

# Appendix 10.1

# DATA ASSURANCE REPORTS

**September 2018**

## **APPENDIX 10.1**

### **DATA ASSURANCE REPORTS**

#### **List of Appendix 10.1 documents:**

1. Non-financial internal audit report.
2. Non-financial external audit report. PR19 data tables: Findings from our review procedures. PwC, August 2018.
3. Financial internal audit report.
4. Financial external audit report. Report of factual findings. Deloitte, August 2018.

## **APPENDIX 10.1**

### **Non-financial internal audit report**

#### **Introduction**

The purpose of this report is to:

- summarise assurance arrangements for the PR19 data tables;
- report the current status of the assurance work, detailing any recommended actions for future reporting; and
- confirm that there are no material issues or concerns to report.

The Internal Audit department is responsible for scoping and co-ordinating the assurance work and reporting our findings. The findings from our External Technical Auditor (PwC) are reported separately.

I can confirm the assurance work that we have undertaken is complete. Many of the data lines are common between Annual Performance Report (APR), including the cost assessment tables, and PR19. The 17/18 (base year) reported number for PR19 being the APR number with a forecast working from this base year in the PR19 data tables. In reviewing the forecast we undertook a review of the methodology and ensured that it had been consistently applied.

The lines we reviewed are attached to this paper for information.

#### **Assurance Framework**

We have continued to use the risk-based approach to assurance adopted successfully for previous regulatory reports. This is the same process as for APR reporting. For example we:

- applied business as usual assurance for our ongoing data capture and measurement processes;
- ensured that each piece of data had been provided by the nominated data provider and reviewed before being audited. This was controlled by a workflow system which was introduced this year; and
- procured additional independent technical assurance to examine areas that were identified as being higher risk as defined by our regulatory data risk management framework.

#### **Findings**

Performance or asset data (non-financial) has been reviewed by either Internal Audit or our External Technical Auditor (PwC). The financial tables will be reviewed by Deloitte under 'agreed upon procedures' in line with similar tables for APR or Internal Audit (to the same degree as Deloitte are auditing).

The Internal Audit team has undertaken reviews of the non-financial data in line with the details within this report. The areas highlighted in green have been completed and agreed with no material issues outstanding.

## APPENDIX 10.1

### Non-financial internal audit report

As there are such close links between the information requirements of APR and PR19 the issues that we raised regarding the APR to improve processes and data quality in future also apply here. I have detailed these below:

- A review of the Asset Hierarchy data should be undertaken as gaps and inconsistencies were noted. This data is used in a number of places throughout APR (and therefore PR19). This matter was also raised by PwC. A review and refresh of this data is part of iAM and my recommendation is an action plan should be developed to ensure this is resolved for future reporting in advance of iAM go live.
- We reported that around 25% of lines were returned to data providers for correction for APR, the corresponding PR19 line also had to be returned. A communication exercise highlighting the importance of the data is planned. This should include the importance of ensuring that the forecast methodology is clear.

### Conclusion

Based upon our assessment of our allocated sections of the PR19 data tables, I conclude that the assurance arrangements have been effective and appropriate.

Assurance work has been completed for non-financial tables and no material issues have been raised which have not subsequently been corrected.

## APPENDIX 10.1

### DATA ASSURANCE REPORTS

In the table below we have detailed the lines of the PR19 data tables that were allocated to Internal Audit. Where the "Line" column is green this line either had no issues or the data table was returned to the data provider with some minor recommendations and they have made the necessary amendments and passed it back through the process. You will notice that they are all now complete. We have reclassified WS18.9 and WS18.11 as financial lines as they relate to changes in customer bills which are some of the last lines to be completed following the financial tables:

Table	Line	Line Description
App2	App2.42	PR14 supply interruption performance commitment]
App2	App2.43	PR14 internal sewer flooding performance commitment]
App4	App4.1	Customers finding the level of their water bills affordable: (a) for companies who charge for water only (WoCs)
App4	App4.2	Customers finding the level of their combined bills affordable: (b) for companies who charge for both water and wastewater (WaSCs)
App4	App4.3	Customers finding the level of their combined bills affordable: (c) for companies who charge for water only (WoCs)
App4	App4.4	Customers finding their water bills acceptable: (a) for companies who charge for water only (WoCs)
App4	App4.5	Customers finding their combined bills acceptable: (b) for companies who charge for both water and wastewater (WaSCs)
App4	App4.6	Customers finding their combined bills acceptable: (c) for companies who charge for water only (WoCs)
App4	App4.7	Benefits of applying affordability assistance measures
App4	App4.8	Costs of applying affordability assistance measures
App4	App4.9	Customers aware of affordability assistance measures
App4	App4.10	Customers who are in debt who have a repayment plan
App4	App4.11	Customers who have a repayment plan and who are continuing to pay
App4	App4.12	Customers aware of the non-financial vulnerability assistance measures offered
App4	App4.13	Customers on Special Assistance Register/ Priority Service Register (SAR/PSR)
App4	App4.14	Customers on Special Assistance Register/ Priority Service Register (SAR/PSR)
App4	App4.15	Customers receiving services through the SAR/PSR: (a) support with communication
App4	App4.16	Customers receiving services through the SAR/PSR: (b) support with mobility and access restrictions
App4	App4.17	Customers receiving services through the SAR/PSR: (c) support with supply interruption
App4	App4.18	Customers receiving services through the SAR/PSR: (d) support with security
App4	App4.19	Customers receiving services through the SAR/PSR: (e) support with 'other needs'
App4	App4.20	Customers satisfied that the services are easy to access
App4	App4.21	Customers on SAR/PSR contacted over the previous two years to ensure they are still receiving the right support
App5	App5 (all lines)	PR14 Reconciliation
App30	App30.1	Number of void properties ~ residential
App30	App30.2	Number of void properties ~ business
App31	App31.1	Stage 1 complaints received
App31	App31.2	Complaints escalated internally to stage 2
App31	App31.3	Complaints referred to CCWater
App31	App31.4	Investigations opened by CCWater
App31	App31.5	Complaints investigated by Ofwat or WATRS
App31	App31.6	Total number of major incidents
App31	App31.14	Formal cautions for breach of drinking water quality requirements
App31	App31.15	Completed prosecutions for breach of drinking water quality requirements

## APPENDIX 10.1

### DATA ASSURANCE REPORTS

Table	Line	Line Description
App31	App31.16	Completed enforcement action taken under the Water Industry Act 1991 and the licence
App31	App31.17	Completed enforcement action taken under competition law
R3	R3 (all lines)	Residential retail - bad debt and customer services
Wn1	Wn1.1	Total water treated at all SW simple disinfection works
Wn1	Wn1.2	Total water treated at all SW1 works
Wn1	Wn1.3	Total water treated at all SW2 works
Wn1	Wn1.4	Total water treated at all SW3 works
Wn1	Wn1.5	Total water treated at all SW4 works
Wn1	Wn1.6	Total water treated at all SW5 works
Wn1	Wn1.7	Total water treated at all SW6 works
Wn1	Wn1.8	Total water treated at all GW simple disinfection works
Wn1	Wn1.9	Total water treated at all GW1 works
Wn1	Wn1.10	Total water treated at all GW2 works
Wn1	Wn1.11	Total water treated at all GW3 works
Wn1	Wn1.12	Total water treated at all GW4 works
Wn1	Wn1.13	Total water treated at all GW5 works
Wn1	Wn1.14	Total water treated at all GW6 works
Wn1	Wn1.15	Total water treated at more than one type of works
Wn1	Wn1.16	Total number of SW simple disinfection works
Wn1	Wn1.17	Total number of SW1 works
Wn1	Wn1.18	Total number of SW2 works
Wn1	Wn1.19	Total number of SW3 works
Wn1	Wn1.20	Total number of SW4 works
Wn1	Wn1.21	Total number of SW5 works
Wn1	Wn1.22	Total number of SW6 works
Wn1	Wn1.23	Total number of GW simple disinfection works
Wn1	Wn1.24	Total number of GW1 works
Wn1	Wn1.25	Total number of GW2 works
Wn1	Wn1.26	Total number of GW3 works
Wn1	Wn1.27	Total number of GW4 works
Wn1	Wn1.28	Total number of GW5 works
Wn1	Wn1.29	Total number of GW6 works
Wn1	Wn1.30	Number of treatment works requiring remedial action because of raw water deterioration
Wn1	Wn1.31	Zonal population receiving water treated with orthophosphate
Wn1	Wn1.32	Average pumping head ~ treatment
Wn1	Wn1.33	WTWs in size band 1
Wn1	Wn1.34	WTWs in size band 2
Wn1	Wn1.35	WTWs in size band 3
Wn1	Wn1.36	WTWs in size band 4
Wn1	Wn1.37	WTWs in size band 5
Wn1	Wn1.38	WTWs in size band 6
Wn1	Wn1.39	WTWs in size band 7
Wn1	Wn1.40	WTWs in size band 8
Wn1	Wn1.41	Proportion of Total DI band 1
Wn1	Wn1.42	Proportion of Total DI band 2
Wn1	Wn1.43	Proportion of Total DI band 3
Wn1	Wn1.44	Proportion of Total DI band 4
Wn1	Wn1.45	Proportion of Total DI band 5
Wn1	Wn1.46	Proportion of Total DI band 6
Wn1	Wn1.47	Proportion of Total DI band 7
Wn1	Wn1.48	Proportion of Total DI band 8

## APPENDIX 10.1

### DATA ASSURANCE REPORTS

Table	Line	Line Description
Wn2	Wn2.1	Total length of potable mains as at 31 March
Wn2	Wn2.2	Total length of mains relined
Wn2	Wn2.3	Total length of mains renewed
Wn2	Wn2.4	Total length of new mains
Wn2	Wn2.5	Potable water mains (<320mm)
Wn2	Wn2.6	Potable water mains 320mm - 450mm
Wn2	Wn2.7	Potable water mains 450mm - 610mm
Wn2	Wn2.8	Potable water mains > 610mm
Wn2	Wn2.9	Total length of non-potable and partially treated main for supplying customers
Wn2	Wn2.10	Total length of non-potable and partially treated main for treatment
Wn2	Wn2.11	Capacity of booster pumping stations
Wn2	Wn2.12	Capacity of service reservoirs
Wn2	Wn2.13	Capacity of water towers
Wn2	Wn2.22	Number of lead communication pipes
Wn2	Wn2.23	Number of galvanised iron communication pipes
Wn2	Wn2.24	Number of other communication pipes
Wn2	Wn2.25	Number of booster pumping stations
Wn2	Wn2.26	Total number of service reservoirs
Wn2	Wn2.27	Number of water towers
Wn2	Wn2.28	Total length of mains laid or structurally refurbished pre-1880
Wn2	Wn2.29	Total length of mains laid or structurally refurbished between 1881 and 1900
Wn2	Wn2.30	Total length of mains laid or structurally refurbished between 1901 and 1920
Wn2	Wn2.31	Total length of mains laid or structurally refurbished between 1921 and 1940
Wn2	Wn2.32	Total length of mains laid or structurally refurbished between 1941 and 1960
Wn2	Wn2.33	Total length of mains laid or structurally refurbished between 1961 and 1980
Wn2	Wn2.34	Total length of mains laid or structurally refurbished between 1981 and 2000
Wn2	Wn2.35	Total length of mains laid or structurally refurbished post 2001
Wn2	Wn2.36	Average pumping head – distribution
WS3	WS3.9	Number of residential meters renewed
WS3	WS3.10	Number of business meters renewed
WS3	WS3.11	Number of meters installed at the request of optants
WS3	WS3.12	Number of selective meters installed
WS4	WS4.1	Number of lead communication pipes replaced for water quality
WS4	WS4.6	Energy consumption ~ network plus
WS4	WS4.7	Energy consumption ~ water resources
WS4	WS4.8	Energy consumption ~ wholesale
WS18	WS18.1	Residential customers metered
WS18	WS18.2	Number of contacts about drinking water (taste, odour and discolouration)
WS18	WS18.3	Number of catchment management schemes
WS18	WS18.4	Number of people receiving help paying their water bill
WS18	WS18.5	Number of direct procurement water service schemes
WS18	WS18.6	The volume of water traded
WS18	WS18.7	Length of rivers improved as a result of WINEP Water Resource schemes
WS18	WS18.8	Greenhouse gas emissions from water operations
WS18	WS18.10	Amount of planned water investment improving services, maintaining the network and protecting the environment
WS18	WS18.11	Total number of residential and business customers who receive a water bill
WS18	WS18.12	Amount of planned water investment per customer billed
WS18	WS.18.13	Number of residential retail customers engaged with on the business plan
WWn3	WWn3.1	Connectable properties served by s101A schemes completed in the report year

