

# **AMP6 Reporter**

2017-18 Assurance Report  
Bristol Water

**09 July 2018**

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## Client signoff

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## Assurance Statement for Bristol Water's 2017/18 APR

This document is Atkins Limited's assurance statement that encapsulates observations we made during the technical audit of aspects of Bristol Water's Annual Performance Report for 2017/18. We presented our findings to the Bristol Water's Executive Team on 11 June 2018, the Bristol Water Challenge Panel on 13 June 2018 and to the full Board of Bristol Water on 5 July 2018.

This statement is part of a continuous improvement process that has involved detailed consideration of the methodologies and their applications by which Bristol Water reports on its performance at financial year end and at the mid-year point. We have been providing this service since 2015.

For the areas we cover and from the information we have been provided with, we conclude that the Company has a full understanding of and has sufficient processes and internal systems of control to meet its reporting obligations. We also conclude that the Company has appropriate systems and processes in place to allow it to manage its reporting risks.

Our approach to technical assurance is to draw upon our experiences at previous rounds of audit and to plan in detail who should be present, what information will be covered, where and when. We issue a notification, carry out the audit, provide immediate verbal feedback, provide key issue feedback within 24 hours and a formal feedback summary including requests for further information or clarification with a table of issues raised. The issues across all of the audits are gathered into an Issues Log, which is used to manage the resolution of reporting issues before the finalisation of the technical assurance process. This statement reflects the technical assurance position after the iterative process of resolving outstanding issues has concluded. It should be read in conjunction with Bristol Water's Risk & Compliance Statement 2017/18 and associated documentation.

Bristol Water has 21 Performance Commitments (PCs), ten of which have associated financial penalties and rewards. We note that since last year's report, Bristol Water has reached agreement with Ofwat for corrigenda to the company specific appendix that accompanied its final determination for AMP6.

As part of our independent assurance of Bristol Water's Annual Performance Report 2017/18, we have been engaged to audit the following tables and submissions to be published in Bristol Water's 2017/18 Annual Performance Report and regulatory reporting:

- Data and commentary reported as part of the Annual Performance Report (APR) to Ofwat:
  - Table 3A - Outcome performance table, including underperformance penalties and outperformance payments.
  - Table 3B - Sub-measure performance table
  - Table 3D - SIM (Service Incentive Mechanism)
  - Tables 4A, 4B, 4C, 4D, 4F and 4G
  - Table 3S – shadow reporting of leakage, customer supply interruptions, unplanned outage, PCC, mains bursts and risk of severe restrictions in a drought (included in separate report)
  - Tables 4J, 4L, 4P, 4Q and 4V (formerly Wholesale Cost Tables)
- WRMP Annual Review
- GSS payments

In a series of 35 meetings and six remote audits in May and June 2018, we carried out combined methodology and data audits designed to test:

- The Company's internal control systems to produce the submission;
- Whether reporting appears to align with relevant guidance;
- If data has been compiled in accordance with Company methods and procedures; and
- Whether commentary is consistent with our observations on performance levels, trends and the information we were provided with at audit.

We were provided with a copy of the commentary the company proposed to publish to explain and clarify its reported performance information. We provided feedback on whether it was a reasonable interpretation of what we had seen during our audits.

Bristol Water has met nine of its 21 committed performance levels for 2017/18 and will incur financial penalties on four of the 12 PCs where it has underperformed. Nevertheless, meter penetration, total carbon emissions, biodiversity index, waste disposal compliance, raw water quality of sources, population in centres >25,000 at risk from asset failure, negative water quality contacts, general satisfaction from surveys and negative billing contacts all show an improvement since 2016/17. Notable observations on Bristol Water's performance are set out below.

- Unplanned customer minutes show a significant increase since 2016/17 (from 13.1 minutes to 73.7 minutes) due to several incidents, including the burst at Willsbridge in July 2017. The commentary sets out the new operational measures in place to improve recovery times, and provided there are no such incidents in the next two years, the Company should be able to meet its committed performance levels.
- Performance on infrastructure asset reliability has been adversely affected by the severe weather conditions experienced in February and March 2018, which has resulted in the sub-indicator bursts exceeding the target resulting in an overall marginal assessment.
- The evidence provided demonstrated that the Southern Resilience Scheme was fully operational before 31st March 2018. We were therefore able to confirm that Performance Commitment B1 (population in centres >25,000 at risk from asset failure) had been fulfilled.
- The Company has not met its metering penetration target for the current year or the past two years. However, it has forecast to meet the target for 2019/20. There is strong senior management ambition to meet this and there is a plan in place to achieve this.
- The Company has developed a new method of dual-reporting leakage to accommodate both leakage performance based on the original non-household night use (NHHNU) assumptions on which the ODI was based, and leakage performance based on more recent NHHNU data, which we believe is more robust. The commentary sets out the Company's efforts to meet the 12% reduction in leakage, which we confirm from our experience is a challenging target to achieve.
- The Company's Service Incentive Mechanism (SIM) score has declined since 2016/17 and the Company has missed its committed performance level. The Company's commentary explains that this is primarily due to four significant incidents, and sets out how it has undertaken lessons learnt research and implemented improvements for the incident at Clevedon, leading to improved customer satisfaction. Based on the actions taken by the Company we believe the Company should be able to improve its performance next year. Our audit of Bristol Water's reporting against Performance Commitment J1: Service Incentive Mechanism identified a potential for process errors when calls were in a managed process, which cannot be precisely quantified after the fact, but our assessment based on the available information is that this is not material to the reported figure. The Company has implemented an action plan to address the problem and will make changes to its process and methodology documentation to reinforce this.
- The Company has improved its customer satisfaction in relation to the general satisfaction from surveys Performance Commitment, although it has not yet met its challenging target of 93% for all years of the AMP. As with SIM, the Company has attributed this to four significant incidents, and we concur that this was an exceptional year. We believe the Company should be able to improve its performance through the measures set out in the commentary.

During the assurance activities, we have had free access to the Director of Strategy and Regulation and his team and the full cooperation of the people responsible for preparing and reporting the 2017/18 APR and regulatory submissions and the supporting information.

We are pleased to provide assurance that, overall, we consider the information published by Bristol Water has been compiled using information which is accurate, reliable and complete. We have traced selected

information to data sources and information systems. We consider the published metrics and commentary provide a fair and reasonable account of Bristol Water's performance in 2017/18 and progress towards achieving its 2020 targets.

While we observed a number of issues for which we provide comment within our main report, we believe these do not impact materially upon the potential to sign-off the Company submission. Each is an area we believe should be given further consideration as part of continuing improvement to performance reporting by Bristol Water.

**Jonathan P Archer**

Regulation Director  
Reporter providing Technical Assurance Services to Bristol Water



# Executive summary

## Introduction

This report summarises the external technical assurance (Reporter) services Atkins has provided in relation to aspects of Bristol Water's 2017/18 Annual Performance Report (APR) Tables 3 and 4, GSS Payments and Water Resources Management Plan (WRMP) Annual Review. This is our third year of providing these services to Bristol Water and the third year of AMP6 in which Bristol Water has reported against the measures defined in the 2014 Final Determination by Ofwat (as subsequently amended as a result of the deliberations of the CMA). This is the second year that we have provided assurance for the WRMP Annual Review. Our approach has been shaped by the expectations of the assurance to be provided for a "prescribed" water company. Throughout, we have received the cooperation of the Company and have had the freedom to express our opinions. We have had access to, and have fed back to the Board, Senior Leadership Team and Bristol Water Challenge Panel.

## Approach

We carried out a series of structured audits, which we tailored to the different data types being reported. For all audits this year we carried out a combined methodology and data audit; these were in line with Ofgem's Data Assurance Guidance.

Our focus on particular areas was risk-based as highlighted in Bristol Water's own analysis and supplemented by our experience in identifying and quantifying the elements of the journey from raw to published data that introduce material errors.

After detailed planning of an audit schedule to ensure the appropriate people (Company and technical auditors) are present, we formally notify all parties of the expectation of the audits. We provide immediate verbal feedback and document our audit findings in both a rapid feedback e-mail and a detailed audit summary. These provide the Company with the opportunity to correct errors of fact and respond with explanations or further information to our observations. The essence of the summaries is captured in an Issues Log which is used to manage the progress on matters arising. The supporting documentation is available for inspection.

## Summary of Findings

Each data table reviewed at audit was allocated an overall rating of Red, Amber or Green to reflect their priority, with separate ratings for the methodology, data and commentary. Table 0-2 to Table 0-7 below provide a summary of our audit findings. Descriptions for each category are given in Table 0-1 below.

**Table 0-1 Description for RAG categories**

Category	Description
RED	High Priority: Failure to comply with reporting requirements, major failure of methodology or data errors that may lead to misreporting.
AMBER	Medium Priority: Shortfalls in methodology and/or methodology documentation. Methodology under development. Incomplete data set or minor errors identified that do not alter the performance reported relative to targets and threshold values.
GREEN	Low Priority: Minor revisions to methodology and/or methodology documentation needed. Issue(s) not judged to be material or no issues.
TBC	To be confirmed – missing data or information

**Table 0-2 Performance Commitments (APR Table 3A-D) – Overall Assessment**

Measure	Reported performance (17/18)	Target performance (17/18)	Methodology	Data	Commentary	Assurance summary
A1: Unplanned customer minutes lost	73.70min	12.8min	Green	Green	Green	Performance has been robustly reported.
A2: Asset reliability – infrastructure (overall)	Marginal	Stable	Green	Green	Green	Performance has been robustly reported.
Sub-indicator: Bursts	1222	950	Green	Green	Green	Performance has been robustly reported.
Sub-indicator: DG2	65	69	Green	Green	Green	Performance has been robustly reported.
A3: Asset reliability - non-infrastructure	Stable	Stable	Green	Green	Green	Performance has been robustly reported.
Sub-indicator: Unplanned maintenance	3,279	3,976	Green	Green	Green	Performance has been robustly reported.
Sub-indicator: Turbidity at treatment works	0	0	Green	Green	Green	Performance has been robustly reported.
B1: Population in centres >25,000 at risk from asset failure	9,063	9,063	Green	Green	Green	Good evidence of SRS scheme completion confirmed the target met.
C1: Security of supply index (SOSI)	100	100	Green	Green	Green	All outstanding issues with the reporting have been resolved.
C2: Hosepipe ban frequency	3.1	10.2	Green	Green	Green	All outstanding issues with the reporting have been resolved.
D1: Mean zonal compliance (MZC)	99.93	100	Green	Green	Green	Performance has been robustly reported.
E1: Negative water quality contacts*	1,711	2,322	Green	Green	Green	All outstanding issues with the reporting have been resolved.
F1: Leakage	50	45	Green	Green	Green	Performance has been robustly reported.

