plain, which is mainly flat and close to sea level.

Population: the main population is concentrated in the Coastal towns of Brighton & Hove, Worthing, Littlehampton and Bognor Regis and the inland towns of Chichester and Horsham. The remainder of the population is spread over the rural area in small towns and villages.

These areas are consistent with those reported in the SEF return.

Line 1 – Total number of properties connected to the sewerage system

This number is taken directly from SEF03 Table 17a line 4 Total connected properties and is consistent with the data reported in JR03 Table 13 line 7.

Line 2 – Number of pumping stations

The total number of pumping stations has been taken directly from SEF03 table 17a line 16. The data has been split into size bands from the data used to report line 17. Where the power rating of the pumping station is not known a county average has been calculated and applied to the “unknowns”. The “unknowns” have been allocated over the size bands pro-rata by the profile of the known sizes.

Line 3 – Pumping stations total capacity

The pumping stations total capacity has been taken directly from SEF03 table 17a line 17. Where the capacity of the pumping stations was known then they were allocated directly to the appropriate size band. Where the capacity of the pumping station is unknown a county average has been calculated and applied to the “unknowns”.

Line 4 – Gross MEA value of sewerage non infrastructure

The percentage allocation of sewerage non-infrastructure gross MEA value is consistent with that reported in the “Asset Inventory Return 1999”.

Confidence Grades

Line nr	Confidence Grade	Justification for Reliability Band	Justification for Accuracy Band
1	A2	Based on full records, (Company billing system)	+/- 5% based the allocation of the properties to area based on historic county estimates
2	B3	Based on full records but with some estimation	+/-10% based on the assumptions used.
3	B3	Based on full records but with some estimation	+/-10% based on the assumptions used.
4	B3	Based on full records but with some estimation	+/-10% based on the assumptions used.

Version: 19th February 2008

Compiled by: T. Harris

Table CM7 - Sewage Treatment (ST) 2002-03 explanatory factors

The areas used in reporting this table have been explained in the commentary to table C6 - Sewerage infrastructure (SI) 2002-03 explanatory factors

Southern Water maintains a database which contains a list of all waste water treatment works, against each of the works is held information including the following:

- resident populations,
- holiday populations,
- trade populations,
- treatment category,
- properties connected,
- consent data
- sludge treatment

A number of established queries are run to produce the data in the required format for reporting in the June Return tables 15 and 17a-g. These queries have been used to report the data in the Capital Maintenance Return 2008.

Line 1 – Equivalent population served (resident)

The number reported is consistent with the data reported in table 15 line 24 for 2003. However, a small typographical error was found in the 2003 data. The number should be as shown in the table below:

Table 15 line nr	June Return 2003	June Return 2003 revised
6	4,180.62	4,180.22

This represents an error of some 400 out of a total of 4.2 million and is not considered to be significant.

Line 2 – Trade effluent load received at STW

The number reported is consistent with the data reported in table 17b line 4 for 2003. The load received at each of the large works is summed by area.

Line 3 – Tanker load received at STW

The number reported is consistent with the data reported in table 17b line 5 for 2003. However, a small typographical error was found in the 2003 data. The number should be as shown in the table below:

Table 17b line nr	Works name	June Return 2003	June Return 2003 revised
5	Morestead	245	1366.89

The tanker load reported excludes trade effluent tankered waste.

Line 4 - Volume of waste water returned

The volume of waste water returned is consistent with the data reported in table 14 line 6 2002-03. The volume returned, excluding the trade volume, is allocated to area pro rata by resident population. The trade volume is distributed based on measured trader discharges in each area for the prior year.

Line 5 – Volume of trade effluent

The volume of trade effluent returned is consistent with the data reported in table 14 line 6. The trade volume is distributed based on measured trader discharges in each area for the prior year.

Line 6 – Average domestic properties connected to the sewerage system receiving treatment

The number of properties connected is consistent with table 13 line 7. Note the total connected properties connected to treatment is 1,608,269 which excludes properties connected to outfalls which are included in the number reported in table 13 line 7.

Line 7 – Gross MEA value of sewage treatment works

The percentage of the ST Gross MEAV value is consistent with that reported in the "Asset Inventory Return 1999".

Lines 8 – 13 – Works numbers

The number of works by treatment category and size band is consistent with the data reported in JR03 table 17c lines 1-6.

Lines 14 – 19 – Works loads

The works loads by treatment category and size band is consistent with the data reported in JR03 table 17d lines 1-6.

Lines 20 – 25 – Works with ammonia consents

The data used to report the works with ammonia consents is consistent with the data reported in table 17c small works with NA3 consents less than 5mg/l (36 works) and the data reported in table 17b line 15 - ammonia consent (11 works). It was taken from the JR03 Southern Water consent database. Currently Southern Water consent data is maintained in "CALMS" which is an intranet based register.

Line nr	Confidence Grade	Justification for Reliability Band	Justification for Accuracy Band
1 (Total)	A2	Based on full records and industry best practice	+/- 5% based on the methodology.
1 (Area)	B3	Based on full records and industry best practice but with some assumptions for the area splits	+/- 10% based on the methodology.
2	B3	Based on full records but from the prior year, which are updated to the current year pro-rata by income	+/-10% based on the use of prior years data and some use of standard strength data.
3	C3	Based on full records which require significant manual intervention to select appropriate loads	+/-10% based on the use of limited sample strength data.
4	B4	Based on full records for measured volumes, and some estimation for the unmeasured volumes	+/- 25% based on the use of a number of assumptions made in calculating the data from prior years income.
5	B3	Based on full records from the prior year, which are updated to the current year pro-rata by income	+/-10% based on the use of prior years data
6	A2	Based on full records, (Company billing system)	+/- 5% based the allocation of the properties to area based on historic county estimates
7	B3	Based on full records but with some estimation	+/-10% based on the assumptions used.
8 - 13	A1	Based on full records with no assumptions	+/-1% based on actual count of works.
14 - 19	B3	Number of works is based on full records, but the conversion to loads uses some assumptions	+/- 10% due to the assumption of a conversion factor to convert from people to load.
20 - 25	A1	Based on full records with no assumptions	+/-1% based on actual count of works consents.

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Compiled by: T. Harris

Table CM8 – Sludge treatment and disposal (ST&D) 2002-03 explanatory factors

The areas used in reporting this table have been explained in the commentary to table C6 - Sewerage infrastructure (SI) 2002-03 explanatory factors.