## APPENDIX 10.1

### DATA ASSURANCE REPORTS

Table	Line	Line Description
WWn3	WWn3.2	Number of s101A schemes completed in the report year
WWn3	WWn3.3	Total pumping station capacity
WWn3	WWn3.4	Number of network pumping stations
WWn3	WWn3.5	Total number of sewer blockages
WWn3	WWn3.6	Total number of gravity sewer collapses
WWn3	WWn3.7	Total number of sewer rising main bursts / collapses
WWn3	WWn3.8	Number of combined sewer overflows
WWn3	WWn3.9	Number of emergency overflows
WWn3	WWn3.10	Number of settled storm overflows
WWn3	WWn3.11	Sewer age profile (constructed post 2001)
WWn3	WWn3.12	Volume of trade effluent
WWn3	WWn3.13	Volume of wastewater receiving treatment at sewage treatment works
WWn3	WWn3.14	Length of gravity sewers rehabilitated
WWn3	WWn3.15	Length of rising mains replaced or structurally refurbished
WWn3	WWn3.16	Length of foul (only) public sewers
WWn3	WWn3.17	Length of surface water (only) public sewers
WWn3	WWn3.18	Length of combined public sewers
WWn3	WWn3.19	Length of rising mains
WWn3	WWn3.20	Length of other wastewater network pipework
WWn3	WWn3.21	Total length of "legacy" public sewers as at 31 March
WWn3	WWn3.22	Length of formerly private sewers and lateral drains (s105A sewers)
WWS4	WWS4.1	Energy consumption ~ network plus
WWS4	WWS4.2	Energy consumption ~ sludge
WWS4	WWS4.3	Energy consumption ~ wholesale
WWS4	WWS4.4	Population resident in National Parks, SSSIs and Areas of Outstanding Natural Beauty (AONBs)
WWS4	WWS4.5	Total sewerage catchment area
WWS4	WWS4.6	Designated bathing waters
WWS4	WWS4.7	Number of intermittent discharge sites with event duration monitoring
WWS4	WWS4.8	Number of monitors for flow monitoring at STWs
WWS4	WWS4.9	Number of odour related complaints
WWS4	WWS4.10	Volume of storage provided at storm tanks, etc to meet spill frequency objectives
WWS4	WWS4.11	Volume of new or additional storage provided in the sewerage network
WWS4	WWS4.12	Number of sewage treatment works at which new or additional storage is provided
WWS4	WWS4.13	Number of sites in network at which new or additional storage is provided
WWS4	WWS4.14	Total volume of network storage
WWS18	WWS18.1	Number of external sewer flooding incidents
WWS18	WWS18.4	Asset Health ~ total number of sewer blockages
WWS18	WWS18.8	Greenhouse gas emissions from wastewater operations
WWS18	WWS18.12	Amount of planned wastewater investment improving services, maintaining the network and protecting the environment
WWS18	WWS18.13	Total number of residential and business customers who receive a wastewater bill
WWS18	WWS18.14	Amount of planned wastewater investment per customer billed
WWS18	WWS18.5	Number of people receiving help paying their wastewater bill
WWS18	WWS18.6	Number of direct procurement wastewater service schemes
WWS18	WWS18.7	Length of rivers improved as a result of WINEP Water Quality schemes
WWS18	WWS18.9	Number of designated coastal bathing waters passing EU standards
R10	R10.1	1st survey score
R10	R10.2	2nd survey score



## APPENDIX 10.1

### DATA ASSURANCE REPORTS

Table	Line	Line Description
R10	R10.3	3rd survey score
R10	R10.4	4th survey score
R10	R10.5	Qualitative SIM score (out of 75)
R10	R10.6	Quantitative composite score
R10	R10.7	Quantitative SIM score (out of 25)
R10	R10.8	Total annual SIM score (out of 100)
R10	R10.9	SIM forecast revenue adjustment at 2017-18 FYA CPIH deflated price base

# *PR19 data tables*

## Findings from our review procedures

***Northumbrian  
Water Limited***

*Confidential*

*Final*

*August 2018*



**Strictly private and confidential**

The Directors  
Northumbrian Water Limited  
Boldon House  
Wheatlands Way  
Durham  
DH1 5FA  
Country

**‘Review and recommend’ procedures over selected information within Northumbrian Water Limited’s Performance Reporting 2019 (‘PR19’).**

Dear Sirs,

We are pleased to enclose our report in respect of our review and recommend procedures over specific aspects of your non-financial Performance Reporting 2019 information for AMP7, the five year period ended 31 March 2025 (the full scope of our work can be found in Appendix 1).

The primary purpose of this report is to communicate our approach to the work, and the significant findings and recommendations that we believe are relevant to those charged with governance.

I would like to thank all of the team at Northumbrian Water Limited for their assistance in helping us during the course of our work, and to prepare our report.

Yours faithfully

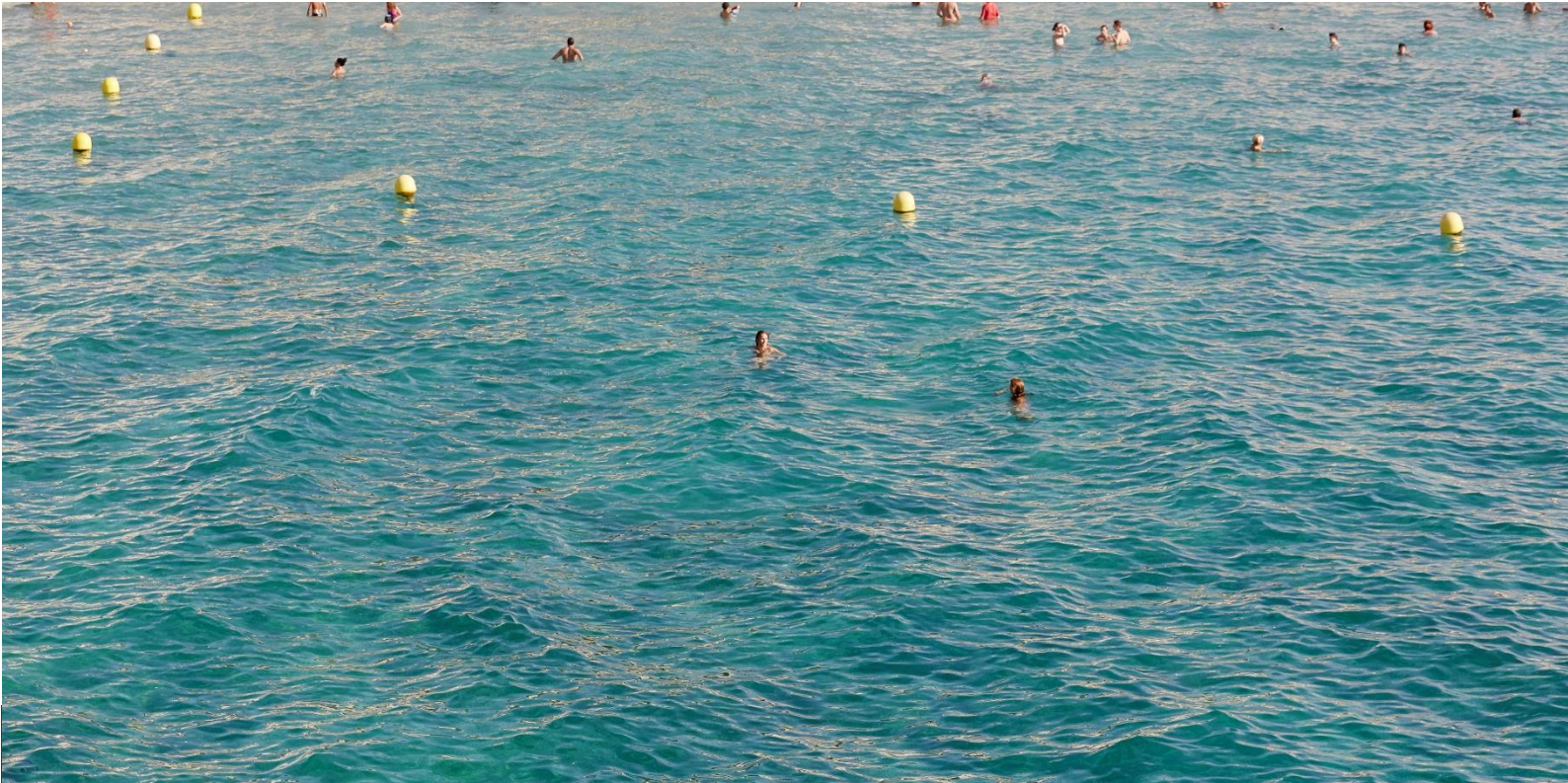
A handwritten signature in black ink, appearing to read 'D. Gandee', written in a cursive style.

**Dave Gandee**  
Partner  
PricewaterhouseCoopers LLP

---

*PricewaterhouseCoopers LLP, Abacus House, Castle Park, Cambridge, CB3 0AN  
T: +44(0)1223 460 05, F: +44(0) 1223 552 336, [www.pwc.co.uk](http://www.pwc.co.uk)*

PricewaterhouseCoopers LLP is a limited liability partnership registered in England with registered number OC303525. The registered office of PricewaterhouseCoopers LLP is 1 Embankment Place, London WC2N 6RH. PricewaterhouseCoopers LLP is authorised and regulated by the Financial Conduct Authority for designated investment business.



# Contents

<b><i>Executive summary</i></b>	<b>1</b>
Background and purpose	1
Our approach	1
Key findings	1
Conclusion	2
<b><i>Our review procedures</i></b>	<b>3</b>
Scope	3
Approach	3
<b><i>Key findings</i></b>	<b>5</b>
<b><i>Appendices</i></b>	<b>6</b>
<i>Appendix 1 – Selected Information subject to review procedures</i>	7

# 1: Executive summary

## Background and purpose

As part of the Price Review 2019 ('PR19') process, you are required to submit a business plan to Ofwat, alongside non-financial information to support your financial plan.

You have asked us to perform a review of select non-financial data points to be submitted as part of your PR19 business plan, and report to you our findings.

This document presents those findings, both at a thematic level (Section 3) and on a line-by-line basis (Appendix 1).

## Our approach

In performing our work, we have used the following four-step assessment process for each of the PR19 lines and tables within our scope:

### 1. Understand the processes and the data.

In order to best inform our review, we first gained an understanding of your reporting process for each line by performing interviews, walkthroughs and limited evidence inspection. As there is a large degree of overlap between the scope of our PR19 work, and the limited assurance work we have performed over your Annual Performance Report ('APR'), we combined this understanding phase where possible.

### 2. Risk assessment.

Understood how you have interpreted the Ofwat guidance for each data point and assessed whether this is appropriate. Additionally, we assessed the risk of misstating each data point and the likelihood of occurrence, whether deliberate or by error. Similarly to above, our risk assessment for the PR19 data points leveraged our mirror process for the APR, but with consideration also given to the forward-looking element of the PR19 data tables.

### 3. Design and execute our test procedures.

We have designed bespoke test procedures for each data point which primarily comprised of:

- Agreeing the baseline figure for 2017/18 back to the figures inspected as part of our work over the APR;

- Assessing the methodology undertaken to prepare forecasts of how the 2017/18 figures are expected to change over the period 2020-2025 (and in some specific cases, beyond 2025); and
- Corroborating the forward looking data where possible (including reconciling the information disclosed to any underlying data), and challenging management on the assumptions used in compiling the performance forecasts. We also considered the accuracy and completeness of the reported data through inspection and testing of underlying forecasting models.