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Measure	Reported performance (17/18)	Target performance (17/18)	Methodology	Data	Commentary	Assurance summary
G1: Meter penetration	52.67%	58.8%	Green	Green	Green	Performance has been robustly reported.
G2: Per capita consumption (PCC)	144.5	143.6	Green	Green	Green	We raised some issues with the measured occupancy rate, although the impact is unlikely to be material to the reported figure at present.
H1: Total carbon emissions	28	23	Green	Green	Green	All outstanding issues with the reporting have been resolved.
H2: Raw water quality of sources	Marginal / -1%	Marginal / +/- ≤10%	Green	Green	Green	Performance has been robustly reported.
H3: Biodiversity index	Improving (17657.49)	Improving (17651)	Green	Green	Green	The Company has changed its approach to reporting this performance commitment and will include a number for each year. Performance has been robustly reported.
H4: Waste disposal compliance	98%	100%	Green	Green	Green	The methodology is fit for purpose. The reported figure provides a good representation of the Company's performance.
I1: Percentage of customers in water poverty	0.0%	1.9%	Green	Green	Green	We did not have any significant concerns over the figure being reported, which is based on data provided by an external company. Following a change to the status of its Assist social tariff, the Company has

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Measure	Reported performance (17/18)	Target performance (17/18)	Methodology	Data	Commentary	Assurance summary
						changed its approach for reporting the figure from the last two years, and has noted this in the commentary.
J1: Service incentive mechanism (SIM): (BW)	83.38	86.0	Amber	Amber	Green	Performance has been robustly reported for the qualitative component of the SIM and written complaints. Weaknesses in the process for calculating the overall SIM score and for managing and reporting unwanted calls were identified.
J1: Service incentive mechanism (SIM): (Pelican)	Contributes to BW SIM score	N/A	Green	Green	N/A	We were satisfied that the methodology and data seen at audit was fit for purpose.
J2: General satisfaction from surveys	87%	93%	Green	Green	Green	Performance has been robustly reported.
J3: Value for money	69%	72%	Green	Green	Green	
K1: Ease of contact from surveys	93.1%	96.5%	Green	Green	Green	
L1: Negative billing contacts (Pelican)	2,300	2,315	Green	Green	Green	Performance has been robustly reported.

\* Audits undertaken in January 2018

**Table 0-3      APR Section 3 Tables - Overall Assessment**

Table	Methodology	Data	Commentary	Assurance summary
3A - Outcome performance table (including underperformance penalties and outperformance payments)	<b>Green</b>	<b>Green</b>	<b>Green</b>	Satisfactory
3B - Sub-measure performance table	<i>See A2 and A3 summaries above</i>			
3D - SIM (Service Incentive Mechanism)	<b>Amber</b>	<b>Amber</b>	<b>Green</b>	See Performance Commitment J1 SIM summary in Table 0-2.
3S - Shadow reporting of new definitions (leakage, supply interruptions, unplanned outage, PCC, mains bursts and risk of severe restrictions in a drought)	Covered in a separate report			

**Table 0-4 APR Section 4 Tables (financial and non-financial information) – Overall Assessment**

Table	Lines	Methodology	Data	Commentary	Assurance summary
4A - Non-financial information	1 to 5	N/A	Green	N/A	We identified a discrepancy in the bulk supplies figures, which was subsequently addressed.
4B - Totex analysis	1 to 9	Green	Green	Green	We consider that it would be sensible in future to link the Table 4B and 4C calculations to ensure consistency between them.
4C - Impact of AMP performance to date on RCV	1 to 6	Green	Green	N/A	There is a small inconsistency with the Table 4B totex underspend apparently due to the use of RPI numbers rounded to different decimal points. We recommend that these figures should be consistent in future.
4D - Wholesale totex analysis – wholesale water	1 to 11	Green	Green	Green	We consider that it would be useful to develop a clear explanation of why some costs have been incorporated in expensed IRE and not others.
	12 to 19	Green	Green	Green	Methodology and commentary are combined.
	20 to 21	Green	Green	Green	Methodology and commentary are combined.
	22 to 24	Green	Green	Green	No issues identified
	25 to 28	Green	Green	Green	We identified a discrepancy with the distribution input in Table 4A which has now been rectified.
4F - Operating cost analysis - household retail		Green	Green	Green	We are satisfied that the table appears to have been compiled consistent with the Company's accounting methodology. However, greater analysis and internal assurance would strengthen confidence in the table. We suggested some improvements to the commentary.
4G - Wholesale current cost financial performance		Green	Green	N/A	The method has changed since last year but appears appropriate. In future years, we consider it would be useful to provide more of an audit trail for the data used in these calculations.

**Table 0-5 APR Section 4 Tables (4J to 4V - previously Wholesale Cost Tables) – Overall Assessment**

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Table	Lines	Line numbers	Methodology	Data	Commentary	Assurance summary
4J - Atypical expenditure by business unit	Operating Expenditure	1 to 11	<i>Please refer to 4D</i>			
	Capital Expenditure	12 to 21	<i>Please refer to 4D</i>			
	Cash Expenditure	22 to 24	<i>Please refer to 4D</i>			
	Atypical Expenditure	25 to 30	N/A	N/A	N/A	<i>Not required – no atypical expenditure identified in the reporting year</i>
	Total Expenditure	31	<i>Please refer to 4D</i>			
4L - Enhancement capital expenditure by purpose	Enhancement expenditure by purpose	1 to 30	<b>Green</b>	<b>Green</b>	<b>Green</b>	We were satisfied that the methodology and data seen at audit was fit for purpose.
4P - Non-financial data for WR, WT and WD: Resources	Proportion of distribution input by source type	1 to 6	<b>Green</b>	<b>Green</b>	<b>Green</b>	We had no significant concerns over the figure being reported.
	Number and capacity of sources	7 to 19	<b>Green</b>	<b>Green</b>	<b>Green</b>	We had no significant concerns over the figure being reported.
	Length of raw mains	20	<b>Green</b>	<b>Green</b>	<b>Green</b>	We believe that the processes in place to produce these figures are fit for purpose.
	Pumping head	21 to 22	<b>Green</b>	<b>Green</b>	<b>Green</b>	The process of data management and extraction is well controlled and appropriate procedures are in place. However, we identified an error in the calculation spreadsheet which has now been amended.
4P - Non-financial data for WR, WT and WD: Treatment	Total water treated	23 to 37	<b>Green</b>	<b>Green</b>	<b>Green</b>	We had no significant concerns over the figures being reported.
	Number of treatment works	38 to 52	<b>Green</b>	<b>Green</b>	<b>Green</b>	We had no significant concerns over the figure being reported.
	Zonal population receiving water treated with orthophosphate	53	<b>Green</b>	<b>Green</b>	<b>Green</b>	We had no significant concerns over the figure being reported.

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Table	Lines	Line numbers	Methodology	Data	Commentary	Assurance summary
	Average pumping head - treatment / Average pumping head - resources	54	Green	Green	Green	The process of data management and extraction is well controlled and appropriate procedures are in place. However, we identified an error in the calculation spreadsheet which was amended prior to submission.
4P - Non-financial data for WR, WT and WD: Distribution	Main lengths	55 to 64	Green	Green	Green	We believe that the processes in place to produce these figures are fit for purpose.
	Capacity	65 to 67	Green	Green	Green	The overall methodology is fit for purpose. Reported historical figures have changed as a result of data validation carried out. We have no concerns over the figures being reported.
	Distribution input	68	Green	Green	Green	We did not encounter any significant issues; two minor areas for improvement and potential update were identified.
	Water Delivered	69 to 72	Green	Green	Green	We had no significant concerns over the figures being reported.
	Leakage	73 to 75	Green	Green	Green	We had no significant concerns over the figures being reported.
	Comms pipes	76 to 78	Green	Green	Green	Information derived from the GIS system.
	Network	79 to 81	Green	Green	Green	The overall methodology is fit for purpose. Reported historical figures have changed as a result of data validation carried out. We have no concerns over the figures being reported.

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Table	Lines	Line numbers	Methodology	Data	Commentary	Assurance summary
	Age of Network	82 to 89	Green	Green	Green	We believe that the processes in place to produce these figures are fit for purpose.
	Pumping head	90	Green	Green	Green	The process of data management and extraction is well controlled and appropriate procedures are in place. However, we identified an error in the calculation spreadsheet which was amended prior to submission.
	WTW in size bands	91 to 98	Green	Green	Green	We had no significant concerns over the figures being reported.
	Proportion of Total DI band	99 to 106	Green	Green	Green	We had no significant concerns over the figures being reported.
4Q - Non-financial data - Properties, population and other	Properties, population and meters	1 to 14, 16 to 17	Green	Green	Green	We had no concerns over the figure being reported. Several improvements to the methodology document were recommended.
	Total Population Served	15	Green	Green	Green	We had no significant concerns over the figure being reported. A number of updates to the methodology were suggested.
	Company area	18	Green	Green	Green	We had no concerns over the figure being reported. We suggested some minor updates to the methodology document.
	Lead Communication pipes	19	Green	Green	Green	Reported figures are readily traced to quality work and checks are evident.
	Supply / Demand	20 to 23	Green	Green	Green	Following the audit, the Company revised the approach used for calculating demand-side enhancements to improve alignment with the line

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Table	Lines	Line numbers	Methodology	Data	Commentary	Assurance summary
						definition. The previous year's figures will need to be re-stated based on this revised approach.
	Energy Consumption	24 to 26	Green	Green	Amber	Some errors were identified in relation to the calculations for liquid fuels and transport, which represent a relatively small proportion of energy consumption, and were corrected post-audit. We recommended updates to the commentary to explain changes to historical figures.
	Peak factor	27	Green	Green	Green	We had no significant concerns over the figure being reported.
	Mean zonal compliance	28	See D1 – Mean Zonal Compliance			
	Volume of leakage	29	Green	Green	Green	We had no significant concerns over the figure being reported.
4V - Operating cost analysis	Opex	1 to 17	Green	Green	Green	Our review found a number of methodology and data issues, such as allocation of inappropriate costs to 'river abstractions' and exclusion of temporary/agency staff costs, which have now been rectified.

**Table 0-6 GSS payments – Overall Assessment**

Performance Measure	Methodology	Data	Commentary	Assurance summary
Guaranteed Standards Scheme (GSS) payments (Bristol Water)	Amber	Green	N/A	We are satisfied that the Company has recorded and made payments where GSS failures had been identified. The Company should update their internal process to prevent the reoccurrence of all-day appointment booking with customers; this should also be reflected in the methodology document.
Guaranteed Standards Scheme (GSS) appointment payments (Pelican)	Amber	Green	N/A	We suggest that there needs to be some additional work completed to improve QA on spreadsheets. There should also be some additional training given to new staff to ensure 'all day' appointments are not provided; this should also be reflected in the methodology document.

**Table 0-7 WRMP Annual Review – Overall Assessment**

Performance report	Methodology	Data	Commentary	Assurance summary
WRMP Annual Review	Green	Green	Green	We identified several figures that needed to be corrected; this was undertaken prior to submission.

# 1. Introduction

## 1.1. Background

Atkins Limited has been appointed by Bristol Water to provide external assurance on the regulatory submissions presented by Bristol Water (the Company) to the Water Services Regulation Authority (commonly known as Ofwat) under the conditions set out in its Licence with the Secretary of State.

In its PR14 Business Plan, Bristol Water stated that they would publish an update on outcome performance and present this to the stakeholder representative group. Bristol Water will publish an Annual Performance Report (APR) on some performance indicators common to all other water supply companies (in England and Wales) and some which are bespoke to the Company which were defined through the PR14 Business Plan, Final Determination and Competition and Markets Authority (CMA) deliberations.

