Northern Ireland Water Ltd
Annual Information Return 2013

Part 8 of 9 containing:
PPP Costs and Activity - commentary for tables 42 and 43

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Table 42 – PPP Schemes

Commentary by REPORTER

1. Background

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 NI Water and PPP relative efficiency

2. Key Findings

- The data from the PPP sites is generally deemed to be of good quality.
- Aggregated data is generally similar to 2011/12 with the notable exception of sludge disposal where the disposal strategy has largely reversed the substantial volumes from 'farmland advanced' to 'incineration'.
- There has been an increase in atypical costs of [x] for the Omega contract dispute, increasing the amount of the total provision to [x] for this contract dispute.
- There has been more than [x] of efficiency gains reported for AIR13.

3. Audit Approach

To verify the data reported our audit consisted of an interview with the NI Water system holders. We have not commented upon the various reports produced by the Company describing the nature of each of the PPP schemes.

4. Audit Findings

4.1 Block A – Project Description

The Alpha PPP Concession is specific to Water Treatment and distribution PPP Projects. The concession consists of four water treatment works (as summarised below) and an upgraded pumping station which was built in preference to the provision of another water treatment works. The upgrade at Forked Bridge consists of a linked main and contact tank operated by the Contractor. There are also two design and build link main facilities at Ballymoney and Limavady which are operated by NI Water.

Ballinrees	Water Treatment Facility
Castor Bay	Water Treatment Facility
Dunore Point	Water Treatment Facility
Moyola	Water Treatment Facility

Wastewater treatment Processes are serviced by two PPP Concessionaires Omega and Kinnegar.

Kinnegar is a standalone treatment facility. Caked sludge from this facility is transferred to Duncrue Street for incineration. The Omega project has five wastewater treatment facilities at Richill, Armagh, Ballynacor, North Down, Ballyrickard and two sludge treatment centres. Caked sludge from the belt press facility at Ballynacor is transferred to the incineration plant at Duncrue Street for further treatment prior to disposal, to destroy pathogens and reduce volume. In addition to the above, an additional sludge storage lagoon has been built at Ballynacor.

The commencement date is as certified by the relevant contract and the service duration is the differential between the Service Commencement date and the Expiry Date. All three PPP contracts have a 25 year term.

4.2 Block B – Payment to PPP Concessionaire

Line 7 – Unitary Charge Capacity Charge
NI Water advised that the data is based on actual invoices received for each of the sites for the 12 months until and including March 2013.

Line 8 – Unitary Charge Variable Charge
As for the capacity charge, NI Water advised that the data is based on actual invoices received for each of the sites for the 12 months until and including March 2013.

Line 9 – Unitary Charge Deductions
NI Water makes performance deductions for both capacity and quality failures. The data is extracted from the invoices and the payment calculation mechanisms.

We note that deductions that are present on the Alpha, Omega and Kinnegar contracts total [x]. These are split as: [x] alpha (an increase of [x] from the previous year), [x] under Kinnegar and [x] Omega which was agreed and for which [x]. [

x

]

The invoice does not provide a split between Ballynacor sludge costs and Duncrue sludge costs. The Company has reported zero under these cells and instead reported a Sludge Service Total cost. [

x

]

Line 10 – Atypical Expenditure

- **Alpha**
  Various items of atypical expenditure have occurred on the Alpha contracts. These items are as follows:

  [

  x

x

]

Other adjustments related to the change in the unitary charge for lower number of TUPE transferees than expected and Lab services being provided in house. The table below lists the different changes.

[x]	[x]
[x]	[x]
[x]	[x]
[x]	[x]

The Company has not been able to split this expenditure by site so has allocated the expenditure in the total column for Alpha.

- **Omega**
  Various items of atypical expenditure reported have occurred on the Omega contract. These items are as follows:

[x]	[x]
[x]	[x]
[x]	[x]
[x]	[x]
[x]	[x]
[x]	[x]

[x]
[x]

- **Kinnegar**
  There are no atypical costs reported for Kinnegar.

Line 11 – Efficiency Gains Included in Lines 7-10
As NI Water stated the only legitimate efficiency gains that can be used are those that arise from a change in levels of service. The table below sets out the efficiency gains achieved:

Alpha:
[x]
[x]

Omega:
[x]
[x]

There are no efficiencies reported for the Kinnegar contract.

Line 13-14 – Capital Repayments and Maintenance
This data relates to paying off the finance lease creditor and any capital maintenance carried out on the contract during the year. The capital maintenance charge has been provided by Dalriada Water and therefore we have accepted this at face value. The Company advised that data related to capital repayments has been extracted from its accounts and therefore the overall value is consistent with the accounts. The financial lease model was then used to apply a capital repayment cost by site. In order to split the totals by interest and lease payments by site the Company has used an apportionment.

