Table 2 – Lines 5 to 19, DG3 Properties affected by supply interruptions

1. Key Findings

Criteria	RAG	Assessment
Independent review of performance and reporting	**Green**	Performance good. Reporting process well managed. NIW has met all three KPI targets for supply interruptions.
Methodology	**Green**	Methodology consistent with current process, control points identified and understood
Assumptions	**Green**	Assumptions reasonable and appropriately applied
Source data	**Green**	Source data is clearly identified, complete beyond material concern, well managed through to accurate systems input
Clarity of audit trails	**Green**	Detailed and comprehensive audit trail to all numbers available
Confidence grades	**Green**	Confidence grade appropriate and rationale clearly documented
Governance	**Green**	Responsibilities for integrity of data and commentary clearly defined. Good evidence of engagement and of final sign-off. Data and commentary governance controlled through Sharepoint Action tasks.

- Northern Ireland Water (NIW) has met all three KPI targets for unplanned/unwarned supply interruptions of >6 hours, >12 hours and >24 hours.
- Data quality is similar to that found in AIR16 resulting from the Central Incident Management System (CIMS) being in use for a second complete year. CIMS replaced the Operations Management Information System (OMIS) in July 2014.
- NIW is capturing more accurate information on the number and duration of water supply interruptions.
- NIW has introduced a process of Service Failure Analysis which contains a detailed log of events and decisions taken (with reasons) to collect data on causes and actions.
- NIW now tracks review by Field Managers of interruption events through a RAG status if they are not reviewed and confirmed/amended within seven days.

2. Audit Scope

To verify the data reported by NIW, our audit consisted of an interview with the NIW system holder, a review of the current Company methodology for data collation, a review of the Company's commentary and audit of the data from the Company's systems to the final table.

3. Performance and significant events

NIW has met all three KPI targets for unplanned/unwarned supply interruptions of >6 hours, >12 hours and >24 hours. This is an improvement compared to 2015/16 where the >6 hours target was missed.

The number of unplanned/unwarned interruption events (779) is essentially the same as the number in 2015/16 (781), however NIW's performance has improved in all duration categories. This is due to a reduction in the number of events affecting greater than

2,000 properties. Despite the improved performance, the number of properties affected by unplanned/unwarned interruptions appears more than double that reported in AIR14 (with no atypical or significant events) however the two data sets are not directly comparable. This is because AIR14 was the last full year where interruptions were recorded on the former OMIS system where interruption durations were rounded to the nearest quarter hour. CIMS records interruptions to the nearest minute, and the accuracy of the number of properties affected has improved because Field Managers have access to CIMS and can verify property numbers.

The table below shows the improved performance with the number of properties affected (with and without industrial action) compared to 2015/16.

Line	2015/16	2016/17	% change 15/16 to 16/17	2016/17 KPI target	2015/16 KPI target met (Y/N)
5 (>3 hrs)	105,235	90,094	Down 14%	N/A	N/A
6 (>6 hrs)	8,699	5,128	Down 41%	7,148	Yes
7 (>12 hrs)	841	494	Down 41%	1,450	Yes
8 (>24 hrs)	32	0	Down to zero	80	Yes

The number of events involving properties affected by planned and warned interruptions has approximately doubled compared to 2015/16. The majority of planned and warned events are associated with the Mains Rehabilitation project which has seen an increase of approximately 46% in meterage delivered. The increase in the number of properties affected therefore aligns closely to the increased mains rehabilitation activity.

For planned and warned interruptions, during the year NIW became aware that one of its water main rehabilitation contractors may have failed to provide sufficient notice of planned interruptions to customers in all circumstances. NI Water discovered this issue in April 2016 and it is believed that this practice may have been going on for a number of years. Where this occurred it may have led to over-reporting of planned interruptions and under-reporting of unplanned interruptions. NI Water took immediate action to address this issue and the Utility Regulator received assurances in May 2016 that all water mains rehabilitation contractors would adhere to the required notice period from that point onwards.

The number of properties affected by interruptions caused by Third Parties has increased significantly during the year (168% >3 hours, 77% >6 hours). Two events involved a large number of properties (greater than 2,000) which accounts for 47% of the total number. NIW has no, or very little, control over third party actions.

The number of properties affected by overruns of planned interruptions has increased (41% >6 hours, 162% >12 hours), however there is an improvement in the >24 hours category (140 properties in 2015/16 to zero in 2016/17). A significant event occurred in Dungannon where 1,076 properties were interrupted due to planned mains rehabilitation work. NIW's investigation of the overrun found that 446 properties in two of the three DMAs affected were interrupted before the time advised on the warning notice. We confirmed that these properties have been correctly reclassified as unplanned/unwarned.

We observed an increase in 'no water' contacts from customers in October 2016 (2,844) compared to adjacent months of September (1,938) and November (1,826). We have seen a similar pattern in some companies in England which may be attributable to weather patterns.

4. Compliance methodology and process controls

4.1 Compliance methodology

NIW's methodology for recording supply interruptions and reporting performance is comprehensively set out in the document Levels of Service Methodology – DG3 Supply Interruptions. In addition, NIW has a specific Methodology Statement for ARI17 which details the raw data sources, reporting processes, audit, verification and amendment arrangements (if required). This is a comprehensive document which describes the procedures for processing and reporting data on a monthly basis.

We confirmed the trigger point for an unplanned interruption is four 'no water' calls from customers within a single DMA in one hour, or when the WCC is otherwise informed. This is unchanged from AIR16, and previous years. We confirmed the process for a customer contact of no water being logged on Rapid which is automatically transferred to the job management system Ellipse. This is seen by staff in the WCC and is entered on CIMS. Property counts are made using GIS which in turn uses the Pointer address database system.

Where an interruption is caused by a burst main, information is collected via field teams of the physical location of the burst (grid reference), pipe material and diameter.

4.2 Process/methodology controls

The methodology statements are controlled documents which are owned by the Customer Systems DG3 Co-ordinator within the Customer Service Delivery Directorate.

We confirmed reports are run from CIMS which contain DG3 and address records. The reports are RPT1183 and RPT1184 which we reviewed.

- RPT1183 records every property affected by an unplanned or planned interruption and is derived from live CIMS data. It is this report which is used to derive the DG3 register.
- RPT1184 lists every interruption event for a specified time period and is derived from live CIMS data. This report is used to report performance monthly to the NIW Board and also to derive outturns for AIR and KPI reporting.

CIMS has greater flexibility compared to the previous OMIS system which is no longer used. CIMS can be updated on a continuous basis as an interruption progresses through to rectification.

The Customer Systems DG3 Co-ordinator carries out verifications of DG3 events using other sources of information, for example telephone logs and 'Upward Reports', and makes amendment recommendations to the Field Managers (FMs) on the basis of the verifications. The FMs amend the data if necessary.

During the year NIW has continued its process of Service Failure Analysis (SFA) and now uses CIMS to maintain a detailed log of events and decisions taken (with reasons) to collect data on causes and actions. SFAs are applied for to events affecting >30 properties and/or > 6 hours duration. These criteria are currently under review depending on the success of the SFA process.

NIW has developed and implemented a procedure to address the instances where one of its water main rehabilitation contractors may have failed to provide sufficient notice of planned interruptions to customers in all circumstances. This is outlined above. We reviewed the Guidance Note GN07 and consider it is an appropriate process to counter this practice which did not appear to be a systemic failure. NIW has also introduced an audit process by Capital Asset Delivery to ensure that customers received adequate notification in the event of planned and warned interruptions.

Quality checks are made by the Customer Systems DG3 Co-ordinator who refers queries to Area Managers and Customer Field Managers as necessary.

NIW now receives weekly performance reports from its two contractors (Farrans and Lagan Construction) who undertake mains rehabilitation work. Previously they were providing reports on a monthly basis.

We are satisfied with the level of controls and quality checking that takes place, which is similar to what companies in England undertake.

5. Summary of audit checks

We reviewed a sample of DG3 records for each category of Unplanned/Unwarned, Planned & Warned, Overruns of Planned & Warned and interruptions caused by Third Parties.

Of the major incidents experienced during the year we reviewed:

- Event 97604 – burst 6” main, Kells
- Events 107950, 107955, 107966 – burst main, Donaghadee
- Events 118079, 118099 – burst 12” main, Belfast
- Event 118139 – burst on the outlet from Lettermire service reservoir
- Event 118243 – burst trunk main, Londonderry
- Event 118557 – burst trunk main, Strabane affecting three DMAs

We reviewed four planned and warned events to confirm the application of Guidance Note GN07 to address the instances where 48 hours’ notice was not always provided. We sampled events EP008, EP023, EP026 and EP037. We requested evidence of the card drop auditing procedure carried out by Capital Asset Delivery in March 2017. This was provided and we confirmed the process is appropriate to provide additional assurance that the new guidance (GN07) is being followed.

We also reviewed the Dungannon overrun of planned work. We confirmed the reclassification of the 446 properties to unplanned/unwarned as these were interrupted in error prior to the warned start time.

We audited two Third Party events ([X] and [X]). We found that for [X] it was not clear whether it was a third party or NIW's own contractor that had caused the interruption, because it had been classed as unplanned/unwarned which suggested NIW's contractor may have been responsible. NIW investigated post audit and confirmed it was a third party cause and amended the appropriate data lines (lines 5 and 13).

With the exception of the mis-classification of the unplanned/unwarned event [X], we found the records in CIMS and Upward Reports for all events we sampled to be comprehensive and accurate. We also sampled the SFA records which we found to be comprehensive.

We confirmed the compilation of the outturn data for reporting against NIW's 2016/17 KPI targets.

6. Confidence Grades

NIW records a Confidence Grade A3 for all DG3 data. This is supportable because of the use of CIMS which is robust and can record start and end times more accurately than the former OMIS which was limited to the nearest 15 minutes. CIMS captures data in real time and also collects a greater number of events which previously were not recorded by OMIS. An update to the CIMS system was implemented in September 2016 which has improved the functionality of CIMS and is enabling more time to be devoted to improving the accuracy of the information.

7. Recommendations

We recommend the Company continues to monitor the warning notification process by its contractors for planned and warned interruptions.

Whilst NIW's performance has improved for AIR17 and all three KPI targets have been met, the Company's performance in terms of minutes lost per property is significantly greater than some companies in England. NIW may benefit from an insight into other companies' processes where they have similar networks that feed rural areas. We would be pleased to facilitate such dialogue.

Table 5 Lines 1-5 DG7

PREPARED BY: Emma Smith

DATE: 14 July 2017

1. Key Findings

The DG7 indicator shows the total number of written complaints received and the number dealt with within the specified time bands.

RR16 Table Criteria	RAG	Assessment
Independent Review of Performance and Reporting	**Green**	Performance good. Reporting process well managed
Methodology	**Green**	Methodology consistent with current process, control points identified and understood
Assumptions	**Green**	Assumptions reasonable and appropriately applied
Source Data	**Blue**	Source data is clearly identified, complete beyond material concern, well managed through to accurate systems input. Our sampling did note that some of the higher risk DG6 categories should be reviewed to make sure that DG7 written complaints are identified appropriately.
Clarity of Audit Trails	**Green**	Detailed and comprehensive audit trail to all numbers available
Confidence Grades	**Green**	Confidence grade appropriate and rationale clearly documented
Governance	**Green**	

- The Company report that the total volume of written complaints received has increased. Overall the number of complaints has increased by 4.6% or 106 complaints in real terms.
- We audited the reported data and challenged the processes on a sample basis. Except where detailed below, we consider the data reported in the table is robustly prepared using systems and process that are appropriate and in line with the reporting requirements and that are properly implemented with effective quality control and governance arrangements.
- Our sample audit of DG7 items noted an excellent conformance rate however our DG6 sample audit results suggest that there are some items that should have been classified as DG7. We note that these results are not representative though and do not allow for extrapolation as our audit was targeted at areas deemed to be at higher risk of error.
- Overall we consider that overall compliance for DG7 reporting is satisfactory with our targeted sample showing some minor concern about categorisation of contacts. We therefore recommend that NI Water aim to strengthen procedures, definitions and training in the high risk DG6 category areas.

2. Audit Scope

The scope of this audit was the DG7 number of written complaints data which comprises Table 5 Lines 1-5.

3. Performance and Significant Events

Total Written Complaints (Line 1)
The volume of complaints has increased by 4.6% or 106 complaints in real terms.
There are no specific events which can be directly attributed to the increase in 2016/17 volumes. However, there were greater than average complaints in the Water, Sewerage and Charges & Billing (particularly disputing liability for charges) categories.

DG7 Performance (Lines 2 to 5)
The Company has maintained a good level of performance in responding to complaints with all written complaints responded to within 10 working days.

4. Compliance Methodology and Process Controls

We found that the procedures and methodology broadly consistent to that reviewed previously.

Overview
To confirm the methods used by the Company are as described we performed a series of reviews and audit checks. From these checks we are content that the approach adopted is in line with NI Water's stated methodology and is accordance with the Reporting Requirements.

We have provided a summary of our findings and the Company's methodology below:

- The definition of a written compliant is aligned to that stated in the reporting guidance.
- Correspondence is opened and date stamped on the date of receipt. At this point, correspondence is allocated between various categories including correspondence relating to DG6 (billing contact) and DG7 complaints.
- All Customer contact information is managed through customer contact and billing system.
- All mail is logged on the day it is received.
- Once correspondence has been opened and indexed it can then be allocated to an Agent for action. Managers have the ability to run reports from Savvion providing a list of prioritised contacts which ensures that contacts are dealt with in line with the SLA and regulatory timescales.
- Contacts are allocated to AS Complaints & Exec Mail Team members where they assess and investigate the complaint as appropriate.
- Contacts are closed when a final response is sent to the customer. For AIR15 we discussed with the Company various logistical points of this process including the times of collection and dispatch, resourcing issues and contingency plans to ensure all mail is dispatched on the same day a contact is closed. There has been no change to this process in AIR17, therefore we believe the practice adopted by the Company is suitable to ensure satisfactory compliance with the Reporting Requirements.

Reporting
The Company reports all complaints received during the Report Year within Line 1. To report Lines 2 to 4 NI Water reports the number of contacts closed in the year (which have been received during the Report Year).

To report data the Company relies on data extracted from CorVu reports.

The Company advised that whilst holding responses close the contact for reporting purposes, the contact remains open on their system until a final response is issued. NI Water explained its methodology for reporting complaints received in one reporting period but not closed until the following year. We understand for AIR17, if a contact was received in the 2016/17 Report Year then this would be included in Line 1 of Table 5. Line 2 includes complaints received in year 16/17 and closed within 10 working days. It also includes any open DG7 contacts at year end for which future closure within SLA is forecast. This forecast is based on the assumption that the closed date for the open DG7 contacts will be backdated to the date on which the first holding response was issued. As of 2nd May 2017 all DG7 contacts received in year 16/17 have been closed.

The Reporter is content that the methodology employed is materially appropriate.

Quality assurance
During our audit work we queried what QA controls NI Water operates on complaints received. The Company outlined the various controls in place, including the administration of their customer service contract and the checks undertaken by the NIW MI & Data Team. We believe these should help to promote good practice, help improve the reporting process and process control.

Dispatch
We established the various logistical points of the dispatch process, including the times of collection and dispatch and resourcing issues to ensure all mail is dispatched appropriately. It was noted that all postal responses are dated when printed and enveloped. 'High-risk' items – those on the last day of the SLA – are prioritised to ensure they are ready for dispatch by 15:30. 'Low-risk' items could be dispatched the following day.

Treatment of emails
We established at AIR15 the processes for email communication and found in general it is treated in the same way as written correspondence. This process has not changed again in AIR17. Emails are logged, date stamped, indexed and allocated to an Agent as per the Company's methodology statement. The Company advised its procedures ensuring that all email contacts are logged on the day of receipt which is especially pertinent to emails received on non-working days or out of hours. Our audit sampling found no errors.

Exclusions from the DG7 indicator
NI Water advised that they do not generally exclude any complaints. In 16/17, a total of 781 written customer complaints were excluded from DG7 reporting. 6 of these were for a variety of exclusion reasons as per the Level of Service Methodology. The remaining 775 were due to campaign-led activity relating to Woodburn and Portavoe Reservoir.

The reporting guidance allows complaints to be excluded for a number of reasons (e.g. about non-appointed activities). Practice elsewhere also excludes contacts where they have fully exhausted the complaints process (where complaints are ongoing over a considerable period and any additional information received from the customer would not change the outcome of the complaint).

Postal strikes
The Company have not advised of any mail strikes having had a material impact on their operations in 2016/17.

Complaint reclassifications
NI Water provides a guidance document to agents detailing the regulatory requirements for the allocation of customer contact.