### 4. Conclude and report to the board.

## Key findings

We have noted a number of high level thematic findings which we would like to bring to your attention:

- **Limited or incomplete evidence available to support the capacity of established infrastructure.**

For established infrastructure such as pumping stations reported in six lines (where evidence is more likely to be older, and so required to be maintained over a longer period of time), it was difficult to obtain evidence to support the data points proposed to be reported for the 2017/18 baseline year, which had an associated impact upon the figures forecast for 2020 onwards. A data cleanse exercise was performed by NWL staff to improve the accuracy of reporting and locate appropriate supporting evidence from across the business. The revised reported figures were re-tested by PwC who found no significant issues. There is agreement though, that further work is required in this area to fully cleanse the data and create a robust system of record to ensure reporting remains accurate and up to date; and

- **Calculation errors or misinterpretation of Ofwat requirements have introduced small or easily-addressed errors into proposed reporting.**

Our procedures initially identified three significant issues across thirteen data points,

where we have been able to establish the extent of the error, and so management have been able to remediate the potential misstatement. Following our review of revised tables, there are now no unresolved issues. Our initial recommendations to mitigate each of these findings are outlined in Section 3.

## *Conclusion*

Section 3 of this document presents the key findings of our work on the data points, and where relevant, outlines the actions we considered to be necessary to address any issues which may have impacted our conclusion.



# 2: Our review procedures

## Scope

At a high level, the scope of our review and procedures over the PR19 corresponds to non-financial reporting in relation to Performance Commitments/Outcome Delivery Incentives, Water Resources (including Water Resources capacity forecasts and new Water Resources capacities), Bioresources, Pollution, Abstraction Incentive Mechanism, Sewage Treatment Works, Water Distribution (including leakage and demand/supply side interventions) and Properties and Population.

Where we have identified issues, we have reported these to you, alongside recommendations as to how the issues can be remediated. Where relevant, once management had taken action to address our findings, we then re-visited those PR19 lines to determine whether the issue had been remediated.

Our approach, in long form, is summarised in the diagram below, and described in more detail in the remainder of this section.

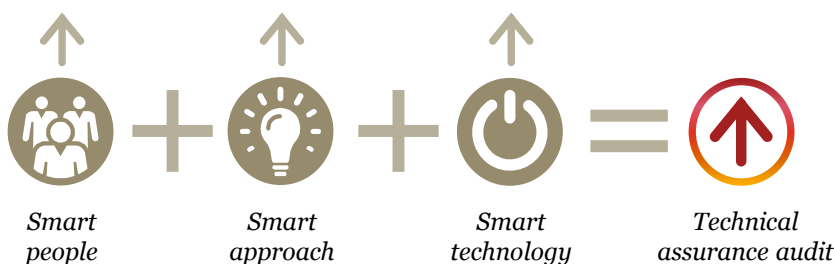
## Approach

In delivering our work, we have performed a review of the way in which historic information (largely for the 2017-18 reporting period) has been used, alongside relevant assumptions and calculations, to generate a forecast of NWL’s expected performance for each of the PR19 areas within our scope.

Note that unlike our approach to your Annual Performance Reporting, this review does not constitute a limited assurance engagement in accordance with the International Standard on Assurance Engagements 3000 (Revised) ‘Assurance engagements other than audits or reviews of historical financial information’ (‘ISAE 3000’), issued by the International Auditing and Assurance Standards Board, which requires the subject matter under review to be historic in nature, rather than including future-looking information.

1. Understand the processes and the data
2. Risk assessment
3. Design and execute test procedures
4. Conclude and report to the Board

*Our technical review is built on the foundation of well trained and talented people, a smart approach and smart technology. This, together with our four-step review process is designed to deliver a review that is robust, risk focused and relevant.*



## 1. *Understand the processes, controls and data*

In the APR Technical assurance engagement, we gained a detailed understanding of the data points within the scope of our PR19 review work, and combined this knowledge with our experience of performance assurance in both utilities and other industries to develop a robust and risk-based assurance approach. To build this understanding, we:

- Met with process, business and data owners for each data point to walkthrough the data measurement, recording, collation and reporting processes and controls; and
- Reviewed Northumbrian Water's reporting criteria which mirrors the Ofwat guidance ('Outcomes definitions – PR19'), describing the methodology that has been adopted to report the non-financial information.

## 2. *Risk assessment*

Based upon the understanding we gained for each data point within our scope, we assessed the risk associated with each data point in the forecast performance reporting over AMP7/PR19 reporting.

For instance, data points which are based upon detailed calculations may be most at risk of being inaccurate, whilst data points which rely upon manual input, or for which there is an incentive for the figure to be lower, may be considered to be higher risk from a completeness perspective.

The outcome of this risk assessment process then informs our practical approach to testing (Step 3).

## 3. *Design and execute test procedures*

We designed our test procedures for each data point individually based on the specific facts and circumstances identified in the previous steps in our approach to the work.

At a high level, we designed our test procedures in line with the following approach:

- **High level analysis** – Performing a fluctuation analysis on the trends/movements in the PR19 forecasts to assess whether the magnitude of the forecasts makes sense given what we know about the business and the industry, and in light of any explanations provided by management;
- **Reconciliation to the APR/WRMP** – Reconcile the baseline figures disclosing the 2017/18 figures in the PR19 tables to the work performed on APR (where the line titles are an exact match between APR and PR19) and/or the Water Resource Management Plan;
- **Validate assumptions made** – Where specific assumptions have been made which drive changes in the baseline 2017/18 figure over AMP7, we have sought to sense-check these assumptions against our knowledge of the industry and to inspect corroborating information (such as communications from Ofwat or other regulators) which help to validate the appropriateness of these assumptions;
- **Re-performance of calculations** – Having tested, validated and cross-referenced the inputs to forecasting calculations, we then independently re-performed the calculations in order to determine whether we reached the same result; and
- **Comparison against Ofwat guidance** – Our final procedure type is to check your approach to producing PR19 forecasts against the requirements within the Ofwat guidance, so as to make sure that the scope and boundaries of your reporting have been set correctly, and that any mandated assumptions or methodologies have been adopted.

## 4. *Conclude and report*

This report contains detail of our key findings on a thematic level and on a line level in Appendix 1.



## 3: Key findings

During the course of our work we noted a number of high level thematic findings which we would like to bring to your attention. We have outlined these below along with our initial suggested recommendations to mitigate these. It is worth noting that these findings broadly mirror those identified in our APR audit committee report, as more significant issues for APR had been found to have an associated impact upon PR19 forecasts, whilst ‘simpler’ errors have tended to repeat across APR and PR19 lines (which usually have the same data owner and reviewer allocated).

Finding	Description	Recommendations
<p><b>Limited or incomplete evidence is available to support the capacity of established infrastructure</b></p>	<p>As part of our testing in relation to ‘Wholesale water resources’, we experienced difficulties in obtaining evidence to support the capacity of pumping stations, as follows:</p> <p>The number of pumping stations had to be reported, and the collective capacity of those pumping stations, split between the two classifications of ‘intake and source’ and ‘raw water’. Our testing initially identified that:</p> <ol style="list-style-type: none"> <li>1 The information contained in different reporting systems (GIS and the Asset Hierarchy system) differed regarding the total number of pumping stations which should be reported;</li> <li>2 Our procedures designed to test the completeness of the data set suggested that some water resources are incorrectly classified as having no pumping station assigned to them; and</li> <li>3 Our inspection of evidence to support the classification of the pumping stations suggested that some are incorrectly classified between being ‘intake and source’ or ‘raw water’ pumping stations.</li> </ol>	<p>As soon as these findings came to light, we reported them to management and recommended that management perform a data cleanse in the first instance to determine whether any other stations have been either misclassified or excluded from reporting, as well as investigating whether any other sources of evidence could be considered to assist us in validating the capacities of the stations.</p> <p>Management have taken actions to address our recommendations, and we are happy with the figures disclosed in these lines.</p>
<p><b>Calculation errors or misinterpretation of Ofwat requirements have introduced small or easily-addressed errors into proposed reporting</b></p>	<p>For a number of the areas in the scope of our work, we identified both material and immaterial errors which we believed were relatively easy to resolve, and were subsequently resolved, and as such had no impact upon our review reporting.</p> <p>These findings differed to those discussed above in relation to reservoirs and pumping stations in that our testing had been able to establish the extent of the identified error, and so we had been able to provide management with recommended changes to the proposed data points.</p> <p>Examples of these tables and lines include:</p> <p><b>Wholesale water resources</b> – The data within these tables contained only the Northern figures as opposed to the North and the South.</p> <p><b>Pumping stations</b> – The records for the number of source pumping stations was incomplete, and the methodology of counting had been applied inconsistently.</p>	<p>Our recommendations for these lines were fed back to the data owners, and the requisite changes have been made as a result.</p>





---






# *Appendices*

# Appendix 1 – Selected Information subject to review procedures





This Appendix presents the Selected Information which is within the scope of our work, including the results of our review procedures and the status of our work against each data point.



















The key to the status is as follows:










-  No issues have been identified, or issues previously identified have been remediated.
-  Some issues were noted during the initial review and there is clear path to remediation available to management. A follow up review is required.
-  Some issues were noted, and management needs to investigate whether remediation is possible.
-  Lines not yet received for review or review work not yet complete.








<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>App1</b>	PCs and ODIs	The longer term projections for Pollution incidents, Risk of Sewer flooding in a storm, Length of water environment did not tie to the underlying documentation that contained the rationale for the PC long term projections.  The Greenhouse Gas Emissions P10 underperformance penalties/ P90 outperformance payments did not reconcile to the Frontier spreadsheet.	The tables have been updated in the line with the recommendations from review 1. No issues noted.	
<b>App2_BlockA.1</b>	Leakage region 1 or whole company	No issues noted.		
<b>App2_BlockA.2</b>	Upper limit of sustainable economic level of leakage (SELL)	No issues noted.		
<b>App2_BlockA.3</b>	Central point of sustainable economic level of leakage (SELL)	No issues noted.		
<b>App2_BlockA.4</b>	Lower limit of sustainable economic level of leakage (SELL)	No issues noted.		

<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>App2_BlockA.5</b>	WRMP leakage targets	No issues noted.		
<b>App2_BlockA.6</b>	Leakage/property/day	No issues noted.		
<b>App2_BlockA.7</b>	Leakage/km of main/day	No issues noted.		
<b>App2_BlockA.8</b>	Leakage region 2	No issues noted.		
<b>App2_BlockA.9</b>	Upper limit of sustainable economic level of leakage (SELL)	No issues noted.		
<b>App2_BlockA.10</b>	Central point of sustainable economic level of leakage (SELL)	No issues noted.		
<b>App2_BlockA.11</b>	Lower limit of sustainable economic level of leakage (SELL)	No issues noted.		
<b>App2_BlockA.12</b>	WRMP leakage targets	No issues noted.		
<b>App2_BlockA.13</b>	Leakage/property/day	No issues noted.		
<b>App2_BlockA.14</b>	Leakage/km of main/day	No issues noted.		
<b>App2_BlockA.15</b>	Leakage region 3	No issues noted.		
<b>App2_BlockA.16</b>	Upper limit of sustainable economic level of leakage (SELL)	No issues noted.		
<b>App2_BlockA.17</b>	Central point of sustainable economic level of leakage (SELL)	No issues noted.		
<b>App2_BlockA.18</b>	Lower limit of sustainable economic level of leakage (SELL)	No issues noted.		
<b>App2_BlockA.19</b>	WRMP leakage targets	No issues noted.		
<b>App2_BlockA.20</b>	Leakage/property/day	No issues noted.		
<b>App2_BlockA.21</b>	Leakage/km of main/day	No issues noted.		
<b>App2_BlockA.22</b>	Leakage region 4	No issues noted.		