The Wholesale Cost Assessment Information Tables are now incorporated under Section 4 of the APR submission. We also include in this assurance report consideration of Bristol Water's Guaranteed Standards Scheme (GSS) payments and the annual update to Bristol Water's Water Resources Management Plan (WRMP).

We have tailored our assurance with the aim of ensuring that customers and stakeholders can trust the data and information that Bristol Water provides. We consider the processes by which data are produced, the material accuracy of the data and any conclusions drawn by Bristol Water. We take an evidential approach to confirm the application of, rather than just the adequacy and appropriateness of procedures.

We note that under Ofwat's Company Monitoring Framework, Bristol Water must share full reports with Ofwat on request, if they have not been published in full. There is no duty of care to Ofwat from the assurer and Ofwat would not publish or share material provided that the Company had not published without agreement. The supporting documentation for this report (audit reports and issue log) is available if required.

## 1.2. Scope

The scope of this audit included the following elements:

- Data and commentary (if applicable) reported as part of the Annual Performance Report (APR) to Ofwat:
  - Table 3A - Outcome performance table, including underperformance penalties and outperformance payments
  - Table 3B - Sub-measure performance table
  - Table 3D - SIM (Service Incentive Mechanism)
  - Tables 4A, 4B, 4C, 4D, 4F and 4G
  - Table 3S – shadow reporting of leakage, customer supply interruptions, unplanned outage, PCC, mains bursts and risk of severe restrictions in a drought
- WRMP Annual Review
- GSS payments
- Tables 4J, 4L, 4P, 4Q and 4V (formerly Wholesale Cost Tables)

The following tables show the scope of the audit in more detail.

**Table 1-1 Scope of assurance – Performance Commitments**

Performance Measure	Methodology and Data Audit
A1: Unplanned customer minutes lost	✓
A2: Asset reliability – infrastructure	✓
A3: Asset reliability - non-infrastructure	✓

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B1: Population in centres >25,000 at risk from asset failure	✓
C1: Security of supply index (SOSI)	✓
C2: Hosepipe ban frequency	✓
D1: Mean zonal compliance (MZC)	✓
E1: Negative water quality contacts	✓*
F1: Leakage	✓
G2: Per capita consumption (PCC)	✓
G1: Meter penetration	✓
H1: Total carbon emissions	✓
H2: Raw water quality of sources	✓
H3: Biodiversity index	✓
H4: Waste disposal compliance	✓
I1: Percentage of customers in water poverty	✓
J1: Service incentive mechanism (SIM): (BW)	✓
J1: Service incentive mechanism (SIM): (Pelican)	✓
J2: General satisfaction from surveys	✓
J3: Value for money	✓
K1: Ease of contact from surveys	✓
L1: Negative billing contacts (Pelican)	✓

\*Completed January 2018

**Table 1-2 Scope of assurance - APR Section 3 Tables**

Table	Methodology and Data Audit
3A - Outcome performance table (including underperformance penalties and outperformance payments)	✓
3B - Sub-measure performance table	✓
3D - SIM (Service Incentive Mechanism)	✓
3S - Shadow reporting of new definitions (leakage, supply interruptions, unplanned outage, PCC, mains bursts and risk of severe restrictions in a drought)	✓

**Table 1-3 Scope of assurance - APR Section 4 Tables (financial and non-financial information)**

Performance Measure	Methodology and Data Audit
4A - Non-financial information	✓
4B - Totex analysis	✓
4C - Impact of AMP performance to date on RCV	✓
4D - Wholesale totex analysis – wholesale water	✓
4F - Operating cost analysis - household retail	✓
4G - Wholesale current cost financial performance	✓

Contains *private* information

**Table 1-4 Scope of assurance – APR Section 4 Tables (4J to 4V - previously Wholesale Cost Tables)**

Table	Lines	Line numbers	Methodology and Data Audit
4J - Atypical expenditure by business unit	Operating Expenditure	1 to 11	✓
	Capital Expenditure	12 to 21	✓
	Cash Expenditure	22 to 24	✓
	Atypical Expenditure	25 to 30	✓
	Total Expenditure	31	✓
4L - Enhancement capital expenditure by purpose	Enhancement expenditure by purpose	1 to 30	✓
4P - Non-financial data for WR, WT and WD: Resources	Proportion of distribution input by source type	1 to 6	✓
	Number and capacity of sources	7 to 19	✓
	Length of raw mains	20	✓
	Pumping head	21 to 22	✓
4P - Non-financial data for WR, WT and WD: Treatment	Total water treated	23 to 37	✓
	Number of treatment works	38 to 52	✓
	Zonal population receiving water treated with orthophosphate	53	✓
	Average pumping head - treatment / Average pumping head - resources	54	✓
4P - Non-financial data for WR, WT and WD: Distribution	Main lengths	55 to 64	✓
	Capacity	65 to 67	✓
	Distribution input	68	✓
	Water Delivered	69 to 72	✓
	Leakage	73 to 75	✓
	Comms pipes	76 to 78	✓
	Network	79 to 81	✓
	Age of Network	82 to 89	✓
	Pumping head	90	✓
	WTW in size bands	91 to 98	✓
	Proportion of Total DI band	99 to 106	✓
4Q - Non-financial data - Properties, population and other	Properties billed	1 to 5	✓
	Properties connected	6 to 8, 13 to 14	✓
	Meters	9 to 12, 16 to 17	✓
	Total Population Served	15	✓
	Company area	18	✓
	Lead Communication pipes	19	✓

Contains *private* information

Table	Lines	Line numbers	Methodology and Data Audit
	Supply / Demand	20 to 23	✓
	Energy Consumption	24 to 26	✓
	Peak factor	27	✓
	Mean zonal compliance	28	✓
	Volume of leakage	29	✓
4V - Operating cost analysis	Opex	1 to 17	✓

**Table 1-5 Scope of assurance - GSS payments**

Performance Measure	Methodology and Data Audit
Guaranteed Standards Scheme (GSS) payments (Bristol Water and Pelican)	✓

**Table 1-6 Scope of assurance – WRMP Annual Review**

Performance report	Methodology and Data Audit
WRMP Annual Review	✓

### 1.3. Structure of Assurance Report

This report is structured as follows:

- Assurance Statement
- Executive Summary
- Section 1 – Introduction
- Section 2 – Approach
- Section 3 – Summary of Findings

## 2. Approach

Our overall approach to assurance is based around a two-stage audit - methodology and data. For all audits this year we carried out a combined methodology and data audit.

The purpose of each audit stage is as follows:

**Methodology Audits:** To assess whether the Company's methodology aligns with appropriate guidance, reporting requirements, licence conditions or industry practice and whether appropriate checks, controls and explanatory documents exist.

**Data Audits:** To assess whether methodologies/procedures are applied as indicated including data trailing to source documents to ensure alignment/consistency with the reported number, checks and controls and appropriateness of confidence grades assigned to reported information (where applicable).

This approach is consistent with Ofgem's Data Assurance Guidance (DAG) which identifies external methodology audit and external data audit as potential 'assurance responses', described as follows:

**External Methodology Audit:** Not responsible for ensuring that returns are complete and accurate but to provide an independent challenge to the methodology to produce the submission. Review of the adequacy and effectiveness of the internal control systems to ensure returns are timely, complete and accurate. Formal report produced. Control gaps/areas for improvement identified and issues logged.

**External Data Audit:** Responsible for providing evidence of verification of Data; Intends to determine the level of confidence that can be placed on the figures; Formal report produced.

The process flow followed for each audit is summarised as follows:

**Figure 2-1 Audit meeting process**



The deliverables for each stage of the process are summarised below in Table 2-1.

**Table 2-1 Description of Deliverables**

Deliverable	Description
Notification of Audit Form (NAF)	Issued in advance of audit. Details audit arrangements, scope and agenda
Email summary	Initial feedback including detail of any material issues.
Summary of Audit Form (SAF)	Issued following the audit. Details findings and any actions for inclusion in the issues log.
Issues Log	Spreadsheet to track and report on responses to issues identified at audit. Includes Reference; Date Raised; Raised by; Line; Observation; Recommendation; Priority; Agreed (Y/N); Company response; Owner; By when; Status

Our assessment of the Company's reporting against each table/table section has been assigned an overall rating of Red, Amber or Green to reflect their priority. Separate ratings have been given to the methodology and to the data.

Table 2-2 sets out the definitions for the different categories.



**Table 2-2 Descriptions for RAG categories**

Category	Description
<b>RED</b>	High Priority: Failure to comply with reporting requirements, major failure of methodology or data errors that may lead to misreporting.
<b>AMBER</b>	Medium Priority: Shortfalls in methodology and/or methodology documentation. Methodology under development. Incomplete data set or minor errors identified that do not alter the performance reported relative to targets and threshold values.
<b>GREEN</b>	Low Priority: Minor revisions to methodology and/or methodology documentation needed. Issue(s) not judged to be material or no issues.
<b>TBC</b>	To be confirmed – missing data or information

Our focus on particular areas was risk-based as highlighted in Bristol Water's own analysis and supplemented by our experience in identifying and quantifying the elements of the journey from raw to published data that introduce material errors.

## 3. Summary of Findings

### 3.1. Performance Commitments (APR Table 3A-D)

The table below summarises the assurance category assigned to each performance commitment reported in the Annual Performance Report (APR Table 3A and 3B) with further detail below. The findings for Table 3S are provided in a separate report.

**Table 3-1 Performance Commitments (APR Table 3A-D) – Overall Assessment**

Measure	Reported performance (17/18)	Target performance (17/18)	Methodology	Data	Commentary	Assurance summary
A1: Unplanned customer minutes lost	73.70min	12.8min	Green	Green	Green	Performance has been robustly reported.
A2: Asset reliability – infrastructure (overall)	Marginal	Stable	Green	Green	Green	Performance has been robustly reported.
Sub-indicator: Bursts	1222	950	Green	Green	Green	Performance has been robustly reported.
Sub-indicator: DG2	65	69	Green	Green	Green	Performance has been robustly reported.
A3: Asset reliability - non-infrastructure	Stable	Stable	Green	Green	Green	Performance has been robustly reported.
Sub-indicator: Unplanned maintenance	3,279	3,976	Green	Green	Green	Performance has been robustly reported.
Sub-indicator: Turbidity at treatment works	0	0	Green	Green	Green	Performance has been robustly reported.
B1: Population in centres >25,000 at risk from asset failure	9,063	9,063	Green	Green	Green	Good evidence of SRS scheme completion confirmed the target met.
C1: Security of supply index (SOSI)	100	100	Green	Green	Green	All outstanding issues with the reporting have been resolved.
C2: Hosepipe ban frequency	3.1	10.2	Green	Green	Green	All outstanding issues with the reporting have been resolved.