Despite the controls in place to mitigate the risk of mis-classification, there is possibility that contacts may need to be reclassified. We queried what controls the Company employs around the reclassification of contacts. NI Water explained that if an Agent is allocated an item from their work queue and recognises the CMS type is incorrect they are able to change the CMS code and would, if

required, seek approval to transfer the item to the correct team. We reviewed a methodology document for re-categorisation of DG7. We did not check the procedures in practice however we believe that the methodology seems to be appropriate.

Assumptions
Except where disclosed above, no assumptions have been identified.

5. Summary of Audit Checks

To check the accuracy of the information reported, our audit consisted of an interview with the NI Water line holder, an audit of the data from the Company's systems to the final table and a review of the current methodology for data collation. This year's data has also been compared with last year's table entries.

During our audit we reviewed a sample of correspondence received by the Company during the year. This sample was chosen at random from contacts received throughout the 16/17 year. Our audit checks were designed to check the following:

- the contact has correctly been classified as DG7
- the Rapid system correctly records the incoming and response date
- there was an audit trail evident for each complaint
- the nature of the complaint (to inform table 5a)
- the response to the complaint is substantive.

As part of our DG7 audit we undertook a sample audit of both DG7 and DG6 correspondence. For the DG7 sample the results are as follows:

DG7 categorisation	Number	Percentage of totals
Total items sampled	30	
Items unable to check	0	0%
Records checked	30	
Yes	30	100%
No	0	0%

Substantive response	Number	Percentage of totals
Total items sampled	30	
Items unable to check	4	13%
Records checked	26	
Yes	26	100%
No	0	0%

No. of holding responses for DG7	Number	Percentage of totals
Total items sampled	30	
Items unable to check	0	0%
Records checked	30	
0	28	93%
1	2	7%

This sample confirms that items categorised as DG7 items have a good level of robustness. Within the sample we found a few items we would call soft complaints, which appear to suggest the cautious nature that NI Water undertake in classification of written complaints.

The DG6 sample results are as follows:

DG6 Categorisation		
Total Items sampled	60	
Items unable to check	0	
Total reviewed	60	
DG6	56	93%
DG7	4	7%

This data result suggests that there are some items that should have been classified as DG7. We note that these results are not representative though and do not allow for extrapolation as our audit was targeted at areas deemed to be at higher risk of error.

We consider that overall compliance for DG7 reporting is satisfactory with some of the higher risk areas requiring a review to see whether categorisation can be improved.

Dating of correspondence
During our audit checks, for each complaint we satisfactorily tested the date of receipt was consistent between date stamp on the incoming correspondence and the date recorded on Rapid. Our audit sampling found no errors however in the DG6 sample there were two occurrences where the incoming document had not been date stamped. NI Water's procedures are that all incoming correspondence is date stamped on date of receipt, we are content that the Company recording of incoming dates is, materially appropriate.

Use of holding replies
Within previous audit checks we noted numerous instances where the Company issues holding responses to customer complaints. This effectively closes the contact for regulatory reporting but the contact remains open on the Company's system to ensure a response is issued to the customer. Our audit sample reviewed 2 holding responses of this type.

Substantiveness of Responses
Out of our sample of 30 DG7 items, all replies reviewed were considered to be substantive. On the basis of the checks undertaken we are content that the Company's interpretation of a substantive response is sound.

Consistency checks
We can confirm that:

- Line 1 equals to Table 5a Line 1
- Line 2 equals to Table 5a Line 2
- Line 4 equals to Table 5a Line 3

6. Confidence Grades

The Company has applied a confidence grade of B2 to all the DG7 related information in the table which has been extracted from their systems. A1 has been applied to the subsequent percentage calculations. These are consistent with the grades reported in AIR16. Whilst we have not undertaken any statistical tests, this grade appears reasonable on the basis of our audit sampling. Further control and reassurance is also gained from checks undertaken by the NIW MI & Data Team and Internal Audit.

7. Recommendations

Based on the sampling undertaken, it suggests there has been an improvement in the categorisation of DG7 complaints and the numbers of substantive responses and holding responses compared to AIR16. However, as the sample size is too small for this to be statistically significant and as there are still some DG6 mis-categorisations, we recommend that higher risk DG6 categories are reviewed by NI Water in order to strengthen procedures, definitions and training for these areas.

Table 5 Lines 6-12 DG8

PREPARED BY: Emma Smith

DATE: 14 July 2017

1. Key Findings

This indicator identifies the proportion of metered customers who receive bills during the year based on actual meter readings and the proportion based on estimated readings.

RR16 Table Criteria	RAG	Assessment
Independent Review of Performance and Reporting	**Green**	Performance good. Reporting process well managed
Methodology	**Green**	Methodology consistent with current process, control points identified and understood
Assumptions	**Green**	Assumptions reasonable and appropriately applied
Source Data	**Green**	Source data is clearly identified, complete beyond material concern, well managed through to accurate systems input
Clarity of Audit Trails	**Green**	Detailed and comprehensive audit trail to all numbers available
Confidence Grades	**Green**	Confidence grade appropriate and rationale clearly documented
Governance	**Green**	

- The Company report that 99.52% of customers received a bill based on a meter reading in 2016/17. This is similar to the 99.23% reported during AIR16.
- We audited the reported data and challenged the processes on a sample basis. Except where detailed below, we consider the data reported in the table is robustly prepared using systems and process that are appropriate and in line with the reporting requirements and that are properly implemented with effective quality control and governance arrangements.

2. Audit Scope

The scope of this audit was the DG8 bills for metered customer's data which comprises Table 5 Lines 6-12.

3. Performance and Significant Events

We found the procedures and methodology broadly consistent to that reviewed previously.

General
The information to derive DG8 data is supplied from reports produced from the Company's billing records. Summary tables are produced from these records to collate figures for the final table. We reviewed the data in the year-end report and followed the data trail through to the Company's final

table.

DG8 Performance

After subtracting the number of exclusions reported in Line 7 from the total number of metered accounts reported in Line 6, a total of 68,379 accounts are included with the DG8 indicator. The Company state that of this total, 99.52% of customers received a bill based on company or customer meter readings in 2016/17. The percentage of meters not read by the Company for two years equates to 0.14% of the total metered accounts or 0.25% of accounts included in the DG8 measure, which is a minor decrease from AIR16.

Total metered accounts (Line 6)

The number of total metered accounts has once again increased (3.3%) from the previous year. This is broadly consistent with the number of household and non-household new connections reported in Table 7. The greatest proportion of this increase relates to household customers which are subsequently excluded from the indicator (see below). For 16/17 the total meters excluded has risen by 3,553 compared to the total exclusion reported in 15/16, this is in line with an increase of 4,044 household accounts being reported for 16/17. The actual number of non-household accounts appears relatively consistent to the previous report year.

Exclusions (Line 7)

As highlighted above the number of exclusions has increased from 15/16 mainly due to an increase in the number of household accounts being reported in Line 6.

We provide the following breakdown of the exclusions made in the year.

Reason for exclusion	AIR17 exclusions	% of total exclusions
Charged on another basis	56,568	95.19
Void Property/No occupier	2,425	4.08
New Property	248	0.42
Occupied <181 consecutive days	187	0.31
Total	59,428	100

Overall, NI Water excluded approximately 46% of its metered base from the DG8 indicator. This is somewhat higher than the average of accounts excluded historically by WaSC's in England and Wales, which is circa 11%. However, whilst providing a useful metric for comparison purposes, it is difficult to make any direct comparisons as NI Water's DG8 statistics include non-domestic accounts only.

During the audit the Company also cited a number of examples where an account would be reported in Line 7 and excluded from the DG8 indicator. Examples of such accounts include:

- Meters charged on another basis
- Test meters
- Trade-effluent meters
- DRD or NI Water meters
- Fire supplies
- Properties occupied less than six months
- Complex accounts – Including combination meters
- Void properties

- Demolished
- Accounts for properties which have been occupied for less than six consecutive months during the report year

In the cases reviewed we were content that the Company's methodology in this area reliably extracts data relating to the exclusion type.

Company readings/Company or customer readings (Lines 8 and 9)
The Company methodology outlines that that it encourages customers to provide their own readings and these can be registered via NI Water's website or by calling their billing line.

During the audit the Company provided data from the Rapid system to support the figures presented. Based on this and the audit checks undertaken we are content that the data produced is appropriate for reporting purposes.

Estimated bills only (Line 10)
Whilst the Company has made endeavours to ensure that every non-household customer receives a bill based on at least one meter reading, NI Water reports a number of instances where this was not possible.

The proportion of metered accounts of receiving a bill based on an estimated reading has reduced marginally in the Report Year. Approximately 0.4% of those accounts included in the DG8 measure received an estimated bill.

No bills received during the Report Year (Line 11)
NI Water reports a small number of accounts where the customer has not received a bill during the year. We have not sought to verify the accuracy of the number of accounts reported. We note that the figure has decreased to 58 accounts this year from the 96 reported in AIR16.

Unread by the Company for 2 years (Line 12)
The percentage of meters not read by the Company for two years equates to 0.25% of the metered base included in the DG8 indicator. This is a marginal improvement when compared to last year and demonstrates management of reading process.

Assumptions
We consider that there are no assumptions to be disclosed and that the data is based on sound procedures.

Validation
A report is downloaded from CorVu as a validation of the data. When undertaking this process at audit we found a minor discrepancy. Lines 6 and 7 should read one account less at 127,806 and 59,427 respectively. This is within the +/- 1% accuracy of the A1 confidence grade.

4. Compliance Methodology and Process Controls

The Company's methodology is unchanged from the previous year. The primary source of data is the Company's billing system and we confirm that the Company presents all the annual data and that no sampling techniques have been employed.
To confirm the methods used by the Company are as they describe and are in line with the Reporting Requirements, we performed a series of reviews and audit checks. From these checks we are content that the approach adopted is in line with their stated methodology.

On the basis of our audits from AIR17 we have provided a summary of our findings and the Company's methodology below:

- NI Water outsources its billing activities to it's third party provider.

- The primary source of data is the Company's billing system, Rapid. Data is extracted via an automatically generated report.
- All customers who are eligible for billing are billed, regardless of consumption.
- Before the start of each reading period all meter accounts which need to be read are transferred from the Rapid system onto the Temetra system. These accounts are then transferred onto the PDA's of meter readers who then visit the meters.
- When in the field, all meter readings (including those not able to be read) are input by the meter reader on their PDA.
- Meter readings are uploaded back from the Temetra system onto the Rapid on a daily basis. Bills are then generated on Rapid based on the consumption recorded and appropriate tariff.

When meter readings cannot be obtained the meter reader records this on their PDA as being 'skipped' and this is fed back into Rapid. Such instances are monitored and managed by way of 'priority list' which a meter reading contractor lists 'unread' customers regularly and prioritise these meters to be read. The Company does also have the facility for customers to enter a reading via the phone or website. If no reading is provided before the subsequent billing run a system estimate is generated and a bill is issued.

5. Summary of Audit Checks

To verify the information provided by the Company our audit consisted of an interview with the NI Water system holder, a review of the current methodology for data collation, an audit of the data from the Company's systems to the final table and a comparison with last year's table entries.

6. Confidence Grades

As in previous years, the Company has assigned a confidence grade of A1 to lines 6 to 12. We understand this grade is assigned on the basis that data used to provide DG8 performance is driven by a system based report that does not require any manual interpretation. The report is taken directly from the Rapid database source which categorises each account automatically based on its status and therefore using the most current and up to date data.

Table 5 Lines 13-17 and 19-25 DG9

PREPARED BY: Emma Smith

DATE: 21 July 2017

1. Key Findings

This indicator identifies the ease with which customers can make telephone contact with the Company.

RR16 Table Criteria	RAG	Assessment
Independent Review of Performance and Reporting	**Green**	Performance good. Reporting process well managed
Methodology	**Green**	Methodology consistent with current process, control points identified and understood
Assumptions	**Green**	Assumptions reasonable and appropriately applied
Source Data	**Green**	Source data is clearly identified, complete beyond material concern, well managed through to accurate systems input
Clarity of Audit Trails	**Green**	Detailed and comprehensive audit trail to all numbers available
Confidence Grades	**Green**	Confidence grade appropriate and rationale clearly documented
Governance	**Green**	

- Overall call volumes have increased during AIR17 from that reported previously however the abandonment rate in percentage terms has fallen (less abandoned calls). We have checked and confirmed the DG9 performance reported in Table 5.
- Scores from the customer satisfaction survey (Line 16) are no longer reported. These have been replaced with new Customer Satisfaction Measures (Lines 19-25).
- We audited the reported data and challenged the processes on a sample basis. Except where detailed below, we consider the data reported in the table is robustly prepared using systems and process that are appropriate and in line with the reporting requirements and that are properly implemented with effective quality control and governance arrangements.

2. Audit Scope

The scope of this audit was the DG9 telephone contact which comprises Table 5 Lines 13-17 and the customer satisfaction measures, Table 5 Lines 19-25.

3. Performance and Significant Events

We found the procedures and methodology broadly consistent to that reviewed previously for lines 13-17. Lines 19-25 are new for AIR17.

General

The volume of calls received on each line is taken directly from Call Media reports (and HVCA reports for calls passed from the Waterline number).
The High Volume Call Answering System (HVCA) has operated since March 2013. This is designed to improve the customer experience when demand on the telephony system is high e.g. during an operational incident, the DG9 reporting methodology includes calls handled by this system. We have consolidated our comments on the HVCA system below.

High Volume Call Answering (HVCA) system
Under normal circumstances, a call received from a customer is logged by the telephony system and routed directly to an agent. When all agents are busy, the customer call is placed in a queue until the next available agent is free. Deployed exclusively on the Waterline, the HVCA system aims to direct the customer's call to the most appropriate team or message via a series of routing options.

The system's intelligence identifies and recognises customer details (e.g. location) from the details held on the billing system. Depending on the call routing and this intelligence the system asks various questions to help answer the customer query or raise a work order.

It is important to recognise that whilst the HVCA is constantly available, calls are only routed into the system at busy periods using predefined capacity criteria. This limits the volume of calls fed to the systems and under normal circumstances customers would reach an agent.

Abandonment
Whilst designed to improve customer experience, there is a risk that the deployment of the HVCA system may lead to an increase in the abandonment rate due to initial customer responses to the system, although this year we note that abandoned calls have fallen significantly.

The HVCA has over 200 hang-up locations which customers may reach depending upon the selections they make within the system. There have been no changes to the methodology used by NI Water during AIR16.

Reporting
The reporting methodology is as in previous years and makes allowance for calls passed from Call Media to HCVA. This ensure that calls passed from Call Media to HCVA are not automatically categorised as answered. We have previously reviewed the logic presented by NI Water and although complicated in the spreadsheet provided, we consider it to be appropriately based to report data in the DG9 metric.

Calls received (Line 13)
NI Water reported that they have received 217,023 calls from customers during the year. We confirm the total volume of calls received is circa 3.1% higher than received in 15/16.

All lines busy (Line 14)
The Company report that 63 calls received an engaged tone during the year. This is a significant decrease on the previous year (159). In the AIR16 Company commentary it was noted that additional DDI lines had been acquired to mitigate future All Lines Busy events.

Abandoned calls (Line 15)
Along with an increase in the overall volume of calls handled, the number of abandoned calls has increased. Overall, performance of calls not abandoned was 99.5%.

Call handling satisfaction (Line 16)
Scores from the customer satisfaction survey (Line 16) are no longer reported in agreement with the Regulator.

Telephone Complaints (Line 17)

The telephone complaints figure is reported as 62,866, which comprises of a 2.53% increase in complaint volumes. During our audit we reviewed the spreadsheets used to compile the data and located no errors.

In a change from AIR16, these figures no longer exclude billing complaints.

We have reviewed the methodology and confirm we consider the reported data appropriate.

Total contacts (Line 19), Unwanted contacts (Line 20), Unwanted contacts as a % of total contacts (Line 21)
These are new lines for AIR17. Total contacts are reported as 257,866. Unwanted contacts reported as 110,197 and therefore the % unwanted contacts is 42.73%. For clarity, line 21 should be coloured blue in the spreadsheet as this is a calculation using lines 19 and 20.

First Point of Contact Resolved (FPOCR) (Line 22)
This is a new line for AIR17. The contacts which are resolved on the first point of contact are reported to be 66.5%.

Customer advocacy measure (Line 23)
The Customer Advocacy measure is generated by 4 waves of customer surveys, carried out by an independent market research company Allto (McCallum & Layton). Customers are asked "Likelihood of recommending Northern Ireland Water 1-10?" This measure is reported as 27. This is on a scale from -100 (bad) to +100 (good).

Omnibus survey question 1 (Line 24), Omnibus survey question 2 (Line 25)
The Omnibus survey is based on a sample of 1000 domestic consumers and 200 non-domestic consumers that have had direct contact with NI Water to request a service or make a complaint. The survey is carried out once a year every September by an independent market research company Millward Brown. Question 1 is: (1 = 'strongly agree' and 5 = 'strongly disagree') 'I am satisfied with the services provided by NI Water'. Question 2 is: (1 = 'not at all likely' and 10 = 'extremely likely' to recommend their water company to a friend or colleague).