Southern Water maintains a database which contains a list of all waste water treatment works, against each of the works is held information including the following:

- resident populations,
- holiday populations,
- trade populations,
- treatment category,
- properties connected,
- consent data,
- sludge treatment (No Sludge, Own Sludge, Sludge Treatment Centre)

A number of established queries are run to produce the data in the required format for reporting in the June Return tables 15 and 17a-g. These queries have been used to report the data in the Capital Maintenance Return 2008.

Lines 1 - 3 – Sludge treatment

The data is consistent with that reported in SEF03 Table 17c lines 11 – 17 – sludge treatment. The data has been allocated to sewerage sub areas by a database query.

Lines 4 – 5 Amount of sewage sludge treated by process and disposed by route

Note: the numbers in lines 4 & 5 are not equal due to rounding.

The data for 02/03 was derived from daily operational records of flows and sludge density measured as dry solids, and contractor records of material lime treated and landfilled.

Where material treated has been subsequently re-treated e.g. digested cake is subsequently lime treated the TDS has been attributed to the final treatment process i.e. the lime and deducted from the initial digested volume. Where treated material has been subsequently landfilled the TDS has been deducted from the initial treated volume.

Confidence Grades

Line nr	Confidence Grade	Justification for Reliability Band	Justification for Accuracy Band
1 - 3	n/a	n/a	n/a
4	B4	Based on full records with some estimation	+/-25% based on the assumptions used.
5	B4	Based on full records with some estimation	+/-25% based on the assumptions used.

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Compiled by: T. Harris / I. Rowland

Table CM9 – Sewerage management and general (SM&G) 2002-03 explanatory factors**Line 1- Total length of sewers**

This is downloaded from JR03 Table 16 line 14 for 2003. This data is consistent with the data reported in table CM5 line 1.

Line 2 – Total number of households billed for sewerage

This is downloaded from JR03 Table 13 line 5 for 2003. The data for 2003 was taken from the company billing system.

Line 3 – Total number of non-households billed for sewerage

This is downloaded from JR03 Table 13 line 8 for 2003. The data for 2003 was taken from the company billing system.

Line 4 – Gross MEA value of sewerage management and general assets

The percentage allocation of sewerage management and general assets gross MEA value is consistent with that reported in the “Asset Inventory Return 1999”.

Lines 6 – 8 Gross MEA value of vehicles, telemetry and computers

This data is downloaded from the FBP04 table 13a lines 20, 21 & 22 respectively.

Confidence grades

Line nr	Confidence Grade	Justification for Reliability Band	Justification for Accuracy Band
1	B3	Based on full records, with some estimation	+/-10% based on the assumptions used.
2	A1	Based on records (company billing system)	+/-10% based on the assumptions used.
3	A1	Based on records (company billing system)	+/-10% based on the assumptions used.
4	B3	Based on full records but with some estimation	+/-10% based on the assumptions used.
5 - 9	n/a	n/a	n/a

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Table CM10 – Capital maintenance expenditure – Water (outturn prices)**All lines**

Expenditure has been allocated to the categories in the table on the basis of asset groupings used in the Southern Water Services asset accounting system.

This data has been directly downloaded from JR03 Table 32.

Confidence grades

Line nr	Confidence Grade	Justification for Reliability Band	Justification for Accuracy Band
1 - 7	n/a	n/a	n/a

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Compiled by: T. Harris

Table CM11 - Capital maintenance expenditure – Sewerage (outturn prices)**Lines 1 - 4**

Expenditure has been allocated to the categories in the table on the basis of asset groupings used in the Southern Water Services asset accounting system.

This data has been directly downloaded from JR03 Table 32a.

Line 5 – Sewerage management and general

Expenditure has been allocated to the categories in the table on the basis of asset groupings used in the Southern Water Services asset accounting system.

This data has been directly downloaded from JR03 Table 32 line 31 col. 6

Confidence grades

Line nr	Confidence Grade	Justification for Reliability Band	Justification for Accuracy Band
1 - 5	n/a	n/a	n/a

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Compiled by: T. Harris

C M E R - 2 0 0 8

SOUTHERN WATER SERVICES

2008 Capital Maintenance Econometric Return to the Water Services Regulation Authority



CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
 CM1 - Water resources and treatment (WR&T) 2002-03 explanatory factors
 Printed 20/Feb/2008 13:54

Description	Units & format	Value 2002-03					CG
		Short	Medium	Long	Infra	Total	
1	nr	5					A1
2	Ml	43,210					A2
3	km	109					B3
4	nr	289					A1
5	kw	53,956					B2
6	Ml/d	594,28					B2
7	Ml/d	594,89					A1
8	000	1,007.2					
Asset life							
9	£m	14.2	545.2	165.2	153.0	877.6	B3
The gross mea value of water resources and treatment assets as at 31 March 2003							
Size band - Surface water (SW)							
		1	2	3	4	5	Average size
10	nr	0	0	0	0	0	0
11	nr	0	0	0	0	0	0
12	nr	0	1	0	0	0	1
13	nr	0	3	2	2	1	8
14	Ml/d	0	0	0	0	0	0
15	Ml/d	0	0	0	0	0	0
16	Ml/d	0	0	0	0	0	0
17	Ml/d	0	26	40	86	41	194
Size band - Ground water (GW)							
		1	2	3	4	5	Average size
18	nr	8	11	4	1	0	24
19	nr	3	12	6	2	0	23
20	nr	0	2	0	1	0	3
21	nr	0	11	13	17	2	43
22	Ml/d	0	9	13	3	0	26
23	Ml/d	0	6	11	4	0	21
24	Ml/d	0	0	0	0	0	0
25	Ml/d	0	31	44	153	125	353

Table CM1

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM2 - Water distribution infrastructure (WDI) 2002-03 explanatory factors

Printed 20/Feb/2008 13:58

		Value 2002-03	CG
Description	Units & format		
1	Total length of unlined iron or unlined steel mains	8,684.10	B3
2	Mains bursts per 1,000km	121	B2
3	Total connected properties at year end.	1,007.2	A1
		Size band	Total
		1	2
		3	4
4	Potable water mains (nominal bore)	10,507	1,783
		936	169
5	Other water mains (nominal bore)	0	0
		0	0
		Pipe material	
		Lead	Galv. iron
		Other	
6	Number of communication pipes	165,000	184,941
		528,232	B3

Table CM2

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM3 - Water distribution non-infrastructure (WDNI) 2002-03 explanatory factors