<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>App2_BlockA.23</b>	Upper limit of sustainable economic level of leakage (SELL)	No issues noted.		
<b>App2_BlockA.24</b>	Central point of sustainable economic level of leakage (SELL)	No issues noted.		
<b>App2_BlockA.25</b>	Lower limit of sustainable economic level of leakage (SELL)	No issues noted.		
<b>App2_BlockA.26</b>	WRMP leakage targets	No issues noted.		
<b>App2_BlockA.27</b>	Leakage/property/day	No issues noted.		
<b>App2_BlockA.28</b>	Leakage/km of main/day	No issues noted.		
<b>App2_BlockB.29</b>	Leakage region 1 or whole company	No issues noted.		
<b>App2_BlockB.30</b>	Leakage	No issues noted.		
<b>App2_BlockB.31</b>	Central point of sustainable economic level of leakage (SELL)	No issues noted.		
<b>App2_BlockB.32</b>	Leakage region 2	No issues noted.		
<b>App2_BlockB.33</b>	Leakage	No issues noted.		
<b>App2_BlockB.34</b>	Central point of sustainable economic level of leakage (SELL)	No issues noted.		
<b>App2_BlockB.35</b>	Leakage region 3	No issues noted.		
<b>App2_BlockB.36</b>	Leakage	No issues noted.		
<b>App2_BlockB.37</b>	Central point of sustainable economic level of leakage (SELL)	No issues noted.		
<b>App2_BlockB.38</b>	Leakage region 4	No issues noted.		
<b>App2_BlockB.39</b>	Leakage	No issues noted.		
<b>App2_BlockB.40</b>	Central point of sustainable economic level of leakage (SELL)	No issues noted.		












<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>App2_BlockC_Line41</b>	Per capita consumption (PCC)	No issues noted.		
<b>App3_Table</b>	Abstraction Incentive Mechanism	No issues noted.		
<b>App31_BlockC_Line7</b>	Number of category 1 and 2 serious pollution incidents	No issues noted.		
<b>App31_BlockC_Line8</b>	Number of category 3 pollution incidents	No issues noted.		
<b>App31_BlockC_Line9</b>	Discharge permit compliance	No issues noted.		
<b>App31_BlockC_Line10</b>	Satisfactory sludge use/disposal	No issues noted.		
<b>App31_BlockC_Line11</b>	Prosecutions for breach of relevant environmental requirements enforced by EA/NRW	No issues noted.		
<b>App31_BlockC_Line12</b>	Enforcement undertakings for breach of relevant environmental requirements from EA/NRW	No issues noted.		
<b>App31_BlockC_Line13</b>	Formal cautions for breach of relevant environmental requirements from EA/NRW	No issues noted.		
<b>WS3_Line1</b>	Residential properties billed for measured water (external meter)	No issues noted.		
<b>WS3_Line2</b>	Residential properties billed for measured water (not external meter)	No issues noted.		
<b>WS3_Line3</b>	Business properties billed measured water	No issues noted.		
<b>WS3_Line4</b>	Residential properties billed for unmeasured water	No issues noted.		
<b>WS3_Line5</b>	Business properties billed unmeasured water	No issues noted.		
<b>WS3_Line6</b>	Total business connected properties at year end	No issues noted.		
<b>WS3_Line7</b>	Total residential connected properties at year end	No issues noted.		
<b>WS3_Line8</b>	Total connected properties at year end	No issues noted.		
<b>WS3_Line 13</b>	Total number of new business connections	No issues noted.		







<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>WS3_Line 14</b>	Total number of new residential connections	We noted a difference whereby the reported figures were one year out from the supporting evidence i.e. 2017/18 figure reported in 2018/19.	Lines were adjusted in line with our recommendations. No issues noted.	
<b>WS3_Line 15</b>	Total population served	No issues noted.		
<b>WS3_Line16</b>	Number of business meters (billed properties)	No issues noted.	Lines were adjusted following void forecast movements. No issues noted.	
<b>WS3_Line17</b>	Number of residential meters (billed properties)	This line was calculated using data on unmeasured properties (not measured) and therefore a significant difference was identified.	Lines were adjusted following void forecast movements. Confirmed that line is now calculated using data on measured properties and no differences were identified.	
<b>WS3_Line 18</b>	Company area	No issues noted.		
<b>WS4_Line 2</b>	Total supply side enhancements to the supply demand balance (dry year critical/peak conditions)	No issues noted.		
<b>WS4_Line 3</b>	Total supply side enhancements to the supply demand balance (dry year annual average conditions)	No issues noted.		
<b>WS4_Line 4</b>	Total demand side enhancements to the supply demand balance (dry year critical/peak conditions)	We noted one immaterial difference on the incremental demand side improvements delivered during the reporting year to the dry year critical/peak period supply demand balance as at the start of the reporting year.	Following the output from the revised Water Resource Management Plan, smart metering had not been factored into the calculation of total demand side enhancements. This has now been amended and the lines have been amended to take smart metering into account.	
<b>WS4_Line 5</b>	Total demand side enhancements to the supply demand balance (dry year annual average conditions)	We noted one immaterial difference on the Incremental demand side improvements delivered during the reporting year to the dry year annual average conditions supply demand balance as at the start of the reporting year.	Exceptions were identified in the calculation of the demand side enhancements due to the incorrect years being picked up in the calculation. This has now been amended and no further issues identified.	








<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
			Following the output from the revised Water Resource Management Plan, smart metering had not been factored into the calculation of total demand side enhancements. This has now been amended and the lines have been amended to take smart metering into account.	
<b>WS4_Line 9</b>	Mean zonal compliance	No issues noted.		
<b>WS4_Line10</b>	Compliance Risk Index	No issues noted.		
<b>WS4_Line11</b>	Event Risk Index	No issues noted as part of this testing, although we did highlight that there is no guidance as to whether the 'less than' character (<) is suitable for use in the submission tables.  We acknowledge that there is no guidance one way or another, and the spreadsheet itself does not automatically give rise to a validation failure.	As a result of this discussion, management amended the table to remove the '<' character, and instead added an explanation to the free text field on the line.	
<b>WS4_Line12</b>	Volume of leakage above or below the sustainable economic level	No issues noted.		
<b>Wn2_Line13</b>	Proportion of distribution input derived from impounding reservoirs	The table in its current form only presents the North results, as opposed to the North and South. We acknowledge that Ofwat have changed the Wr1 table, so plan to address this issue when we receive the table in the revised format.	Data line transferred from table Wr1 to Wn2. Further testing was performed over the revised table and no issues noted.	
<b>Wn2_Line14</b>	Proportion of distribution input derived from pumped storage reservoirs	The table in its current form only presents the North results, as opposed to the North and South. We acknowledge that Ofwat have changed the Wr1 table, so plan to address this issue when we receive the table in the revised format.	Data line transferred from table Wr1 to Wn2. Further testing was performed over the revised table and no issues noted.	
<b>Wn2_Line15</b>	Proportion of distribution input derived from river abstractions	The table in its current form only presents the North results, as opposed to the North and South. We acknowledge that Ofwat have changed the Wr1 table, so plan to address this	Data line transferred from table Wr1 to Wn2. Further testing was performed over the revised table and no issues noted.	
































<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
		issue when we receive the table in the revised format.		
<b>Wn2_Line16</b>	Proportion of distribution input derived from boreholes, groundwater works, excluding managed aquifer recharge (MAR) water supply schemes	The table in its current form only presents the North results, as opposed to the North and South. We acknowledge that Ofwat have changed the W <sub>r1</sub> table, so plan to address this issue when we receive the table in the revised format.	Data line transferred from table W <sub>r1</sub> to W <sub>n2</sub> . Further testing was performed over the revised table and no issues noted.	
<b>Wn2_Line17</b>	Proportion of distribution input derived from artificial recharge (AR) water supply schemes	The table in its current form only presents the North results, as opposed to the North and South. We acknowledge that Ofwat have changed the W <sub>r1</sub> table, so plan to address this issue when we receive the table in the revised format.	Data line transferred from table W <sub>r1</sub> to W <sub>n2</sub> . Further testing was performed over the revised table and no issues noted.	
<b>Wn2_Line18</b>	Proportion of distribution input derived from aquifer storage and recovery (ASR) water supply schemes	The table in its current form only presents the North results, as opposed to the North and South. We acknowledge that Ofwat have changed the W <sub>r1</sub> table, so plan to address this issue when we receive the table in the revised format.	Data line transferred from table W <sub>r1</sub> to W <sub>n2</sub> . Further testing was performed over the revised table and no issues noted.	
<b>Wn2_Line19</b>	Proportion of distribution input from saline abstractions	No issues noted.		
<b>Wn2_Line20</b>	Proportion of distribution input from water reuse schemes	No issues noted.		
<b>Wr1_Line1</b>	Water from impounding reservoirs	No issues noted.		
<b>Wr1_Line2</b>	Water from pumped storage reservoirs	No issues noted.		
<b>Wr1_Line3</b>	Water from river abstractions	No issues noted.		
<b>Wr1_Line4</b>	Water from boreholes, groundwater works, excluding managed aquifer recharge (MAR) water supply schemes	No issues noted.		
<b>Wr1_Line5</b>	Water from artificial recharge (AR) water supply schemes	No issues noted.		
<b>Wr1_Line6</b>	Water from aquifer storage and recovery (ASR) water supply schemes	No issues noted.		

<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>Wr1_Line7</b>	Water from saline abstractions	No issues noted.		
<b>Wr1_Line8</b>	Water from reuse schemes	No issues noted.		
<b>Wr1_Line9</b>	Number of impounding reservoirs	We acknowledge that Ofwat have changed the Wr1 table, so plan to address this issue when we receive the table in the revised format.	No issues noted.	
<b>Wr1_Line10</b>	Number of pumped storage reservoirs	We acknowledge that Ofwat have changed the Wr1 table, so plan to address this issue when we receive the table in the revised format.	No issues noted.	
<b>Wr1_Line11</b>	Number of river abstractions	We acknowledge that Ofwat have changed the Wr1 table, so plan to address this issue when we receive the table in the revised format.	No issues noted.	
<b>Wr1_Line12</b>	Number of groundwater works excluding managed aquifer recharge (MAR) water supply schemes.	We acknowledge that Ofwat have changed the Wr1 table, so plan to address this issue when we receive the table in the revised format.	An error was identified in the number of groundwater works reported. This was updated in a revised version of table. No issues noted	
<b>Wr1_Line13</b>	Number of artificial recharge (AR) water supply schemes	We acknowledge that Ofwat have changed the Wr1 table, so plan to address this issue when we receive the table in the revised format.	No issues noted.	
<b>Wr1_Line14</b>	Number of aquifer storage and recovery (ASR) water supply schemes	We acknowledge that Ofwat have changed the Wr1 table, so plan to address this issue when we receive the table in the revised format.	No issues noted.	
<b>Wr1_Line15</b>	Number of saline abstraction schemes	No issues noted.		
<b>Wr1_Line16</b>	Total number of sources	We acknowledge that Ofwat have changed the Wr1 table, so plan to address this issue when we receive the table in the revised format.	Due to the error identified in Wr1_Line12, the total number of sources reported was incorrect. This was updated in a revised version of the table. No issues noted.	
<b>Wr1_Line17</b>	Number of reuse schemes	A water reuse scheme was incorrectly reported in 2017/18 whereas it should only have been reported from 2018/19 onwards.	No issues noted.	