The score for question 1 is provided as a combined percentage from the domestic and non-domestic responses of those that gave an answer of 1 or 2 (strongly or tend to agree). The reported figure is 80.3 %.

The score for question 2 is provided as a net promoter score for both the domestic and non-domestic customers based on scores of 1-6 = detractors, 7-8 = passive and 9-10 promoters. The net promoter score is the percentage of promoters minus the percentage of detractors. These scores from the domestic and non-domestic responses are combined to give an overall net promoter percentage. The reported figure is 11.2 %.

Assumptions
We believe that all relevant and material assumptions have been disclosed above by either the Company or the Reporter.

4. Compliance Methodology and Process Controls

Overview
The Company's Levels of Service Methodology describes the configuration of its telephony system. NI Water has also identified the telephone numbers (PACCP's) and locations against which they are

reporting in their Methodology Statement.

In summary:

- For Customer Billing the office hours are 8am to 8pm Monday to Friday, 8am to 6pm on Saturday and 12pm to 6pm on Sunday.
- The Company's debt line office hours are 8am and 5pm weekdays only.
- For Service Enquiries, NI Water's Waterline and Leakline are open 24 hours a day 365 days a year.
- The MLA and dedicated lines are also open 24 hours a day 365 days a year.
- Calls received outside of these advertised times are not included are in the report of calls received or calls abandoned.
- NI Water has not utilised any temporary customer contact points during the year.
- No message manager systems or answering machine facilities were used during the reporting year.

Call Services offered/telephony configuration
During our AIR15 audit we questioned the Company on the call services it offered in terms of non IVR Queuing or automated speech recognition facilities as we are aware from other experience that calls via such services are often difficult to track and report.

NI Water advised that their telephony system in the report year has been configured so that an HVCA capability can be deployed if required (see HVCA comments) however the other services highlighted are not currently offered.

This methodology has not changed in AIR17.

Reporting
NI Water advised that the telephony system is configured to produce data required by the Reporting Requirements. As such data, with the exception of HVCA, is provided for the total number of calls received and calls abandoned and is taken directly from the Call Media system. Telephone complaint volumes are derived from CMS logs in Rapid and exported via a Corvu query based on the list of CMS codes identified as a complaint and any other contact that has the complaint indicator selected.

We have not undertaken any checks on the configuration of these reports. The Company has a documented methodology of how data is collated from the system and during the audit the representatives outlined the processes they follow. Data for the all lines busy indicator is derived from NI Water's telephony provider's systems. Again, we have not tested the reliability or accuracy of this report.

We have checked and confirm that the totals presented in the DG9 lines of Table 5 are consistent with the summary Call Media reports compiled by the Company.

Surveys
We found that the Company reports all calls received to the market researcher and no exclusions are made. As such it is possible that allowable exclusions are included in the market researchers' sample in each of the designated weeks.

Wanted/Unwanted calls lookup
At audit we were provided with the wanted/unwanted lookup table. This contains 1361 CMS codes:

Wanted = 163
Unwanted = 238
Exclusions = 419
Closures = 540

Blanks = 1

It was noted that the majority of these were defined as exclusions or closures. NI Water provided the following:

"The Lookup list covers all CMS codes logged within Rapid, this includes Customer raised CMS codes, Internal CMS Codes (to track work flows on Rapid internally) and Closure CMS codes.
We have used Ofwat guidance to determine what is a Wanted and Unwanted contact and anything that does not fall within either category is an Exclusion, for example if a customer contacts NI Water regarding a different company and the query is not related to NI Water then is an Exclusion which is represents by a CMS code.

When a contact is received, it is assigned an Original CMS Code which determines whether it is a Wanted or Unwanted contact, when the contact has been dealt with the outcome will be reflected in the Closure CMS code. For example, a customer may contact NI Water to pay a bill and request a copy of the receipt this will have an Original CMS code for Credit/debit card payment, once this has been dealt with the closure CMS code will be changed to Receipt Request CMS Code. So, for the purposes of reporting on the Original CMS code theses codes are classified as Closures."

Quality Assurance
NI Water advised that they carry out call listening every month to sample 10 calls to assess how they are handled, logged and ensure any follow up requests or requests from the customer have been completed – this is DG9 Sampling. With regards to the Wanted/Unwanted contacts which are extracted from Corvu, no sampling is currently carried out on these contacts.

These checks are important controls within the reporting process and we would encourage the Company to continue these checks in at least the same level of detail. We would also advise introducing sampling of the wanted/unwanted contacts to ensure that these are being correctly applied.

5. Summary of Audit Checks

Our audit consisted of an interview with the NI Water system holders, a review of the current methodology for data collation and an audit of the data provided.
We have also checked the data in the final submission for consistency with previously audited data. We have not attempted to reconcile the numbers of calls received to the number of calls logged on the Company's contact management system.

6. Confidence Grades

We believe the confidence grades assigned to Lines 13 to 17 are appropriate but have not undertaken any specific or statistically significant checks to verify the volume of calls reported. The confidence grades applied to lines 19-25 are considered to be appropriate based on the amount of processing involved in producing the figures.

7. Recommendations

It is recommended that in future AIRs, an audit of a selection of calls is undertaken to check the wanted/unwanted calls are being identified and classified correctly. It is also recommended that NI Water add this to their monthly sampling.

Table 5 Line 18 Special Assistance Register

PREPARED BY: Emma Smith

DATE: 21 July 2017

1. Key Findings

This table identifies customers registered for special assistance.

RR16 Table Criteria	RAG	Assessment
Independent Review of Performance and Reporting	**Green**	Performance good. Reporting process well managed
Methodology	**Amber**	Methodology consistent with current process, control points identified and understood. Annual review process has risk of removing vulnerable customers from the register.
Assumptions	**Green**	Assumptions reasonable and appropriately applied
Source Data	**Green**	Source data is clearly identified, complete beyond material concern, well managed through to accurate systems input
Clarity of Audit Trails	**Green**	Detailed and comprehensive audit trail to all numbers available
Confidence Grades	**Blue**	Grade changed from AIR16. Same processing required.
Governance	**Green**	

- We believe the methodology to populate the Special Assistance Register is appropriate and in line with the Reporting Requirements. However, the annual review and maintenance of the data to keep it up to date has a risk of removing vulnerable customers from the register.
- The number of customers registered on the scheme has decreased by 36%. This is due to the annual review and update of contacts on the register.
- We audited the reported data and challenged the processes on a sample basis. Except where detailed below, we consider the data reported in the table is robustly prepared using systems and process that are appropriate and in line with the reporting requirements and that are properly implemented with effective quality control and governance arrangements.

2. Audit Scope

The scope of this audit was the Special Assistance Register data which comprises Table 5 Lines 18.

3. Performance and Significant Events

The Company's Special Assistance Register is called the Customer Care Register. At the end of the AIR17 reporting period the Company advised that 2,017 customers were recorded on the Customer Care Register. The number of customers registered on the scheme has therefore decreased by 36%.

The following Table shows the data from AIR17 and the previous three years:

Year	2013-14	2014-15	2015-16	2016/17
Customers on the special assistance register	2,903	3,084	3,163	2,017
Increase in customers over previous year	228	181	79	-1,146
Percentage Increase over previous year	8.5%	6.2%	2.6%	-36%

The significant decrease is due to the annual review and maintenance of the register. The methodology used for this is as follows:

1. Identify those customers who haven't had any contact with NI Water since joining the register
2. Undertake proactive outbound telephone contact to confirm if they wish to remain on the Register, if no response then
3. Send a letter asking the customer to contact us within 4 weeks if they wish to remain on the register, if no response then remove.

NI water provided the following:

"At the start of this update process there were a total of 3207 accounts to be checked and this was broken down as follows:

- *Vulnerable – 2447*
- *Deaf – 106*
- *Vocally Impaired – 8*
- *Requires Braille – 44*
- *Requires Audio – 32*
- *Nursing Home – 389*
- *Large Print Bill – 58*
- *Dialysis - 123*

Following the review 1455 accounts were removed from the register following unsuccessful attempts to contact the customers in question.

Please note that the figures reported above are not individual and unique customers and does include customers which can have multiple needs.

It is not appropriate to retain customers on the Register if they (or a nominated carer) fail to respond and there is no other way that NIW can establish if customers have deceased or have entered residential or nursing care.

A data cleanse of the Critical Care register has not been performed since the Register was introduced 10 years ago, it is inevitable that customers who joined the Register in 2007 will have experienced a change in their circumstances in the intervening years and therefore a step change in the number of customers on the Register was to be expected. Going forward the validation will now be performed on an annual basis. Also, the UR's public consultation on Care Registers has just been launched today. This includes recommendations on promoting greater awareness of the Registers and recommendations to data sharing between utilities to populate Registers."

We acknowledge that It is necessary to maintain the register however, we consider that removing customers at step 3 as a default position, particularly with the large numbers involved (>1,400), could be putting potentially vulnerable NI Water customers at risk.

The manner in which Customer Care Registers are operated is the focus of a public consultation exercise that the Utility Regulator will be launching in July.

NI Water promote the register through local councils. It is also promoted in an annual newsletter in November and via the website.

4. Compliance Methodology and Process Controls

We found that the procedures and methodology broadly consistent to that reviewed previously.

During the audit we discussed a number of aspects of the operation of the scheme. The following provides an overview of these discussions:

- The reported figure is extracted from the Rapid system and registration on the scheme is managed by the Company's Service Provider.
- The Company confirmed and we checked that where a customer is registered for more than one service, they are only counted once in the total number of customers reported in Line 18.
- We noted that individuals are counted. In the case of nursing homes this means that a number of nursing home residents are counted for the same nursing home. We noted at audit that it may be possible to count nursing homes using addresses. However, reporting of the data is consistent with previous years.

We consider that there are no assumptions to be disclosed and that the data is based on sound procedures.

5. Summary of Audit Checks

To check the accuracy of the information reported, our audit consisted of an interview with the NI Water line holder, an audit of the data from the Company's systems to the final table and a review of the current methodology for data collation. This year's data has also been compared with last year's table entries.

6. Confidence Grades

The Company has assigned a confidence grade of A1 to this line. This is an improved confidence grade to the A2 grading in AIR16. This improvement is based on the annual review and maintenance of the register being undertaken. However, we believe the grade should remain at A2 as the processing of the data for Line 18 uses the same methodology as in AIR 16.

7. Recommendations

It is recommended that NI Water review their methodology regarding the annual review and maintenance of the register. We suggest that the default position should be that customers are kept on the list and further attempts are made to contact vulnerable customers.

Table 11 – Water Service Activities

1. Key Findings

Criteria	RAG	Assessment
Independent review of performance and reporting	**Green**	Performance good. Reporting process well managed
Methodology	**Green**	Methodology consistent with current process, control points identified and understood
Assumptions	**Green**	Assumptions reasonable and appropriately applied
Source data	**Green**	Source data is clearly identified, complete beyond material concern, well managed through to accurate systems input
Clarity of audit trails	**Blue**	Content with reported information but supporting data needs future improvement
Confidence grades	**Green**	Confidence grade appropriate and rationale clearly documented
Governance	**Green**	Responsibilities for integrity of data and commentary clearly defined. Good evidence of engagement and of final sign-off.

- The length of mains renewed is back to previous levels, increasing from 66 km to 161 km, this confirms the Company's explanation that the low value in AIR16 was due to 2015-16 being the first year of PC15.

- The Company has exceeded its target of 93 km of new, renewed or relined mains delivered under the watermain rehabilitation programme, with 237 km reported in AIR17.

- The Company has replaced 5,608 communication pipes, which is mid-way between the AIR16 (3,915) and AIR15 (7,469) values.

- All zonal study models were completed in 2012/13, so the Company has reported 100% completion. The Company has continued to update the models when investment is planned and requires an up-to-date model.

- The confidence grades are similar to last year, with small changes due to the balance of data from different sources with different levels of confidence.

- The number of mains bursts reported (Line 11) has increased from 73.8 to 79.7 bursts per 1000 km, which is consistent with the additional leakage activity.

- Percentage Overall compliance is similar to that reported in AIR16 which indicates continued stability against drinking water regulations. Our audit confirmed % Overall compliance at 99.86% (99.83% in AIR16) exceeding the target of 99.79%.

- Percentage Compliance at consumers' taps (Line 19) was confirmed at 99.77% (99.74% in AIR16) meeting the target of 99.69%.

- Percentage Iron compliance at customers' taps (Line 20) has increased from 98.40% in 2015 to 98.66% in 2016. The OPA target is 97.90% and the Overall target is 97.10%. Both targets have been achieved.

- The Company has improved its process for collating the data for this table from various sources, but we recommend that further improvements could be made, particularly in developing a single spreadsheet to collate the returns.

- We audited the reported data and challenged the processes on a sample basis. Except where detailed below, we consider the data reported in the table is robustly prepared using systems and process that are appropriate and in line with the reporting requirements and that are properly implemented with effective quality control and governance arrangements.

2. Audit Scope

The audit consisted of interviews with the NI Water system holders to discuss the methodology and data that has been used to populate this table as well as plans for improving the data in future years

3. Performance and significant events

Company performance has largely been in line with AIR16, except in the following areas:

- NIW has exceeded all targets for water quality compliance for the 2016 calendar year

- The length of mains renewed has returned to previous levels, increasing from 66 km to 161 km.

- The Company has exceeded its target of 93 km of new, renewed or relined mains delivered under the watermain rehabilitation programme, with 172 km reported in AIR17.

- The Company has replaced 5,608 communication pipes, which is mid-way between the AIR16 (3,915) and AIR15 (7,469) values

- Although all distribution studies have been completed the Company has started the process of updating these as up-to-date information is required. A further nine models were rebuilt in AIR17.

- The Company has continued its educational programme to promote the efficient use of water to schools and at community events

- The burst rate, which is effectively a 'repair rate' has increased due to additional leakage activity by the Company.

4. Compliance methodology and process controls

4.1 Compliance methodology

This information will provide a statement of activities in the Report Year relating to the water service. It includes activities and asset balance in respect of water distribution; information on water distribution zone studies and delivery of nominated outputs.

4.2 Process/methodology controls

The detail of Lines 1 and 12 is consistent with the requirements laid out by the regulator. The Line Methodology provided by NI Water confirms that information on potable water mains includes only live NIW-owned water mains that are of type distribution, distribution trunk, trunk and scour as they are deemed as potable mains. This includes trunk mains that are marked as "Out of Service" on the Corporate Asset Register as although these mains are currently out of service they are not abandoned and thus are usable so could potentially come back into service in the future.

The entries of **Lines 2 to 17** in this table are largely a summation of values provided from Networks Water Operations (NOW) and Engineering Procurement (EP). The values are collated centrally before compilation of the commentary and table. We recommend that the data providers (EP and Networks Water or their contractors) supply a commentary with their data which discusses trends and highlights any reasons for a-typical years.

For Lines 18 to 21 the Company explained that there was no change in its methodology which we confirmed. The data source is the LIMS system which is an Oracle database interrogated using specific SQL queries. Monthly reports are produced, at month end, for ongoing monitoring of Water Quality compliance. This data is produced using the same SQL queries as used for the AIR year end information. Where the number of samples taken and analysed is greater than the number required by the DWI, the reported number is adjusted to be the number required. The Company confirmed that any exceedances are reported even if they originate from a larger number of samples than required. The Company therefore does not selectively report sample results when a greater number is available to the number required

We note, in general, that the Company's methodology demands that the table and commentary are signed off by senior management.

The Company demonstrated the quality assurance controls it has in place to ensure the data collation process is robust. A significant improvement to the audit trail for regulatory samples has been introduced during the year with the roll out of Remote Sampler which is a mobile data collection solution designed specifically for use in the water and environmental sectors. The Remote Sampler system allows NIW's field technicians using Toughpads to receive and complete sampling jobs scheduled and managed from a central hub application. A centrally located scheduler using the hub can extract sample, bottle and test information from LIMS and flexibly assigned to the different devices and users in the sampling team. This provides a full audit trail for samples which records when the sample was taken, the exact location of the sample point, flushing that took place, sample bottle references, and when they were returned to the hub and dispatch to the laboratory. This improved audit trail can assist in the event

of a sample failure because the process of obtaining the sample (disinfection) and delivery top the lab can be fully demonstrated, where previously a sample failure may have been attributed to the sample process but could not be fully substantiated.

Remote Sampler also assists the field team with samples that are to be taken from customers' taps. For example if the selected address is not accessible Remote Sampler provides 100 other addresses which are guaranteed to be on the same water supply zone.

For Lines 22-24, all relevant data is extracted directly from CPMR.