Measure	Reported performance (17/18)	Target performance (17/18)	Methodology	Data	Commentary	Assurance summary
D1: Mean zonal compliance (MZC)	99.93	100	Green	Green	Green	Performance has been robustly reported.
E1: Negative water quality contacts*	1,711	2,322	Green	Green	Green	All outstanding issues with the reporting have been resolved.
F1: Leakage	50	45	Green	Green	Green	Performance has been robustly reported.
G1: Meter penetration	52.67%	58.8%	Green	Green	Green	Performance has been robustly reported. The Company is not currently meeting its target but we understand that there is a plan in place to achieve the target for the next two years.
G2: Per capita consumption (PCC)	144.5	143.6	Green	Green	Green	We raised some issues with the measured occupancy rate, although the impact is unlikely to be material to the reported figure at present.
H1: Total carbon emissions	28	23	Green	Green	Green	All outstanding issues with the reporting have been resolved.
H2: Raw water quality of sources	Marginal / -1%	Marginal / +/- ≤10%	Green	Green	Green	Performance has been robustly reported.
H3: Biodiversity index	Improving (17657.49)	Improving (17651)	Green	Green	Green	The Company has changed its approach to reporting this performance commitment and will include a number for each year. Performance has been robustly reported.
H4: Waste disposal compliance	98.08%	100%	Green	Green	Green	The methodology is fit for purpose. The reported

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Measure	Reported performance (17/18)	Target performance (17/18)	Methodology	Data	Commentary	Assurance summary
						figure provides a good representation of the Company's performance.
I1: Percentage of customers in water poverty	0.0%	1.9%	Green	Green	Green	We did not have any significant concerns over the figure being reported, which is based on data provided by an external company. Following a change to the status of its Assist social tariff, the Company has changed its approach for reporting the figure from the last two years, and has noted this in the commentary.
J1: Service incentive mechanism (SIM): (BW)	83.38	86.0	Amber	Amber	Green	Performance has been robustly reported for the qualitative component of the SIM and written complaints. Weaknesses in the process for calculating the overall SIM score and for managing and reporting unwanted calls were identified.
J1: Service incentive mechanism (SIM): (Pelican)	Contributes to BW SIM score	N/A	Green	Green	Green	We were satisfied that the methodology and data seen at audit was fit for purpose.
J2: General satisfaction from surveys	87%	93%	Green	Green	Green	Performance has been robustly reported.

Measure	Reported performance (17/18)	Target performance (17/18)	Methodology	Data	Commentary	Assurance summary
J3: Value for money	69%	72%	Green	Green	Green	
K1: Ease of contact from surveys	93.1%	96.5%	Green	Green	Green	
L1: Negative billing contacts (Pelican)	2,300	2,315	Green	Green	Green	Performance has been robustly reported.

\* Audits undertaken in January 2018

### 3.1.1. A1: Unplanned customer minutes lost

The Company has significantly exceeded its penalty collar. The year-end figure was 73.70 minutes against a year end performance commitment (post CMA) of 12.8 minutes and a penalty collar of 14.8 minutes. The incident at Willsbridge in July 2017 dominates the reported figure, contributing 54.19 minutes. We believe the reported data to be robust. The Company is forecasting to meet its performance commitment for the final two years of AMP6.

The methodology document is fit for purpose, but needs to be updated (minor changes) to reflect the current organisation and could elaborate upon the checks and controls that have been enhanced.

### 3.1.2. A2: Asset reliability – infrastructure and sub indicators

#### Overall Assessment of Asset Reliability (infra)

The outturn for the bursts sub-measures is above the high reference level and therefore the overall assessment can be made that Asset Reliability (infra) is Marginal, which means that the Company has not met its performance commitment for 2017/18.

#### Sub-indicator: Bursts

The Company's reporting methodology is fit for purpose. The reported figure was stated as 1,222. We viewed a spreadsheet listing each of the bursts and the associated dates and job numbers. The source of the data in the spreadsheet was the GIS system. The reporting codes for the Business Objects report used to produce the data are unchanged and appropriate reporting fields were used. The reported number of bursts is above the high reference level and the reasons for this were explained by the Company. There is no indication of an underlying increasing trend, as reporting year performance can readily be explained by the severe weather conditions experienced.

#### Sub-indicator: DG2

We believe that the Company's reporting methodology for the reporting of DG2 is consistent with how it was done previously and how the target was set at PR14. The reported figure for DG2 was 65 against a committed performance level of 69, comprising 15 single supplies and 50 shared supplies. The reduction from the reported figure of 94 properties reported last year is due to site work to separate shared supplies and reassessment of the properties on the register, for which we were provided evidence. The target for the remainder of AMP6 should be achievable.

### 3.1.3. A3: Asset reliability - non-infrastructure and sub indicators

The methodology for the overall and sub-measures is clear and comprehensive with appropriate governance. The Company is currently in compliance with the overall PC target and is reporting the measure as 'Stable' with which we concur.

#### Sub-indicator: Unplanned maintenance

The Company has a well-developed system for recording all activities and subsequently analysing based on a range of criteria to obtain only those activities relevant to the measure. Since the beginning of the AMP the Company has implemented an additional series of internal checks and reviews to ensure that the workbook

macros are working as they should. The evidence provided for these checks gives confidence that the processes are working as they should. In undertaking our audit, we double check the internal processes and review additional lines selected at random. To date no issues have been found. The Company is reporting 3,279 events for the reporting period; this is below the target of 3,976.

#### **Sub-indicator: Turbidity at treatment works**

The Company has consistently performed well against this measure and is again reporting zero (0) for the reporting period. This is supported by figures reported to the DWI for turbidity at customer taps where the 99%ile (considered representative of a maximum by the DWI) is 0.468 NTU.

#### **3.1.4. B1: Population in centres >25,000 at risk from asset failure**

The evidence provided confirmed that the Southern Resilience Scheme was fully operational before 31<sup>st</sup> March 2018. The methodology for reporting against Performance Commitment B1: Population Centres >25,000 at risk from asset failure stipulates that the step change in target level at 2017/18 is a function of the population served, at the time of PR14, that would go without water in the event of the Gloucester Sharpness Canal sources (Littleton TW and Purton TW) being lost. The fulfilment of the commitment is confirmed.

#### **3.1.5. C1: Security of supply index (SOSI)**

We found that the Company had been following a consistent approach to 2016/17; however, upon review of the 2015/16 version of the SOSI calculator and SOSI definitions we challenged the Company on the use of planned rather than outturn outage and process loss figures. The Company has improved its approach to estimating outturn outage figures since the last review, although we raised concerns over the accuracy of the process loss data. Following the audit, the Company revised the process loss figures and SOSI calculations to take account of outturn figures. The methodology document also required a number of updates before it was fit for purpose, which were made post-audit. The Company is meeting its target of 100, although the outturn dry year surplus is only 2% for this year. There is an ongoing need to ensure that checks are undertaken and recorded in the cover sheet to provide evidence of the checks and controls in place.

#### **3.1.6. C2: Hosepipe ban frequency**

The only change in approach used by the Company this year was that outturn bulk exports were included in the hosepipe ban calculation rather than contractual/planned. This lowers the water deployed figure used in calculation, potentially reducing the hosepipe ban frequency. We recommended that the Company update the hosepipe ban calculator with the contractual bulk export figure in line with the approach used in prior years; the Company confirmed that this was done post-audit and this did not change the reported figure. The methodology document also required a number of updates before it was fit for purpose; the Company confirmed that these were made post-audit.

#### **3.1.7. D1: Mean zonal compliance (MZC)**

The Company is reporting a MZC of 99.93% which is below target (100%) and the penalty deadband (99.95%) and penalty collar (99.94%); as such a penalty will be incurred. The primary driver is nickel failures at customer taps (likely arising from leaching from chrome plating); in the absence of these failures the Company would have a MZC of 99.98% which, while below target, would be above the penalty deadband.

#### **3.1.8. Negative water quality contacts**

The Company is reporting a total of 1,711 negative water quality contacts. A small error was identified during the audit process which led to permissible exclusions of an additional 28 contacts connected to two events reported to the DWI.

The Company has met its 2017/18 target of no more than 2,322 customer contacts; however, it is not below the reward cap of 1,439 contacts so there is no reward associated with the ODI this year.

#### **3.1.9. F1: Leakage**

The leakage management and reporting process is largely unchanged, and we did not encounter any issues or exceptions with the process itself during reasonably extensive testing. The final audited figures were as follows:

- 'ODI' (using 'legacy' NHHNU coefficients) equals 51.8 pre MLE, 2% imbalance, 49.58 post MLE

- 'Actual' (using 22.95 NHHNU) = 0.3% imbalance, pre MLE 46.94, 46.64 post MLE.

The company has robustly reported its leakage figure in accordance with Ofwat guidance. The company met and agreed with Ofwat that non-household night use (NHHNU) should be consistently used in the leakage calculation using the model in place at PR14. That is, the leakage performance is reported on the same basis as the target was set. This is explained at length in the company commentary. The company commentary clarifies the issues concerning leakage reporting related to the 22.95l/prop/hr NHHNU figure calculated if a 2016 investigation and associated model coefficients are applied to this year's annual billed volume (ABV) data, as taken from MOSL. The nature of the relationship between ABV and NHHNU appears to have changed over the years, so there is an issue that some of that difference will have already affected NHHNU after the PC target was set, and the trend may still be continuing, meaning NHHNU will steadily increase further during AMP6. This means that the increase in NHHNU that has occurred since the AMP6 target was set (2013/14) is effectively being reported as leakage, which is inaccurate and over-states the level of leakage and therefore penalises the company.

We reviewed the movements in ABV over time and confirmed that this has been reasonably constant. We also reviewed the effective movements in the water balance over time, and there is some evidence that the 'bottom up' totals have been increasing relative to DI. This implies that there is indeed a trend in the relationship between ABV and NHHNU over time.

Our audit trails for all aspects of the water balance were satisfactory and reporting is being carried out in accordance with the procedures. We noted that the 'ODI' version of leakage reporting results in an imbalance that is greater than 2%, so have noted this in the issues log.

The Company's leakage performance has declined since the start of the AMP and it is not forecasting to meet its leakage target in the remainder of AMP6. Commentary and forecast were provided post-audit; we had no concerns over these.

### **3.1.10. G1: Meter penetration**

We had no concerns over the data being reported for this PC, although we suggested that the Company ensures that full checks and controls on the reported figure are implemented and evidenced.

An error in the meter penetration figure amounting to an overestimate 0.3% in the reported 2016/17 figure and 0.7% for the September 2017 mid-year figure was identified recently and has been rectified. This was the result of the classification by Pelican of some properties that were currently unmeasured but on the list for metering due to change of occupancy as 'voids'. It is our understanding that the Company plans to re-state the previous figures reported that were affected by this issue.

The Company has not met its metering penetration target for the current year or the past two years; however, it has forecast to meet the target for 2019/20. We queried whether this was realistic; the auditee advised that there is strong senior management ambition to meet this and there is a plan in place to achieve this.

### **3.1.11. G2: Per capita consumption (PCC)**

Of the potentially available data, 40 CMAs were actually used in the regression equation, with a total of 21,500 population, 11,600 properties. Overall, we confirmed that the output of 161.8 l/h/d for unmeasured consumption is valid.

As with previous years we note that the company level measured occupancy rate has not changed over time, and the company level unmeasured occupancy rate is therefore getting higher as it is calculated as a residual. That means that unmeasured occupancy rate has increased from 2.5 to 2.6 between 14/15 and 17/18. If the occupancy rate was dropped to 2.55 though, this would only affect UMPCC by 1, and as the target is for overall PCC even this is balanced out for the ODI. This is therefore only categorised as a green issue.