Line 15 – Residual Interest
The Company has not been able to split the data for the Omega sites on a site by site basis and hence reported the entire sum under 'Omega all'.

Line 16 – Atypical Payments Capitalised
The Company has reported no such payments for AIR12.

Line 19 – Interest
The Company advised that the data is from the financial model related to the contract and is consistent with the statutory accounts. We did not review the financial model and accepted the data provided to us at face value.

4.3 Block C – Water Distribution Data

Line 21 – Distribution Input
This line represents the water utilised by the PPP companies. The Supply Source Distribution Table has been updated from AIR12 to take cognisance of the change in demand associated with PPP sites. 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 confidence grade of B2 due to checks can be supported.

Line 21a – WTW Capacity
There has been no change to the minimum required capacity of the Alpha WTW under the contract. This is the second year of the requirement to represent the capacity of each water treatment works. Similar to Table 15 Line 9 for WwTWs, AIR13 mirrors AIR12 in that the water works capacity is based on Functional Design Specification. As per the reporting guidance the volume is 'Qminreq' for each facility and this aligns with the Alpha Contract requirement. The confidence grade of A1 is prescriptive however based on 'Qminreq' it can be supported.

Line 22 – Length of Mains
This line represents the length of main under the contract which links the 16.42 km main from Castor Bay to Forked Bridge. This section of the main is operated and controlled by the contractor and information has not changed from previous reports and correlates with totals reported in other tables. Detailed drawings with defined cross-sectional details and change allow for a confidence grade of A2 to be supported.

4.4 Block D – Water Resource and Treatment

Lines 23&24 – Turbidity 95%ile greater or equal to 0.5NTU
We have reviewed various supported documents presented by the Company. We queried NI Water the reasons for the CGs to be A1. They explained that this is a mistake and should be A2 due to, unlike NI Water data, the PPP data were provided with 2 decimal points. We believe this is reasonable.

Lines 25-26 – Treatment Source/Type
There are no changes to these lines from AIR12. The confidence grade is A1 as source type and treatment provided are unequivocal. Data is consistent with 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 currently under review.

Line 27 – Average Pumping Head
The APH for 'Alpha Total' and 'Water Services Total' has changed to reflect the changed requirements of Table 42 Line 27 guidance notes, wherein the Company is no longer required to use its total Distribution Input as the denominator, rather use the PPP Distribution Input utilised in AIR12. This has resulted in a significant change in data entry value from AIR12 68.18 m.hd to 156.1m.hd.

Period	Alpha WT Balinrees	Alpha WT Castor Bay	Alpha WT Dunore Point	Alpha WT Moyola	Alpha WD/WT DBFO LM & FKd BDG Cont TK	Alpha Total
AIR 13	130.0	147.0	174.0	146.0	N/A	156.1
AIR 12	104.0	146.0	175.0	146.0	N/A	68.18

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

Lines 28-29 – Total Length of Sewer
As all the sewers are critical (as defined by WRc), AIR13 data mirrors AIR12. Each PPP facility has collective lengths of sewer which are supported by record drawings enabling a confidence grade of B2 for each site to be carried forward as the overall grade.

North Down WwTW receives pumped screened sewage from terminal pumping stations at Briggs Rock, Donaghadee, and Millisle, each main has its own record drawings and the cumulative change reflects the input.

Ballynacor WwTW has a similar network in this instance with two terminal pumping stations at Bullay's Hill and Seagoe forwarding screened sewage. Ballyrickard and Richill WwTWs have pipelines from the perimeter to the inlet screens and from the storm tanks discharge and final effluent outfall. Armagh WwTW has a pipeline from the perimeter to the inlet screens and the final effluent outfall to the discharge point.

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

Line 30 – PE of load received
The PE has been derived from total loads received from the contractors and is consistent with Table 15 Line 6. The confidence grade for this line and Table 15 Line 6 is B2 which is unchanged from AIR12. Given the frequency of sampling for PPP facilities, a confidence grade of B2 can be supported.

Line 31- Load received
The total load is based on analytical data derived from samples taken from the inlet of all the PPP wastewater treatment works. Sampling frequencies vary from 52 to 365 per annum which provide a greater degree of confidence than the proposed B3 grade. Due to the frequency of sampling and analytical monitoring the confidence grade could increase to B2.

Lines 32-36 - Consents
Information is unchanged from AIR12 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, hence the A1 confidence grade. Consents are based on lower and upper tier limits with pass failure being based on look up tables. Any 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. A confidence grade of A1 can be supported.

Line 37 – Classification of works
The treatment type has followed guidelines as per methodologies reported in Table 17b Line 8 and a confidence grade of A1 can be supported.