5. Summary of audit checks

Total length of mains (Lines 1 and 12)

The figure reported in Line 1 has been copied as directed from AIR16 Table 16 Line 12.

The figure reported in Line 12 has been extracted from the Corporate Asset Register using a query specified within the Company's Line Methodology document. There has been no change to the methodology used from the previous years with the exception that the query is now automated rather than manually entered

Line 1 is consistent with AIR16 Table 16, line 12.

Changes during report year (Lines 2 to 11)

There have been no significant changes to the overall methodologies or commentary structures compared to last year. The commentary segregates the inputs from Networks Water Operations (NWO) and Engineering & Procurement (EP) for Lines 2 to 10. The level of detail provided for Lines 7 to 10 has been improved from the AIR16 commentary, we consider further improvements could be made to improve the audit trails by collating all data in a single spreadsheet.

Main renewal, relining and cleaning (Lines 2-6)

In line with the Reporting Requirements, the inputs into the line totals comprise input data from EP and NWO. Mains owned and operated by PPP are correctly excluded from the line totals.

Trunk main lengths have been included in the totals, with details of trunk mains included in the commentary as required by the reporting requirements.

Line 2 - Mains Renewals

The Company reports a significant increase in mains renewals this year from 65.94 km to 161.29 km; this is now similar to the AIR15 level of 164.91 km. This supports the company's statement at AIR16 that the lower value was due to 2015-16 being the first year of the PC15 period.

Line 3 - Mains Relined

Pipes replaced by pipe bursting or structural lining methods (standard slip-lining techniques are generally considered to replace the existing main) are correctly included in Line 2 as these are deemed to replace the existing pipe. Only where a lining is applied to the fabric of the existing pipe (e.g. spray application) is it reported in Line 3.

Historically, the Company does not employ any non-structural lining methods and hence the Line 3 total is zero.

Line 4 - Mains Cleaning

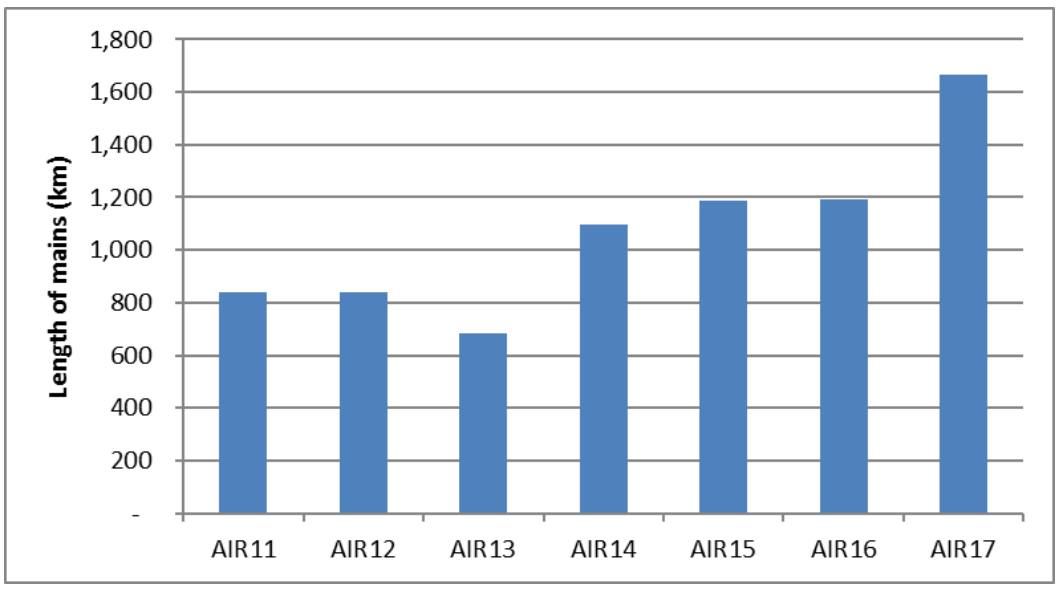
Mains cleaning is all undertaken by Networks Water under maintenance activity and hence the EP input is zero. This year, the Line 4 total of 1,665.69km and increase from the AIR16 value of 1,191.68km. Although the mains length has increased, the number of flushing jobs has decreased from 7,639 to 7,058.

For AIR17 the company has revised the factor that is used to convert from number of mains flushing to length of mains flushed. The revised factor is based on a sample of 150 mains flushing events, and has increased from 0.156km per flush to 0.236km per flush. This estimate will be revised further in future years.

We undertook a detailed audit of mains flushing activity and confirm audit trails exist to support the reported values, which indicate that there were 7,058 flushing jobs, of which 6,667 (94%) were planned. The number of planned jobs was similar to AIR16, (6,731) reflecting the Company's move to a planned flushing programme.

The Company undertakes manual checks to assess the data for errors and duplication. NI Water admits that there remains a potential for some double counting (primarily of repeated one-off incidents within year or for cleaning in response to customer water quality complaints following a mains repair), but advised that these occurrences are 'minimal'. We agree that recent changes to the system through the adoption of work codes and that carrying out manual checks on the data have greatly improved the reliability and reduced the potential for error.

We are therefore satisfied that the impact of any remaining duplications is likely to be within the margin of error covered by the current B3 confidence grade.



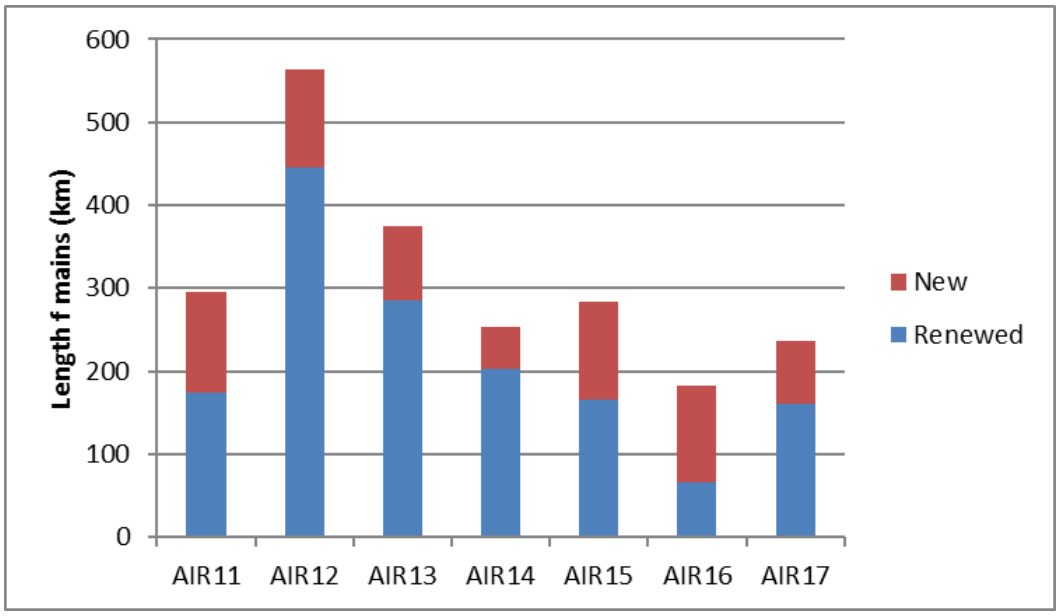
Line 6 – New mains

The reported length of new mains installed has decreased significantly from 115.81km to 75.22km within the Report Year. This comprises 55.59 (42.37km last year) reported by NWO and 19.63km (73.44km last year) reported by EP.

The total reported by NWO relates to new housing developments.

Line 6a – New, renewed or relined mains

This is a calculated line, the sum of Lines 2, 3 and 6, which is 236.51km, and increase from the relatively low value reported last year (181.75km in AIR16). The following graph presents a comparison with previous years.



Line 6b – New, renewed or relined mains delivered under the watermain rehabilitation programme

This is a calculated line, the sum of Lines 2, 3 and 6 (236.51km) minus new mains on new developments (56.31km) and nominated trunk mains (7.86km) giving a value of 127.27km.

The Company has exceeded the monitoring plan target of 93km per year in PC15 by 79km.

Mains abandoned and other changes (Line 7)

The Company has reported a total of 167.55km (105.51km last year) of abandoned mains this year, with the majority which are reported by EP under the mains rehabilitation programme (167.55km). Lengths are based on data provided by individual project managers. The increase is in-line with the reduction in the mains renewal programme last year which was due to 2015-16 being the first year of PC15.

Our review concluded that the lengths of abandoned mains have been correctly extracted in accordance with the Reporting Requirements. The total includes both wholly abandoned mains and those replaced by renewals as per the Line 7 definition. Due to the way the Company reports abandoned mains, it is not possible to ascertain from the

data how much of this length was wholly abandoned and how much was through the process of renewal.

Communication pipes (Lines 8 to 10)

The reporting requirements for Lines 8 to 9 changed for AIR14, with greater detail requested for the reasons leading to the lead communication pipe replacement.

Line 8a – Lead communication pipes replaced as a consequence of water quality sample failures

This activity is undertaken by NWO, with a total of 44 reported this year; this is similar to the 37 reported in AIR16.

Line 8b – Lead communication pipes replaced as a consequence of customers notifying NI Water that they are replacing their lead supply pipe

This activity is undertaken by NWO only; we were provided with monthly totals that confirm the annual total is 599. This is consistent with previous years (703 in AIR17, 566 in AIR15 and 617 in AIR14).

Line 8c – Opportunistic lead communication pipes replacement undertaken under the watermain rehabilitation programme or during burst service pipe repairs

At AIR16 the Company reported a significant reduction in this line from 2,747 to 660 due to a combination of factors including 2015-16 being the first year of the PC15 period and mains renewal being targeted to rural areas. The AIR17 value has increased significantly this year to 1,801 back towards previous values.

Line 8d - Lead communication pipes replaced under the proactive lead replacement programme

This activity is undertaken by EP and relates to a new programme that started in April 2014. The AIR17 value of 1,867 is similar to last year's value of 1,822 and exceeds the PC15 year 2 target of 1,844.

Line 9 - Lead communication pipes replaced - maintenance or other

The Company has reported a value that is the summation of 8a, 8b, 8c and 8d (4,311) which represents a significant increase from the value of 3,322 reported at AIR16.

Line 10 - Communication pipes replaced - other

The number of communication pipes replaced in a year reflects both the length of mains replaced and the rural/urban mix; urban mains will have a greater density of communication pipes per km of mains. In AIR17 the Company has replaced 5,608 communication pipes, which is mid-way between the AIR16 (3,915) and AIR15 (7,469) values.

The AIR17 value is built up from 4,419 (2,736 in AIR16) from EP and 1,189 from Networks Water (1,179 in AIR16).

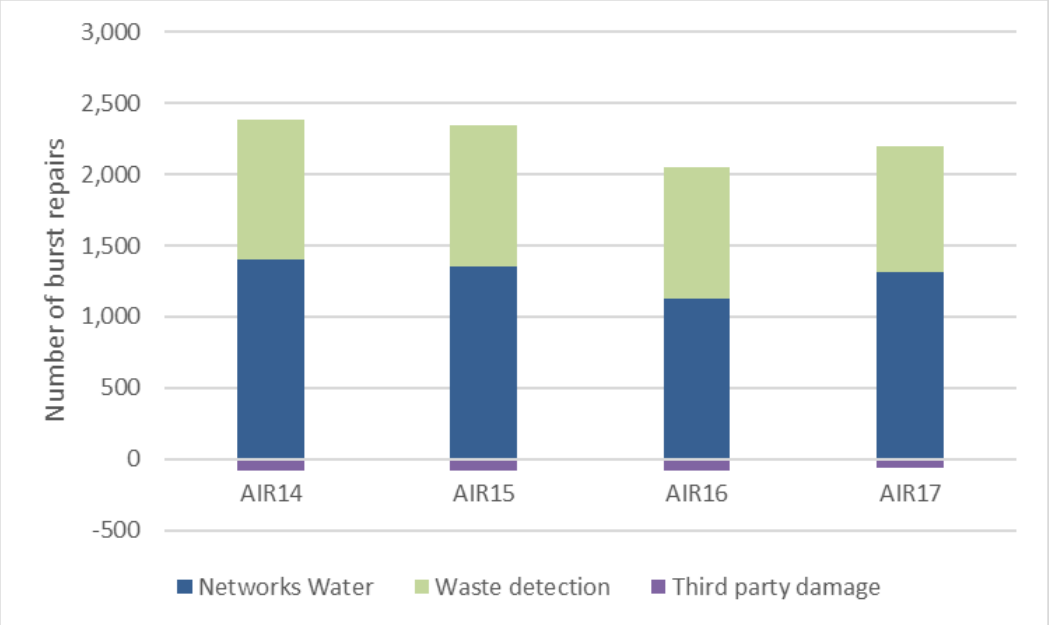
Line 11 - Mains bursts per 1000km

There has been an increase in the reported number of mains bursts per 1,000km this year, increasing 74 (73.8 to 1dp) to 80 (79.7 to 1dp) bursts per 1,000km. As explained in the Company's commentary, this figure is derived from the total number of recorded burst events, divided by the total length of mains.

The number of bursts is calculated directly from data compiled and reported primarily by the Water Business Unit and agreed with field managers within Networks Water Function.

A check against the source data confirmed the contributing total of 1,313 reported burst mains repairs by Networks Water with an additional 883 repairs were undertaken due to waste detection. Additionally, 61 repairs due to third party damage on mains were deducted from the total giving a total of 2,135 repairs in the report year. The values for the last four years are shown in the following table and chart.

Number of bursts	AIR14	AIR15	AIR16	AIR17	Change (AIR16 to AIR17)
Networks Water	1,397	1,352	1,127	1,313	+17%
Waste detection	985	996	924	883	-4%
Third party damage	-83	-82	-79	-61	-23%
Total	2,299	2,266	1,972	2,135	+8%



The increase in the number of bursts is consistent with the additional leakage activity undertaken by the company to recover its leakage.

NI Water confirmed that any repairs to PPP mains are not included in the totals. The line total is confirmed as the correct summation of the data obtained from the two data sources divided by 1,000km as required.

Distribution Studies (Lines 13 to 17)

NI Water's zonal model development started in 1999 leading to the adoption of a distribution zonal study programme in 2001. The programme aimed to set up models to cover all 71 water supply zones, and the final 7 models were completed by 2012-13. NI Water now has models for all 71 distribution zones, and consequently 100% of the zones studies have been completed, and 100% of the population are now covered.

Now that all models have been completed, the company has started a new programme to update the oldest models, those where significant changes may have occurred, and those covering areas where there may be operational problems or investment planned.

The Company state that nine models have been updated during 2016-17, which is in addition to the nine updated in 2015-16.

To retain some consistency with the reporting requirements for zonal distribution studies, as recommend during our AIR16 audit, in additional to listing the models updated during the report year the Company also provides an estimate of the population covered by each model.

Water quality compliance measures (Lines 18 to 21)

The Company reports Percentage Overall compliance with drinking water regulations for Line 18. Percentage Overall compliance is similar to that reported in AIR16 which indicates continued stability against drinking water regulations. Our audit confirmed % Overall compliance at 99.86% (99.83% in AIR16) exceeding the target of 99.79%.

Percentage Compliance at consumers' taps (Line 19) was confirmed at 99.77% (99.74% in AIR16) meeting the target of 99.69%.

Percentage Iron compliance at customers' taps (Line 20) has increased from 98.40% in 2015 to 98.66% in 2016. The OPA target is 97.90% and the Overall target is 97.10%. Both targets have been achieved.

Service Reservoirs with coliforms detected in >5% of samples (line 21) is reported as zero because no service reservoir sites had more than three failures during the year (three failures = the site has failed for the year).

We confirmed all results are reported for the 2016 calendar year.

Nominated Water Service Outputs (Lines 22-24)

During our audit of Tables 40 and 40a of AIR16 and associated interrogation of CPMR we were able to confirm the total number of nominated Trunk Main, WTW and Reservoir improvements delivered during the year (line 22 to 24).
For AIR17, NI Water has delivered 1 nominated Trunk Main outputs against a PC15 FD profile of 1 output for Year 1, with completion of JB693 – Carland to Cookstown Trunk main.

There were no WTW (Line 23) and Service Reservoir nominated outputs (Line 24) forecast for delivery in Year 2 of PC15, hence the Nil return.

We note that DWI has full visibility of the programme and sign off individual outputs confirming delivery of the outputs reported in Lines 22 to 24.

Number of Catchment Management Plans (Line 25)

Company activity in the year and plans for 2016/17 are reported on in detail in the commentaries for Table 47. We reviewed Table 47 and confirmed that the CMPs for Dunore Point, Castor Bay, Moyola, Ballinrees, Lough Macroy, Lough Fea and Glenhordial were completed on target in 2016/17 and constitute the 7 noted for the year against line 25.