Printed 20/Feb/2008 13:59

		Value 2002-03	CG
Description	Units & format		
1	Distribution input	594.89	B2
2	Average pumping head (distribution)	102.2	B2
3	Number of non-household meters	51,422	
4	Number of household meters	211,361	
5	Total connected properties at year end	1,007.2	A1
		Total	
		200.0	B3
6	The gross mea value of water distribution non-infrastructure assets as at 31 March 2003	£m	
		Total	
		223	A1
		1,236.0	A2
		16	A1
		10.5	A2
		162	A1
		9,795	B3
		Average size	
		238	A1
		1,236.0	A2
		16	A1
		10.5	A2
		162	A1
		9,795	B3
		Asset life	
		Short	
		11.1	
		Medium	
		31.1	
		Long	
		157.8	
		Size band	
		1	
		57	
		2	
		85	
		3	
		254.4	
		4	
		435.7	
		5	
		166.8	
7	Number of service reservoirs	nr	
8	Capacity of service reservoirs	MI	
9	Number of water towers	nr	
10	Capacity of water towers	MI	
11	Number of booster pumping stations	nr	
12	Capacity of booster pumping stations	kw	

Table CM3

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM4 - Water management and general (WM&G) 2002-03 explanatory factors

Printed 20/Feb/2008 13:59

		Value 2002-03	CG
Description	Units & format		
1	Potable water mains (nominal bore)	13,395.00	B3
2	Number of households billed for water.	916.850	
3	Non-households billed water	65.616	
		Asset life	
		Short	Medium
4	The gross mea value of water management and general assets as at 31 March 2003	46.6	3.0
			Long
			Infra
			Total
			14.7
			0.1
			64.4
			B3
		Value 2002-03	
5	The gross mea value at 31 March 2003 - Vehicles	0.000	
6	The gross mea value at 31 March 2003 - Telemetry systems	15.577	
7	The gross mea value at 31 March 2003 - Computers	15.295	
8	% of system covered by telemetry systems	95.0	
9	Number of telemetry outstations	513	

Table CM4

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
 CM5 - Sewerage infrastructure (SI) 2002-03 explanatory factors
 Printed 20/Feb/2008 16:33

Line	Description	Unit	2002-03	CG	2002-03	CG	2002-03	CG	2002-03	CG	2002-03	CG	2002-03	CG	2002-03	CG	2002-03	CG
1	Total length of sewers	km	4,012.00	B3	3,155.00	B3	3,551.00	B3	3,518.00	B3	2,957.00	B3	3,978.00	B3	21,171.00	B3		
2	Total length of "critical" sewers.	km	1,397.00	B4	1,077.00	B4	1,163.00	B4	696.00	B4	875.00	B4	1,336.00	B4	6,544.00	B4		
3	Total length of section 24 sewers	km	372	C4	292	C4	318	C4	323	C4	268	C4	359	C4	1,932	C4		
4	Total length of brick and masonry sewers	km	43.87	B4	8.23	B4	30.04	B4	30.38	B4	45.39	B4	92.10	B4	250.01	B4		
5	Number of combined sewer overflows	nr	204	B3	71	B3	111	B3	192	B3	176	B3	118	B3	872	B3		
6	Number of sewer collapses per 1,000km	nr/000KM	11	B4	6	B4	6	B4	7	B4	13	B4	13	B4		B4		
7	Total number of domestic properties connected to sewerage system at the end of the year.	000	307.94	A2	256.25	A2	287.66	A2	325.21	A2	230.53	A2	379.29	A2	1,786.88	A2		

Table CM5

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
CM6 - Sewerage non-infrastructure (SNI) 2002-03 explanatory factors
Printed 20/Feb/2008 14:00

		Hampshire East (including IOW)					CG			
		Value 2002-03								
Description	Units & format									
1	Total number of domestic properties connected to sewerage system at the end of the year.	000						A2		
		307.94								
		Size band					Total			
		1	2	3	4	5				
2	Total number of pumping stations	nr	102	115	92	35	2	346	B3	
3	Total capacity of pumping stations	kw	290	1,270	4,418	7,955	1,798	15,631	B3	
		Asset life					Total			
		Short	Medium	Long						
4	The gross mea value of sewerage non-infrastructure assets as at 31 March 2003	£m	0.9	185.7	0.2				186.8	B3

Table CM6

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM6 - Sewerage non-infrastructure (SNI) 2002-03 explanatory factors

Printed 20/Feb/2008 14:00

		Hampshire West					CG	
		Value 2002-03						
Description	Units & format							
1	Total number of domestic properties connected to sewerage system at the end of the year.	000						A2
		256,25						
			Size band					Total
			1	2	3	4	5	
2	Total number of pumping stations	nr	67	86	66	21	1	241 B3
3	Total capacity of pumping stations	kw	216	919	2,930	4,505	704	9,274 B3
			Asset life					Total
			Short		Medium	Long		
4	The gross mea value of sewerage non-infrastructure assets as at 31 March 2003	£m	0.4		88.8	0.1		89.3 B3

Table CM6

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
CM6 - Sewerage non-infrastructure (SNI) 2002-03 explanatory factors
Printed 20/Feb/2008 14:00

		Kent East				CG	
		Value 2002-03					
Description	Units & format						
1	Total number of domestic properties connected to sewerage system at the end of the year.	000					A2
		287.66					
		Size band					Total
		1	2	3	4	5	
2	Total number of pumping stations	nr	182	166	128	28	7
3	Total capacity of pumping stations	kw	554	1,783	5,779	5,393	6,646
		Asset life					Total
		Short	Medium	Long			
4	The gross mea value of sewerage non-infrastructure assets as at 31 March 2003	£m	1.0	193.4	0.2		194.6
							B3

Table CM6

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
CM6 - Sewerage non-infrastructure (SNI) 2002-03 explanatory factors
Printed 20/Feb/2008 14:01

		Kent West				CG	
		Value 2002-03				A2	
Description	Units & format						
1	Total number of domestic properties connected to sewerage system at the end of the year.	000	325.21				
		Size band					Total
		1	2	3	4	5	
2	Total number of pumping stations	nr	86	146	89	15	4
3	Total capacity of pumping stations	kw	296	1,571	3,645	3,245	2,858
		Asset life					Total
		Short	Medium	Long			
4	The gross mea value of sewerage non-infrastructure assets as at 31 March 2003	£m	0.8	162.2	0.2		163.2
							B3

Table CM6

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM6 - Sewerage non-infrastructure (SNI) 2002-03 explanatory factors