<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>Wr1_Line18</b>	Total number of water reservoirs	We acknowledge that Ofwat have changed the Wr1 table, so plan to address this issue when we receive the table in the revised format.	No issues noted.	
<b>Wr1_Line19</b>	Total capacity of water reservoirs	We acknowledge that Ofwat have changed the Wr1 table, so plan to address this issue when we receive the table in the revised format.	An inconsistency in reporting was with the APR. This was updated in a revised version of the table. No issues noted.	
<b>Wr1_Line20</b>	Total number of intake and source pumping stations	In line with the findings in APR, the records for the number of source pumping stations is incomplete, and the methodology of counting has been applied inconsistently. We recommend that management undertake an exercise to reconcile the Asset Hierarchy and GIS on a 100% basis to establish one version of the truth for the number of source pumping stations.	Following the data cleanse exercise, and further testing for APR, this line was updated to reflect the accurate number of source and intake pumping stations. No issues noted.	
<b>Wr1_Line21</b>	Total capacity of intake and source pumping stations	In line with the findings in APR, the records for the number of source pumping stations is incomplete, and the methodology of counting has been applied inconsistently. We recommend that management undertake an exercise to reconcile the Asset Hierarchy and GIS on a 100% basis to establish one version of the truth for the number of source pumping stations.	Following the data cleanse exercise, and further testing for APR, this line was updated to reflect the accurate capacity of source and intake pumping stations. No issues noted.	
<b>Wr1_Line22</b>	Total length of raw water mains and conveyors	No issues noted.		
<b>Wr1_Line23</b>	Average pumping head ~ raw water abstraction	In line with the findings in APR, the records for the number of raw water transfer stations and average pumping head are incomplete, and the methodology of counting has been applied inconsistently. We recommend that management undertake an exercise to reconcile the Asset Hierarchy and GIS on a 100% basis to establish one version of the truth for the number of raw	Following the data cleanse exercise, and further testing for APR, this line was updated to reflect the accurate capacity of source and intake pumping stations. No issues noted.	

<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
		water transfer stations, and consequently present an accurate average pumping head calculation.		
<b>Wr1_Line24</b>	Total number of raw water abstraction imports	No issues noted.		
<b>Wr1_Line25</b>	Water imported from 3rd parties' raw water abstraction systems	No issues noted.		
<b>Wr1_Line26</b>	Total number of raw water abstraction exports	No issues noted.		
<b>Wr1_Line27</b>	Water exported to 3rd parties' raw water abstraction systems	No issues noted.		
<b>Wn1_Line1</b>	Total number of raw water transfer stations	In line with the findings in APR, the records for the number of raw water transfer stations and average pumping head are incomplete, and the methodology of counting has been applied inconsistently. We recommend that management undertake an exercise to reconcile the Asset Hierarchy and GIS on a 100% basis to establish one version of the truth for the number of raw water transfer stations, and consequently present an accurate average pumping head calculation.	The reconciliation exercise between Asset Hierarchy and GIS had taken place, and as such the PR19 line was tested with no issues noted.	
<b>Wn1_Line2</b>	Total capacity of raw water transfer pumping stations	In line with the findings in APR, the records for the number of raw water transfer stations and average pumping head are incomplete, and the methodology of counting has been applied inconsistently. We recommend that management undertake an exercise to reconcile the Asset Hierarchy and GIS on a 100% basis to establish one version of the truth for the number of raw water transfer stations, and consequently present an accurate average pumping head calculation.	The reconciliation exercise between Asset Hierarchy and GIS had taken place, and as such the PR19 line was tested with no issues noted.	
<b>Wn1_Line3</b>	Average pumping head ~ raw water transport	In line with the findings in APR, the records for the number of source pumping stations is incomplete, and the methodology of counting has	The reconciliation exercise between Asset Hierarchy and GIS had taken place, and as such the PR19 line was	

<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
		been applied inconsistently. We recommend that management undertake an exercise to reconcile the Asset Hierarchy and GIS on a 100% basis to establish one version of the truth for the number of source pumping stations.	tested with no issues noted.	
<b>Wr6_BlockA_Line1</b>	Pre-2020 capacity (DYAA)	The totals do not cast following the update to the table.	The lines in the table have been updated. No issues noted.	
<b>Wr6_BlockA_Line2</b>	Pre-2020 capacity (DYCP)	No issues noted.		
<b>Wr6_BlockA_Line3</b>	Post-2020 incumbent cumulative capacity (DYAA)	The totals do not cast following the update to the table	The lines in the table have been updated. No issues noted.	
<b>Wr6_BlockA_Line4</b>	Post-2020 incumbent cumulative capacity (DYCP)	No issues noted.		
<b>Wr6_BlockA_Line5</b>	Post-2020 third party bilateral cumulative capacity (DYAA)	No issues noted.		
<b>Wr6_BlockA_Line6</b>	Post-2020 third party bilateral cumulative capacity (DYCP)	No issues noted.		
<b>Wr6_BlockB_Line7</b>	WRZ name	No issues noted.		
<b>Wr6_BlockB_Line8</b>	Pre-2020 capacity (DYAA)	No issues noted.		
<b>Wr6_BlockB_Line9</b>	Pre-2020 capacity (DYCP)	No issues noted.		
<b>Wr6_BlockB_Line10</b>	Post-2020 incumbent cumulative capacity (DYAA)	No issues noted.		
<b>Wr6_BlockB_Line11</b>	Post-2020 incumbent cumulative capacity (DYCP)	No issues noted.		
<b>Wr6_BlockB_Line12</b>	Post-2020 third party bilateral cumulative capacity (DYAA)	No issues noted.		
<b>Wr6_BlockB_Line13</b>	Post-2020 third party bilateral cumulative capacity (DYCP)	No issues noted.		
<b>Wr6_BlockC_Line7</b>	WRZ name	Differences were noted and returned to client for amendment.	No issues noted.	
<b>Wr6_BlockC_Line8</b>	Pre-2020 capacity (DYAA)	No issues noted.		













<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>Wr6_BlockC_Line9</b>	Pre-2020 capacity (DYCP)	No issues noted.		
<b>Wr6_BlockC_Line10</b>	Post-2020 incumbent cumulative capacity (DYAA)	Differences were noted and returned to client for amendment.	No issues noted.	
<b>Wr6_BlockC_Line11</b>	Post-2020 incumbent cumulative capacity (DYCP)	No issues noted.		
<b>Wr6_BlockC_Line12</b>	Post-2020 third party bilateral cumulative capacity (DYAA)	No issues noted.		
<b>Wr6_BlockC_Line13</b>	Post-2020 third party bilateral cumulative capacity (DYCP)	No issues noted.		
<b>Wr6_BlockD_Line7</b>	WRZ name	No issues noted.		
<b>Wr6_BlockD_Line8</b>	Pre-2020 capacity (DYAA)	No issues noted.		
<b>Wr6_BlockD_Line9</b>	Pre-2020 capacity (DYCP)	No issues noted.		
<b>Wr6_BlockD_Line10</b>	Post-2020 incumbent cumulative capacity (DYAA)	No issues noted.		
<b>Wr6_BlockD_Line11</b>	Post-2020 incumbent cumulative capacity (DYCP)	No issues noted.		
<b>Wr6_BlockD_Line12</b>	Post-2020 third party bilateral cumulative capacity (DYAA)	No issues noted.		
<b>Wr6_BlockD_Line13</b>	Post-2020 third party bilateral cumulative capacity (DYCP)	No issues noted.		
<b>Wr6_BlockE_Line7</b>	WRZ name	Differences were noted and returned to client for amendment.	No issues noted.	
<b>Wr6_BlockE_Line8</b>	Pre-2020 capacity (DYAA)	No issues noted.		
<b>Wr6_BlockE_Line9</b>	Pre-2020 capacity (DYCP)	No issues noted.		
<b>Wr6_BlockE_Line10</b>	Post-2020 incumbent cumulative capacity (DYAA)	No issues noted.		
<b>Wr6_BlockE_Line11</b>	Post-2020 incumbent cumulative capacity (DYCP)	No issues noted.		
<b>Wr6_BlockE_Line12</b>	Post-2020 third party bilateral cumulative capacity (DYAA)	No issues noted.		

<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>Wr6_BlockE_Line13</b>	Post-2020 third party bilateral cumulative capacity (DYCP)	No issues noted.		
<b>Wr6_BlockF_Line7</b>	WRZ name	No issues noted.		
<b>Wr6_BlockF_Line8</b>	Pre-2020 capacity (DYAA)	No issues noted.		
<b>Wr6_BlockF_Line9</b>	Pre-2020 capacity (DYCP)	No issues noted.		
<b>Wr6_BlockF_Line10</b>	Post-2020 incumbent cumulative capacity (DYAA)	No issues noted.		
<b>Wr6_BlockF_Line11</b>	Post-2020 incumbent cumulative capacity (DYCP)	No issues noted.		
<b>Wr6_BlockF_Line12</b>	Post-2020 third party bilateral cumulative capacity (DYAA)	No issues noted.		
<b>Wr6_BlockF_Line13</b>	Post-2020 third party bilateral cumulative capacity (DYCP)	No issues noted.		
<b>Wr6_BlockG_Line7</b>	WRZ name	No issues noted.		
<b>Wr6_BlockG_Line8</b>	Pre-2020 capacity (DYAA)	No issues noted.		
<b>Wr6_BlockG_Line9</b>	Pre-2020 capacity (DYCP)	No issues noted.		
<b>Wr6_BlockG_Line10</b>	Post-2020 incumbent cumulative capacity (DYAA)	No issues noted.		
<b>Wr6_BlockG_Line11</b>	Post-2020 incumbent cumulative capacity (DYCP)	No issues noted.		
<b>Wr6_BlockG_Line12</b>	Post-2020 third party bilateral cumulative capacity (DYAA)	No issues noted.		
<b>Wr6_BlockG_Line13</b>	Post-2020 third party bilateral cumulative capacity (DYCP)	No issues noted.		
<b>Wr6_BlockH_Line7</b>	WRZ name	Differences were noted and returned to client for amendment.	No issues noted.	
<b>Wr6_BlockH_Line8</b>	Pre-2020 capacity (DYAA)	No issues noted.		
<b>Wr6_BlockH_Line9</b>	Pre-2020 capacity (DYCP)	No issues noted.		

<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>Wr6_BlockH_Line10</b>	Post-2020 incumbent cumulative capacity (DYAA)	Differences were noted and returned to client for amendment.	No issues noted.	
<b>Wr6_BlockH_Line11</b>	Post-2020 incumbent cumulative capacity (DYCP)	No issues noted.		
<b>Wr6_BlockH_Line12</b>	Post-2020 third party bilateral cumulative capacity (DYAA)	No issues noted.		
<b>Wr6_BlockH_Line13</b>	Post-2020 third party bilateral cumulative capacity (DYCP)	No issues noted.		
<b>Wr7_BlockA_Line1</b>	Asset type 1 name	No issues noted.		
<b>Wr7_BlockA_Line2</b>	Asset type 2 name	No issues noted.		
<b>Wr7_BlockA_Line3</b>	Asset type 3 name	No issues noted.		
<b>Wr7_BlockA_Line4</b>	Asset type 4 name	No issues noted.		
<b>Wr7_BlockA_Line5</b>	Asset type 5 name	No issues noted.		
<b>Wr7_BlockA_Line6</b>	Asset type 6 name	No issues noted.		
<b>Wr7_BlockA_Line7</b>	Asset type 7 name	No issues noted.		
<b>Wr7_BlockA_Line8</b>	Asset type 1 assumed asset life	No issues noted.		
<b>Wr7_BlockA_Line9</b>	Asset type 2 assumed asset life	No issues noted.		
<b>Wr7_BlockA_Line10</b>	Asset type 3 assumed asset life	No issues noted.		
<b>Wr7_BlockA_Line11</b>	Asset type 4 assumed asset life	No issues noted.		
<b>Wr7_BlockA_Line12</b>	Asset type 5 assumed asset life	No issues noted.		
<b>Wr7_BlockA_Line13</b>	Asset type 6 assumed asset life	No issues noted.		