We reviewed the approach, methodology and reporting of the CMP for Dunore Point which is a comprehensive study. NIW's approach to catchment management is to work with farmers and stakeholders in partnership rather than in an enforcing role. This approach is reasonable and has been successful in companies in England that adopt a similar tact.

Five of the 23 CMPs will then remain of which three are in progress (Carron Hill, Rathlin and Dungonnell). Two ([X] and [X]) may qualify for INTERREG VA funding, so may not require capital from the PC15 allowances.

Number of school visits (Line 26)

We reviewed the hard copy and spreadsheet records to confirm a total of 257 school visits during the 2016/17 year. Data includes all visits to school classes, visits made by NIW's Waterbus to schools, visits by school pupils to NIW's Heritage Centre at Bretland WWTW and school visits to Silent Valley organised by NIW. Whilst this is a reduction in the number of schools compared to 2015/16, the number of pupils that took part has significantly increased because NIW has targeted larger schools in Londonderry and Belfast. NIW has also spent more time at schools by visiting larger ones for a full day rather than two smaller schools in a day. A total of 19,770 pupils have been educated in water efficiency which is supported with records of the number of pupils and teachers visited at each school.

Number of other education visits (Line 27)

This is a manual count of hard copy records which is entered on the "Community Events" spreadsheet. We confirmed 64 events in 2016/17 (65 in 2015/16). This activity has reached 8,935 people.

We observe that there is high demand for both school and educational visits promoting the efficient use of water with a significant waiting list for school visits and NIW's Waterbus is fully booked into 2018. Currently NIW has two Educators and a customer demand that can't be met with current resources. The Educators have a clear vision as to how further work could be achieved thus meeting NIW's corporate responsibility to deliver water efficiency education. For example, NIW would like to target Secondary schools which we support because the Company has a robust approach to education which could easily be expanded to a wider audience delivering powerful messages through education. In addition, we consider a valuable component of the educational

strategy is NIW's winter campaign "Beat the Freeze" (launched after the freeze/thaw event) because this raises further awareness of water wastage.

To achieve this, NIW needs additional resources such as a Part Time or 'Term Time' Educator (NIW staff or external Temp). We discussed the costs of an additional resource which are minimal relative to the current budget for the activity and we are supportive of this approach. The benefits of expanding the education campaign would be achieving reach to Secondary schools, being better able to meet demand for education, and delivering a firm and consistent message from NIW promoting the efficient use of water.

Service Reservoir Sample Taps (Line 28)

This was a new line last year, and reports the percentage of service reservoirs where sample taps have been assessed, and if necessary upgraded, to the appropriate standard.

The Company has reported a value of zero again for this line in the Report year, but anticipate that this work will start during 2017-18.

6. Confidence Grades

During the audit we discussed the confidence grades assigned and the Company's rationale and concur with the Company's assessments in all cases.

Lines 1 and 12

As in previous AIR submissions, the Company has assigned a B3 grade (5% to 10%) to Lines 1 and 12. We consider that the assigned confidence grades are reasonable. In brief, it is difficult to assess the level of accuracy/inaccuracy inherent in the datasets but we believe it is appropriate to retain the grades which relate to NI Water's underlying methodologies. We have however not undertaken any specific statistical analysis to fully verify this.

Lines 2 to 12

The Company generally apply average confidence grades for Lines 2-10 to reflect the two separate streams of information from Engineering and Procurement (EP) and Network Water Operations (NWO).

Currently, all data provided by EP for Lines 2-10 is applied a confidence grade of either A1 or A2 due to the detailed project records held and theoretical accuracy of the data. Data provided by NWO for Lines 2-10 is applied confidence grades varying from A1 to B3. Given the relative accuracy of the various data sources, we consider these confidence grades to be appropriate.

The overall grade applied to each line is generally to lower of the confident grades from the relevant data sources, unless one source dominates then the confidence grade from the dominant source is used.

Lines 13 to 17

Given the discrete data entities, we support the Company's decision to report an A1 confidence grade for these lines.

Lines 18 to 21

The Company's confidence grades remain unchanged from last year, maintaining the policy of reporting A2 grades for all data based on a calculation. Where a value is reported on an absolute value of zero (i.e. pass/fail) for Line 21, A1 is appropriate

Lines 22 to 24

NI Water has reported a confidence grade of A1 for all nominated output related data, as it is derived directly from CPMR and the beneficial use date is embedded into CPMR to ensure output has been handed over to Operations.

Lines 26 to 28

We confirmed confidence grades of A1 are appropriate for these lines.

7. Recommendations

The entries of Lines 2 to 17 in this table are largely a summation of values provided from Networks Water Operations (NWO) and Engineering Procurement (EP). The values are collated centrally before compilation of the commentary and table. We also recommend that the data is collated into a single spreadsheet that also contains a summary from previous years to enable trend analysis of both the components and totals.

We recommend NIW considers an additional resource to assist with expanding the educational programme promoting the efficient use of water, as described under Lines 26 & 27 above.

Table 16 All Lines - Sewerage Service Activities

PREPARED BY: C Gittings and G Hawken

DATE: 21 July 2017

1. Key Findings

AIR17 Table Criteria	RAG	Assessment
Independent Review of Performance and Reporting	**Green**	Performance good. Reporting process well managed
Methodology	**Green**	Methodology consistent with current process, control points identified and understood
Assumptions	**Green**	Assumptions reasonable and appropriately applied
Source Data	**Green**	Source data is clearly identified, complete beyond material concern, well managed through to accurate systems input
Clarity of Audit Trails	**Green**	Detailed and comprehensive audit trail to all numbers available
Confidence Grades	**Green**	Confidence grade appropriate and rationale clearly documented
Governance	**Green**	Responsibilities for integrity of data and commentary clearly defined. Good evidence of engagement and of final sign-off

- Key methodologies for Asset Changes and Drainage Area Plans are developing to provide a more robust audit trail and cross checks. The underlying methodology used to provide the data reported in the data tables is unchanged. No material issues were found, but checks on source data for asset changes suggest that continued efforts on improvement of the audit trail are prudent, however the data provided is considered to be within the bounds of the confidence grades. We note that a route to potential greater clarity in the comparison between data from AssetMapper GIS and the indicative calculation of changes to the asset balance during the report year is appearing and will be investigated further for AIR18.
- No material issues were located in our review of wastewater compliance.
- Whilst the number of reported collapses are relatively stable, the number of blockages are continuing to reduce year on year, demonstrating the benefits of a proactive hotspot programme.
- Whilst there was a significant increase in the number of blockages occurring on public laterals reported for AIR15, the trend has not been as apparent for AIR16 and AIR17 suggesting a change in reporting practice by the maintenance contractors is more likely.
- The Company can report on the time required to repair a blockage (Lines 13a-13c) and NI Water now also collates a list of all the work order numbers on the blockage drafts which are not 'full rate' blockage clearance jobs and these jobs are excluded from the Ellipse data, thus improving the accuracy of the reported data.
- As the methodology for lines 12 to 13 can now differentiate between failures on the main sewer and failures on laterals, we support a confidence grade of B3. For Lines 13a to 13c, we support a confidence grade of A2, reflecting the improved interrogation of the Ellipse system.

2. Audit Scope

Network activities provide a good measure of work achieved, provided they can be related to associated investment. The investment breakdowns included in these reporting requirements provide this linkage, with the separation of base service expenditure from that related to enhancements on table 36.

Audit Approach

The responsibility for the compilation of this table is split between numbers of managers who collate information from a number of contributors, each of whom was audited. The audit consisted of an interview with the line owners to discuss the methodology and data used to generate this table. The systems and methodologies used to gather data were reviewed.

3. Performance and Significant Events

There has been no issues relating to performance of significant events noted as significantly impacting on the data reported in Table 16.

4. Compliance Methodology and Process Controls

Asset Balance (lines 1 to 2)

The Company methodology is to use the data stated for AIR16 Table 16, lines 14 and 15.

Changes during Report Year (lines 3 to 11)

For Sewerage Infrastructure changes during the report year, the reporting procedure is based on aggregating the data provided to the system holder.
There were no significant changes from the AIR16 submission methodologies.

Sewer Collapses and Blockages (lines 12 to 13)

The number of sewer collapses and blockages per 1000 km is calculated based on other data as follows:

- line 12 (sewer collapses) = [table 46 line 32 (rising main failures) + table 46 line 33 (gravity sewer collapses)] / [table 16 line 14 (length of sewers at end of year)]
- line 13 (sewer blockages) = [table 46 line 36 (sewer blockages)] / [table 16 line 14 (length of sewers at end of year)]

Asset Balance at March 31 (lines 14 to 15)

Lines 14 and 15 are taken directly from the Company's GIS system. The queries used to extract the data for line 15 are based on the WRc methodology for critical sewers, where there is a degree of extrapolation and estimation based on the difference between the GIS data available and actual infrastructure.
We note that the GIS queries are automated but are able to be checked at audit. There is no change in the data extraction methodology at AIR17.

Intermittent Discharges (lines 16 and 17)

The methodology for Lines 16a and 16b remains unchanged from that agreed in AIR11 when a baseline number of UIDs was initially determined. This value has been applied as a baseline value since AIR11, with values for subsequent years being calculated through adjustment of known improvement works only. The actual list of UIDs is subject to ongoing verification by NI Water and NIEA but the baseline remains fixed. Data is compiled and extracted within a single,

controlled spreadsheet.

The methodology for Lines 17a and 17b remains unchanged from last year. Information is based on the total number of sewerage system overflows from wastewater pumping stations and treatment works which were initially compiled from Company GIS systems and now monitored and controlled within a live spreadsheet. Information for Lines 17a and 17b is extracted from the Asset Performance Team Data which is updated throughout the year. Changes to the master spreadsheet are initiated through either a change in consent (via NIEA), a correction to an existing consent (via NI Water Environmental Regulation Team), changes resulting from a project (via EP), or site observations made by NI Water Operations. In addition, changes are only made to the database when signed up to by the business unit which allows robust control of the information. Details of the additions and removals are fully documented in Company commentary.

NI Water has continued their methodology from last year. The information for Line 16a and 17a (historic from AIR11) is only based upon combined pumping station overflows. Foul-only pumping station overflows are not included as they do not have a formal NIEA classification. Similarly, overflows within the boundaries of WwTWs are not included in Line 16a as it is expected that they would be classified as improvements to works. The total number of overflows at works are however included in Line 17a. There is a possible discrepancy in information, but year on year reporting is consistent. An estimate of the number of foul-only pumping station UIDs and WwTW UIDs is not known.

For Lines 16a - 17b, the Company carries out a number of cross checks against source data and with relevant internal departments to check and challenge information included in the database. Evidence of quality control was observed in the master spreadsheets which contain cells to highlight when a works consent condition or status has changed. Changes from year to year are generally clear and auditable.

Drainage Area Plans (lines 18 and 22)

For drainage area planning the system holder manages the process of procuring the modelling work that NI Water utilise to undertake their DAPs. The records to demonstrate increases in the data is typically provided through letters of appointment and the delivery of the consultants reports.

Sewerage treatment compliance measures (Lines 23, 24, 24a, 25)

Data for Lines 23, 24 and 24a are taken directly from listed consent data and collated for all wastewater treatment works. The data is compiled and queried within a single spreadsheet to enable percentages to be calculated. Consent data is updated at the start of the year and based on those defined by NIEA.
For the purposes of the line total, the total number of WwTW with numeric consent is taken as 230 (excluding the 6 PPP sites) and is an identical list to that defined by NIEA. A site is deemed to have failed its consent if it exceeds the number of allowed fails or it exceeds the upper tier limit value (if specified) in accordance with NIEA definitions. The total number of consent failures is based on records of all samples taken and is recorded and extracted from LIMS.
Population equivalents (PE) applied to Lines 24 and 24a are based on those defined in the latest works consent by NIEA and hence differ slightly from those listed by NI Water in other line totals (which are based on current best estimates). In AIR15, the PEs are based the PE data used at AIR13. The line totals hence include those sites with a consented PE of >250, even if that site has subsequently been reduced to <250 actual PE. Non-resident (tourist) populations are included in line with NIEA reporting and in accordance with the reporting guidelines. Sampling periods for consent compliance are based on calendar year.

Line 25 – Small WwTW compliance

The 2016 small WwTW data is derived using the 2013 baseline adjusted for Rural Wastewater Investment Programme (RWIP) outputs.

The NIEA provided NI Water with the 2013 dataset having inspected all the small works. The NIEA continue to do this on a rolling annual basis. As a result of this activity NI Water receives site inspection reports on a monthly basis.

In order to determine the number of works that are moved from failing to satisfactory an NIEA officer and NI Water meet to prioritise what happens under the following RWIP annual programme. Upgrades are agreed and then once completed they are treated as compliant.

WWTW's upgraded to comply with PPC Regulations (Line 30)

This line reflects a recent compliance measure for Wastewater Treatment Works upgraded to comply with PPC Regulations. NI Water maintains records of which sites are applicable to this line and the works to be undertaken to at each site. These records are reviewed and signed off by the NIEA. As part of this tracking a prioritisation table for the odour modelling is maintained as shown in the Company commentary.

Nominated & Additional Sewerage Service Activities (lines 26-28 & 32-33)

All relevant data is extracted directly from CPMR.

Impermeable surface water collection area removed from the combined sewerage network (Line 31)

Data is collected and provided by Engineering Procurement (EP) based on the records available from CPMR.

5. Summary of Audit Checks

Asset Balance (Lines 1 to 2)

The total length of sewers at the start of the report year is consistent with the asset balance at the end of the previous year (Lines 14 and 15) and was carried forward correctly.

Changes during Report Year (Lines 3 to 11a)

Date provided by Engineering Procurement and Developer Services

The methodology remains the same as for AIR14 where we undertook a comprehensive review of the way data was compiled for these lines. We have confirmed the data reported by NI Water is aligned with the data we reviewed at audit. No issues were located.

We note that the audit trail for the Customer Services Directorate contractors has been developed this year and provides a better view of monthly inputs to these lines. This development will hopefully continue so that NI Water can a more transparent view of data they are provided which will also create a more robust audit trail.

Date provided by Customer Services Directorate's external contractor

We have not completed a comprehensive audit of the data provided by CSD's external contractor as the data has not been available to review although it has been reported monthly for AIR17. We note that the methodology for this data remains the same as in previous years. The data reported by the Customer Services Directorate's external contractor is not material to the total changes made to sewerage infrastructure during the report year comprising in total only 0.2% of the total lengths reported in lines 3-11a.

Comparison to data provided for Asset Balance and Changes during the report year
We have recommended in previous years that greater clarity is sought in the comparison between data from AssetMapper GIS and the indicative calculation of changes to the asset balance during the report year. This year we have discussed this at length with the Company and consider that it may be possible to identify on a broad basis the data received AssetMapper GIS team and that provided from the different work areas.

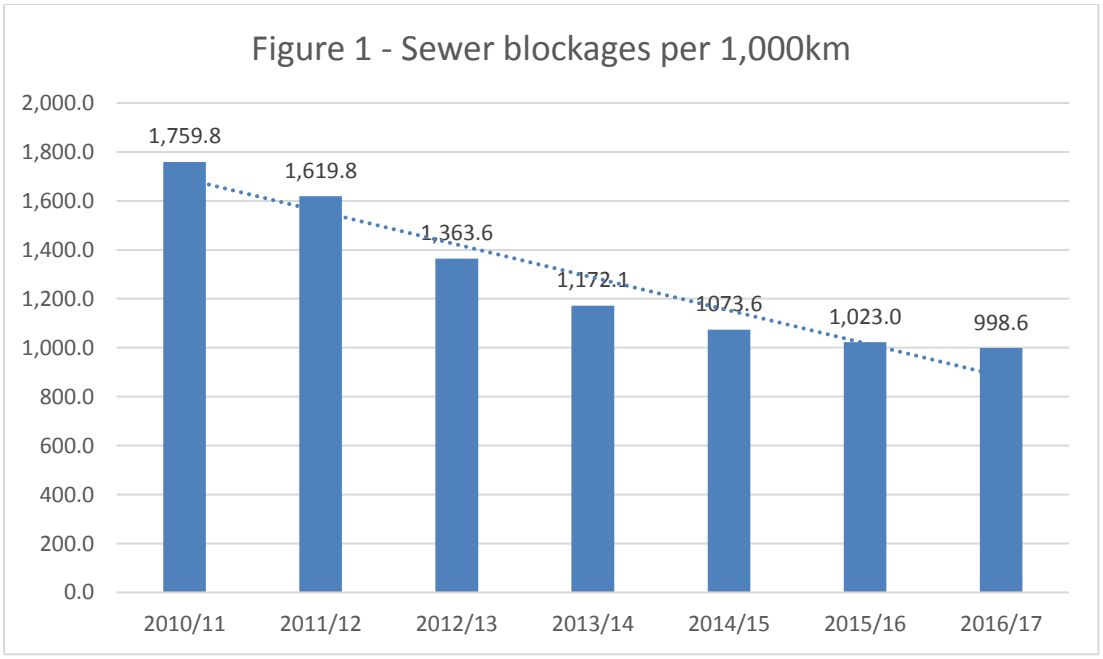
NI Water will investigate this possibility further for AIR18 to ascertain whether a more general agreement with the separate dataset can be obtained. This will be undertaken by utilising further analysis of the AssetMapper GIS database. Due to the operating methodology surrounding data submissions to the GIS team, this is unlikely to provide full reconciliation, however it is expected to close the gaps we have pointed to in previous years.