Printed 20/Feb/2008 14:03

		Sussex East					CG	
		Value 2002-03						
Description	Units & format							
1	Total number of domestic properties connected to sewerage system at the end of the year.	000						A2
		230.53						
		Size band					Total	
		1	2	3	4	5		
2	Total number of pumping stations	nr	51	144	82	12	1	
3	Total capacity of pumping stations	kw	161	1,591	3,528	2,143	1,003	
		Asset life					Total	
		Short	Medium	Long				
4	The gross mea value of sewerage non-infrastructure assets as at 31 March 2003	£m	0.3	63.0	0.1		63.4	
							B3	

Table CM6

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
CM6 - Sewerage non-infrastructure (SNI) 2002-03 explanatory factors
Printed 20/Feb/2008 14:03

		Sussex West								
		Value 2002-03					CG			
Description	Units & format									
1	Total number of domestic properties connected to sewerage system at the end of the year.	000	379.29					A2		
		Size band					Total			
		1	2	3	4	5				
2	Total number of pumping stations	nr	111	143	129	19	0	402	B3	
3	Total capacity of pumping stations	kw	371	1,464	5,961	4,055	0	11,851	B3	
		Asset life					Total			
		Short	Medium	Long						
4	The gross mea value of sewerage non-infrastructure assets as at 31 March 2003	£m	0.5	105.5	0.1				106.1	B3

Table CM6

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM6 - Sewerage non-infrastructure (SNI) 2002-03 explanatory factors

Printed 20/Feb/2008 14:04

		Total						CG	
		Value 2002-03							
Description	Units & format		Size band					Total	
			1	2	3	4	5		
1	Total number of domestic properties connected to sewerage system at the end of the year.	000		1,786.88					A2
2	Total number of pumping stations	nr		599	800	586	130	15	2,130 B3
3	Total capacity of pumping stations	kw		1,888	8,598	26,261	27,196	13,009	76,952 B3
			Asset life					Total	
			Short		Medium	Long			
4	The gross mea value of sewerage non-infrastructure assets as at 31 March 2003	£m		3.9	798.6	0.9			803.4 B3

Table CM6

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
 CM7 - Sewage treatment (ST) 2002-03 explanatory factors
 Printed 20/Feb/2008 14:04

		Hampshire East (including IOW)					CG	
		Value 2002-03						
Description	Units & format	Short	Medium	Long	Infra	Total		
1	Equivalent population serviced (resident).	768.77					B3	
2	Trade effluent load received at STW	6,329					B3	
3	Tanker load received at STW	1,631					C3	
4	Volume of waste water returned	139.70					B4	
5	Volume trade effluent	5.80					B3	
6	Average dom prop connected to sewerage system receiving treatment	210.51					A2	
		Asset life					Total	
7	The gross mea value of sewage treatment assets as at 31 March 2003	2.1	250.8	0.3	0.0		253.2 B3	
		Size band					Total	
		1 (> 1500 kg BOD5/day)	2 (>15 <= 30 kg BOD5/day)	3 (>30 <= 120 kg BOD5/day)	4 (>120 <= 600 kg BOD5/day)	5 (>600 <= 1500 kg BOD5/day)	6 (> 1500 kg BOD5/day)	
8	The total number of preliminary sewage works	0	0	0	0	0	0	0 A1
9	The total number of primary sewage works	2	0	0	0	0	0	2 A1
10	The total number of secondary activated works	1	1	1	1	1	4	7 A1
11	The total number of secondary biological works	11	1	1	3	1	0	16 A1
12	The total number of tertiary activated works	0	0	2	2	0	0	3 A1
13	The total number of tertiary biological works	3	0	0	5	1	0	11 A1
14	Load received by preliminary works	0	0	0	0	0	0	0 B3
15	Load received by primary works	3	0	0	0	0	0	3 B3
16	Load received by secondary activated works	4	27	151	0	0	44,146	44,328 B3
17	Load received by secondary biological works	26	19	286	164	0	0	495 B3
18	Load received by tertiary activated works	0	0	116	412	0	0	528 B3
19	Load received by tertiary biological works	18	0	275	364	1,894	0	2,551 B3
20	The total number of preliminary works with NH3 consents (<= 5mg/l)	0	0	0	0	0	0	0 A1
21	The total number of primary works with NH3 consents (<= 5mg/l)	0	0	0	0	0	0	0 A1
22	The total number of secondary activated work with NH3 consents (<= 5mg/l)	0	1	0	0	0	0	2 A1
23	The total number of secondary biological works with NH3 consents (<= 5mg/l)	0	0	0	0	0	0	0 A1
24	The total number of tertiary activated works with NH3 consents (<= 5mg/l)	0	0	0	0	0	0	0 A1
25	The total number of tertiary biological works with NH3 consents (<= 5mg/l)	1	0	0	0	2	0	3 A1

Table CM7

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
 CM7 - Sewage treatment (ST) 2002-03 explanatory factors
 Printed 20/Feb/2008 14:05

		Hampshire West		Value 2002-03		CG	
Description	Units & format	Short	Medium	Long	Infra	Total	
1	Equivalent population serviced (resident)	000	694.40			B3	
2	Trade effluent load received at STW	kg COD/day	7,215			B3	
3	Tanker load received at STW	kg COD/day	4,535			C3	
4	Volume of waste water returned	M/ld	121.20			B4	
5	Volume trade effluent	M/ld	7.30			B3	
6	Average dom prop connected to sewerage system receiving treatment	000	265.13			A2	
Asset life							
7	The gross mea value of sewage treatment assets as at 31 March 2003	£m	2.3	270.6	0.3	0.0	Total 273.2 B3
Size band							
8	The total number of preliminary sewage works	nr	0	0	0	0	0 A1
9	The total number of primary sewage works	nr	2	0	0	0	2 A1
10	The total number of secondary activated works	nr	1	0	0	2	8 A1
11	The total number of secondary biological works	nr	5	2	2	0	12 A1
12	The total number of tertiary activated works	nr	2	0	1	0	4 A1
13	The total number of tertiary biological works	nr	2	0	6	2	19 A1
14	Load received by preliminary works	kg BOD5/day	0	0	0	0	0 B3
15	Load received by primary works	kg BOD5/day	2	0	0	0	2 B3
16	Load received by secondary activated works	kg BOD5/day	3	0	0	2,039	25,570 B3
17	Load received by secondary biological works	kg BOD5/day	17	50	117	451	6,500 B3
18	Load received by tertiary activated works	kg BOD5/day	6	0	34	0	2,112 B3
19	Load received by tertiary biological works	kg BOD5/day	11	0	374	1,935	7,284 B3
20	The total number of preliminary works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	0	0 A1
21	The total number of primary works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	0	0 A1
22	The total number of secondary activated work with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	0	0 A1
23	The total number of secondary biological works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	0	0 A1
24	The total number of tertiary activated works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	0	0 A1
25	The total number of tertiary biological works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	0	1 A1