<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>Wr7_BlockA_Line14</b>	Asset type 7 assumed asset life	No issues noted.		
<b>Wr7_BlockA_Line15</b>	Nominal pre-tax cost of capital	No issues noted.		
<b>Wr7_BlockB_Line1</b>	WRZ name	No issues noted.		
<b>Wr7_BlockB_Line2</b>	Principal planning scenario driver	No issues noted.		
<b>Wr7_BlockB_Line3</b>	Water resources total cost – all options	No issues noted.		
<b>Wr7_BlockB_Line4</b>	Annualised unit cost of post-2020 capacity	No issues noted.		
<b>Wn2_Line 12</b>	Distribution input	No issues noted.		
<b>Wn2_Line 21</b>	Water delivered (non- potable)	No issues noted.		
<b>Wn2_Line 22</b>	Water delivered (potable)	No issues noted.		
<b>Wn2_Line 23</b>	Water delivered (billed measured residential)	No issues noted.		
<b>Wn2_Line 24</b>	Water delivered (billed measured business)	No issues noted.		
<b>Wn2_Line 25</b>	Total leakage	No issues noted.		
<b>Wn2_Line 26</b>	Distribution losses	No issues noted.		
<b>Wn2_Line 27</b>	Water taken unbilled	No issues noted.		
<b>WWS3_Line1</b>	Residential properties connected during the year	No issues noted.		
<b>WWS3_Line2</b>	Business properties connected during the year	2017/18 data was not used to support the calculation of forecast data. When included, a significant difference was noted.	Numbers have been updated in line with our recommendations. No issues noted.	
<b>WWS3_Line3</b>	Residential properties billed unmeasured sewage	No issues noted.		

<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>WWS3_Line4</b>	Residential properties billed measured sewage	No issues noted.		
<b>WWS3_Line5</b>	Residential properties billed for sewage	No issues noted.		
<b>WWS3_Line6</b>	Business properties billed unmeasured sewage	A difference was identified between to the number reported for APR purposes. For consistency of reporting, this should resolved.	The line has been updated to reflect the APR reported figure. No issues noted.	
<b>WWS3_Line7</b>	Business properties billed measured sewage	A difference was identified between to the number reported for APR purposes. For consistency of reporting, this should resolved.	The line has been updated to reflect the APR reported figure. No issues noted.	
<b>WWS3_Line8</b>	Business properties billed for sewage	A difference was identified between to the number reported for APR purposes. For consistency of reporting, this should resolved.	The line has been updated to reflect the APR reported figure. No issues noted.	
<b>WWS3_Line9</b>	Void properties	A difference was identified between to the number reported for APR purposes. For consistency of reporting, this should resolved.	The line has been updated to reflect the APR reported figure. No issues noted.	
<b>WWS3_Line10</b>	Total number of properties	A difference was identified between to the number reported for APR purposes. For consistency of reporting, this should resolved.	The line has been updated to reflect the APR reported figure. No issues noted.	
<b>WWS3_Line11</b>	Resident population	No issues noted.		
<b>WWS3_Line12</b>	Non-resident population	In line with the findings for APR, this data line was not calculated using the most recently available data and therefore should be recalculated to increase accuracy.	The line has been updated to reflect the APR reported figure. No issues noted.	
<b>WWS18_BlockA Line 2</b>	Number of serious pollution incidents (category 1 and 2)	No issues noted.		
<b>WWS18_BlockA Line 3</b>	Number of pollution incidents (category 3)	No issues noted.		
<b>WWS18_Block E Line 10</b>	Percentage discharge permit compliance (STW and WTW discharges compliant with numeric permits)	Small findings identified – at management’s discretion as to whether these changes are applied.		
<b>WWn2_Block A Line 1</b>	Works name	No issues noted.		

<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>WWn2_Block A Line 2</b>	Classification of treatment works	No issues noted.		
<b>WWn2_Block A Line 3</b>	Population equivalent of total load received	No issues noted.		
<b>WWn2_Block A Line 4</b>	Suspended solids consent	No issues noted.		
<b>WWn2_Block A Line 5</b>	BOD <sub>5</sub> consent	No issues noted.		
<b>WWn2_Block A Line 6</b>	Ammonia consent	No issues noted.		
<b>WWn2_Block A Line 7</b>	Phosphorus consent	No issues noted.		
<b>WWn2_Block A Line 8</b>	UV consent	No issues noted.		
<b>WWn2_Block A Line 9</b>	Load received by STW	No issues noted.		
<b>WWn2_Block A Line 10</b>	Flow passed to full treatment	No issues noted.		
<b>WWn4_BlockA_Line 1</b>	Load received by STWs in size band 1	No issues noted.		
<b>WWn4_BlockA_Line 2</b>	Load received by STWs in size band 2	No issues noted.		
<b>WWn4_BlockA_Line 3</b>	Load received by STWs in size band 3	No issues noted.		
<b>WWn4_BlockA_Line 4</b>	Load received by STWs in size band 4	No issues noted.		
<b>WWn4_BlockA_Line 5</b>	Load received by STWs in size band 5	No issues noted.		
<b>WWn4_BlockA_Line 6</b>	Load received by STWs above size band 5	No issues noted.		
<b>WWn4_BlockA_Line 7</b>	Total load received	No issues noted.		
<b>WWn4_BlockA_Line 8</b>	Load received from trade effluent customers at treatment works	No issues noted.		
<b>WWn4_BlockA_Line 9</b>	STWs in size band 1	No issues noted.		
<b>WWn4_BlockA_Line 10</b>	STWs in size band 2	No issues noted.		
<b>WWn4_BlockA_Line 11</b>	STWs in size band 3	No issues noted.		
<b>WWn4_BlockA_Line 12</b>	STWs in size band 4	No issues noted.		

<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>WWn4_BlockA_Line 13</b>	STWs in size band 5	No issues noted.		
<b>WWn4_BlockA_Line 14</b>	STWs above size band 5	No issues noted.		
<b>WWn4_BlockA_Line 15</b>	Total number of works	No issues noted.		
<b>WWn4_BlockB_Line 1</b>	Load received by STWs in size band 1	No issues noted.		
<b>WWn4_BlockB_Line 2</b>	Load received by STWs in size band 2	No issues noted.		
<b>WWn4_BlockB_Line 3</b>	Load received by STWs in size band 3	No issues noted.		
<b>WWn4_BlockB_Line 4</b>	Load received by STWs in size band 4	No issues noted.		
<b>WWn4_BlockB_Line 5</b>	Load received by STWs in size band 5	No issues noted.		
<b>WWn4_BlockB_Line 6</b>	Load received by STWs above size band 5	No issues noted.		
<b>WWn4_BlockB_Line 7</b>	Total load received	No issues noted.		
<b>WWn4_BlockB_Line 8</b>	Load received from trade effluent customers at treatment works	No issues noted.		
<b>WWn4_BlockB_Line 9</b>	STWs in size band 1	No issues noted.		
<b>WWn4_BlockB_Line 10</b>	STWs in size band 2	No issues noted.		
<b>WWn4_BlockB_Line 11</b>	STWs in size band 3	No issues noted.		
<b>WWn4_BlockB_Line 12</b>	STWs in size band 4	No issues noted.		
<b>WWn4_BlockB_Line 13</b>	STWs in size band 5	No issues noted.		
<b>WWn4_BlockB_Line 14</b>	STWs above size band 5	No issues noted.		
<b>WWn4_BlockB_Line 15</b>	Total number of works	No issues noted.		
<b>WWn4_BlockC_Line 1</b>	Load received by STWs in size band 1	No issues noted.		
<b>WWn4_BlockC_Line 2</b>	Load received by STWs in size band 2	No issues noted.		
<b>WWn4_BlockC_Line 3</b>	Load received by STWs in size band 3	No issues noted.		
















<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>WWn4_BlockC_Line 4</b>	Load received by STWs in size band 4	No issues noted.		
<b>WWn4_BlockC_Line 5</b>	Load received by STWs in size band 5	No issues noted.		
<b>WWn4_BlockC_Line 6</b>	Load received by STWs above size band 5	No issues noted.		
<b>WWn4_BlockC_Line 7</b>	Total load received	No issues noted.		
<b>WWn4_BlockC_Line 8</b>	Load received from trade effluent customers at treatment works	No issues noted.		
<b>WWn4_BlockC_Line 9</b>	STWs in size band 1	No issues noted.		
<b>WWn4_BlockC_Line 10</b>	STWs in size band 2	No issues noted.		
<b>WWn4_BlockC_Line 11</b>	STWs in size band 3	No issues noted.		
<b>WWn4_BlockC_Line 12</b>	STWs in size band 4	No issues noted.		
<b>WWn4_BlockC_Line 13</b>	STWs in size band 5	No issues noted.		
<b>WWn4_BlockC_Line 14</b>	STWs above size band 5	No issues noted.		
<b>WWn4_BlockC_Line 15</b>	Total number of works	No issues noted.		
<b>WWn4_BlockD_Line 1</b>	Load received by STWs in size band 1	No issues noted.		
<b>WWn4_BlockD_Line 2</b>	Load received by STWs in size band 2	No issues noted.		
<b>WWn4_BlockD_Line 3</b>	Load received by STWs in size band 3	No issues noted.		
<b>WWn4_BlockD_Line 4</b>	Load received by STWs in size band 4	No issues noted.		
<b>WWn4_BlockD_Line 5</b>	Load received by STWs in size band 5	No issues noted.		
<b>WWn4_BlockD_Line 6</b>	Load received by STWs above size band 5	No issues noted.		
<b>WWn4_BlockD_Line 7</b>	Total load received	No issues noted.		
<b>WWn4_BlockD_Line 8</b>	Load received from trade effluent customers at treatment works	No issues noted.		















<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>WWn4_BlockD_Line 9</b>	STWs in size band 1	No issues noted.		
<b>WWn4_BlockD_Line 10</b>	STWs in size band 2	No issues noted.		
<b>WWn4_BlockD_Line 11</b>	STWs in size band 3	No issues noted.		
<b>WWn4_BlockD_Line 12</b>	STWs in size band 4	No issues noted.		
<b>WWn4_BlockD_Line 13</b>	STWs in size band 5	No issues noted.		
<b>WWn4_BlockD_Line 14</b>	STWs above size band 5	No issues noted.		
<b>WWn4_BlockD_Line 15</b>	Total number of works	No issues noted.		
<b>WWn4_BlockE_Line 1</b>	Load received by STWs in size band 1	No issues noted.		
<b>WWn4_BlockE_Line 2</b>	Load received by STWs in size band 2	No issues noted.		
<b>WWn4_BlockE_Line 3</b>	Load received by STWs in size band 3	No issues noted.		
<b>WWn4_BlockE_Line 4</b>	Load received by STWs in size band 4	No issues noted.		
<b>WWn4_BlockE_Line 5</b>	Load received by STWs in size band 5	No issues noted.		
<b>WWn4_BlockE_Line 6</b>	Load received by STWs above size band 5	No issues noted.		
<b>WWn4_BlockE_Line 7</b>	Total load received	No issues noted.		
<b>WWn4_BlockE_Line 8</b>	Load received from trade effluent customers at treatment works	No issues noted.		
<b>WWn4_BlockE_Line 9</b>	STWs in size band 1	No issues noted.		
<b>WWn4_BlockE_Line 10</b>	STWs in size band 2	No issues noted.		
<b>WWn4_BlockE_Line 11</b>	STWs in size band 3	No issues noted.		
<b>WWn4_BlockE_Line 12</b>	STWs in size band 4	No issues noted.		
<b>WWn4_BlockE_Line 13</b>	STWs in size band 5	No issues noted.		
<b>WWn4_BlockE_Line 14</b>	STWs above size band 5	No issues noted.		