We note that we have not identified an issue with the data reported as both methodologies have been shown to be reasonable and deemed suitable for the reporting of the data in Table 16. This is purely a recommendation for greater clarity to be sought in AIR17.

Sewer Collapses and Blockages (Lines 12 to 13c)

For AIR17, NI Water has reported 79 collapses per 1000km and 998 blockages per 1000 km. Rising main failures account for 0.4% of collapses. The total number of blockages and collapses used to derive the metrics in Lines 12 and 13, are based on checked and paid contractor invoices for the numbers of blockages and collapses resolved.

Although the number of collapses per 1000 km reported year on year is relatively stable, the number of blockages continues to improve year on year. As demonstrated in Figure 1 below, over the previous 7 year period, NI Water has achieved a circa 45% reduction in blockages, although it is becoming apparent that performance is plateauing at circa 1 blockage per 1 km of sewer.



As reported previously, the Company has adopted a more proactive response to repeat blockages, whereby a dedicated CCTV crew has been assigned to each area to complete CCTV inspections on all blockage hotspots and carry out cleaning, desilting and repairs, where problems are identified.

Performance in AIR17, suggests this strategy is continuing to deliver results, with a further 3% reduction in blockages reported for the year.

Whilst the above strategy is delivering results in reducing the number of blockages, the number of collapses remain at a relatively stable level, suggesting the structurally deficient sections of their sewerage infrastructure are not being addressed through the blockage hotspot strategy. As reported previously, we suggested that there may be benefit in implementing a similar strategy to address poor performing lengths of sewer and introduce a proactive, targeted CCTV and re-lining programme, and we are pleased to see that the Company are now targeting 11 km of sewer rehabilitation each year. Through the development of well defined, prioritised programme (like that established for Water Mains Rehabilitation Programme), NI Water will be able to respond quickly to changes in PE, improving the Company's chances of delivering this programme. A separate review of 'pitch fibre' sewers has also been completed, as this type of sewer is more prone to collapse and blockage. This also will be delivered as and when additional PE is available.

As highlighted previously, NI Water can separately identify blockages occurring on the public main sewer and public laterals, and have been reporting on this basis since April 2013. Additionally, NI Water developed a method of estimating the length of lateral sewers, using geospatial technology to create logical lateral sewers from properties to the sewer collection system. Based on this, an extra 2155 km of sewer has been estimated, although this derived length has not been added to the total length of sewer, which is used as the denominator for this metric. We reviewed the breakdown of blockage and collapse data for 2016/17 and found that 599 of the 15,755 blockages (4%) and 60 of the 1248 collapses (5%) occurred on public laterals. When compared to 2014/15, the number of blockages on public laterals has continued to decrease significantly from the 31% reported for AIR15, suggesting the number of blockages on public laterals has reduced significantly. However, we consider it is more likely that the maintenance contractor has not reported on the number of blockages allocated to public laterals as diligently as in previously. Based on the above findings, it is difficult to suggest that blockages on laterals are an explanatory factor for the large number of blockages reported.

To report on the time to repair blockages in Table 16 L13a-13c, NI Water run a monthly report in 'Ellipse' which confirms the length of time a sewer blockage job took to be completed. We found that for reporting purposes, NI Water now collates a list of all the work order numbers on the blockage drafts which are not "full rate" blockage clearance jobs and these jobs are excluded from the above-mentioned Ellipse data. Since the Ellipse system calculates the length of time a job takes from the time the work request is raised, until the work request is closed, all jobs exceeding 24 hours are investigated, as all follow-on jobs are included in the time the work request is open. These jobs are then reported in the correct category per the length of time the blockage job took to be completed.

Because of this improvement in process, NI Water has been able to better distinguish between actual blockages, follow on jobs, cancelled jobs or repeat calls, and thus reduce the variance in the number of blockages reported on 'Ellipse' with those based on checked and paid contractor invoices (used to derive Line 12 and 13 data). For AIR17, 16,195 blockages were identified on 'Ellipse' compared to 15,775 blockages that were based on paid contractor invoices, confirming a variance of +/- 3%, a significant improvement on the +/- 25% variance reported for AIR15.

Asset Balance at March 31 (Lines 14 to 15)

The total length of sewers at the end of the reporting period is 15,777.29 km, an increase of 0.97% from AIR16. The total length of "critical" sewers is 3,860.69 km at the end of the reporting period which is an increase of 0.54%. The proportion of critical sewers has stayed relatively static at 24.5%.

Based on the formulae, Lines 14 & 15 should be the summation of data entries from Lines 1 & 2 and Lines 3 to 11. However, NI Water does not follow this approach, instead opting to adjust Lines 14 and 15 to corrected figures obtained from their GIS database. This approach has allowed them to mitigate any legacy data issues and report a more appropriate value for the total lengths reported in Lines 14 and 15. As such, we consider this is a reasonable approach.

We confirmed the data extracted from the database and located no errors.

Intermittent Discharges (lines 16a to 22)

During 2016/17 the Company has reduced the number of unsatisfactory intermittent discharges at CSOs by 7 (2.7%) and at other discharges by 4 (2.6%).

The value reported in line 16a is equal to the number of UIDs (excluding CSOs) reported in AIR11, less the number removed from the network through direct improvement works in subsequent AIR periods. The net change to the totals in Lines 16a and 16b total are correctly calculated from the recorded changes to CSOs (-7) and other UIDs (-4).

The Company provided a full breakdown of the changes to Lines 17a and 17b in their commentary including detailed tables in changes. Checks carried out against the master spreadsheet and for wastewater treatment works confirmed the numbers reported and the net result of the changes to the line totals.

Drainage Area Plans (lines 23 to 25)

There have been no new drainage area plans completed during the report year.

There is some progress being reported by NI Water during AIR17 as there are a further 6 studies commissioned. The extended time to discuss NIEA standards that need to be applied is responsible for the outputs not being completed during AIR17.

We can confirm that Lines 20-22 have been completed accurately and reflect the methodology described in NI Water's commentary for Table 16.

Sewerage treatment compliance measures (Lines 23, 24, 24a, 25)

Checks against source data confirmed consistency with the reporting methods and with figures reported by NIEA. In total, 15 WwTWs failed their consent during AIR17, the majority by exceeding the number of allowed fails.

At audit we confirmed the calculations for Lines 23-24a which are outlined in the NI Water commentary for these lines.

Line 25 – Small WwTW compliance

The 2016 small WwTW data is derived using the 2013 baseline adjusted for Rural Wastewater Investment Programme (RWIP) outputs. There is also one less works included in the figures as the works removed was subject to replacement by pump transfer.

The NIEA provided NI Water with the 2013 dataset having inspected all the small works. The NIEA continue to do this on a rolling annual basis. As a result of this activity NI Water receives site inspection reports on a monthly basis.

In order to determine the number of works that are moved from failing to satisfactory an NIEA officer and NI Water meet to prioritise what happens under the following RWIP annual programme. Upgrades are agreed and then once completed they are treated as compliant.

We note that the site inspection reports produced since 2013 have not reclassified works as passing or failing but do raise areas of concern. These areas of concern are then prioritised as part of the following years planning process. The works in most need receiving the funding available for the programme.

At audit we reviewed the data input and planning processes for this line.

Nominated Sewerage Service Activities (lines 26 to 28)

During our audit of Tables 40 and 40a of AIR16 and associated interrogation of CPMR we were able to confirm the total number of nominated UID, WwTW and small WwTW improvements delivered during the year (line 26 to 28).

For AIR17, NI Water has delivered 11 nominated UID outputs against a PC15 target for Year 2 of 16 outputs, although none of the outputs were nominated PC15 Year 2 UIDs. We found that 5 of the delivered outputs were actual Year 1 nominated PC15 UIDs, with a further 4 PC13 carryover UIDs,and a further 2 new UIDs identified and delivered.

In terms of the WwTW nominated outputs (Line 27), 2 WwTW outputs (Blackrock and The Loup WwTWs) were delivered in 2016/17, against a PC15 Year 2 target of 4 outputs. As above, of the actual PC15 nominated Year 2 outputs, none were delivered on schedule. Blackrock WwTW (a year 1 nominated output) was delivered late (Year 2), because of land purchase issues, and The Loup, which was initially included in the scope for the rural wastewater treatment works programme was re-designated as a Sub-Programme 16 output, as the actual PE of the site has exceeded the 250 PE threshold.

Of the 4 nominated PC15 Year 2 outputs; Ballycastle WwTW is nearing completion and will be delivered in early 2017/18; construction has commenced at Clabby WwTW with completion forecast for 2017/18; and land/planning issues has meant Ards South and Ballykelly WwTWs will not be delivered until 2018/19.

A total of 8 small rural WwTW nominated outputs were delivered, which is in accordance with the PC15 programme.

We note that NIEA have full visibility of the programme and sign off individual outputs confirming delivery of the outputs reported in Lines 26 to 28.

WWTW's upgraded to comply with PPC Regulations (Line 30)

This line reflects the compliance measure for Wastewater Treatment Works upgraded to comply with PPC Regulations. NI Water currently has 29 qualifying works for this new measure. For AIR17 NI Water reports a zero return as odour modelling needs to be undertaken for 24 of the 29 sites and this has yet to be completed. The remaining 5 sites require documentation to be completed and signed-off by the NIEA. We note that the table of prioritisation for the odour modelling is shown in the Company commentary.

Where works are required, these are scheduled for the final year of PC15.

Impermeable surface water collection area removed from the combined sewerage network (Line 31)

This line has been populated using data provided by Engineering Procurement (EP) who maintain the CPMR system. We have reviewed the data which has been broken down by capital scheme and confirm that the data reported in Table 16 matches the build-up data provided by the company.

Additional Sewerage Service Activities (lines 32 to 33)

We confirm that 2 sustainable WwTW solutions were delivered during the year.

The Loup WwTW, which was delivered during the year (as discussed above), is a refurbished PST/Percolating Filter Bed works with newly added Humus Tanks and Reed Bed with a PE of 315, accounting for the single output claimed in Line 32.

The single output reported in Line 33, relates to Kilross WwTW, which is a refurbished PST/Percolating Filter Bed works with newly added Humus Tank and Reed Bed with a maximum PE of 130.

Consistency Checks

- Lines 12 and 13 are consistent with lines 35 and 37 of table 46 and line 14 of table 16.
- The population equivalents used for categorisation of consents in Lines 23-24a do not match those used in Table 17b as they are based on consented populations defined by NEIA.

Company Commentary

We have not noted any material areas where NI Water have not addressed the requirements laid out in the reporting guidance.

6. Confidence Grades

Lines 1 to 2
The Company has not changed the confidence grade for these lines from those reported at AIR16. We consider the values reported for AIR16 are still appropriate for AIR17.

Lines 3 to 11a
The Company has retained the confidence grades applied at AR16. After high level consideration of the data methodology and audit discussions at our three audit meetings, we believe that the assigned confidence grades are appropriate based on the methodology used to produce the data, which has remained unchanged from previous submissions.

Lines 12 and 13
The Company has assigned a confidence grade of B3 to lines 12 and 13, on the basis the data is derived from checked and paid invoices, and relies on the total length of main (L14 CG B3) in its calculation. On this basis we support a B3 confidence grade.

The Company has assigned a confidence grade of A2 for Line 13a, 13b & 13c, as the data is derived directly from Ellipse, reflecting the improved methodology. NI Water has reported a confidence grade of A2 for all nominated output related data, as it is derived directly from CPMR and the beneficial use date is embedded into CPMR to ensure output has been handed over to Operations.

Lines 14 and 15
The Company has not changed the confidence grade for these lines from those reported at AIR16. We consider the values reported for AIR16 are still appropriate for AIR17.

Lines 16a and 16b
The Company has not changed the confidence grade for these lines from those reported at AIR16. We consider the values reported for AIR16 are still appropriate for AIR17.

Lines 17a and 17b
The Company has reduced the confidence grade for these lines from those reported at AIR16. We consider the values reported for AIR17 are appropriate based on the discussions had at audit.

Lines 18 to 22
The Company has assigned an A1 grade (0% to 1%) to Lines 18 and 19, an A2 grade (1% to 5%) for Lines 20 to 22 and a B3 grade (5% to 10%) for Line 22. These confidence grades have been derived by NI Water on the basis of the methodology and where other data is used (such as the population data for Line 22) the confidence grade of that data has typically dictated the grade applied to the lines reported. After high level consideration of the data methodology and audit discussions, we believe that the assigned confidence grades are still appropriate.

Lines 23, 24, 24a

The application of A1 to Line 23-24a is considered appropriate as the numbers used to calculate the percentages are theoretically exact counts with no assumptions. The line is reporting a percentage of total consented PE values, the values of which are agreed with NIEA. From the Company's point of view, these values are fixed (there is no data manipulation or estimation done by NI Water in producing the figures) and hence can be considered 'accurate' values. We consider the A1 confidence grades to be appropriate.

Line 25

This line has been assigned a confidence grade of A1. This is based on the agreement between NIEA and NI Water. We confirm that this confidence grade is appropriate.

Lines 26 to 28

NI Water has reported a confidence grade of A1 for Lines 26 and 27, plus an A2 for Line 28. We consider these to be appropriate based on the data being derived directly from CPMR and the beneficial use date is embedded into CPMR to ensure output has been handed over to Operations. We further note that NIEA have full visibility of the programme and sign off individual outputs confirming delivery of the outputs reported in Lines 26 to 28.

Line 29-33

The confidence grades reported for lines 29-33 are considered appropriate based on their respective data methodologies.

7. Recommendations

We recommend that the work being undertaken to provide more robustness to Lines 3-11a is continued. Although we acknowledge that any error is not material to the data reported, it should assist confidence with in NI Water in addition to the reporting methodologies.

Table 42 – PPP Reporting

1. Introduction

The purpose of the table is to collect information on the cost, performance, and other explanatory variables of the PPP concession, together with assessment of NIW and PPP relative efficiency.

2. Key findings

Criteria	RAG	Assessment
Independent review of performance and reporting	**Green**	Performance good. Reporting process well managed
Methodology	**Green**	Methodology well documented
Assumptions	**Green**	Assumptions reasonable and appropriately applied
Source data	**Green**	Source data is clearly identified, complete beyond material concern, well managed through to accurate systems input
Clarity of audit trails	**Green**	Detailed and comprehensive audit trail to all numbers available
Confidence grades	**Green**	The confidence grades included are deemed to remain appropriate.
Governance	**Green**	Responsibilities for integrity of data and commentary clearly defined. Good evidence of engagement of senior staff

- Based on our audit of selected sample data we believe that the data reported in this table is materially consistent with the reporting requirements.
- More granular Unitary Charge information is supported by invoices from the PPP concessionaires, either split down by site where shown or at PPP level as shown.
- More granular information on other lines is extracted from the PPP models which were established at the outset of each concession. Line 14 (Maintenance) for Alpha uses an average.
- We audited the reported data and challenged the processes on a sample basis, generally informed by the materiality of the data and variances from the previous year. We consider the data reported in the table is robustly prepared using systems and process that are appropriate and in line with the reporting requirements and which are properly implemented with effective quality control and governance arrangements.

3. Audit approach

To verify the data reported our audit consisted of an interview with the NIW system holders during which the methodologies were reviewed, data and trends considered and tested where not as expected or where explanations were not deemed sufficiently comprehensive, and a selection of data reported in the table was audited back to example source data (e.g. to concessionaire invoices).

4. Audit findings

4.1 Block A – Project Description

No changes have been made to this data. No changes were expected.

4.2 Block B – Payment to PPP concessionaire (Lines 7 to 20)

Line 7 – Unitary Charge Capacity Charge

This charge applies to Alpha sites only.

NIW has previously demonstrated that the data is based on actual invoices from the concessionaires. The costs are based on the payment mechanism as set out in the contract.

On average, the Alpha capacity charges have risen only nominally ([X]) and in line with expectations since last year. Some small corrections were required but no further audit was deemed necessary.

Line 8 – Unitary Charge Variable Charge

This charge is identifiable at site level for all PPPs.

As for the capacity charge, NI Water has previously successfully demonstrated that the data is based on actual invoices received for each of the sites each month.