Table CM7

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
 CM7 - Sewage treatment (ST) 2002-03 explanatory factors
 Printed 20/Feb/2008 14:05

		Kent East		Value 2002-03		CG	
Description	Units & format	Short	Medium	Long	Infra	Total	
1	Equivalent population serviced (resident).	749.17					B3
2	Trade effluent load received at STW	14,386					B3
3	Tanker load received at STW	5,442					C3
4	Volume of waste water returned	136.30					B4
5	Volume trade effluent	8.60					B3
6	Average dom prop connected to sewerage system receiving treatment	266.77					A2
Asset life							
7	The gross mea value of sewage treatment assets as at 31 March 2003	2.8	336.1	0.4	0.0		339.3 B3
Size band						Total	
1 (> 1500 kg BOD5/day)	2 (>15 <= 30 kg BOD5/day)	3 (>30 <= 120 kg BOD5/day)	4 (>120 <= 600 kg BOD5/day)	5 (>600 <= 1500 kg BOD5/day)	6 (> 1500 kg BOD5/day)	Total	
8	The total number of preliminary sewage works	0	0	0	0	2	2 A1
9	The total number of primary sewage works	1	0	0	0	1	1 A1
10	The total number of secondary activated works	1	0	0	1	7	10 A1
11	The total number of secondary biological works	3	1	1	5	1	12 A1
12	The total number of tertiary activated works	2	0	0	1	0	3 A1
13	The total number of tertiary biological works	1	3	9	8	1	23 A1
14	Load received by preliminary works	0	0	0	0	5,715	5,715 B3
15	Load received by primary works	1	0	0	0	0	1 B3
16	Load received by secondary activated works	14	0	0	214	26,792	28,441 B3
17	Load received by secondary biological works	14	17	48	1,773	2,342	5,506 B3
18	Load received by tertiary activated works	10	0	0	289	0	309 B3
19	Load received by tertiary biological works	11	62	526	2,290	9,651	13,579 B3
20	The total number of preliminary works with NH3 consents (<= 5mg/l)	0	0	0	0	0	0 A1
21	The total number of primary works with NH3 consents (<= 5mg/l)	0	0	0	0	0	0 A1
22	The total number of secondary activated work with NH3 consents (<= 5mg/l)	0	0	0	0	3	3 A1
23	The total number of secondary biological works with NH3 consents (<= 5mg/l)	0	0	0	0	0	0 A1
24	The total number of tertiary activated works with NH3 consents (<= 5mg/l)	0	0	0	0	0	0 A1
25	The total number of tertiary biological works with NH3 consents (<= 5mg/l)	0	0	2	3	1	6 A1

Table CM7

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
 CM7 - Sewage treatment (ST) 2002-03 explanatory factors
 Printed 20/Feb/2008 14:05

		Kent West		Value 2002-03		CG	
Description	Units & format	Short	Medium	Long	Infra	Total	
1	Equivalent population serviced (resident).	000	796.02				B3
2	Trade effluent load received at STW	kg COD/day	6,927				B3
3	Tanker load received at STW	kg COD/day	2,760				C3
4	Volume of waste water returned	M/ld	142.10				B4
5	Volume trade effluent	M/ld	4.10				B3
6	Average dom prop connected to sewerage system receiving treatment	000	323.04				A2
		Asset life				Total	
7	The gross mea value of sewage treatment assets as at 31 March 2003	£m	2.6	313.1	0.3	0.0	316.0 B3
		Size band				Total	
		1 (> 1500 kg BOD5/day)	2 (>15 <= 30 kg BOD5/day)	3 (>30 <= 120 kg BOD5/day)	4 (>120 <= 600 kg BOD5/day)	5 (>600 <= 1500 kg BOD5/day)	6 (> 1500 kg BOD5/day)
8	The total number of preliminary sewage works	nr	0	0	1	0	0 1 A1
9	The total number of primary sewage works	nr	1	0	0	1	0 2 A1
10	The total number of secondary activated works	nr	0	0	0	0	5 A1
11	The total number of secondary biological works	nr	6	3	3	7	2 21 A1
12	The total number of tertiary activated works	nr	0	0	2	0	0 4 A1
13	The total number of tertiary biological works	nr	0	6	6	7	2 25 A1
14	Load received by preliminary works	kg BOD5/day	0	0	93	0	0 93 B3
15	Load received by primary works	kg BOD5/day	3	0	0	206	0 209 B3
16	Load received by secondary activated works	kg BOD5/day	0	0	0	0	26,830 B3
17	Load received by secondary biological works	kg BOD5/day	33	61	212	2,089	8,736 11,141 B3
18	Load received by tertiary activated works	kg BOD5/day	0	0	145	1,011	0 1,156 B3
19	Load received by tertiary biological works	kg BOD5/day	0	111	469	2,283	3,453 9,373 B3
20	The total number of preliminary works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	0	0 0 A1
21	The total number of primary works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	0	0 0 A1
22	The total number of secondary activated work with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	0	1 1 A1
23	The total number of secondary biological works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	0	0 0 A1
24	The total number of tertiary activated works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	2	0 2 A1
25	The total number of tertiary biological works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	2	3	1 8 A1

Table CM7

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
 CM7 - Sewage treatment (ST) 2002-03 explanatory factors
 Printed 20/Feb/2008 14:05

