



SCOTTISH WATER

Water Industry Commission for Scotland (WICS) ANNUAL RETURN 2024/25

Section D – Asset Information

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Section D – Asset Information

1 Table D5 – Activities – Water service

1.1 Overview

Section D provides information on activities relating to water mains and sewers during the report year. Table D5 covers the water mains activities.

The total length of water mains has increased from 49,224 km for AR24 to 49,385 km for AR25 mainly due to new housing and commercial developments.

There has been a decrease in the number of communication pipes replaced in AR25 as reported in **Lines D5.9-D5.11** compared to AR24 however please see the performance trend section for these lines as the AR24 figures have been revised. The total number of pipes replaced is 1,699, which is a decrease of 52% based from the original AR24 figures. The number of pipes replaced was taken from the Salesforce Task Scheduling system, as in AR24, which uses specific categories for recording the type of activity undertaken on communication pipes. The system has ensured that all replacements involving lead can be clearly identified and included in Section D.

1.2 Performance Trends

D5.1 Total length of mains (opening balance)

The opening balance for water mains on **Line D5.1** is 49224.43km, which is the **Line H3.4** Mains Potable value from AR24.

The confidence grade of A1 remains the same as AR24.

D5.2 Mains renewed

Renewed mains have increased by 11.89 km from 64.43 km in AR24 to 76.32 km. Renewed pipes have been formed by open cut direct replacement, pipe bursting or certain methods of slip lining of existing mains during the reporting year. Identification of the affected pipes is based on GIS (Geospatial Information Systems) analysis using the method employed to renew the pipe, referred to as "Forming Method" in GIS. The forming methods which identify renewed mains are listed in Table 1.

Table 1: The categories associated with renewing a water main.

ID	Forming Method
30	OCR - Open Cut (Direct Replacement)
35	ACB - Pipe Bursting Of AC Pipe
40	CCB - Pipe Bursting Of Concrete Pipe
45	FPB - Pipe Bursting Of Ferrous Pipe
55	VCB - Pipe Bursting Clay-ware Pipe
60	PBU - Pipe Bursting (Unknown Pipe)
65	CSS - Chemical Soil Stabilisation (Sewers)
70	CIPP - Cured In Place Resin Sleeve Liner (Sewers)
75	GRP - Lined With GRP Panels
80	GRC - Resin Concrete Lining Panels
90	PRP - Ripped PE or PVC Pipe
95	RSP - Ripped Steel Pipe
100	RLP - Ripped Lead Pipe
105	ACT - Thermo Plastic Liner In AC Host
110	TPL - Thermo Plastic Liner Non AC Host
115	ACH - Slip Lining In AC Host Pipe
120	FCH - Slip Lining In Ferrous Host (Close Fit)
125	FLH - Slip Lining In Ferrous Host (Loose Fit)
130	PLL - Service Lining To Lead (Service) Pipe
135	VTH - Slip Lining Clay Pipe (Tight Fit)
140	OCH - Sliplining in Other Host

The confidence grade of B3 remains the same as in AR24.

D5.3 Mains relined

Mains identified as having been relined during the reporting year have decreased from 4.38 km to 2.38 km in AR25. Mains that have been lined since the previous year but whose forming method is “RIM – Resin Injection Methods” or unknown are included in Line D5.3. The improvement in the completion of the forming method in GIS which describes the technique used to reline the pipe has resulted in less pipes being identified with an unknown forming method. This has resulted in more pipes being included in Line D5.2 instead.

The lengths that make up Line **D5.3** and the lining material used is shown in Table 2 below:

Table 2: Lengths of mains relined from GIS.

Lining Material	Length Km
HPPE SDR17	2.135
MDPE SDR11	0.135
SL - Slip Lined	0.106

The confidence grade of B3 remains the same as the method of data collection has not been subject to any improvement plans.

D5.4 Mains cleaned (Total)

The total length of mains cleaned has increased by 6%, from 1,386.59 km in AR24 to 1,464.79 km which is consistent with year-on-year variation. **Line D5.4**, which reports the total length of mains cleaned and **Line D5.5**, which reports the length of mains cleaned for quality reasons, report the same length as all pipes cleaned are selected for water quality improvement reasons, as stated below.

Scottish Water has built on the learning gained in delivering the SR15 OMG06 Mains Cleaning programme, which adopted a one-off “source to tap” zonal cleaning approach and has enhanced this by improving our understanding of how biofilms and metals accumulate and are then mobilised within water networks. A range of field investigations applying the learning gained from the University of Sheffield PODDS (Prevention of Discolouration in Distribution Systems) project were undertaken to build this understanding.

These activities are recorded as “investigations” rather than “cleaning” even where mains flushing activities are carried out as part of the investigative work. This ensures that Scottish Water targets our interventions at locations and at a frequency to manage the rate of material regeneration within the water network. To support this new approach, Scottish Water suggests that a different set of metrics is discussed with the Water Industry Commission for Scotland for application to future annual returns.

The confidence grade of B3 remains the same as in AR24 as the change in the approach to identifying which mains to target did not affect the accuracy of the lengths reported.