For non-household billed volumes there are clearly some issues with the MOSL data, but these are much smaller than we have seen at other water companies, and the level of error is not material to the water balance.

The Company has not met its PCC target for 2017/18 and performance has declined over the AMP. Commentary and forecast were provided post-audit; we had no concerns over these. The Company is forecasting to meet its target PCC for the final two years of AMP6.

### **3.1.12. H1: Total carbon emissions**

The Company has not yet written and implemented a formalised, fully documented workflow that sets out who and how to capture the information needed to compute its greenhouse gas emissions which was a recommendation from the previous audit. The Company should also streamline the number of different spreadsheets used to ensure (a) the information needed is easily found, and (b) to minimise the need to copy and paste.

Data checks were made and some errors were found. Following issues identified during the audit, the company revised its emission calculations. In doing so it used an incorrect version of the Carbon Accounting Workbook, meaning further revisions were needed. These have been done resulting in a performance of 28.35.

The Company has not met its performance target: the reason given is that the emission factor for grid electricity is beyond its control. While this is true, the Company was challenged, as per the last audit, to express its performance against the target either (a) using the emission factors that was in place at the time the target was set, to compare like with like, and/or (b) to use an ancillary measure, such as the year on year total use of grid electricity, as this is the dominant contributor to the Company's emissions.

### **3.1.13. H2: Raw water quality of sources**

We have reviewed the updated methodology and can confirm that this aligns with the approach outlined in the Ofwat corrigenda to the Final Determination published on the 25th April 2018. We note the changes have been accompanied by appropriate governance and sign off. We have checked the calculations and not found any issues. The Company is reporting 'marginal' on the basis of the a -1% change in 5 year rolling average against the AMP base year figure. This aligns with the definition in the Ofwat corrigenda.

This is a bespoke measure for the Company and a new definition. The Company has provided a back cast for historical data; while an improvement appears evident it is considered unlikely that this will be directly attributable to catchment management activities as benefits are only likely to be seen in the longer term.

### **3.1.14. H3: Biodiversity index**

The Company has changed its approach to reporting this performance commitment and will include a number for each year. The Company's method statement should be changed to reflect next year's approach.

The Company is reporting an improvement of 7 points, derived from the planting of trees, and clearance of a dry ditch. These works were not chosen due to the potential for biodiversity improvement but more from the opportunity to do some works. Any improvement works for the remainder of AMP6 will be delivered in a similar opportunistic basis. Without additional resource given to this performance commitment it is difficult to see how else it can be achieved. Nevertheless, an improvement has been recorded which means that the Company has met its target.

The Company is planning to change the way in which the Biodiversity Indicator is calculated for AMP7 and is planning for changes to happen during the remainder of this AMP, in order that the new process can start immediately at the commencement of AMP7. As a result, there is little incentive to improve the current spreadsheet tool as per previous discussions, which is accepted.

### **3.1.15. H4: Waste disposal compliance**

The Company is reporting 98.08% compliance against a target of 100%. This is an improvement over the previous two years. There have been no significant changes to the Company's methodology since our last review. The methodology document is fit for purpose.

We had some minor concerns over the number of samples that were being taken; while the methodology states that, as a target, a minimum of 40 samples per year should be collected this has only been achieved for 3 sites out of the 13 (12 after Shipton Moyne stopped discharging in April 2017) that have been in operation during the reporting year. We queried this with the Company who identified that there were occasional issues around sampling at those sites where discharges were intermittent. We understand the problem and the Company has indicated that it is working to improve the sampling process at those sites. Overall, we consider the reported figure provides a good representation of the Company's performance, any improvements that can be made in sampling at intermittent discharge sites will add to the robustness of the existing assessment.



We noted that the Company (based on the sign off sheet commentary) is forecasting a lower performance for the remaining two years of the AMP. We requested clarification from the Company as to the reasons for this and received the following response: “*We have a new discharge consent for a site which has very tight quality limits and it is unlikely that we will be able to comply with it at certain times of the year. We will be working to improve the quality leaving the site and also working with the Environment Agency to see whether the limits can be relaxed in any way*”. The reduced forecast appears pragmatic given the new permit.

### **3.1.16. I1: Percentage of customers in water poverty**

The Company is reporting a figure of 0.0% (0 out of 489,955 household customers) for 2017/18, which represents a reduction from the 2016/17 figure of 0.9%. It is also below the target figure of 1.9%, which means that the committed performance level has been met. Following a change to the status of its Assist social tariff, the Company has changed its approach for reporting the figure from the last two years, when the gross figure was reported without subtracting the number of customers on the Company’s Assist tariff, as this would have led to a negative figure. Using the same approach this year would have resulted in a reported figure of 0.8%. The Company has determined that the reporting of zero this year is more consistent with the measure as defined in the Company’s PR14 plan and the basis on which the target was set, and has noted this in the commentary.

We followed the audit trail and confirmed the accuracy of the reporting.

### **3.1.17. J1: Service incentive mechanism (SIM)**

**Bristol Water:** The reported SIM score for 2017/18 is 83.38. Performance has been robustly reported for the qualitative component of the SIM and written complaints. Weaknesses in both the processes for calculating the overall SIM score and for managing and reporting unwanted calls were identified (processes for logging of calls, managed processes, effectiveness of checks and controls). The calculation of the SIM score was corrected and we have recommended an overhaul of the reporting tool. In relation to unwanted calls, we do not believe the issues materially impact on reporting: our coarse assessment of the potential impact of the resultant unwanted calls is that it has a <0.1 impact on the SIM score. In response to the findings, the Company has put together an action plan and programme of work to ensure that more robust processes for recording, logging and reporting of all calls will be in place for the next reporting year.

**Pelican:** There has been no change to the methodology from last year. We followed the audit trail and confirmed the accuracy of the reporting.

### **3.1.18. J2: General satisfaction from surveys**

The Company is reporting 87% for 2017/18 against a target of 93%. The source for the reporting is the results from a survey commissioned from a third-party provider. We followed the audit trail and confirmed the accuracy of the reporting.

### **3.1.19. J3: Value for money and K1: Ease of contact**

The Company is reporting 68.9% for 2017/18 against a target of 72%. The source for the reporting is the results from a survey commissioned from a third-party provider. We followed the audit trail and confirmed the accuracy of the reporting.

### **3.1.20. L1: Negative billing contacts**

The Company is reporting 2,300 negative billing contacts for 2017/18 against a target of 2,315. We followed the audit trail to the numbers reported by Pelican. No issues were identified.

## **3.2. Section 3 Tables**

Table 3-2 below provides a summary of our assurance findings for Tables 3A, 3B and 3D.

**Table 3-2 APR Section 3 Tables - Overall Assessment**

Table	Methodology	Data	Commentary	Assurance summary
3A - Outcome performance table (including underperformance penalties and outperformance payments)	Green	Green	Green	Latest draft reviewed. Minor changes suggested
3B - Sub-measure performance table	See A2 and A3 summaries above			
3D - SIM (Service Incentive Mechanism)	Amber	Amber	Green	See Performance Commitment J1 SIM summary in Table 3-2.
3S - Shadow reporting of new definitions (leakage, supply interruptions, unplanned outage, PCC, mains bursts and risk of severe restrictions in a drought)	Covered in a separate report			

### 3.2.1. 3A - Outcome performance table (including underperformance penalties and outperformance payments)

We were able to trace all the figures in Table 3A to the signed off values in the individual PC Submission Forms and, where relevant, through the calculations. We judged the calculations to be correctly applying the processes laid down in the Final Determination (or as amended by the CMA). Exceptions to this were J1: Service Incentive Mechanism. We need to confirm with the audit team that the reported figures agree with the final position as audited. Atkins has not been appointed to assure the forecast performance figures for the years 2018/19 and 2019/20 and therefore these have been taken at face value and the application together with ODI rates checked.

### 3.2.2. 3B - Sub-measure performance table

Please refer to Performance Commitment A2 and A3 summaries above.

### 3.2.3. 3D - SIM (Service Incentive Mechanism)

Please refer to Performance Commitment J1 SIM summary.

### 3.3. Section 4 Tables – financial and non-financial information

The table below summarises the assurance category assigned to each table, with further detail below.

**Table 3-3 APR Section 4 Tables (financial and non-financial information) – Overall Assessment**

Table	Lines	Methodology	Data	Commentary	Assurance summary
4A - Non-financial information	1 to 5	N/A	Green	N/A	We identified a discrepancy in the bulk supplies figures, which was subsequently addressed.
4B - Totex analysis	1 to 9	Green	Green	Green	We consider that it would be sensible in future to link the Table 4B and 4C calculations to ensure consistency between them.
4C - Impact of AMP performance to date on RCV	1 to 6	Green	Green	N/A	There is a small inconsistency with the Table 4B totex underspend apparently due to the use of RPI numbers rounded to different decimal points. We recommend that these figures should be consistent in future.
4D - Wholesale totex analysis – wholesale water	1 to 11	Green	Green	Green	We consider that it would be useful to develop a clear explanation of why some costs have been incorporated in expensed IRE and not others.
	12 to 19	Green	Green	Green	Methodology and commentary are combined.
	20 to 21	Green	Green	Green	Methodology and commentary are combined.
	22 to 24	Green	Green	Green	No issues identified
	25 to 28	Green	Green	Green	We identified a discrepancy with the distribution input in Table 4A which has now been rectified.
4F - Operating cost analysis - household retail		Green	Green	Green	We are satisfied that the table appears to have been compiled consistent with the Company's accounting methodology. However, greater analysis and internal assurance would strengthen confidence in the table. We suggested some improvements to the commentary.
4G - Wholesale current cost financial performance		Green	Green	N/A	The method has changed since last year but appears appropriate. In future years, we consider it would be useful to provide more of an audit trail for the data used in these calculations.

#### 3.3.1. Table 4A - Non-financial information

We identified a discrepancy in the reported bulk supplies figures with other parts of the submission, which was subsequently addressed.

### **3.3.2. Table 4B – Wholesale Totex analysis**

From what we observed Table 4B has been compiled consistent with the Bristol Water accounting separation methodology. Our review found a number of methodology and data issues which have now been rectified.

Some improvements could be made to the commentary to make it easier to understand the table and year-on-year variances. For example, it would be useful to have a narrative on the difference between Lines 8 & 9 (allowed and actual totex). We also consider that greater effort should be made to ensure that the numbers are consistent with Table 4C, see below.

### **3.3.3. Table 4C – Impact of AMP performance to date on RCV**

Table 4C has changed since last year and line 1 now relates to totex under/overspend. There were some challenges in reconciling line 1 with Table 4B. After correcting third party costs and 'other cash items' the remaining difference from Table 4B is apparently due to the use of RPI numbers which have been rounded to different decimal points.

We consider that it would be sensible in future to link the Table 4C calculations to Table 4B to ensure consistency between them.

Based on what we reviewed and discussed at the audit we believe the data has been appropriately reported consistent with Ofwat guidance.

### **3.3.4. Table 4D – Wholesale totex analysis – wholesale water**

The data reported in Table 4D comes from SAP and a reconciliation was carried out to ensure full alignment between the entries to Table 4L and 4D. A methodology document was provided, which was the same in substance to last year for the Fixed Asset, Capital expenditure and Depreciation section of the broader Accounting Separation Methodologies 2018 document. The document is not in the format used for other aspects of the APR submission.