		Sussex East		Value 2002-03		CG	
Description	Units & format	Short	Medium	Long	Infra	Total	
1	Equivalent population serviced (resident).	000	538.64				
2	Trade effluent load received at STW	kg COD/day	3,206			B3	
3	Tanker load received at STW	kg COD/day	2,016			B3	
4	Volume of waste water returned	M/ld	97.80			C3	
5	Volume trade effluent	M/ld	3.50			B4	
6	Average dom prop connected to sewerage system receiving treatment	000	253.02			B3	
		Asset life				A2	
		Short	Medium	Long	Infra	Total	
7	The gross mea value of sewage treatment assets as at 31 March 2003	£m	2.1	253.7	0.3	0.0	256.1 B3
		Size band				Total	
		1 (> 1500 kg BOD5/day)	2 (>15 <= 30 kg BOD5/day)	3 (>30 <= 120 kg BOD5/day)	4 (>120 <= 600 kg BOD5/day)	5 (>600 <= 1500 kg BOD5/day)	6 (> 1500 kg BOD5/day)
8	The total number of preliminary sewage works	nr	0	0	0	0	0 A1
9	The total number of primary sewage works	nr	2	0	0	0	2 A1
10	The total number of secondary activated works	nr	3	2	1	0	10 A1
11	The total number of secondary biological works	nr	18	2	4	1	25 A1
12	The total number of tertiary activated works	nr	3	1	2	0	12 A1
13	The total number of tertiary biological works	nr	2	3	27	3	43 A1
14	Load received by preliminary works	kg BOD5/day	0	0	0	0	0 B3
15	Load received by primary works	kg BOD5/day	3	0	0	0	3 B3
16	Load received by secondary activated works	kg BOD5/day	6	34	84	531	17,646 B3
17	Load received by secondary biological works	kg BOD5/day	67	45	217	1,241	10,225 B3
18	Load received by tertiary activated works	kg BOD5/day	31	25	171	1,801	1,621 B3
19	Load received by tertiary biological works	kg BOD5/day	20	55	2,072	1,456	2,154 B3
20	The total number of preliminary works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	0	0 A1
21	The total number of primary works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	0	0 A1
22	The total number of secondary activated work with NH3 consents (<= 5mg/l)	kg BOD5/day	0	1	1	1	3 A1
23	The total number of secondary biological works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	0	0 A1
24	The total number of tertiary activated works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	1	2	4 A1
25	The total number of tertiary biological works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	3	3	9 A1

Table CM7

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
 CM7 - Sewage treatment (ST) 2002-03 explanatory factors
 Printed 20/Feb/2008 14:05

		Sussex West		Value 2002-03		CG
Description	Units & format	Short	Medium	Long	Infra	Total
1	Equivalent population serviced (resident)	625.23				
2	Trade effluent load received at STW	2,255				
3	Tanker load received at STW	3,650				
4	Volume of waste water returned	165.40				
5	Volume trade effluent	5.20				
6	Average dom prop connected to sewerage system receiving treatment	287.80				
		Asset life				
7	The gross mea value of sewage treatment assets as at 31 March 2003	2.2	259.2	0.3	0.0	261.7
		Size band				Total
	1 (> 1500 kg BOD5/day)	2 (>15 <= 30 kg BOD5/day)	3 (>30 <= 120 kg BOD5/day)	4 (>120 <= 600 kg BOD5/day)	5 (>600 <= 1500 kg BOD5/day)	6 (> 1500 kg BOD5/day)
8	The total number of preliminary sewage works	0	0	0	0	0
9	The total number of primary sewage works	1	0	0	0	0
10	The total number of secondary activated works	1	0	0	0	0
11	The total number of secondary biological works	23	4	8	8	2
12	The total number of tertiary activated works	8	0	0	1	0
13	The total number of tertiary biological works	3	3	6	5	2
14	Load received by preliminary works	0	0	0	0	0
15	Load received by primary works	0	0	0	0	0
16	Load received by secondary activated works	4	0	0	0	0
17	Load received by secondary biological works	124	79	441	2,115	2,755
18	Load received by tertiary activated works	78	0	72	617	0
19	Load received by tertiary biological works	29	83	357	1,385	2,982
20	The total number of preliminary works with NH3 consents (<= 5mg/l)	0	0	0	0	0
21	The total number of primary works with NH3 consents (<= 5mg/l)	0	0	0	0	0
22	The total number of secondary activated work with NH3 consents (<= 5mg/l)	0	0	0	0	0
23	The total number of secondary biological works with NH3 consents (<= 5mg/l)	0	0	0	1	1
24	The total number of tertiary activated works with NH3 consents (<= 5mg/l)	0	0	1	0	1
25	The total number of tertiary biological works with NH3 consents (<= 5mg/l)	0	0	0	1	1

Table CM7

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
 CM7 - Sewage treatment (ST) 2002-03 explanatory factors
 Printed 20/Feb/2008 14:06

Total		Value 2002-03		CG						
Description	Units & format	Short	Long	Infra	Total					
1	Equivalent population serviced (resident)	000	4,180.22		A2					
2	Trade effluent load received at STW	kg COD/day	40,318		B3					
3	Tanker load received at STW	kg COD/day	20,034		C3					
4	Volume of waste water returned	M/ld	803.10		B4					
5	Volume trade effluent	M/ld	34.50		B3					
6	Average dom prop connected to sewerage system receiving treatment	000	1,606.27		A2					
Asset life										
7	The gross mea value of sewage treatment assets as at 31 March 2003	£m	14.1	1.9	0.0	Total				
Size band										
1 (> 1500 kg BOD5/day)	2 (>15 <= 30 kg BOD5/day)	3 (>30 <= 120 kg BOD5/day)	4 (>120 <= 600 kg BOD5/day)	5 (>600 <= 1500 kg BOD5/day)	6 (> 1500 kg BOD5/day)	Total				
8	The total number of preliminary sewage works	nr	0	1	0	3	4	A1		
9	The total number of primary sewage works	nr	9	0	0	0	0	10	A1	
10	The total number of secondary activated works	nr	7	3	1	3	3	28	45	A1
11	The total number of secondary biological works	nr	66	13	21	27	4	5	136	A1
12	The total number of tertiary activated works	nr	15	1	8	11	0	3	38	A1
13	The total number of tertiary biological works	nr	11	15	59	36	14	5	140	A1
14	Load received by preliminary works	kg BOD5/day	0	0	93	0	0	21,488	21,591	B3
15	Load received by primary works	kg BOD5/day	12	0	0	206	0	0	218	B3
16	Load received by secondary activated works	kg BOD5/day	31	61	84	896	3,460	180,168	164,700	B3
17	Load received by secondary biological works	kg BOD5/day	281	271	1,321	7,843	5,092	21,712	36,520	B3
18	Load received by tertiary activated works	kg BOD5/day	125	25	538	4,140	0	6,715	11,543	B3
19	Load received by tertiary biological works	kg BOD5/day	89	311	4,073	9,713	13,268	18,593	46,047	B3
20	The total number of preliminary works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	0	0	0	0	A1
21	The total number of primary works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	0	0	0	0	A1
22	The total number of secondary activated work with NH3 consents (<= 5mg/l)	kg BOD5/day	0	2	1	2	0	4	9	A1
23	The total number of secondary biological works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	0	1	0	1	2	A1
24	The total number of tertiary activated works with NH3 consents (<= 5mg/l)	kg BOD5/day	0	0	2	4	0	2	8	A1
25	The total number of tertiary biological works with NH3 consents (<= 5mg/l)	kg BOD5/day	1	0	7	9	7	4	28	A1