In total, across the Alpha sites, the Variable charges have risen by 16%. This reflects the rise in Distribution Input (line 21) of 12% (at Castor Bay and Dunore Point), but is not fully proportionate owing to the charge escalation mechanism which applies.

Kinnegar charges have risen by 2.5%. Flows and loads have also risen similarly.

The variable charges for the Omega sites have dropped by 3% whilst the loads received at STW (line 31) has risen similarly.

For AIR16, we specifically checked the audit trail for the Sludge Services entry. This checked back satisfactorily via a spreadsheet containing a monthly summary of invoices by site and through to the invoices for Omega and Ballynacor TDS. The Omega invoices are monthly and show that they carry ongoing credit for overpayments where necessary. The Ballynacor TDS is accrued and billed 6-monthly, then spread across the months. The audit check fully reconciled. As the methodologies remain the same, a similar check was not undertaken for AIR17.

Line 9 – Unitary Charge Deductions

These deductions are identifiable at site level for Alpha only.

NI Water makes performance deductions for both capacity and quality failures. The data is extracted from the invoices (which have been satisfactorily demonstrated) and the payment calculation mechanisms.

Performance deductions have been reported in the company commentary for both Alpha and Omega.

No deductions were made for Kinnegar.

Note that there is a difference between the way in which Alpha PPP and Omega PPP deductions are treated:

- For Alpha, the deductions are generally agreed quickly and are identified in, and consistent with, the monthly invoices. Supporting information confirmed the figure.
- For Omega, the performance deductions are recognised through credit notes, some of these are not resolved for some time and may be reported in subsequent years. The log of unresolved issues for Omega has dropped over the year from an opening balance of circa [X] to circa [X].

Line 10 – Atypical Expenditure

Only Alpha and Omega have atypical expenditure reported, at PPP level only.

The atypical expenditure reported includes any payments or credits agreed in monthly invoices. It also includes provisions for claims, which may not necessarily be site specific.

NIW has provided detail on the relevant items in their commentary.

Line 11 – Efficiency Gains included in lines 7 - 10

This information is generally reportable at PPP level, as is the case this year.

As NIW has stated, the only legitimate efficiency gains that can be used are those that arise from a change in levels of service.

Increases are nominal on 2015/16. The company commentary identifies the initiatives which have yielded the savings (these are consistently included in the figures and commentary for line 10).

Line 13 – 14 – Capital Repayments and Maintenance

These lines relate to Alpha only and are materially similar to 2015/16.

The capital maintenance charge (line 14) for the Alpha PPP has been allocated as a straight line based on the total amounts in the original financial model. This is different to the approach adopted prior to 2013/14 where the value was provided by Dalriada Water and could vary markedly between years. The values in the financial model were split by site and the totals across the full concession period have been used to pro rate the straight line ([X]) between the sites.

The financial lease model gives (by site) the capacity charge (line 7), from which the capital maintenance charge (line 14) is deducted. These values were used to pro rate the total Interest (line 19) and total Capital Repayments (line 13) and derive charges per site. The values are tabulated in the company's commentary.

It should also be noted that in 2013/14, the financial lease model was revised. This is because it was noted that a discrepancy was present between the financial lease repayment term and the contract term. The Company now also allocates a proportion of the capacity charge to Opex ([X]). We have not reviewed the detail behind the model or the appropriateness of the amount allocated to Opex. We understand that this approach was suggested/supported by the financial auditors.

Line 15 – Residual Interest

This relates to Kinnegar and Omega only (which are off balance sheet) as reported in the company's commentary.

The figures are taken from the Residual Interest Models and are not divisible by site. An annual increase of 2.5% is assumed in the model, as reported in the table.

This company has advised that the amounts stated are consistent with those stated in the financial accounts, pre IFRS adjustments.

Line 16 – Atypical Payments Capitalised

The Company has reported a nil return for this line.

Lines 17 & 18 – Totals from other lines

No comment

Line 19 – Interest

This relates to Alpha only (which is on-balance sheet). There is a nominal increase on 2015/16.

Line 20 – Total PPP Opex

Calculated correctly from other lines. No further comment.

4.2 Block C – Water distribution data (Lines 21 and 22)

Line 21 – Distribution Input

This line represents the water utilised by the PPP companies. The methodology mirrors that of Table 10 Line 26 to provide a calculated volume for each site and a cumulative figure for the Alpha contract.

The volume reported at Ballinress and Mayola are similar to 2015/16. Castor Bay and Dunore Point show significant increases.

As part of the Castor Bay to Belfast link main upgrade, the pumps at Castor Bay have been replaced and now provide additional resilience by supplying the Magheraliskmisk Service Reservoir, increasing pumped volumes by around 50% (16Ml/d) along this main.

The Dunore Point flows were reduced from around 94.8Ml/d to 80.7Ml/d last year as pumping costs were deemed to be more expensive from this site. We questioned why they have risen back to their previous levels. NIW confirmed that this was due to the low rainfall experienced over the year which had (and continues to) deplete their other water resources and thus require additional take from the Lough Neagh fed facilities. This is reasonable and consistent with our observations in other areas of service.

Line 21a – WTW Capacity

There has been no change to the minimum required capacity of the Alpha WTW under the contract. The capacities are based on Functional Design Specifications. As per the reporting guidance the volume is 'Q_{minreq}' for each facility and this aligns with the Alpha Contract requirement.

Line 22 – Length of Mains

This line represents the length of main under the contract which links Castor Bay to Forked Bridge. This 16.42 km main is operated and controlled by the contractor and information has not changed from previous reports and correlates with totals reported in other tables.

4.3 Block D – Water resource and treatment data (Lines 23 to 27)

Lines 23&24 – Turbidity 95%-ile greater or equal to 0.5NTU

The status reported in these lines is the same as in 2014/15, when we fully checked back to source data. The data source is the LIMS system which is an Oracle database. We re-ran the SQL queries to replicate the reported data and confirmed the reported information was correct. We also noted that NIW had appropriate quality checks in place within the Environmental Regulation function.

Lines 25-26 – Treatment Source/Type

There are no changes to these lines from the previous year.

Data is consistent with the methodology and summary data in Table 12. However, as Ballinrees WTW has three sources (impounded reservoirs at Ballinrees and Altikerragh as well as an intake from River Bann), the overall classification is more complex.

Line 27 – Average Pumping Head

The Company uses the PPP Distribution Input as the denominator.

The AIR17 aggregated value is 157.4m compared to 153.3m in AIR16. The rise is particularly noticeable at Ballinrees, which has risen from 125.1m to 147.2m. The calculations were reviewed and the main cause was observed to be that due to the lower than average rainfall, the Ballinrees site has been predominantly fed from the pumped River Bann extraction point rather than upland sources which flow under gravitational head.

Castor Bay also has a higher Average Pumping Head, which as noted above, relates to the pump upgrade and larger are it now serves.

4.4 Block E – Sewerage data (Lines 28 and 29)

Lines 28-29 – Total Length of Sewer

As all the sewers reported are classified as critical (as defined by WRc), the length is unchanged from last year. Each PPP facility has collective lengths of sewer which are supported by record drawings for each site.

4.5 Block F – Sewage treatment and disposal data (Lines 30 to 38)

Line 30 – PE of load received

No material change.

The PE has been derived satisfactorily from total loads (line 31) received from the contractors using the industry standard factor of 60g BOD per person per day.

Line 31- Load received

Slight rises are observed at both Kinnegar and Omega. The exception is Richhill which shows a reduction from 161 to 117 kg BOD/d. The total load is based on analytical data derived from samples taken from the inlet of all the PPP wastewater treatment works.

Otherwise, it is interesting to note that loads have generally risen slightly despite a significantly drier year. It is speculated that this may be due to factors such as: the lower rainfall may not have flushed the BOD loads out of the sewers during storm events leaving higher loading concentrations; the programme of CSO closures will pass more flow/load forward to the STW. The increases are, however, small and not deemed to be of material concern.

Lines 32-36 - Consents

Information is unchanged and is derived from Water Order Consents which are held by the Contractors and supplied by the Environment Agency. These are legal documents with unequivocal limits. Consents are based on lower and upper tier limits with pass/fail being based on look up tables, a breach of the upper tier limits being classed as a failure.

The Phosphate consents which are applicable to Armagh and Ballynacor are based on annual average consent figures <1mg/l as set out in the Water Order Consent.

Line 37 – Classification of works

The treatment type has followed guidelines as per methodologies reported in Table 17b Line 8 and is unchanged from previous years.

Line 38 – Size Band of works

Following a clarification from the UR, this now mirrors the requirements associated with size banding and there is no change from last year.

4.6 Block G – Sludge treatment and disposal data (Lines 39 to 52)

Line 39 – Sludge imported

Sludge imported from NI Water is only either transferred to the belt press at Ballynacor or to the incineration plant at Duncrue Street, the sum of the two values reported in Line 39 is consistent with the total value reported in Table 15 Line 16. The minor difference is due to the volumes of grit and screenings.

As noted above, despite the low rainfall experienced in the report year, the sludge volumes have risen by 10% from NIW sites and by around 6% from PPP sites (allowing for sludges put into storage at Kinnegar). There is therefore reasonable consistency to accept this increase without further challenge.

Line 40 – Sludge produced by the PPP facility

The values reported in Line 40 are consistent with Table 15 (PPP) line 15, the difference between the figures being the grit and screenings arising at the Omega and Kinnegar sites (as shown in the table in the company commentary) and which are disposed of to landfill.

Sludge produced at North Down Ards, Ballyrickard, Richhill and Armagh are transferred to either the caking, belt press facility at Ballynacor or sent directly to Duncrue Street incineration plant and are measured by on-site 'Slogger' sludge monitoring systems. The 'Slogger' system has the capability of recording volume as well as dry solids content to provide accurate ttds. In conjunction with NI Water, consistent sampling and measuring of sludge cake imports is also in place.

At Ballynacor the indigenous sludge is calculated by subtracting the input logger data (which records both inputs from NI Water and PPP facilities at North Down Ards, Ballyrickard, Richhill and Armagh) from the cake transferred to Duncrue Street.

To avoid double counting of sludges produced at NI Water facilities or Kinnegar, but transferred and treated at either Ballynacor or Duncrue Street PPP Sludge facilities, zeros have been entered at these PPP sites, which do not produce their own sludges.

Kinnegar sludge is transferred to the incineration plant at Duncrue Street. Prior to discharge at this facility the sludge from Kinnegar is monitored by weighbridge at Duncrue Street. This system involves weighing the vehicles entering and leaving the facility to ascertain the exact tier weight.

NI Water has incorporated an analysis of the sludge production trends by PPP site in their commentary.

The main noteworthy change in sludge volumes is Kinnegar where the belt-presses are being replaced with centrifuges and the sludges that are being put into storage will be released in 2017/18. It is estimated that this equates to approximately 200-300 tds.

Line 41 – Sludge exported to Duncrue Incinerator

Due to all PPP sites transferring sludge to Duncrue Street and mixing with sludge from NI Water, it is impractical to determine where any discrete PPP wastewater treatment sludge was ultimately disposed of to any of the eight disposal sites.

All sludge from PPP facilities is measured irrespective of whether it was thickened at Ballynacor only on receipt at Duncrue Street. At Duncrue Street the sludge is either incinerated or disposed of by alternative disposal routes.

The line confirms exports from only PPP Facilities to Duncrue Street. NIW's sludges are not included in this line, but are captured in Table 42 Line 39 instead.

The number reported excludes grit and screenings, which are sent to landfill.

Line 42 – Sludge exported to Other PPP facilities

N/A and zeros are reported as expected.

Line 43 – Sludge exported to NI Water

Zeros - the Omega sludge PPP contract has no provision regarding return of sludge to NI Water for disposal.

Line 44 to 51 – Sludge Disposed

The figures for alternative disposal are based on the total ttds excluding incinerated sludge, split in accordance with the proportion of m3 of cake sent by each disposal route. All information is based on contractor reports detailing disposal route and the disposal site. The transfers are cross-referenced by waste management notes and weighbridge reports as well as being calibrated using on-board weighing systems on plant and road haulage vehicles. Information is collated (in wet tonnes) and submitted

monthly to NI Water. The wet tonnes volumes are converted to ttds by assuming a 20.5% dry solids content.

Line	Disposal Route	AIR17 (ttds)	AIR16 (ttds)	AIR15 (ttds)	AIR14 (ttds)	AIR13 (ttds)	AIR12 (ttds)
46	Farmland Advanced (Lime treatment)	2.714	2.019	1.559	0.384	0	8.190
47	Incineration	39.085	36.199	37.497	36.545	36.386	26.765
48	Land fill	0.264	0.132	0.140	0.880	0.128	0
49	Composted	0	0	0	0	0	0.097
50	Land Reclamation	0.225	0.290	0.084	0.409	0.549	2.561
51	Other (Willow Coppicing)	0	0	0	0.657	0.515	0.634
52	**Totals**	**42.288**	**38.640**	**39.280**	**38.875**	**37.578**	**38.247**

Line 46, Farmland Advanced (Lime Treatment) shows a continued increase since 2012/13. The amounts are supported by Contractor's dockets which are processed monthly.

Note that line 47 (Incineration) is calculated as the total sludge received at the Duncrue Street site minus the total sludge recorded as disposed of off-site.

The disposal route to landfill (line 48) is primarily for grit and screenings. This has the most uncertainty (although it is only a small volume) as the % dry solids are not measured for all skip loads. The volume reported is all grit and screenings from both Kinnegar and Omega.

Line 52 is correctly calculated from the sums of Lines 44 to 51.

5. Assumptions

Except where noted above we do not believe there are any material assumptions to report.

6. Confidence grades

We have no reason to reconsider the confidence grades as previously agreed.

7. Reconciliation checks

Line 21 is consistent with methodology and figures used for Table 10, line 26

Line 22 = Table 12/13. Confirmed

Line 25 = Table 12 (PPP)/A. Confirmed.

Line 26 = Table 12 (PPP)/B. Confirmed.

Line 27 = Table 12 (PPP)/5. Confirmed.

Line 30 = Table 15 (PPP)/6. Confirmed.

Line 31 = Table 17c and 17d. Confirmed.

Line 35 = Table 17c/9. Confirmed.

Line 38 = Table 17c. Confirmed.

Line 39 = Table 15/16. Confirmed.

Line 52 = Table 15/17. Confirmed.

Table 43 – PPP Reporting – Operational Costs

1. Introduction

The purpose of the table is to collect information on the cost, performance, and other explanatory variables of the PPP concessions, to assist with the assessment of NIW and PPP relative efficiency.

2. Key findings

Criteria	RAG	Assessment
Independent review of performance and reporting	**Green**	Performance good. Reporting process well managed
Methodology	**Green**	Methodology consistent with current process, control points identified and understood
Assumptions	**Green**	Assumptions reasonable and appropriately applied
Source data	**Green**	Source data is clearly identified, complete beyond material concern, well managed through to accurate systems input
Clarity of audit trails	**Blue**	Detailed and comprehensive audit trail to all numbers available, but processes not defined in the methodology.
Confidence grades	**Green**	Confidence grades are not applicable for this table, but data is deemed robust
Governance	**Blue**	Though processes are sound and trends are well-established, the methodology statement should ideally identify the individuals or post-holders with responsibility for producing the data, checking and approving the table and commentary for submission.

- Wherever relevant, the line entries are consistent with Tables 21, 22 and 42 entries.
- We consider that where the company has needed to make assumptions on cost apportionment to each site, the assumptions are generally reasonable to within material tolerances. We have not identified any material concerns.
- Though not impacting on the accuracy of the reported information, we consider it would be good practice to improve the Methodology to identify for all lines, the Oracle reports (or other sources) that provide the data required for this table.
- It would also be good practice to identify the key contributors to the production and approval of the reported information.

3. Audit approach

We have reviewed the data in this table and compared it with that audited in previous years. Where changes are material, we have sought explanation/commentary from NIW and/or included comment below.

To verify the data reported our audit consisted of an interview with the NI Water system holders during which the methodologies were reviewed and a selection of data reported in the table was audited back to example source data (e.g. to concessionaire invoices) .

4. Company methodology

Line entries are based on paid invoices and exclude any capital investment as per the reporting requirements. The values are consistent with entries in Tables 42, 21 & 22.

Other, more specific findings are given in section 5 below.

5. Audit findings

2016/17 values have been compared against 2015/16 in the table below.

[X]

[X]

[X]

Further detail relating to each line is discussed below.

Lines 1 to 3 – Project Description
No changes expected. None made. All as previously confirmed. No further comment.

Line 4 – Payment to Concessionaire
As required, this is fully consistent with the information presented in Table 42, line 12 and in the table 42 commentary. This represents the total unitary charge (both opex and capex) paid by NI Water. Efficiencies (table 42, line 11 have not been deducted).