#### **Line 1-11 Operating expenditure, Lines, 25-28 Unit cost information**

In general, we found the company's approach to Table 4D to be appropriate and in line with its Accounting Separation Methodology Statement.

We found the approach to classification of expenditure as expensed renewals (i.e. line 5) to be unclear. After the audit, the company amended the methodology to refer to FA01 IRE Capitalisation Policy and the IRE Opex and Leakage policy. We understand that the Financial Auditor has reviewed the company's capitalisation policy in some detail this year. However, we still consider that it would be useful to develop a clear explanation of why some costs have been incorporated in this category and not others.

We have also highlighted a number of potential improvements to the company's methodology statement and commentary.

#### **Line 12-19 Capital expenditure**

We reviewed the download from SAP of all fixed assets on the fixed asset register and the schemes that contribute to each line, using filters and sorting schemes by value to check the appropriateness of the allocations. We were able to confirm the appropriateness of the allocations and noted that there was a £1m spend against infrastructure renewals for lead communication pipe replacements, which accords with our observations about the reporting of lead communication pipe replacements for quality in Table 4L.

#### **Line 20-21 Grants and Contributions**

We confirmed from the SAP report that this comprised infrastructure, including infrastructure charges, connection charges, requisition mains and diversions.

#### **Line 22-24 Cash expenditure**

There were zero entries for Lines 22 and 23 and Line 24 is a calculated field.

### 3.3.5. Table 4F – Operating cost analysis - household retail

From what we have observed, Table 4F appears to have been compiled consistent with the Company's accounting separation methodology.

However, we consider that greater analysis and internal assurance of BWBSL's costs would strengthen the confidence in this table. In particular, we consider that the Company should derive their estimate of the cost categories specifically for their own customers, rather than using the fixed proportion of Wessex and Bristol Water's aggregate costs.

We also consider it would be useful to strengthen the commentary to explain year on year variations.

### 3.3.6. Table 4G – Wholesale current cost financial performance

Except for line 3 ('Capital maintenance charges') all of the lines in Table 4G are taken from other APR tables.

The company has changed its approach to deriving Line 3 since last year. It is now based on forecast average AMP6 & 7 Infrastructure Renewals Expenditure Capex rather than 2014/15 IRC indexed forward and adjusted for IFRS treatment of IRE opex. The IRE Capex is then added to CCD from the company's CCA FAR. The method used appears appropriate and consistent with RAG 1.08. In future years, we consider it would be useful to provide more of an audit trail for the data used in these calculations.

### 3.3.7. Section 4 Tables 4J to 4V (previously Wholesale Cost Tables)

The table below summarises the assurance category assigned to each table, with further detail below.

**Table 3-4 APR Section 4 Tables (4J to 4V - previously Wholesale Cost Tables) – Overall Assessment**

Table	Lines	Line numbers	Methodology	Data	Commentary	Assurance summary
4J - Atypical expenditure by business unit	Operating Expenditure	1 to 11	<i>Please refer to 4D</i>			
	Capital Expenditure	12 to 21	<i>Please refer to 4D</i>			
	Cash Expenditure	22 to 24	<i>Please refer to 4D</i>			
	Atypical Expenditure	25 to 30	N/A	N/A	N/A	<i>Not required – no atypical expenditure identified in the reporting year</i>
	Total Expenditure	31	<i>Please refer to 4D</i>			
4L - Enhancement capital expenditure by purpose	Enhancement expenditure by purpose	1 to 30	<b>Green</b>	<b>Green</b>	<b>Green</b>	We were satisfied that the methodology and data seen at audit was fit for purpose.
4P - Non-financial data for WR, WT and WD: Resources	Proportion of distribution input by source type	1 to 6	<b>Green</b>	<b>Green</b>	<b>Green</b>	We had no significant concerns over the figure being reported.
	Number and capacity of sources	7 to 19	<b>Green</b>	<b>Green</b>	<b>Green</b>	We had no significant concerns over the figure being reported.
	Length of raw mains	20	<b>Green</b>	<b>Green</b>	<b>Green</b>	We believe that the processes in place to produce these

Table	Lines	Line numbers	Methodology	Data	Commentary	Assurance summary
						figures are fit for purpose.
	Pumping head	21 to 22	Green	Green	Green	The process of data management and extraction is well controlled and appropriate procedures are in place. However, we identified an error in the calculation spreadsheet which has now been amended.
4P - Non-financial data for WR, WT and WD: Treatment	Total water treated	23 to 37	Green	Green	Green	We had no significant concerns over the figures being reported.
	Number of treatment works	38 to 52	Green	Green	Green	We had no significant concerns over the figure being reported.
	Zonal population receiving water treated with orthophosphate	53	Green	Green	Green	We had no significant concerns over the figure being reported.
	Average pumping head - treatment / Average pumping head - resources	54	Green	Green	Green	The process of data management and extraction is well controlled and appropriate procedures are in place. However, we identified an error in the calculation spreadsheet which was amended prior to submission.
4P - Non-financial data for WR, WT and WD: Distribution	Main lengths	55 to 64	Green	Green	Green	We believe that the processes in place to produce these figures are fit for purpose.
	Capacity	65 to 67	Green	Green	Green	The overall methodology is fit for purpose. Reported historical figures have changed as a result of data validation carried out. We have no concerns over the figures being reported.

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Table	Lines	Line numbers	Methodology	Data	Commentary	Assurance summary
	Distribution input	68	Green	Green	Green	We did not encounter any significant issues, two minor areas for improvement and potential update were identified.
	Water Delivered	69 to 72	Green	Green	Green	We had no significant concerns over the figures being reported.
	Leakage	73 to 75	Green	Green	Green	We had no significant concerns over the figures being reported.
	Comms pipes	76 to 78	Green	Green	Green	Information derived from the GIS system.
	Network	79 to 81	Green	Green	Green	The overall methodology is fit for purpose. Reported historical figures have changed as a result of data validation carried out. We have no concerns over the figures being reported.
	Age of Network	82 to 89	Green	Green	Green	We believe that the processes in place to produce these figures are fit for purpose.
	Pumping head	90	Green	Green	Green	The process of data management and extraction is well controlled and appropriate procedures are in place. However, we identified an error in the calculation spreadsheet which was amended prior to submission.
	WTW in size bands	91 to 98	Green	Green	Green	We had no significant concerns over the figures being reported.
	Proportion of Total DI band	99 to 106	Green	Green	Green	We had no significant concerns over the figures being reported.
4Q - Non-financial data - Properties,	Properties, population and meters	1 to 14, 16 to 17	Green	Green	Green	We had no concerns over the figure being reported. Several improvements to the

Contains *private* information

Table	Lines	Line numbers	Methodology	Data	Commentary	Assurance summary
population and other						methodology document were recommended.
	Total Population Served	15	Green	Green	Green	We had no significant concerns over the figure being reported. A number of updates to the methodology were suggested.
	Company area	18	Green	Green	Green	We had no concerns over the figure being reported. We suggested some minor updates to the methodology document.
	Lead Comms pipes	19	Green	Green	Green	Reported figures are readily traced to quality work and checks are evident.
	Supply / Demand	20 to 23	Green	Green	Green	Following the audit, the Company revised the approach used for calculating demand-side enhancements to improve alignment with the line definition. The previous year's figures will need to be re-stated based on this revised approach.
	Energy Consumption	24 to 26	Green	Green	Amber	Some errors were identified in relation to the calculations for liquid fuels and transport, which represent a relatively small proportion of energy consumption, which were corrected post-audit. We recommended updates to the commentary to explain changes to historical figures.
	Peak factor	27	Green	Green	Green	We had no significant concerns over the figure being reported.
	Mean zonal compliance	28	See D1 – Mean Zonal Compliance			

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Table	Lines	Line numbers	Methodology	Data	Commentary	Assurance summary
	Volume of leakage	29	Green	Green	Green	We had no significant concerns over the figure being reported.
4V - Operating cost analysis	Opex	1 to 17	Green	Green	Green	Our review found a number of methodology and data issues, such as allocation of inappropriate costs to 'river abstractions' and exclusion of temporary/agency staff costs, which have now been rectified.

### 3.3.8. Table 4J - Atypical expenditure by business unit

Although Table 4J is new this year, there are no atypical items, so it contains the same information as Table 4D. Therefore, no change in the Company's methodology has been required and no additional comments are made here.

### 3.3.9. Table 4L – Enhancement expenditure by purpose

#### Line 1-20: Enhancement expenditure by purpose

We note that the data in Table 4L as audited by us was draft, as the finalised accounts for the year 2017/18 had not yet been formally signed-off. The Company had prepared a comprehensive methodology document for the completion of Table 4L. This included a detailed scope with the definitions extracted from the current RAG4.07 (November 2017) for each of the reported lines and columns therein. The AMP6 capital expenditure on enhancement schemes had previously analysed for the completion in 2017 of Tables 2 and 2.1. This analysis was used as the basis/starting point for the reporting in Table 4L, though minor line description and purpose allocation changes led to the need for some adjustments. These are catalogued in detail in an appendix to the methodology. The methodology has a step by step explanation of how the data is reported and includes a confidence grading (per Ofwat JR reporting requirements definitions). The document could be more explicit in the price bases that need to apply. We believe the methodology to be fit for purpose.

Previously reported schemes and their associated expenditure were reported by developing 2016/17 reporting. An appendix was included in the methodology document that identified the new (in year) AMP6 enhancement schemes and categorisation that were included for the first time during the report year. We considered each new scheme and its allocation and were satisfied. The audit involved trailing back to a capital expenditure dump from the SAP system. The allocation of expenditure between capital and operating expenditure was out of scope and is in the domain of the financial auditors.

The expenditure in SAP is not allocated across the water service columns as separate codes exist to carry out that function at an earlier stage. The only exception to that is expenditure in Security and Emergency Measures Directive work.

We went through the SAP reports for every entry that had expenditure against it. We found the figures tied back to schemes which, based upon the scheme name, appear to be appropriately allocated. For example, expenditure in Line 2 was correctly allocated to raw water abstractions and as the work was ongoing, there was no value in the cumulative column. Expenditure in Line 5 was all on lead communication pipe replacement for quality, which is appropriate. We note that the value was small, which is consistent with the Bristol Water approach of allocating replacement of lead CPs to renewals when associated with a mains renewal.

The largest block of expenditure was against the Southern Resilience Scheme (SRS), with £11.7m resilience and £5.0m growth. The SRS is the only scheme in 2017/18 with expenditure allocated between lines in the table.

A general comment was that we would like to see checks and controls explicitly evidenced. However, it was apparent that checking had been carried out.

A commentary is provided, which explained the changes in scale of expenditure in some lines that resulted from the Southern Resilience Scheme activities.