Table CM7

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM8 - Sludge treatment and disposal (ST&D) 2002-03 explanatory factors

Printed 20/Feb/2008 15:24

		Hampshire East (including IOW)										CG
		Value 2002-03										
1	Number of STWs which treat only their own sludge	nr										
2	Number of STWs, which are sludge centres	nr										
3	Number of sludge centres not situated at STWs	nr										
		Sludge treatment process										Total
		Dewatering only	Lime stabilisation		Digestion		Drying	Composting	Other			
			Dewatering	No dewatering	Dewatering	No dewatering						
4	Amount of sewage sludge treated by each process	ttds	0.1	0.0	0.0	12.1	0.0	9.6	0.0	0.0	21.8	B4
		Sludge disposal route										Total
		Farmland	Incineration	Landfill	Land reclamation	Other						
5	Amount of sewage sludge disposed of to each route	ttds	20.9	0.0	0.9	0.0	0.0	21.8				B4

Table CM8

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM8 - Sludge treatment and disposal (ST&D) 2002-03 explanatory factors

Printed 20/Feb/2008 15:25

		Hampshire West										CG
		Value 2002-03										
1	Number of STWs which treat only their own sludge	nr										
2	Number of STWs, which are sludge centres	nr										
3	Number of sludge centres not situated at STWs	nr										
		Sludge treatment process										Total
		Dewatering only	Lime stabilisation		Digestion		Drying	Composting	Other			
			Dewatering	No dewatering	Dewatering	No dewatering						
4	Amount of sewage sludge treated by each process	ttds	0.6	7.1	0.0	0.0	3.9	0.0	6.7	0.0	18.3	
		Sludge disposal route										Total
		Farmland	Incineration	Landfill	Land reclamation	Other						
5	Amount of sewage sludge disposed of to each route	ttds	15.4	0.0	3.0	0.0	0.0	18.4				
												B4

Table CM8

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM8 - Sludge treatment and disposal (ST&D) 2002-03 explanatory factors

Printed 20/Feb/2008 15:25

		Kent East										CG
		Value 2002-03										
1	Number of STWs which treat only their own sludge	nr										
2	Number of STWs, which are sludge centres	nr										
3	Number of sludge centres not situated at STWs	nr										
Sludge treatment process												
Dewatering only		Lime stabilisation		Digestion		Drying		Composting		Other		
		Dewatering		No dewatering		Dewatering		No dewatering		Other		
4	Amount of sewage sludge treated by each process	0.8	0.0	0.0	0.0	19.7	0.0	0.0	0.0	0.0	20.5	B4
Sludge disposal route												
Farmland		Incineration		Landfill		Land reclamation		Other		Total		
5	Amount of sewage sludge disposed of to each route	19.7	0.0	0.8	0.0	0.0	0.0	0.0	0.0	20.5		B4

Table CM8

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM8 - Sludge treatment and disposal (ST&D) 2002-03 explanatory factors

Printed 20/Feb/2008 15:25

		Kent West									
		Value 2002-03								CG	
1	Number of STWs which treat only their own sludge	nr									
2	Number of STWs, which are sludge centres	nr	0								
3	Number of sludge centres not situated at STWs	nr	8								
			49								
Sludge treatment process											
Dewatering only		Lime stabilisation		Digestion		Drying		Composting		Other	
		Dewatering		No dewatering		Dewatering		No dewatering		Total	
		0.0		3.7		0.0		20.1		0.0	
4	Amount of sewage sludge treated by each process	ttds									23.8
Sludge disposal route											
Farmland		Incineration		Landfill		Land reclamation		Other		Total	
		0.0		0.0		0.0		0.0		23.9	
5	Amount of sewage sludge disposed of to each route	ttds									B4

Table CM8

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM8 - Sludge treatment and disposal (ST&D) 2002-03 explanatory factors

Printed 20/Feb/2008 15:25

		Sussex East										CG	
		Value 2002-03											
1	Number of STWs which treat only their own sludge	nr										0	
2	Number of STWs, which are sludge centres	nr										2	
3	Number of sludge centres not situated at STWs	nr										94	
		Sludge treatment process										Total	
		Dewatering only	Lime stabilisation		Digestion		Drying	Composting	Other				
			Dewatering	No dewatering	Dewatering	No dewatering							
4	Amount of sewage sludge treated by each process	ttds	1.9	0.3	0.0	0.0	1.1	0.0	0.0	0.0	0.0	3.3	
		Sludge disposal route										Total	
		Farmland	Incineration	Landfill	Land reclamation	Other							
5	Amount of sewage sludge disposed of to each route	ttds	1.4	0.0	1.9	0.0	0.0	0.0	0.0	0.0	3.3	B4	

Table CM8

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM8 - Sludge treatment and disposal (ST&D) 2002-03 explanatory factors

Printed 20/Feb/2008 15:25

		Sussex West										CG
		Value 2002-03										
1	Number of STWs which treat only their own sludge	nr										
2	Number of STWs, which are sludge centres	nr										
3	Number of sludge centres not situated at STWs	nr										
		Sludge treatment process										Total
		Dewatering only	Lime stabilisation		Digestion		Drying	Composting	Other			
			Dewatering	No dewatering	Dewatering	No dewatering						
4	Amount of sewage sludge treated by each process	ttds	0.1	2.1	0.0	14.2	0.0	4.2	0.0	0.0	20.6	B4
		Sludge disposal route										Total
		Farmland	Incineration	Landfill	Land reclamation	Other						
5	Amount of sewage sludge disposed of to each route	ttds	19.2	0.0	1.4	0.0	0.0	20.6				B4

Table CM8

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM8 - Sludge treatment and disposal (ST&D) 2002-03 explanatory factors

Printed 20/Feb/2008 15:26

		Total												CG	
		Value 2002-03													
1	Number of STWs which treat only their own sludge	nr	1												
2	Number of STWs, which are sludge centres	nr	22												
3	Number of sludge centres not situated at STWs	nr	346												
				Sludge treatment process										Total	
				Dewatering only		Lime stabilisation		Digestion		Drying	Composting		Other		
				Dewatering	No dewatering	Dewatering	No dewatering	Dewatering	No dewatering						
				3.5	0.0	13.2	0.0	71.1	0.0	20.5	0.0	0.0	0.0	108.3	B4
				Sludge disposal route										Total	
				Farmland		Incineration		Landfill		Land reclamation		Other			
				100.5	0.0	8.0	0.0	0.0	0.0	108.5	0.0	0.0	0.0	108.5	B4
4	Amount of sewage sludge treated by each process	ttds													
5	Amount of sewage sludge disposed of to each route	ttds													