Line 38 – Size Band of works
This mirrors requirements associated with size banding. There is no change from AIR12. Armagh has reduced from 1404kg BOD /d in AIR12 to 1252 kg BOD /d in AIR13 and sits comfortably in band 5 category, 600 to 1500 kg BOD/day.

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

Line 39 – Sludge imported
The PPP works receive no sludge from NI Water WTWs at the works inlets. Imported sludge is either transferred to the belt press at Ballynacor or the incineration plant at Duncrue Street.

NI Water sludge is imported and measured at Duncrue Street. The calculated measured sludge imported from NI Water is therefore the total weight received at Duncrue Street minus sludge from Omega and Kinnegar. Sludge's received at Duncrue Street are reported in Table 15 Line 16. Sludge received by the Contractor is reported in Table 15 Line 15 with NI Water import being the differential. Due to monitoring and sampling the confidence grade of B2 can be supported.

The Omega contractor assumed responsibility for disposal of all NI Water sludge from 31st March 2010. AIR13 reports the total Sludge imported from NI Water as 31.3 tds corresponding to the 30.7 tds reported in AIR12.

Prior to AIR12, due to inadequacies within the monitoring system, it was impractical to align with any degree of confidence, logger details with import source. Consequently it was not possible to differentiate source point sludge imports arriving at Ballynacor Sludge Facility from those importing directly into Duncrue St Sludge Facility. In AIR13, although protocols existed, these have been updated to eradicate system nuances, and it is now viable with increased confidence to provide breakdowns of source point imports to both Ballynacor and Duncrue Street facilities. Due to monitoring and sampling the confidence grade of B2 can be supported.

Line 40 – Sludge produced

Sludge produced at North Down Ards, Ballyrickard, Richill and Armagh are transferred to either the caking, belt press facility at Ballynacor or sent directly to Duncrue Street incineration plant. On site 'Slogger' sludge monitoring systems at both sludge treatment centres record inputs from the aforementioned wastewater treatment centres. The 'Slogger' system has the capability of recording volume as well as dry solids content to provide accurate ttds. In conjunction with NI Water a new protocol designed to improve sampling of sludge cake imports has been implemented. This will further improve confidence. Given the consistency of approach, the confidence grade of B2 can be supported.

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. The confidence grade for this operation is B3. Given the reliance on different monitoring systems this confidence grade can be supported.

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. This is an accurate methodology for sludge disposal and the confidence grade of B2 can be supported.

The total sludge production as a whole for AIR13 is broadly consistent with AIR12. The tabulated data below indicates variances between the previous four AIR returns. Whilst the total sludge production recorded against each PPP contract and PPP as a whole is broadly consistent with last year's records, the records for each of the individual Omega sites are different from those recorded in AIR12.

The variations are tabulated below;

PPP Production	AIR13	AIR12	AIR11	AIR10
Armagh WWTW	0.535	0.570	0.759	0.84
Richhill WWTW	0.065	0.066	0.213	0.21
Ballynacor WWTW	2.069	3.330	2.468	2.29

Ballyrickard WWTW	1.158	1.225	1.627	1.717
NDA WWTW	1.628	1.559	1.753	1.654
Kinnegar WWTW	0.726	0.823	0.792	0.7
Omega Screenings and Grit	0.106			
Kinnegar Screenings and Grit	0.022			
Totals	6.309	7.573	7.612	7.411

The change in Kinnegar and Ballynacor is potentially the return to a more standardised loading profile as in earlier years.

The changes in sludge production records data for Omega reflect a probable combination of

(i) Cumulative tolerances in the representative nature of dry solids sampling and flowmeter accuracy (particularly on smaller sites).

(ii) a mix of improved methodologies and record keeping systems for liquid and cake movements (as demanded by the Omega contract payment processes) implemented at the end of AIR11,

(iii) the loads delivered to the PPP contractor from the NI Water sewer network, outside the PPP contractor's control, and

(iv) The timing of data capture, where prolonged dry periods can have a fluctuating effect from year to year on absolute values.

Line 41 – Sludge exported to Duncrue Street

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 to alternative disposal routes. The data provided relies upon data provided in Line 40.

We believe that the confidence grade of B2 can be supported despite being unable to identify which sites export to which sludge treatment centre.

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

Line 42 – Sludge exported to Other PPP

As reported in AIR12, all PPP facilities ultimately route sludge to Duncrue Street for final disposal. While sludge's from North Down Ards, Armagh, Richhill and Ballynacor are thickened in the belt press at Ballynacor they are still transferred to Duncrue Street for disposal. For the avoidance of doubt, sludge's are recorded as being exported to Duncrue Street as per Line 41 and are not reported as being exported to another PPP facility as they are being transferred for further treatment.