**Lines 21-34** were not used.

**Line 35** is a calculated field.

### **3.3.10. Table 4P – Non-financial data for Water Resources, Water Treatment and Water Distribution**

#### **Line 1-6 Proportion of distribution input by source type**

There has been no change to the Company methodology from the previous year. We followed the audit trails of the Company's spreadsheets for calculating the reported figure. We found an error in the calculations involving net imports/exports whereby the net figure in MI/d was used in calculations that were based on MI. The Company was informed of the error (which applied not only to 2017/18 figures but to all previous reported numbers) and the requirement to multiply the net import/export figure by 365 before use. The Company agreed and re-calculated the numbers for 2017/18 and for previous figures. The updated figures do not represent a material change but do ensure that there is better alignment with the overall DI figure reported. In audit we also queried the difference between values for input to Banwell TW and the output value (input<output). The Company investigated and identified a meter error on the inflow from Banwell Castle equivalent to circa 0.6 MI/d. As Barrow Castle covers inputs from Blagdon and Cheddar reservoirs the error has been proportioned between the two. We have noted that we will look at this in more detail at the next review; we do not consider the error to be material. Following updates, we do not have any further significant concerns on the numbers reported.

#### **Line 7-19 Number and capacity of sources**

There has been no change to the Company methodology from the previous year. The Company had considered changing the source description for some of the sites (in particular the Purton TW and Littleton TW intakes); however, having sought clarification from Ofwat the Company has agreed to maintain the descriptions as they are. The Company has split out the capacity (kW) of intake pumping stations and that for raw water transfer stations as per Ofwat guidance. The Company has undertaken a detailed review of the capacity of individual stations and has made some exclusions and additions that have changed the numbers for 2017. As these changes apply across the years i.e. changes do not reflect actual system modifications but an increased accuracy of the data, the Company has altered the annual figures for previous submissions. We will revisit the changes in more detail at the next review period but consider the approach taken by the Company to be reasonable.

#### **Line 20 Length of Raw Water Mains**

At audit we were shown the GIS system which holds all the Company's information on their water mains. This is the tool which is used for reporting mains lengths of different materials, types and epochs. There has been little change to the length of raw water mains in recent years as there have been no major schemes to lay raw water mains. Raw water mains lengths are taken as a subset of the total mains length on the system. We were satisfied with the method of data collection and reporting from GIS.

#### **Line 21-22, 54 and 90 Average Pumping Head**

The process of data management and extraction is well controlled and appropriate procedures are in place. We identified two issues, one of which was very significant but easy to amend:

- The denominator on total pumped volumes was wrong according to the RAG and the internal guidance issued by the regulation team. It needs to equal the total volume of water entering each price control, not the sum of Q from all the pumping stages.
- There were a number of the more sizeable minor sites where no QH had been assigned because of a lack of inlet pressure data, but where estimates had been made in previous years. Ideally some estimate should be made of the pressure lift. This affects less than 1% of QH, so is not material.

### **Line 23-37 Total water treated, Line 91-98 WTW in size bands and Line 99-106 Proportion of Total DI band**

There has been no change to the Company methodology from the previous year. We followed the audit trails of the Company's spreadsheets for calculating the reported figure and this did not raise any concerns. The figures align closely with that for overall DI (Line 68); minor variations are not material and suggest rounding issues. The auditee confirmed that the data had been checked by the relevant manager and this was recorded in the submission sheet; signatures for director and regulation were missing.

### **Line 38-52 Total number of Treatment Works**

There has been no change to the Company methodology from the previous year. We followed the audit trails of the Company's spreadsheets for calculating the reported figure and this did not raise any concerns. The auditee confirmed that the data had been checked by the relevant manager but this was not recorded in the cover sheet. We recommended that the cover sheet be updated.

### **Line 53 Zonal population receiving water treated with orthophosphate**

There has been no change to the Company methodology from the previous year. We followed the audit trails of the Company's spreadsheets for calculating the reported figure and this did not raise any concerns. The auditee confirmed that the data had been checked by the relevant manager but this was not recorded in the cover sheet. We recommended that the cover sheet be updated.

### **Line 55-64 Main lengths**

We reviewed the reported lengths of differing diameters and mains renewals and confirmed that they were correctly transcribed. We also reviewed the calculation spreadsheet and assurance processes which are part of developing these numbers. The 2017/18 data has been reported directly from GIS. We confirmed that the reported values were equal to the sum of the mains of differing epochs.

### **Line 65-67, 79-81 Capacity and number of water towers, booster pumping stations and service reservoirs**

The overall methodology for reporting these lines has remained the same since last year. However, further validation has been undertaken on the asset data in SAP, which has resulted in changes to the figures being reported for lines 65, 66, 79 and 80 compared to the previous year, although there has been no material change to the relevant assets. Following the audit, it was confirmed that the previous years' figures would be re-stated.

During the audit we attempted to reconcile changes for individual assets with the total net changes for these lines and this highlighted the need for additional checks to be made by the Company. A comparison of the changes for each asset compared to the previous year was undertaken following the audit and the reported figures were confirmed as being correct. We suggested that this systematic check be built into the reporting process for next year.

We also queried how details of corrections and updates to figures and asset status during the year are recorded. Although these are not recorded in a central document or in SAP at present, the Company is planning to produce a form of change log in the coming year to fulfil this requirement. A system also needs to be implemented to allow such changes to be reflected in the GIS so that there is a single version of the truth.

There is ongoing discussion within the Company about the definitions of decommissioned versus abandoned versus isolated assets and how to report these. The Company is planning to develop a set of agreed definitions within the business over the coming year.

### **Line 68 Distribution input**

The key concern raised last year in terms of validation has been adequately addressed and we are comfortable with removing the risk from our register. For this year we did not encounter any significant (red or amber) issues, and identified two minor areas for improvement and potential update:

- We note that the process of moving over from Hydrolog to Netbase in the 18/19 report year could end up identifying some site configuration issues. That represents an improvement, but we need to note that there could be some minor changes to DI as a result.

- At audit the Company wasn't able to provide an overview of the meter calibration process, although we understand this is an ongoing programme by Ops & Maintenance, so is in hand. This will need to be reviewed next year.

#### **Line 69-75 Water Delivered and Total Leakage**

We reviewed the reported figures and confirmed that they were consistent with the water balance reviewed within the F1 Leakage audit.

#### **Line 76-78 Communication pipes**

The data provided at audit did not give us confidence in the reported figures. It was not possible to gain a sensible relationship between the lead communication pipe replacement activity as identified from the job management system and the changes in the number of pipes counted on the GIS system. We suggested and it was agreed at the audit that the auditees would carry out a reconciliation exercise and resubmit the data and there would be a follow-up audit.

#### **Line 82-89 Age of Network**

We reviewed the reported lengths in each of the reported epochs and confirmed that they were correctly transcribed. We also reviewed the calculation spreadsheet and assurance processes which are part of developing these numbers. The 2017/18 data has been reported directly from GIS. We confirmed that the reported values were equal to the sum of the mains of differing diameters.

### **3.3.11. Table 4Q – Non-financial data – Properties, population and other**

#### **Line 1-14, 16-17 Properties and meters**

The methodology document has been updated to cover Table 4Q lines 1-8, 13-14 and 16-17; however, we suggested some additional improvements to the document to clarify the scope and some of the calculations.

We had no concerns over the data being reported for these lines, although we suggested that the Company ensures that full checks and controls on the reported figures are implemented and evidenced. The Company should also ensure that Pelican provides evidence that the main source report from Pelican for the figures (REG100), or its future replacement, have been assured.

#### **Line 15 Total population served**

There has been no change to the Company methodology from the previous year. We followed the audit trails of the Company's spreadsheets for calculating the reported figure and this did not raise any concerns. The auditee confirmed that the data had been checked by the relevant manager but this was not recorded in the cover sheet. We recommended that the cover sheet be updated.

We suggested that further investigation into the private supplies figures derived from the public register of private water supplies from Mendip District Council by the Company is warranted to check if a more recent dataset can be obtained for next year's report.

#### **Line 18 Company Area**

The figure being reported (2,367 km<sup>2</sup>) is the same as last year and there has been no change to the Company's methodology. We queried whether the figures for prior years (pre-16/17), which still state 2,400 km<sup>2</sup> as the Company area (due to the rounding issue identified in the previous year's audit) should be updated as there has been no physical change in the Company's supply area; the Company confirmed that this was the case. Minor updates to the methodology document were discussed and implemented.

#### **Line 19 Lead Communication pipes**

The data provided at audit did not give us confidence in the reported figures. It was not possible to gain a sensible relationship between the lead communication pipe replacement activity as identified from the job management system and the changes in the number of pipes counted on the GIS system. We suggested and it was agreed at the audit that the auditees would carry out a reconciliation exercise and resubmit the data and there would be a follow-up audit.

### **Line 20-23 Supply/demand side enhancements**

There have been several improvements to the Company's methodology documents since our last review and these now provide additional detail on the approach and key assumptions. However, additional clarifications were discussed and agreed for the methodology document for lines 22-23.

The Company has not implemented any supply-side enhancements in AMP6 to date and is therefore reporting a figure of zero for lines 20-21. Following the audit, the Company revised the approach used for calculating demand-side enhancements to improve alignment with the line definition. The previous year's figures will be re-stated based on this revised approach.

### **Line 24-26 Energy consumption**

There have been no significant changes to the Company's overall methodology since our last review, although there have been a number of improvements to the methodology document and calculation spreadsheets following APR 16/17.

The figures reported represent the total combined energy consumption relating to electricity, gas, liquid fuels and transport. Whilst we had no concerns over the figures being reported for electricity and gas (which comprise the majority of the consumption figures), some errors and required updates were identified in relation to the emissions factors being used to convert fuel volumes to kWh for liquid fuels and transport. We also recommended that these updates are reflected in the methodology document. These issues were addressed post-audit, although we recommended updates to the commentary to ensure that changes to historical figures are clearly explained.

There is an ongoing need to ensure that checks are undertaken and recorded in the cover sheet to provide evidence of the checks and controls in place.

### **Line 27 Peak Factor**

There has been no change to the Company methodology from the previous year. We followed the audit trails of the Company's spreadsheets for calculating the reported figure and this did not raise any concerns. The auditee confirmed that the data had been checked by the relevant manager and this was seen in the sign off sheet.

### **Line 28 Mean Zonal Compliance**

Please refer to Section 3.1.7 above – performance commitment D1: Mean Zonal Compliance.

### **Line 29 Volume of Leakage above or below the sustainable economic level**

The Company has derived this figure by subtracting the total leakage figure of 46.64 Ml/d calculated using the new NHHNU figure (as opposed to the ODI version of the leakage figure) from the sustainable economic level of leakage (SELL) of 56 Ml/d as reported at PR14. We did not have any concerns over the reported figure.

## **3.3.12. Table 4V – Operating cost analysis**

Table 4V is a new table and new methodology. From what we observed this table had been compiled consistent with the Bristol Water accounting separation methodology.

The company has changed the way it classifies many of its water resources in the last year. There has been a significant shift from classifying many of them as 'river abstractions' to treating them as 'impounding reservoirs' and 'pumped storage'.

Our review found a number of methodology and data issues, such as allocation of inappropriate costs to 'river abstractions' and exclusion of temporary/agency staff costs, which have now been rectified. Some improvements could be made to the commentary for both tables to make it easier to understand the variances.

## **3.4. GSS Payments**

The table below summarises the assurance category assigned to each table, with further detail below.