<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>WWn4_BlockE_Line 15</b>	Total number of works	No issues noted.		
<b>WWn4_BlockF_Line 1</b>	Load received by STWs in size band 1	No issues noted.		
<b>WWn4_BlockF_Line 2</b>	Load received by STWs in size band 2	No issues noted.		
<b>WWn4_BlockF_Line 3</b>	Load received by STWs in size band 3	No issues noted.		
<b>WWn4_BlockF_Line 4</b>	Load received by STWs in size band 4	No issues noted.		
<b>WWn4_BlockF_Line 5</b>	Load received by STWs in size band 5	No issues noted.		
<b>WWn4_BlockF_Line 6</b>	Load received by STWs above size band 5	No issues noted.		
<b>WWn4_BlockF_Line 7</b>	Total load received	No issues noted.		
<b>WWn4_BlockF_Line 8</b>	Load received from trade effluent customers at treatment works	No issues noted.		
<b>WWn4_BlockF_Line 9</b>	STWs in size band 1	No issues noted.		
<b>WWn4_BlockF_Line 10</b>	STWs in size band 2	No issues noted.		
<b>WWn4_BlockF_Line 11</b>	STWs in size band 3	No issues noted.		
<b>WWn4_BlockF_Line 12</b>	STWs in size band 4	No issues noted.		
<b>WWn4_BlockF_Line 13</b>	STWs in size band 5	No issues noted.		
<b>WWn4_BlockF_Line 14</b>	STWs above size band 5	No issues noted.		
<b>WWn4_BlockF_Line 15</b>	Total number of works	No issues noted.		
<b>WWn4_BlockG_Line 1</b>	Load received by STWs in size band 1	No issues noted.		
<b>WWn4_BlockG_Line 2</b>	Load received by STWs in size band 2	No issues noted.		
<b>WWn4_BlockG_Line 3</b>	Load received by STWs in size band 3	No issues noted.		
<b>WWn4_BlockG_Line 4</b>	Load received by STWs in size band 4	No issues noted.		

<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>WWn4_BlockG_Line 5</b>	Load received by STWs in size band 5	No issues noted.		
<b>WWn4_BlockG_Line 6</b>	Load received by STWs above size band 5	No issues noted.		
<b>WWn4_BlockG_Line 7</b>	Total load received	No issues noted.		
<b>WWn4_BlockG_Line 8</b>	Load received from trade effluent customers at treatment works	No issues noted.		
<b>WWn4_BlockG_Line 9</b>	STWs in size band 1	No issues noted.		
<b>WWn4_BlockG_Line 10</b>	STWs in size band 2	No issues noted.		
<b>WWn4_BlockG_Line 11</b>	STWs in size band 3	No issues noted.		
<b>WWn4_BlockG_Line 12</b>	STWs in size band 4	No issues noted.		
<b>WWn4_BlockG_Line 13</b>	STWs in size band 5	No issues noted.		
<b>WWn4_BlockG_Line 14</b>	STWs above size band 5	No issues noted.		
<b>WWn4_BlockG_Line 15</b>	Total number of works	No issues noted.		
<b>WWn4_BlockH_Line 1</b>	Load received by STWs in size band 1	No issues noted.		
<b>WWn4_BlockH_Line 2</b>	Load received by STWs in size band 2	No issues noted.		
<b>WWn4_BlockH_Line 3</b>	Load received by STWs in size band 3	No issues noted.		
<b>WWn4_BlockH_Line 4</b>	Load received by STWs in size band 4	No issues noted.		
<b>WWn4_BlockH_Line 5</b>	Load received by STWs in size band 5	No issues noted.		
<b>WWn4_BlockH_Line 6</b>	Load received by STWs above size band 5	No issues noted.		
<b>WWn4_BlockH_Line 7</b>	Total load received	No issues noted.		
<b>WWn4_BlockH_Line 8</b>	Load received from trade effluent customers at treatment works	No issues noted.		
<b>WWn4_BlockH_Line 9</b>	STWs in size band 1	No issues noted.		



<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>WWn4_BlockH_Line 10</b>	STWs in size band 2	No issues noted.		
<b>WWn4_BlockH_Line 11</b>	STWs in size band 3	No issues noted.		
<b>WWn4_BlockH_Line 12</b>	STWs in size band 4	No issues noted.		
<b>WWn4_BlockH_Line 13</b>	STWs in size band 5	No issues noted.		
<b>WWn4_BlockH_Line 14</b>	STWs above size band 5	No issues noted.		
<b>WWn4_BlockH_Line 15</b>	Total number of works	No issues noted.		
<b>WWn4_BlockI_Line 16</b>	Current population equivalent served by STWs	Small rounding differences noted.	No issues noted as part of the follow up review as our recommendation from the initial review had been addressed.	
<b>WWn4_BlockI_Line 17</b>	Current population equivalent served by discharge relocation schemes	No issues noted.		
<b>WWn4_BlockI_Line 18</b>	Current population equivalent served by filter bed STWs with tightened/new P consents	A significant difference has been identified in year 2025 with the clients reported figure of 86.51 differing from PwC's calculated figure of 107.31.	No issues noted as part of the follow up review as our recommendation from the initial review had been addressed.	
<b>WWn4_BlockI_Line 19</b>	Current population equivalent served by activated sludge STWs with tightened/new P consents	No issues noted.		
<b>WWn4_BlockI_Line 20</b>	Current population equivalent served by groundwater protection schemes	No issues noted.		
<b>WWn4_BlockI_Line 21</b>	Current population equivalent served by STWs with a Flow1 driver scheme	No issues noted.		
<b>WWn4_BlockI_Line 22</b>	Current population equivalent served by STWs with tightened/new N consents	No issues noted.		
<b>WWn4_BlockI_Line 23</b>	Current population equivalent served by STWs with tightened/new sanitary parameter consents	A significant difference has been identified in year 2025 with the clients reported figure of 1.33 differing from PwC calculated figure of 54.43.	No issues noted as part of the follow up review as our recommendation from the initial review had been addressed.	
<b>WWn4_BlockI_Line 24</b>	Current population equivalent served by STWs	No issues noted.		

<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
	with tightened/new UV consents			
<b>WWn4_BlockI_Line 25</b>	Population equivalent treatment capacity enhancement	No issues noted.		
<b>Bio1_Line 1</b>	Total sewage sludge produced, treated by incumbents	No issues noted.		
<b>Bio1_Line 2</b>	Total sewage sludge produced, treated by 3rd party sludge service provider	No issues noted.		
<b>Bio1_Line 3</b>	Total sewage sludge produced	No issues noted.		
<b>Bio1_Line 4</b>	Total sewage sludge produced from non-appointed liquid waste treatment.	No issues noted		
<b>Bio1_Line 5</b>	Percentage of sludge produced and treated at a site of STW and STC co-location	No issues noted.		
<b>Bio1_Line 6</b>	Total sewage sludge disposed by incumbents	No issues noted.		
<b>Bio1_Line 7</b>	Total sewage sludge disposed by 3rd party sludge service provider	No issues noted.		
<b>Bio1_Line 8</b>	Total sewage sludge disposed	No issues noted.		
<b>Bio1_Line 9</b>	Total measure of intersiting 'work' done by pipeline	No issues noted, but completeness of reporting all forecasted years should be populated with "o" rather than left blank.		
<b>Bio1_Line 10</b>	Total measure of intersiting 'work' done by tanker	No issues noted.		
<b>Bio1_Line 11</b>	Total measure of intersiting 'work' done by truck	No issues noted.		
<b>Bio1_Line 12</b>	Total measure of intersiting 'work' done (all forms of transportation)	No issues noted.		
<b>Bio1_Line 13</b>	Total measure of intersiting 'work' done by tanker (by volume transported)	No issues noted.		

<i>Line ref</i>	<i>Line title</i>	<i>Findings and recommendations from review 1</i>	<i>Findings from review 2 (where relevant)</i>	<i>Current RAG status</i>
<b>Bio1_Line 14</b>	Total measure of 'work' done in sludge disposal operations by pipeline	No issues noted but completeness of reporting all forecasted years should be populated with “o” rather than left blank.		
<b>Bio1_Line 15</b>	Total measure of 'work' done in sludge disposal operations by tanker	No issues noted but completeness of reporting all forecasted years should be populated with “o” rather than left blank.		
<b>Bio1_Line 16</b>	Total measure of 'work' done in sludge disposal operations by truck	No issues noted.		
<b>Bio1_Line 17</b>	Total measure of 'work' done in sludge disposal operations (all forms of transportation)	No issues noted.		
<b>Bio1_Line 18</b>	Total measure of 'work' done by tanker in sludge disposal operations (by volume transported)	No issues noted but completeness of reporting all forecasted years should be populated with “o” rather than left blank.		
<b>Bio1_Line 19</b>	Chemical P sludge as percentage of sludge produced at STWs	No issues noted.		
<b>Bio2_BlockA_Line1</b>	% Sludge – Untreated	No issues noted.		
<b>Bio2_BlockA_Line2</b>	% Sludge treatment process – Raw sludge liming	No issues noted.		
<b>Bio2_BlockA_Line3</b>	% Sludge treatment process – Conventional AD	No issues noted.		
<b>Bio2_BlockA_Line4</b>	% Sludge treatment process – Advanced AD	No issues noted.		
<b>Bio2_BlockA_Line5</b>	% Sludge treatment process – incineration of raw sludge	No issues noted.		
<b>Bio2_BlockA_Line6</b>	% Sludge treatment process – Phyto-conditioning/composting	No issues noted.		
<b>Bio2_BlockA_Line7</b>	% Sludge treatment process – Other (specify)	No issues noted.		
<b>Bio2_BlockA_Line8</b>	% Sludge treatment process – Total	No issues noted.		

This document has been prepared only for Northumbrian Water Limited and solely for the purpose and on the terms agreed with Northumbrian Water Limited in our agreement dated 12 January 2018. We accept no liability (including for negligence) to anyone else in connection with this document, and it may not be provided to anyone else.

© 2018 PricewaterhouseCoopers LLP. All rights reserved. PwC refers to the UK member firm, and may sometimes refer to the PwC network. Each member firm is a separate legal entity. Please see [www.pwc.com/structure](http://www.pwc.com/structure) for further details.

## APPENDIX 10.1

### Financial Internal Audit Report

#### Report of Findings

The Internal Audit team have undertaken a review of a limited set of PR19 financial data tables. In undertaking our review, we have performed the following procedures as agreed with management. The agreed upon procedures were performed solely for the purpose of providing specific assurance based on those procedures to the Directors on the PR19 business tables to be submitted to Ofwat.

The procedures performed were as follows:

#### Cost Recovery (RCV run off & PAYG)

Table Description	Procedures Performed
Wr4 – Cost recovery for water resources	<ul style="list-style-type: none"><li>• Agreed block A - C (all lines) to supporting workings file.</li><li>• Agreed block D (all lines) to supporting workings file (Wr4 &amp; Bio5 only).</li></ul>
Wn4 – Cost recovery for water network plus	
WWn6 - Cost recovery for wastewater network plus	
Bio5 – Cost recovery for bioresources	
R7 – Revenue and cost recovery for retail	<ul style="list-style-type: none"><li>• Agreed block A to the supporting financial model.</li><li>• Agreed block C to supporting workings file. [Note: block B relates to Wales only)</li></ul>

#### WACC

Table Description	Procedures Performed
App32 – Weighted average cost of capital for the appointee	<ul style="list-style-type: none"><li>• Agreed block A - B (all lines) to prescribed figures taken from table 1 ('Our early view on the cost of capital for PR19') and table 7 ('Comparison of our early equity beta view and PR14') of Ofwat's 'Delivering Water 2020' document, appendix 12: Aligning risk and return.</li></ul>
Wr5 – Weighted average cost of capital for the water resources control	
Wn5 – Weighted average cost of capital for the water network plus control	
WWn7 – Weighted average cost of capital for the wastewater network plus control	
Bio6 - Weighted average cost of capital for the bioresources control	
R8 – Net retail margins	<ul style="list-style-type: none"><li>• Agreed block A (all lines) to the proposed figure taken from section 10.8.2 ('Retail margins') of Ofwat's 'Delivering Water 2020: final methodology for the 2019 price review' document.</li></ul>
App26 – RoRE scenarios	<ul style="list-style-type: none"><li>• Agreed all lines to the supporting financial model.</li></ul>