D5.5 Distribution mains cleaned for quality

Line D5.5 has increased by 6%, from 1,386.59 km in AR24 to 1,464.79 km in AR25 - the same length as reported in **D5.4**. The method for identifying quality-based cleaning is described in the commentary for **D5.4**.

The confidence grade of B3 remains the same as AR24 as the focus was on changing the approach so that the necessary mains could be targeted more effectively.

D5.6 New mains

Mains lengths adopted for new developments and lengths delivered as part of our capital programme are reported in **Line D5.6**. The length reported in AR24 was 187.43 km. In AR25, 168.43 km have been identified in GIS as being commissioned or been adopted during the year. As in recent years, the GIS analysis employs methods to exclude any historical mains records that have been added during the year. This ensures only newly laid or adopted mains are included.

The confidence grade of B2 remains the same as AR24, as the data quality level has been sustained but not improved.

D5.7 Mains abandoned

46.3 km fewer mains were abandoned in AR25 than in AR24 with 127.93 km being reported, which is an decrease of 27%.

These pipes are identified as being Scottish Water owned and having their status changed from Operational to Abandoned during the year.

The confidence grade of B2 remains the same as AR24, as the data quality level has been sustained but not improved.

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 **Line D5.8**. The length in this reporting year is -43.69km, which is approximately 20% more than in AR24. This length accounts for the necessary updating of networks in GIS during the year that are not identifiable as new or abandoned pipes, for example a correction in the positioning or length in GIS of an existing pipe, as this would not create a new pipe ID or change the operational status.

The confidence grade of B3 remains the same as AR24, as the data quality level has been sustained but not improved.

D5.8 Total length of mains (closing balance)

This line is a summation of **Lines D5.1, D5.2 and D5.6** minus **Lines D5.7 and D5.7a**. The total length reported for AR25 is 49,384.94 km (consistent with **Line H3.4**), compared with 49,224.43 km in AR24.

The confidence grade of A1 remains the same as AR24. The total length value is extracted from our GIS corporate system and therefore we consider A1 to be the appropriate confidence grade. Confidence grades for the input lines (**Lines D5.2 - D5.7a**) are lower (B2 or B3) as there is a level of uncertainty on the individual length of mains that have been subject to the different interventions, but this uncertainty does not affect the confidence in the total length given activity relates to less than one percent of change to our network.

D5.9-D5.11 Communication pipes replaced

These lines report the number of communication pipes. Scottish Water's Salesforce Task Scheduling system has again been used to identify the nature of the work undertaken to replace pipes.

Following AR24, it was found that a number of jobs in Salesforce that were showing in the Power BI reports as being lead replacements were actually investigations where no lead pipes were found at all. A new report has been created that identifies lead replacements distinctly, which has been used to produce the figures for AR25. The new report has also been used to retrospectively calculate the numbers of lead replacements for AR24 to enable a correct comparison, which is shown here:

Line	Description	AR24 Original	AR24 Revised	AR25	Change
D5.9	Lead communication pipes replaced - quality	441	20	62	210%
D5.10	Lead communication pipes replaced - maintenance or other	2854	933	1459	56%
D5.11	Communication pipes replaced - other	214	157	178	13%
Totals		3509	1110	1699	53%

The individual line comparisons in the remainder of the commentary refer to the actual numbers submitted in AR24.

The percentage movement from AR24 to AR25 is shown below in Table 3.

Table 3: Comparison of Communication Pipe Replacements from AR24 to AR25

Line	Description	AR24	AR25	Change
D5.9	Lead communication pipes replaced - quality	441	62	-86%
D5.10	Lead communication pipes replaced - maintenance or other	2854	1459	-49%
D5.11	Communication pipes replaced - other	214	178	-17%

D5.9 Lead communication pipes replaced - quality

The total number in AR25 is 62, which is an decrease of 379 from AR24.

The confidence grade remains at A2 given the data quality level has been sustained but not improved.

D5.10 Lead communication pipes replaced – maintenance or other

The total number in AR25 is 1,459, which is an decrease of 1,395 from AR24.

The confidence grade remains at A2 given the data quality level has been sustained but not improved.

D5.11 Communication pipes replaced - other

The total number replaced in AR25 is 178. This is a 17% decrease from the 214 reported in AR24.

The confidence grade remains at A2 given the data quality level has been sustained but not improved.

1.3 Data

1.3.1 Data sources and confidence grades

The lengths reported in Table D5 are taken, unless otherwise stated, directly from digitised infrastructure in Scottish Water's GIS system.

Mains Renewed and Mains Relined are reported from interventions carried out during reactive operations, capital maintenance and capital project interventions; Mains Cleaned is reported from work done as part of the capital programme and carried out by our water infrastructure alliance partner.

The number of Pipes Replaced is taken from Scottish Water's lead replacement programme records which now processes through the Salesforce Task Scheduling system. Further detailed information on how individual lines are calculated, including the components of the calculation, is contained in the assurance report for Section D.

Confidence grades are the same as AR24.