Table CM8

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM9 - Sewerage management and general (SM&G) 2002-03 explanatory factors

Printed 20/Feb/2008 14:10

		Value 2002-03	CG
Description	Units & format		
1	Total length of sewers	21,171.08	B3
2	Total number of households billed for sewage.	1,643.444	A1
3	Total number of non-households billed for sewage.	96.738	A1
		Asset life	Total
		Short	Medium
4	The gross mea value of sewerage management and general assets as at 31 March 2003	135.6	120
			58.7
			0.3
			206.6
			B3
		Value 2002-03	
5	The gross mea value at 31 March 2003 - Vehicles	0.000	
6	The gross mea value at 31 March 2003 - Telemetry systems	11.835	
7	The gross mea value at 31 March 2003 - Computers	61.178	
8	% of system covered by telemetry systems	90.0	
9	Telemetry outstations	2,331	

Table CM9

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM10 - Capital maintenance expenditure - Water (outturn prices)

Printed 20/Feb/2008 14:11

Line	Description	Unit	2003-04	2004-05	2005-06	2006-07
1	Water resources and treatment: Water resource facilities	£m	2.014	1.425	2.309	7.711
2	Water resources and treatment: Water treatment works	£m	7.494	6.333	5.508	25.544
3	Water distribution infrastructure: Water distribution mains	£m	17.157	10.027	18.631	30.739
4	Water distribution non-infrastructure: Water distribution mains	£m	1.417	1.238	2.618	2.498
5	Water distribution non-infrastructure: Service reservoirs and water towers	£m	0.762	1.079	0.519	1.499
6	Water distribution non-infrastructure: Pumping stations	£m	2.545	2.221	5.703	6.192
7	Water management and general	£m	4.580	3.854	5.379	5.825

Table CM10

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)

CM11 - Capital maintenance expenditure - Sewerage (outturn prices)

Printed 20/Feb/2008 14:11

		Hampshire East (including IOW)						
Line	Description	Unit	2003-04	2004-05	2005-06	2006-07		
1	Sewerage infrastructure	£m	1.697	1.152	3.331	4.517		
2	Sewerage non-infrastructure	£m	1.896	1.289	1.806	5.868		
3	Sewage treatment	£m	8.832	3.886	12.502	13.985		
4	Sludge treatment and disposal	£m	0.383	0.948	2.345	0.514		
Line	Description	Unit	2003-04	2004-05	2005-06	2006-07		
5	Sewerage management and general (company wide only)	£m	14.752	9.106	20.887	23.697		

Table CM11

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
CM11 - Capital maintenance expenditure - Sewerage (outturn prices)
Printed 20/Feb/2008 14:11

		Hampshire West					
Line	Description	Unit	2003-04	2004-05	2005-06	2006-07	
1	Sewerage infrastructure	£m	1.380	1.503	2.334	3.510	
2	Sewerage non-infrastructure	£m	1.164	0.523	1.356	2.142	
3	Sewage treatment	£m	5.551	6.836	14.507	13.337	
4	Sludge treatment and disposal	£m	0.307	0.489	1.330	0.530	
Line	Description	Unit	2003-04	2004-05	2005-06	2006-07	
5	Sewerage management and general (company wide only)	£m	14.752	9.106	20.887	23.697	

Table CM11

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
CM11 - Capital maintenance expenditure - Sewerage (outturn prices)
Printed 20/Feb/2008 14:11

		Kent East						
Line	Description	Unit	2003-04	2004-05	2005-06	2006-07		
1	Sewerage infrastructure	£m	2.423	0.076	4.164	6.176		
2	Sewerage non-infrastructure	£m	1.391	0.506	1.733	3.020		
3	Sewage treatment	£m	5.675	5.407	15.148	20.657		
4	Sludge treatment and disposal	£m	0.112	0.531	0.729	8.328		
Line	Description	Unit	2003-04	2004-05	2005-06	2006-07		
5	Sewerage management and general (company wide only)	£m	14.752	9.106	20.887	23.697		

Table CM11

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
CM11 - Capital maintenance expenditure - Sewerage (outturn prices)

Printed 20/Feb/2008 14:11

		Kent West					
Line	Description	Unit	2003-04	2004-05	2005-06	2006-07	
1	Sewerage infrastructure	£m	1.411	0.971	5.437	6.558	
2	Sewerage non-infrastructure	£m	0.844	1.562	3.254	5.755	
3	Sewage treatment	£m	7.000	9.031	15.037	22.064	
4	Sludge treatment and disposal	£m	0.089	0.424	2.586	1.618	
Line	Description	Unit	2003-04	2004-05	2005-06	2006-07	
5	Sewerage management and general (company wide only)	£m	14.752	9.106	20.887	23.697	

Table CM11

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
CM11 - Capital maintenance expenditure - Sewerage (outturn prices)

Printed 20/Feb/2008 14:11

		Sussex East						
Line	Description	Unit	2003-04	2004-05	2005-06	2006-07		
1	Sewerage infrastructure	£m	1.424	1.330	2.580	3.494		
2	Sewerage non-infrastructure	£m	0.769	0.496	1.439	1.985		
3	Sewage treatment	£m	9.584	5.554	10.464	17.146		
4	Sludge treatment and disposal	£m	0.142	0.511	2.826	0.884		
Line	Description	Unit	2003-04	2004-05	2005-06	2006-07		
5	Sewerage management and general (company wide only)	£m	14.752	9.106	20.887	23.697		

Table CM11

CMER-ICS, 1.12 for SRN (Southern Water Services Ltd)
CM11 - Capital maintenance expenditure - Sewerage (outturn prices)
Printed 20/Feb/2008 14:11

		Sussex West						
Line	Description	Unit	2003-04	2004-05	2005-06	2006-07		
1	Sewerage infrastructure	£m	1.692	1.442	2.731	4.877		
2	Sewerage non-infrastructure	£m	0.986	0.456	3.923	3.155		
3	Sewage treatment	£m	10.859	4.263	10.154	25.761		
4	Sludge treatment and disposal	£m	0.073	0.470	0.831	6.510		
Line	Description	Unit	2003-04	2004-05	2005-06	2006-07		
5	Sewerage management and general (company wide only)	£m	14.752	9.106	20.887	23.697		

Table CM11