## APPENDIX 10.1

### Financial Internal Audit Report

#### Model Outputs

Table Description	Procedures Performed
App8 – Appointee financing	<ul style="list-style-type: none"><li>• Agreed all input cells in block B to inputs and outputs of the RCV adjustment feeder model.</li></ul>
App10 – Financial ratios	<ul style="list-style-type: none"><li>• Agreed block A (all lines) and block B (all lines) to the supporting financial model.</li></ul>
App11 – Income statement based on the actual company structure	<ul style="list-style-type: none"><li>• Agreed all input cells to the supporting financial model.</li></ul>
App11a - Income statement based on a notional company structure	<ul style="list-style-type: none"><li>• Agreed all input cells to supporting workings file.</li></ul>
App12 – Balance sheet based on the actual company structure	<ul style="list-style-type: none"><li>• Agreed all input cells to the supporting financial model.</li></ul>
App12a - Balance sheet based on a notional company structure	<ul style="list-style-type: none"><li>• Agreed all input cells to supporting workings file.</li><li>• Where relevant agreed input lines to App12.</li></ul>
App13 – Trade receivables	<ul style="list-style-type: none"><li>• Agreed all input cells to supporting workings file.</li><li>• Agreed totals in Block A to the balance sheet movement in trade creditors which in turn been agreed to the supporting financial model.</li></ul>
App14 – Trade and other payables	<ul style="list-style-type: none"><li>• Agreed all input cells to supporting workings file.</li><li>• Agreed totals in block A to the trade creditors line in App12 which has in turn been agreed to the supporting financial model.</li></ul>
App15 – Cashflow based on the actual company structure	<ul style="list-style-type: none"><li>• Agreed all input cells to the supporting financial model.</li></ul>
App15a – Cashflow based on a notional company structure	<ul style="list-style-type: none"><li>• Agreed all input cells to supporting workings file.</li><li>• Where relevant agreed input lines to App15.</li></ul>
App16 – Tangible fixed assets	<ul style="list-style-type: none"><li>• Agreed all input cells to supporting workings file.</li><li>• Where relevant referenced lines to the supporting financial model.</li></ul>
App17 – Appointee revenue summary	<ul style="list-style-type: none"><li>• All cells in this table are calculated cells.</li></ul>
App18 – Share capital and dividends	<ul style="list-style-type: none"><li>• Agreed all input cells to supporting workings file.</li><li>• Where relevant agreed input lines to App11.</li></ul>
App24a – Real price effects (RPEs) and efficiency gains	<ul style="list-style-type: none"><li>• Agreed all input cells to supporting workings file.</li><li>• Agreed a sample of cells to 'economic insight reports'.</li></ul>

## APPENDIX 10.1

### Financial Internal Audit Report

#### Totex

Table Description	Procedures Performed
App24 – Input proportions	<ul style="list-style-type: none"> <li>Agreed all input cells to supporting workings file.</li> <li>Where relevant 2017-18 data lines have been agreed to submitted cost assessment data tables.</li> </ul>
App28 – Developer services (wholesale)	
WS1 – Wholesale water operating and capital expenditure by business unit	
WWS1 - Wholesale wastewater operating and capital expenditure by business unit	
WS2 – Wholesale water capital and operating enhancement expenditure by purpose	
WWS2 - Wholesale wastewater capital and operating enhancement expenditure by purpose	
WS2a – Wholesale water cumulative capital enhancement expenditure by purpose	
WWS2a - Wholesale wastewater cumulative capital enhancement expenditure by purpose	
WS5 – Other wholesale water expenditure	
WWS5 - Other wholesale wastewater expenditure	
WS8 – Third party costs by business unit for the wholesale water service	
WWS8 - Third party costs by business unit for the wholesale wastewater service	
WS10 – Transitional spending in the wholesale water service	
WWS10 - Transitional spending in the wholesale wastewater service	
Wr2 – Wholesale water resources opex	
WWn1 – Wholesale wastewater sewage treatment operating expenditure	
WWn2 – Wholesale wastewater large sewage treatment works explanatory variables and operating expenditure	
Bio3 – Wholesale wastewater sludge opex	<ul style="list-style-type: none"> <li>Agreed all input cells to supporting workings file.</li> <li>Where relevant 2017-18 data lines have been agreed to submitted cost assessment data tables.</li> </ul>
R1 – Residential retail	<ul style="list-style-type: none"> <li>Agreed all input cells to supporting workings file.</li> </ul>

## APPENDIX 10.1

### Financial Internal Audit Report

#### Revenue

Table Description	Procedures Performed
App7 – Proposed price limits and average bills	<ul style="list-style-type: none"><li>• Agreed all input cells to supporting workings file.</li></ul>
Wr3 – Wholesale revenue projections for the water resources price control	<ul style="list-style-type: none"><li>• Agreed Block A (all lines) to the supporting financial model.</li></ul>
Wn3 - Wholesale revenue projections for the water network plus price control	<ul style="list-style-type: none"><li>• Agreed Block B - G (all lines) to supporting workings file.</li></ul>
WWn5 - Wholesale revenue projections for the wastewater network plus price control	<ul style="list-style-type: none"><li>• Agreed Block H (all lines) to supporting workings file (Bio4 only).</li></ul>
Bio4 - Wholesale revenue projections for the wastewater bioresources price control	

#### Conclusion

Based upon our assessment of our allocated sections of the PR19 data tables, we conclude that the assurance arrangements have been effective and appropriate. The procedures performed have been completed solely for the financial tables detailed above and no material issues have been raised which have not subsequently been corrected.



## Private and Confidential

16 August 2018

The Board of Directors  
Northumbrian Water Limited  
Northumbria House  
Abbey Road  
Pity Me  
Durham  
DH1 5FJ  
Our Ref: AM/DK/PR19

Dear Sirs

## Report of Factual Findings

We have performed the following procedures as agreed by Northumbrian Water Limited ("the Company") in accordance with our engagement letter dated August 16, 2018, a copy of which is attached. The agreed upon procedures were performed solely for the purpose of providing specific assurance based on those procedures to the Directors on the PR19 business tables to Ofwat ("the Report") ("the Services").

## Scope of our work and factual findings

The procedures performed were as follows:

### Debt

App20 - Cost of debt / analysis of debt  
App19 - Debt and interest costs

For App20:

- Agree totals for fixed-rate instruments (cell V209 in App 20), floating instruments (cells V412 and W412), indexation (cell V615), and total debt (cell V820) to Table 1E of the Annual Performance Report for NWL, 2017-18.

For App19:

- Agree block A to supporting workings.
- Agree block B, lines 11 and 13, to supporting workings.
- Agree block B, lines 12, 14, 18, 20 and 21, to supporting workings.

### Rates

WS7 - Wholesale water local authority rates  
WWS7 - Wholesale wastewater local authority rates

- Confirm 2017/18 costs in line 8 agree to Table 2B in 2017/18 APR.
- WS7 – confirm cost increase in line 1 against VOA Valuation letter and VOA Alteration Impact Report from Turner Morum (adjusted for consistency with CPIH assumptions).
- WWS7 – confirm transitional relief on line 2 to management's source data.
- Confirm accuracy of calculations for WS7 and WWS7.

### Pension

App22 - Pensions

- Block A – each cell tied back to management's working file
- Block B - each cell tied back to management's working file

- Block C&D – total contributions line 26 and 34 tied back to management’s working file and the agreed Schedule of Contributions.
- Agree from App22 splits for defined-benefit cells L8:S14 and defined-contribution charges from cell L19:S25 through to the pensions supporting workings ensuring the percentages applied within the formulae are consistent with the allocations per the supporting tabs.

## **RCV**

WS12 - RCV allocation in the wholesale water service

WS12a - Change in RCV allocation in the wholesale water service

WWS12 - RCV allocation in the wholesale wastewater service

For WS12:

- Agree Line 1 to 31 March 2015 prices as reported in the Ofwat’s PR19 Business Plan Table June 2018
- Tie Line 4 back to management’s working file and RPI and CPIH Inflation Indices
- Tie Additions back to management’s working file
- Tie Depreciation back to management’s working file
- Agree Line 18 to Ofwat’s RCV publication

For WS12a

- Agree Line 1 to RCV valuations submission in January 2018
- Agree Line 2 to table WS12
- Agree Block B to management’s working file

For WWS12

- Agree Block A to the Ofwat’s PR19 Business Plan Table June 2018
- Tie Line 4 back to management’s working file and RPI and CPIH Inflation Indices
- Tie Line 5-10 back to management’s working file
- Agree Line 19 to Ofwat’s RCV publication
- Tie Block D&E back to management’s working file

## **Leasing**

App33 - Wholesale operating leases reclassified under IFRS16

WS1a - Wholesale water operating and capital expenditure by business unit including operating leases reclassified under IFRS16

WWS1a - Wholesale wastewater operating and capital expenditure by business unit including operating leases reclassified under IFRS16

For App33:

- Confirm operating lease cash flows against note 16b of NWL Financial Statements March 2018 with any differences being agreed to management working papers showing leases that are excluded from App33.
- Confirm deflation of cash flows in App 33 by CPIH per indices in App23 (+2% pa long term).
- Confirm allocations by price control to management’s working file.
- Confirm discount rate of 2.8% per Ofwat’s guidance and methodology.
- Agree values for Block F to supporting workings.
- Confirm consistency with Ofwat’s guidance in Information Notice IN18/09 through performing procedures 1-4.

For WS1a & WWS1a:

- Obtain copies of tables WS1 and WWS1 which are the supporting documents to WS1a and WWS1a.
- Calculate difference between the values in WS1 and WS1a for line 7.
- For line 7 take the difference calculated between WS1 and WS1a and agree management workings.
- Calculate difference between the values in WWS1 and WWS1a for line 7.
- For line 7 take the difference calculated between WWS1 and WWS1a and agree management workings.

No exceptions were noted from performing the procedures set out above.

## Tax

### App29

- Agree projections for opening TWDVs within Block A & B of App29 to management's working files.
- Agree Block A-H inputs from App29 to management's working files.
- Review underlying schedules in order to consider whether or not the assumptions within the working files reflect the appropriate tax treatment.

The scope of our work in preparing this report ("Report") was limited solely to those procedures set out above. Accordingly we do not express any opinion or overall conclusion on the procedures we have performed. You are responsible for determining whether the scope of our work specified is sufficient for your purposes and we make no representation regarding the sufficiency of these procedures for your purposes. If we were to perform additional procedures, other matters might come to our attention that would be reported to you.

Our Report should not be taken to supplant any other enquiries and procedures that may be necessary to satisfy the requirements of the recipients of the Report.

The procedures we performed did not constitute a review or an audit of any kind. We did not subject the information contained in our Report or given to us by the Directors to checking or verification procedures except to the extent expressly stated above. This is normal practice when carrying out such limited scope procedures, but contrasts significantly with, for example, an audit. The procedures we performed were not designed to and are not likely to reveal fraud.

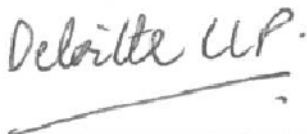
In particular, the scope of the audit work was set and judgements made by reference to the assessment of materiality in the context of the audited accounts taken as a whole, rather than in the context of the Report contemplated in this letter. Deloitte LLP have not expressed an opinion or other form of assurance on individual account balances, financial amounts, financial information or the adequacy of financial, accounting or management systems.

Deloitte LLP do not accept or assume responsibility to anyone other than the Company and the Company's members as a body, for their audit work, for their audit report or for the opinions they have formed. To the fullest extent permitted by law, Deloitte LLP do not accept or assume responsibility or liability to anyone by virtue of this engagement or our Report in relation to our audits of the Company's financial statements.

## Use of Report

Our Report has been prepared solely for your exclusive use and solely for the purpose providing specific assurance based on those procedures to the Directors on the PR19 Business tables. However, we understand that a copy of our Report may be requested by Ofwat solely for the purpose of confirming the Directors have sought external assurance in respect of the PR19 submissions. We agree that a copy of our Report may be provided to Ofwat for their information in connection with this purpose but only on the basis that we accept no duty, liability or responsibility to Ofwat in relation to our Report. Our Report Is not to be used for any other purpose, recited or referred to in any document, copied or made available (in whole or in part) to any other person without our prior written express consent. We accept no duty, responsibility or liability to any party, other than you, in connection with the Report or this engagement.

Yours faithfully

A handwritten signature in black ink that reads "Deloitte LLP." The signature is written in a cursive style and is positioned above a horizontal line.

Deloitte LLP  
Newcastle, United Kingdom