1.3.2 Data improvement programmes

Following the embedding of Scottish Water's new Salesforce Task Scheduling system with PowerBI reporting, which uses specific categories for recording the type of replacement activity undertaken on communication pipes, there have been no further data improvement programmes.

1.3.3 Assumptions used for forecast data

There is no forecast data for the D5 table.

2 Table D6 – Activities – Wastewater service

2.1 Overview

The D Tables provide information on activities relating to water mains and sewers during the report year. Table D6 covers the activities on sewers. The overall increase in activity across the reported lines when compared to AR24 is largely due to new housing and commercial developments being connected.

The total length of sewers has increased from 54,690 km at AR24 to 55,200 km for AR25. The increase is largely due to the addition of new sewers. Of the total length of sewers, 20,256 km relate to sewer laterals, which are either new wastewater house connections added, or 'virtual' connections created in GIS being replaced with more accurate, digitized lateral lengths.

2.1.1 Performance Trends

D6.1 Total length of sewers – opening balance

The opening balance for sewers on **Line D6.1** is 54689.63 km, which is the Table **H4.1** Sewers value from AR24.

The confidence grade of B2 remains the same as AR24.

D6.3 New sewers added during the year

The length reported has increased by 7.1%, from 452.32 km in AR24 to 484.66 km in AR25.

Of the 484.66 km of new sewers, 227.6 km were due to the increase in the number of connected properties in AR25, as shown in Table 4 below:

Table 4: Change in the number of connected properties from AR24 to AR25.

	AR24	AR25	Difference
Connected Properties (nr)	2,672,411	2,690,305	17,894

The lengths of connections are taken from digitized laterals in GIS or based on average lateral lengths representative of the different property types in Scotland.

The remaining 257.1 km of new sewers is due to newly laid sewers and changes in the existing wastewater network.

The confidence grade of B2 remains the same as AR24, as the data quality level has been sustained but not improved.

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

In AR25 there were 35.76 km of sewers inspected which is a reduction of 13.5 km from AR24. The majority of the AR25 survey work was in Critical Sewers CCTV Phase 7 Dundee City & Angus (27.0 km) and CCTV Phase 6 - Aberdeenshire (6.8 km) performed under the Critical Sewers (MA002) and Non-Critical Sewers (MA014) Management Approaches this year. At the start of SR21 extensive work in Glasgow and Edinburgh was undertaken along with SR15 overhang work, which resulted in a high annual CCTV survey length. The remaining SR21 work has been re-phased into SR27. This is likely to result in the trend of decreasing lengths continuing until the CCTV survey programme accelerates in SR27.

The confidence grade of B3 remains the same as AR24, as the data quality level has been sustained but not improved.

D6.5 Sewers – renovated

In AR25 0.09 km of sewers were recorded as being renovated in Scottish Water's GIS system. In AR24 there were 0 km.

The confidence grade for **Line D6.5** is B2.

D6.6 Sewers - replaced

The sewers were replaced as part of the infrastructure programme in this reporting year has increased from 0.29 km in AR24 to 0.55 km in AR25.

The confidence grade of B2 remains the same as AR24, as the data quality level has been sustained but not improved.

D6.7 Abandoned sewers

In AR24 we reported 12.31 km of sewers as abandoned. This has increased by 87% (10.67 km) in AR25 to 22.98 km. There is natural variation of abandoned sewers every year due to the varied scale of activity carried out by the capital programme. The average length of abandoned sewers over the past five years has been 18.01 km.

The confidence grade of B2 remains the same as AR24, as the data quality level has been sustained but not improved.

D6.7a Other changes to sewers

The length reported is the balancing value to bring the total changes in the year in line with the closing balance reported in **Line D6.8**. For AR25 the balancing figure has increased from -29.41 km to -48.82 km. This length accounts for the necessary updating of networks in GIS during the year that do not reflect physical changes to sewers and the change due to statistically generated laterals being replaced with GIS digitized laterals, which have a more accurate length. The confidence grade for **Line D6.7a** is B3, this is in line with the confidence grade used for **D5.7a**.

The confidence grade for **Line D6.7a** is B3, this is in line with the confidence grade used for **D5.7a**.

D6.8 Total length of sewer - closing balance

This line is a summation of **Lines D6.1, D6.3** minus **Lines D6.7 and D6.7a**. The closing balance for sewers on **Line D6.8** is 55,200.13 km, compared to 54,689.62 km reported in AR24 and is consistent with **Line H4.1**. Sewer laterals contribute 20,256 km to the closing balance.

The confidence grade of B2 remains the same as AR24, as the data quality level has been sustained but not improved.

2.2 Data

2.2.1 Data sources and confidence grades

The lengths reported in Table D6 are taken directly from digitised infrastructure in Scottish Water's GIS system unless otherwise stated.

The length reported in 'Other Changes to Sewers' is the balancing value to bring the total changes in the year to the current total length of sewers as reported in **Line H4.1**.

2.2.2 Data improvement programmes

Data is constantly updated in GIS by digitising new development plans and the opportunistic recording of information gathered during operational activities.

2.2.3 Assumptions used for forecast data

There is no forecast data for Table D6.