Line 5 - Payment by Concessionaire to Operating Company
There have been no changes to the methodology for calculating this line and the totals are very similar to the previous year.

Increases at the Alpha sites of Castor Bay and Dunore Point reflect the increases in distribution input from those sites.

NIW advised that the only noteworthy difference to the previous year for the Omega sites is at the Ballynacor Lagoons where NIW payments of [X] for landscaping work has been passed through to the operating company directly.

The data relating to payment by concessionaire to operating Company is provided to NI Water by the PPP contractors. We were able to satisfactorily trace all the numbers given in the table to the information provided by the Concessionaires (Kelda, Coastal Clearwater and Laing O'Rourke).

The values are consistent with the totals presented in T21 L22a and T22 L21a.

Line 6 - Power
We note that Alpha PPP power costs have increased by 2.5% whilst flows have increased by 12% (mainly influenced by Castor Bay), Omega power costs have reduced by 14% (mainly at North Down, Ballynacor and Duncrue) whilst flows have decreased by over 20%. The Company continues not to estimate power costs for Kinnegar as it has no mechanism for doing so.

However, this data is extracted from the Company's general ledger system on a site by site basis and hence no apportionment of data to derive these figures is required.

For Duncrue Street, NIW's methodology indicates that one electricity meter covers both the Belfast WwTW and the PPP Incinerators. 54% of these costs are allocated to the PPP Incinerators, a small change from 52% in previous years.

Line 7 – Other Direct Costs
These costs relate to the cost of abstraction licenses for the alpha sites only.

Line 9 – General and Support Expenditure
General and support costs are a combination of consultancy costs and time costs of staff employed by NI Water to manage these contracts.

Consultancy costs are taken directly from the general ledger and are specifically costed against the relevant PPP, then split approximately equally across the sites within the PPP.

For staff costs, NI Water has a team who allocate some or all of their time between the PPPs. A 'P101' cost centre report is run which shows the relevant payroll costs. Once the total costs per PPP have been established, the general and support costs are allocated evenly across each of the sites in each PPP. The differences by site in each PPP are only to prevent rounding from producing an incorrect PPP total.

There has been a change in the capitalisation methodology of salaries in the year, resulting in a [X] increase in the amount allocated to the Alpha PPP, [X] to Kinnegar, and [X] to Omega.

Line 11 – Scientific Services

Alpha PPP – related costs are included in the Unitary Charge. Zeros have therefore been entered for each site as in previous years.

Kinnegar PPP and Omega PPP - The Company has determined the gross costs relating to scientific services and allocated these costs across PPP sites based on the assessed percentage of samples attributed to each PPP site, an allocation of staff costs and operational contractor costs per site visit. The numbers of samples counted includes a large volume of 'Uncharged' samples which are included in the apportionment exercise of the gross costs. NI Water advised that the 'Uncharged' samples at Kinnegar relate to the costs of influent and effluent sampling and are borne directly by NI Water rather than recharged by the concessionaire. On this basis, we accept that the 'Uncharged' sample costs should be included in the calculations and the apportionment between the sites as given by NI Water seems reasonable.

The monetary sums are not material and therefore have not been challenged.

Line 12 – Rates

Alpha PPP – the total rates bill for water supply sites is based on volumes. NI Water has apportioned the total cost by site according to the proportion of Distribution Input that each contributes. The total for the Alpha sites is reasonably proportionate to the DI that they contribute. The total NIW rates costs include an element of allocation of the Company's administrative properties. In the calculation of the rates attributable to the PPP WTW sites, only the cumulo (ie WTW) element of the overall NI Water charge is included.

Kinnegar PPP and Omega PPP - Wastewater sites each receive separate rates bills and hence the data can be attributed directly and accurately.

For the Ballynacor site, the Company has split the costs 65%:35% wastewater to sludge respectively on the basis of the site area split between wastewater and sludge facilities.

Duncrue has also been allocated between NIW and PPP, but on the basis of site area covered, with the Incinerators covering 15% of the site. This remains consistent with previous submissions.

Line 13 – Estimated Terminal Pumping Costs

The Company has reported power costs related to the pumping stations listed in their commentary. NIW advises that this follows the direction of NIAUR.

Line 14 – Estimated Sludge Costs

The cost here is the payment by concessionaire, functional expenditure, scientific services costs and rates (lines 5, 10, 11 and 12 respectively) for Ballynacor and Duncrue only. The change from the previous year is a nominal reduction. We note that the scientific services costs (of [X]) were not included in 2015/16.

Line 15 – Total PPP operating expenditure

As required, these correctly state the sums of lines 5, 10, 11 and 12.

6. Confidence grades

Not applicable to this table but the data is considered to be well supported by suitable cost allocation systems and appropriate apportionment processes where required.

Prepared by: CWJ Turner
Date: May 2017

Table 46 Lines 6, 29, 48-51 & 53
Serviceability return

1. Key Findings

Criteria	RAG	Assessment
Independent review of performance and reporting	**Green**	Performance good. Reporting process well managed
Methodology	**Blue**	Methodology consistent with current process, control points identified and understood. Some minor improvements to the methodology are suggested.
Assumptions	**Green**	Assumptions reasonable and appropriately applied
Source data	**Green**	Source data is clearly identified, complete beyond material concern, well managed through to accurate systems input
Clarity of audit trails	**Green**	Content with reported information
Confidence grades	**Green**	Confidence grade appropriate and rationale clearly documented
Governance	**Green**	Responsibilities for integrity of data and commentary clearly defined. Good evidence of engagement and of final sign-off. Data and commentary governance controlled through Sharepoint Action tasks.

- We agree with NIW's serviceability assessment as 'Stable' for the sub-measures Interruptions to supply > 3 hours resulting from equipment failure (water non-infrastructure) and Wastewater compliance (wastewater non-infrastructure)
- The methodology for unplanned maintenance is consistent with previous years and the process is unchanged. The trends indicate:
    - a further improvement in the availability of equipment for water non-infrastructure (line 29): Improving
    - a small reduction for wastewater non-infrastructure (line 53): Stable
    - a reduction in the number of failures repaired (line 42): Improving

  This is deemed to be due to improvements in targeting and work management and to 2016/17 being a relatively benign year for weather (as was last year). Both 2015/16 and 2016/17 can be considered as relatively benign years.
- We make some minor suggestions to improve the methodology, and commentary when required.

2. Audit Scope

The responsibility for the compilation of the table is split between several system holders. In previous years, we have held meetings with the system holders to discuss changes in the methodologies, trends and reasons for changes in performance. For 2016/17 this was not deemed necessary as the primary system holder is located in NI Water's Gelvin Grange office, the methodology is fundamentally unchanged and performance is stable or improving. Instead the audit was conducted through email exchange and information transfer.

3. Performance and significant events

NIW has experienced half the number of supply interruption events affecting >2,000 properties during 2016/17 compared to 2015/16.

Wastewater compliance performance (2016 calendar year) is similar to that reported in AIR16 for the 2015 calendar year.

This is the fourth year of reporting these unplanned maintenance performance indicators. The indicators are a surrogate for the 'health' of critical non-infrastructure equipment.

Both 2015/16 and 2016/17 are deemed to have been relatively benign as far as the weather is concerned. This may reduce the use of the equipment and thereby reduce the likelihood of an unplanned failure.

The indicators for reactive maintenance are given as the percentage availability for equipment:

- Levels of availability are relatively high
- Water non-infrastructure equipment shows an improving 'health'
- Wastewater non-infrastructure equipment shows a slight reduction in availability

Table 46 Lines 29 & 53 respectively	**2013/14**	**2014/15**	**2015/16**	**2016/17**
Water non-infrastructure	96.4%	97.4%	98.3%	99.03%
Wastewater non-infrastructure	94.5%	96.4%	97.8%	97.61%

The trends are anticipated to be partly due to improvements in targeted maintenance where area managers have been looking at equipment off-line and focusing on bringing it back into service more quickly.

For sewerage infrastructure assets in particular, the relatively benign weather, with fewer storms causing blockages is likely to be a significant factor. This is also the likely cause of a significant reduction in the total number of equipment failures identified for sewerage infrastructure (line 42), as shown below.

Table 46, Line 42	**2013/14**	**2014/15**	**2015/16**	**2016/17**
Total number of sewerage failures repaired	10,899	11,245	9,986	9,883

The targeted maintenance aimed at improving availability of assets is not necessarily going to reduce the count of number of failures but should improve the availability by restoring them to service more quickly and with better prioritisation of those which are more critical.

4. Compliance methodology and process controls

4.1 Compliance methodology

NIW has a documented and controlled methodology for supply interruptions >3 hours resulting from equipment failure ("Monthly DG3 Composite Reports (Apr16 to Mar 17").

The methodology ensures the master data set is consistent with information reported in Table 2 lines 5, 9 and 13 and how the figures for Table 46 are derived.

NIW's methodology for Lines 48 to 51 is a controlled methodology which documents the SQL queries applied to the LIMS Oracle database.

For unplanned maintenance, the information is collated and presented in regular reports to the M&E Management Team and to the Field Managers who utilise this to plan and prioritise their work and to improve the availability of the assets and performance of the sites in their areas. We consider that this 'check' is sufficient for this company-specific indicator.

The principal shortcomings of these metrics and of the process are identified in the line methodology (some relevant data is not captured, some is less relevant to serviceability and some manual data cleansing is necessary). These are noted and accepted in the context of the value that these metrics and trends are providing to NI Water.

4.2 Process/methodology controls

Line 6 - Interruptions to supply > 3 hours resulting from equipment failure

NIW has used the same methodology as in previous years where all records of supply interruptions greater than three hours are obtained from CIMS. Deductions are made for:

- Interruptions caused by third parties
- Interruptions resulting from Engineering / Procurement work which is planned and a small number of events which are unplanned and which are assumed to be the result of human error
- Short duration interruptions caused by the Company's meter contractor or relating to leakage detection step tests
- Non-equipment failures – interruptions where the cause was unrelated to equipment failure

The above interruption events are outside of NIW's control and/or not an indication of asset deterioration. We agree with these assumptions.

Although NIW has reported its outturns excluding only those events deemed to have been atypical, the commentary has been used to discuss the further exclusion of three events which are defined as unplanned interruptions affecting 2,000 properties or more. This is consistent with previous years.

The Company has used CIMS throughout the year for the second year running, whereas in previous years, data was recorded on the OMIS system which had limitations in its accuracy for duration of interruptions. The change to CIMS appears to have caused an increase in the number reported relative to previous years where the data repository had known limitations. This is because CIMS captures more events to a greater accuracy of duration. Despite the step change in 2014/15 resulting from the change to CIMS, CIMS is records consistent and data of greater accuracy compared to OMIS.

The serviceability assessment for the period from 2007/08 to 2013/14 is more reflective of the true data trend for this measure since it is a longer period during which the methodology was unchanged and the quality of data was consistent. With only two complete years of CIMS data available, we consider it is not a sufficiently large data sample to be conclusive, however we note the trend appears similar to that derived from OMIS data over the seven-year period.

Lines 29, 42 & 53 – Unplanned (reactive) maintenance Water (29), Total number of equipment failures repaired (42) and Wastewater non-infra (53)

The methodology for collection of data is unchanged from last year, similar methodologies are used for lines 29 unplanned (reactive) maintenance water non-inf and line 53 unplanned (reactive) wastewater non-inf. NI Water has chosen to report on the percentage availability of M&E equipment as reported through its telemetry system. This is a comparable metric as required by the reporting requirements for these two lines.

Data is extracted from NI Water's telemetry system using a database they had previously developed to identify out-of-service M&E equipment. This database allows the interrogation of a daily snapshot of telemetry signal data relating to M&E equipment being "not available". This is a cumulative daily report which records the cumulative days for unavailable items of plant to determine a ratio for the year of the availability of the equipment. Although quite coarse and not a direct measure of the amount of unplanned maintenance carried out, the volume of information captured with reasonable consistency make it a good indicator of the serviceability measurement required. The line entry is defined around "critical" plant, the assumption by using telemetered data is that telemetry is provided for important plant only or that which would be classed as critical.

There are some shortcomings in reporting methodology proposed in that:

1. Some telemetry anomalies could show as "unavailable" e.g. equipment running "in hand" may show as "unavailable" and be counted;
2. Analysis on a daily basis only picks up failures that extend from one day to the next, a failure occurring and resolved on the same day is not picked up;
3. Equipment not on telemetry is not included in the assessment.
4. The telemetry data also picks up assets which are 'out of service' due to planned maintenance activities, so is not truly representing unplanned (reactive) maintenance.
5. The telemetry system itself is monitored separately and, if down, would not report at all on the assets affected, which are assumed to continue to operate/fail as normal. It is therefore unlikely to materially impact on the percentage calculations.

These shortcomings will affect an absolute picture of the situation but consistent reporting on the same basis and methodology will allow comparative trends to be undertaken. The most significant shortcoming is the non-recording of failures repaired the same day, for major and critical assets same day maintenance could well be essential/the norm and hence as a measure of reactive maintenance for the AIR it would be a preference to also capture these to give a better picture and comparative output. However, in a similar manner, items that trip overnight will be picked up as unavailable for 24hrs even if they are brought back on line that same day. Overall if the methodology

is maintained consistent from year to year a comparative measurement of this service indicator will be achieved.

Line 42 - Total number of equipment failures repaired

The Company's methodology for capturing data and recording information on sewerage equipment failures for line 42 follows that previously devised for Table 16a Line 4 of previous Annual Information Returns and is the same as last year. Information is taken from NIW's Mobile Work Management system on a monthly basis: extracting entries relating to reactive maintenance jobs associated with CSOs or Sewage Pumping Stations. NIW does not have the ability to record data on non-electromechanical devices such as storage tanks anti-flood devices or flow control devices.

Manual filtering of the information extracted is undertaken to remove duplicates arising from the entries of "two-man" jobs, it is also noted that some out of hours jobs may not be captured by the Mobile Work Management system. The methodology only captures equipment failures, not the outcome associated with the failure, so it cannot be filtered to report only those that result in "a detrimental impact on service".

A change in working arrangements occurred in the 2015/16 year when contractors became able to assist NIW staff with pump blockages. Contractors only respond to work requests from NIW, contractor's 'unblock' jobs are included in the reporting. Total numbers of blockages attended should not be materially affected by this change.

Although there are some shortcomings with this methodology, it uses the best information available to NI Water and is consistent with previous years. Overall it should give a good year on year representation of this serviceability indicator.

We would however suggest that an occasional review of the cleansing assumptions used for "two-man jobs" on line 42 is undertaken. The review should look to ensure consistency over time and that only the jobs reported through the Work Management System, which relate to additional attendances for the same failure, are removed and nothing more.

Also, with reference to items 1, 2 and 4 in section 4.1 above, should there be a change in approach to intervention strategy or work scheduling, or to how the telemetry information is reported, this may result in an apparent change in trends in equipment failures. We recommend therefore that such changes should be noted in the commentary and that the methodology should be developed in a little more detail to include for example the instructions to create the report and its timing (as if run later in the day, more 'equipment' may be back on line).

5. Summary of audit checks

Line 6 - Interruptions to supply > 3 hours resulting from equipment failure

We checked the data in Table 46 is consistent with that reported elsewhere in AIR17, which is generally the input data to Table 46 (for supply interruptions).

Line 29 & 53 – Unplanned (reactive) maintenance water & wastewater non-infra

The audit was limited to a review of the methodology of the processes and the data trends from last year. The base data for the information is stored on NIW's data systems and hence not auditable without travelling to the associated office and undertaking a detailed in-depth review of this data live on the system with the team responsible. This was not undertaken for this year's audit checks.

Lines 48 to 51 – Wastewater compliance

We re-created the Oracle SQL queries to interrogate the LIMS to derive the data reporting wastewater compliance for Wastewater Non-infrastructure. We checked the number of BOD, Suspended Solids and Ammonia results recorded for works with numeric consents. We confirmed the results returned are those reported.
We also confirmed the number of results for these parameters that exceeded their numeric consent value.

We note that NIW shares all water quality results with the DWI which is more than is required by the regulations.

Lines 42 - Total number of equipment failures repaired

The audit was limited to a review of the methodology of the processes and the data trends from last year. The base data for the information is stored on NIW's data systems and hence not auditable without travelling to the associated office and undertaking a detailed in-depth review of this data live on the system with the team responsible. This was not undertaken for this year's audit checks.

6. Confidence Grades

Confidence grades are not required for these data lines.

7. Recommendations

Whilst we agree that NIW's serviceability assessment for supply interruptions arising from equipment failure, the Company's performance for supply in terms of minutes lost per property is significantly greater than some companies in England. NIW may benefit from an insight into other companies' processes where they have similar networks that feed rural areas. We would be pleased to facilitate such dialogue.

Some minor suggestions to improve the methodology and when appropriate, the AIR commentary, are included. See section 4.1 above.

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