**Table 3-5 GSS payments – Overall Assessment**

Performance Measure	Methodology	Data	Commentary	Assurance summary
Guaranteed Standards Scheme (GSS) payments (Bristol Water)	Amber	Green	N/A	We are satisfied that the Company has recorded and made payments where GSS failures had been identified. The Company should update their internal process to prevent the reoccurrence of all-day appointment booking with customers; this should also be reflected in the methodology document.
Guaranteed Standards Scheme (GSS) appointment payments (Pelican)	Amber	Green	N/A	We suggest that there needs to be some additional work completed to improve QA on spreadsheets and that the issue of providing all day appointments to customers is rectified; this should also be reflected in the methodology document.

**Bristol Water:** We concluded that the company requires some updates to its processes and procedures after failing to meet its statutory obligations by arranging some all-day appointments with customers in one department. Bristol Water is clearly making efforts to rectify this by honouring all these GSS failures. Based on the review we completed with the OCS team we found that payments and appointments records were satisfactory.

**Pelican:** We were satisfied that GSS payments were being made to the customers where an appointment failure had been identified. The Company needs to improve QA in supporting spreadsheets to ensure that failures are not overlooked due to calculation errors in supporting spreadsheets. We also found that there were five occasions where an ‘all day’ appointment had been offered to the customer. It is essential that processes are improved to prevent the booking of ‘all day’ appointments with customers, for example, additional training given to staff to reinforce that all day appointments are not in line with Pelican’s statutory requirements.

### 3.5. WRMP Annual Review

The table below summarises the assurance category assigned to each table, with further detail below.

**Table 3-6 WRMP Annual Review – Overall Assessment**

Performance report	Methodology	Data	Commentary	Assurance summary
WRMP Annual Review	Green	Green	Green	We identified several figures that needed to be corrected; this was undertaken prior to submission.

We undertook a remote review of the methodology document, report and data table for the WRMP Annual Review submission. We had no concerns over the methodology document; however, we raised several queries and identified a number of figures that required corrections for consistency with data reported elsewhere. These corrections were subsequently made.

# Appendices

# Appendix A.

## A.1. Meeting Record

**Table A-1 Performance Commitments Methodology and Data Audits Meeting Record**

Performance Measure	Owner/Auditee	Auditor	Methodology and Data Audit Date
A1: Unplanned customer minutes lost	Glenn Hiscock	Jonathan Archer	17/05/2018
A2: Asset reliability - infrastructure	Frank van der Kleij (overall)	Jonathan Archer	02/05/2018
Asset reliability sub indicator: Bursts	Kevin Henderson	Jonathan Archer	02/05/2018
Asset reliability sub indicator: DG2 Low Pressure	Mathias Pacalin	Jonathan Archer	02/05/2018
A3: Asset reliability - non-infrastructure	Mark Phipps (overall)	John Sutherland	08/05/2018
Asset reliability sub indicator: Turbidity Performance at WTW	Graham Williams	John Sutherland	08/05/2018
Asset reliability sub indicator: Unplanned maintenance events	Maciej Zgola	John Sutherland	08/05/2018
B1: Population in centres >25,000 at risk from asset failure	Kevin Henderson	Jonathan Archer	10/05/2018
C1: Security of supply index (SOSI)	Mike Sumblor	Monica Barker	15/05/2018
C2: Hosepipe ban frequency	Mike Sumblor	Monica Barker	15/05/2018
D1: Mean zonal compliance (MZC)	Graham Williams	John Sutherland	Remote
E1: Negative water quality contacts	Jon Scott	Julian Jacobs	27/01/2018
F1: Leakage	Mathias Pacalin	Doug Hunt	21/05/2018
G2: Per capita consumption (PCC)	Mathias Pacalin	Doug Hunt	21/05/2018
G1: Meter penetration	Glenn Hiscock	Monica Barker	16/05/2018
H1: Total carbon emissions	Patric Bulmer/ Natasha Clarke	Helen Gavin	08/05/2018
H2: Raw water quality of sources	Matt Pitts	John Sutherland	Remote
H3: Biodiversity index	Patric Bulmer/ Natasha Clarke	Helen Gavin	08/05/2018
H4: Waste disposal compliance	Robert Luckwell	John Sutherland	Remote
I1: Percentage of customers in water poverty	James Holman	Monica Barker	Remote
J1: Service incentive mechanism (SIM)	Sue Clarke	Katherine Adams	09/05/2018
J1: Service incentive mechanism (SIM) Pelican	Stephanie Martin	Katherine Adams	15/05/2018
J2: General satisfaction from surveys	Sue Clarke	Katherine Adams	09/05/2018
J3: Value for money	Sue Clarke	Katherine Adams	09/05/2018
K1: Ease of contact from surveys	Sue Clarke	Katherine Adams	09/05/2018
L1: Negative billing contacts	Sue Clarke	Katherine Adams	09/05/2018

**Table A-2 GSS Payment Audit Meeting Record**

Area	Owner/Auditee	Auditor	Audit Date
GSS Payments Bristol Water	Lynn Hawkins; Jayne Hooper; Steve Robbins;	Katherine Adams	14/05/2018

Contains *private* information



Area	Owner/Auditee	Auditor	Audit Date
GSS Payment Pelican	Mike Paul, Graham Smith	Katherine Adams	21/05/2018

**Table A-3 APR Section 3 Tables Meeting Record**

Table	Owner/Auditee	Auditor	Audit Date
3A - Outcome performance table (including underperformance penalties and outperformance payments)	James Holman/Alex Smethurst	Jonathan Archer	24/05/2018
3B - Sub-measure performance table	<i>Covered under performance commitments A2 and A3 above</i>		
3D - SIM (Service Incentive Mechanism)	Sue Clarke	Katherine Adams	09/05/2018
3S - Shadow reporting of leakage	Mathias Pacalin	Doug Hunt	21/05/2018
3S - Shadow reporting of PCC	Mathias Pacalin	Doug Hunt	21/05/2018
3S - Shadow reporting of supply interruptions	Glenn Hiscock	Jonathan Archer	17/05/2018
3S - Shadow reporting of unplanned outage	Mike Sumbler	Jo Parker	17/05/2018
3S - Shadow reporting of mains bursts	Kevin Henderson	Jonathan Archer	02/05/2018
3S - Shadow reporting of risk of severe restrictions in a drought	Shawn Beatson	Lauren Petch	Remote

**Table A-4 APR Section 4 Tables (financial and non-financial information) Meeting Record**

Performance Measure	Owner/Auditee	Auditor	Audit Date
4A - Non-financial information	<i>Covered under APR audits</i>		
4B - Totex analysis	Matt Woolley	Graydon Jeal	08/06/2018
4C - Impact of AMP performance to date on RCV	Beverley Lawton	Graydon Jeal	12/06/2018
4D - Wholesale totex analysis – wholesale water	Matt Woolley; Geraldine Redman	Graydon Jeal	11/06/2018
4F - Operating cost analysis - household retail	Matt Woolley	Graydon Jeal	11/06/2018
4G - Wholesale current cost financial performance	Jonathan Hucker	Graydon Jeal	11/06/2018

**Table A-5 APR Section 4 Tables (4J to 4V - previously Wholesale Cost Tables) Meeting Record**

Table	Lines	Line numbers	Owner/Auditee	Auditor	Audit Date
4J - Atypical expenditure by business unit	Operating Expenditure	1 to 11	Matt Woolley	Graydon Jeal	07/06/2018
	Capital Expenditure	12 to 21	Geraldine Redman	Jonathan Archer	11/06/2018
	Cash Expenditure	22 to 24	Matt Woolley	Graydon Jeal	07/06/2018
	Atypical Expenditure	25 to 30	Not required as no Atypical expenditure		
	Total Expenditure	31	Matt Woolley	Graydon Jeal	07/06/2018
4L - Enhancement capital expenditure by purpose	Enhancement expenditure by purpose	1 to 30	Geraldine Redman	Jonathan Archer	11/06/2018
4P - Non-financial data for WR, WT and WD: Resources	Proportion of distribution input by source type	1 to 6	Carl Gilbert	John Sutherland	09/05/2018
	Number and capacity of sources	7 to 19	Matthew Davies	John Sutherland	17/05/2018
	Length of raw mains	20	Henry Ditoos	Katherine Adams	18/05/2018
	Pumping head	21 to 22	Jamie Harris	Doug Hunt	23/05/2018
4P - Non-financial data for WR, WT and WD: Treatment	Total water treated	23 to 37	Carl Gilbert	John Sutherland	09/05/2018
	Number of treatment works	38 to 52	Graham Williams, Sarah McHugh	John Sutherland	09/05/2018
	Zonal population receiving water treated with orthophosphate	53	Henry Ditoos	John Sutherland	09/05/2018
	Average pumping head - treatment / Average pumping head - resources	54	Jamie Harris	Doug Hunt	23/05/2018
4P - Non-financial data for WR, WT and WD: Distribution	Main lengths	55 to 64	Henry Ditoos	Katherine Adams	18/05/2018
	Capacity	65 to 67	Sarah McHugh	Monica Barker	09/05/2018
	Distribution input	68	Carl Gilbert	Doug Hunt	23/05/2018
	Water Delivered	69 to 72	Mathias Pacalin	Doug Hunt	22/05/2018
	Leakage	73 to 75	Mathias Pacalin	Doug Hunt	Inc in F1 audit
	Comms pipes	76 to 78	Henry Ditoos	Jonathan Archer	03/05/2018
	Network	79 to 81	Sarah McHugh	Monica Barker	09/05/2018

Contains *private* information

Table	Lines	Line numbers	Owner/Auditee	Auditor	Audit Date
	Age of Network	82 to 89	Henry Ditoos	Katherine Adams	18/05/2018
	Pumping head	90	Jamie Harris	Doug Hunt	23/05/2018
	WTW in size bands	91 to 98	Carl Gilbert	John Sutherland	09/05/2018
	Proportion of Total DI band	99 to 106	Carl Gilbert	John Sutherland	10/05/2018
4Q - Non-financial data - Properties, population and other	Properties billed	1 to 5	Glenn Hiscock	Monica Barker	16/05/2018
	Properties connected	6 to 8, 13 to 14	Glenn Hiscock	Monica Barker	16/05/2018
	Meters	9 to 12, 16 to 17	Glenn Hiscock	Monica Barker	16/05/2018
	Total Population Served	15	Mathias Pacalin	Monica Barker	17/05/2018
	Company area	18	Henry Ditoos	Monica Barker	10/05/2018
	Lead Communication pipes	19	Tim St John	Jonathan Archer	03/05/2018
	Supply / Demand	20 to 23	Shawn Beatson (covering Liz Cornwell, who is on maternity leave)	Monica Barker	18/05/2018
	Energy Consumption	24 to 26	Jamie Harris	Monica Barker	10/05/2018
	Peak factor	27	Jamie Harris	John Sutherland	10/05/2018
	Mean zonal compliance	28	Graham Williams	John Sutherland	Remote
	Volume of leakage	29	Mathias Pacalin	Doug Hunt	Inc in F1 audit
4V - Operating cost analysis	Opex	1 to 17	Matt Woolley / Geraldine Redman	Graydon Jeal	08/06/2018

**Table A-6 WRMP Update Audit**

Area	Owner/Auditee	Auditor	Date
WRMP Annual Return	Shawn Beatson	Monica Barker	Remote – 08/06/18

**Monica Barker**  
Atkins  
Woodcote Grove  
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