Line 43 – Sludge exported to NI Water
The Omega sludge PPP contract has no provision regarding return of sludge to NI Water for disposal. Therefore in AIR13, no sludge was returned to NI Water. It should be noted that that since AIR11, nil returns have been recorded.

Line 44 to 52 – Sludge Disposed
The figures for alternative disposal are based on the total ttds excluding incinerated sludge, split in accordance with the proportion of m^3 of cake sent to each outlet. All information is based on contractor reports detailing disposal route and the disposal site. The transfers are cross-referenced by waste management notes, weighbridge reports, as well as, calibrated using on board weighing systems on plant and Road Haulage Vehicles Information is collated and submitted monthly to NI Water.

Confidence grades vary for these lines dependent on disposal route between A1 for landfill and Farmland conservation and B2 for the remainder. Given waste management licensing requirements and ADAS 10 requirements for field disposal, the A1 confidence grades can be supported. As transfers are supported by waste management notes, weighbridge reports and calibrated on board weighing systems on plant and Road Haulage Vehicles the confidence grades of the other practices can also be supported at B2.

Disposal of sludge via alternative routes other than incineration is measured volumetrically. The weight of each alternative route is therefore the proportion of sludge disposed of by alternative routes divided by the overall alternative volume times gross weight of alternative disposal.

The most significant variance between AIR13 and AIR12 is the increased ttds being treated by the incinerator, due to the improved operability of this method. The Omega sludge PPP contract sustains diverse alternative routes to maintain outlets in case the incineration plant has a catastrophic failure.

Disposal	AIR13 ttds	AIR12 ttds	AIR11 ttds
Farmland untreated - Willow Coppicing	0.515	0.634	1.915
Farmland Advanced - Limed	0	8.19	26.366
Incineration	36.386	26.765	5.899
Composted	0	0.097	1.792
Land Reclamation	0.549	2.561	1.251
Land fill	0.128	0	0

Line 52 has been calculated from the sum of Lines 44 to 51.

Date: 29 July 2013
Prepared by: HMS

Table 43 – PPP reporting operational costs

Commentary by REPORTER

1. Background

The purpose of this table is to report information on operational costs related to the PPP contracts.

2. Key Findings

- In order to report data for some lines the Company has had to rely on data from external sources.
- Some apportionments and assessments are required to report the data. Where these have been applied we believe they are appropriate and likely to result in data that is reflective of the actual position.

3. Audit Approach

The audit consisted of an interview with the table owner to discuss the methodology and review the source data extracted from the financial system.

4. Audit Findings

Data has been reported at site level for each of the 16 active sites. Further detail relating to each line is discussed below:

Line 4 – Payment to Concessionaire
This data has been transposed from Table 42 Line 12. This data is discussed in our commentary to Table 22.

Line 5 – Payment by Concessionaire to Operating Company
The data relating to payment by concessionaire to operating Company is provided to NI Water by the PPP contractors. There is no way to determine the veracity of this information as the data originates externally.

Line 6 - Power
This data has been extracted from the Company's general ledger system. Data related to power costs is reported on a site by site basis and hence no apportionment of data to derive these figures is required. Note the Company has not attempted to estimate power costs for Kinnegar for AIR13 as it has no mechanism for doing so. If this data was required by the Regulator the Company may consider using apportionments or an alternative method to estimate power costs at Kinnegar.

Line 7 – Other Direct Costs
The Company has reported [x] for this line.

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. For staff costs a P101 cost centre report is run which shows the relevant payroll costs. The general and support costs are then allocated evenly across each of the sites in order to apply payroll costs to individual sites.

Line 11 – Scientific Services
The Company has determined the total costs related 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 approach relies on judgement and assessments. However in the absence of actual data we believe the approach is appropriate.

Line 12 – Rates
The Company has apportioned the rates bill across the different types of sites. For the rates bill related to water sites the Company has data related to total rates bills. It has allocated the portion to the Alpha sites based on the proportion of potable water provided as a percentage of total NI Water input. In the absence of more direct data we believe this approach is appropriate.

Wastewater sites receive a separate rates bill and hence the data can be attributed to each PPP site. For Ballynacor the Company has split costs between sewerage and sludge on the basis of a 65%:35% wastewater to sludge split, whilst Duncrue was allocated between NI Water and PPP on the basis of site area covered, with PPP covering 15% of the site.

Line 13 – Estimated Terminal Pumping Costs
The Company has reported power costs related to the terminal pumping station by using the location codes for known sites.

Line 14 – Estimated Sludge Costs
The cost here is simply the payment by concessionaire, functional expenditure and rates for Ballynacor and Duncrue.

Date: 29 July 2013
Prepared by: HMS