

# Chapter 15

## Non financial measures

### Sewage treatment

Covering:  
Sewage – loads  
Sewerage service – facilities  
Sewage sludge

# Non financial measures

## Chapter 15

### Sewage treatment

Three tables have been provided. One for NI Water data only, a second for PPP data only and a third which will be the sum of the first two. NI Water should comment on any line where the third table data is not the sum of the first two and explain why this is the case.

These tables have three blocks and a total of 12 lines. The company must include inset appointments as they are part of the regulated business. Please provide details in your commentary of the amounts included for any inset appointments in the relevant lines.

The information in this table is used to assist in operating efficiency studies.

- **Sewage – loads**  
This part of the table includes a breakdown of the pollution loads arising from the domestic population, trade effluent and tankered (i.e. septic tank, cesspool and industrial liquid waste) loads being treated by the company. It is important that the loads that are treated as part of the non-regulated business are included in the appropriate lines 1 to 7.
- **Sewerage service – facilities**  
Records the total number of sewage treatment works and the treatment capacity available.
- **Sewage sludge**  
Records the total quantity of sludge disposed and produced. These may not be the same in the report year due to the amount of stockpiled sludge. The data also records the quantity of sludge transferred from NIW to the PPP concessionaire for disposal.

#### Company commentary

The company should provide a clear statement in its commentary of the components of the sewage loads reported in Table 15. For each component of load, the company should provide a statement of how the load was calculated describing the primary sources of data used, the methodology used to process the data and the value and basis for any conversion factor used in the analysis to convert to BOD load or equivalent population. The commentary should include a breakdown of the total load received by the company in '000 tonnes of BOD per annum by each component used to build up the reported data.

The company should:

- detail any assumptions made in completing this table;
- state any COD to BOD conversion factor that it has used in completing the table;
- explain whether it has included re-circulated sludge/sludge liquors in the loads reported in lines 1 to 7, and if included, provide an indication of the size of these loads; and,
- advise when the reported equivalent population figures were established, whether these were agreed with NIEA and whether these are consistent with the figures used by NIEA for the equivalent calendar year. The company is expected to report equivalent population figures on a consistent basis year-on-year and consistently throughout the annual information return. Any change in terms of how information is reported year-on-year, or any inconsistencies in reporting equivalent population figures between tables, must be fully disclosed by the company in the commentary for Table 15.

The company should report all loads, including PPP loads on a consistent basis from a bottom up assessment of domestic population, trade effluent, tankered loads and contribution from holiday populations. Where the company has measured load data, these should be reported in a table in the commentary by works, comparing the estimated and measured loads. In its commentary, the company should provide its assessment and opinion of the difference in estimated and measured loads.

The company should set down any key assumptions used in calculating sludge production and disposal figures, e.g. regarding grit and screenings dry solids content, gas uplift allowance, etc. We have no requirements as to the methodology that the company should use in the derivation of these figures, other than that the methods for lines 15 and 16 should be consistent, and that any change in method from the previous year should be explained.

For line 14, percentage unsatisfactory sludge disposal, the company should give the reasons for unsatisfactory disposal in the commentary and the percentages affected.

### **Guidance to the Reporter**

The reporter should:

- comment on the robustness of the systems and methodologies used to estimate the various components within the table with a particular emphasis on the accuracy with which sewage loads can be measured and calculated;
- confirm the correct reporting of PPP data;
- comment how this compares with the confidence grade assigned by the company; and
- comment on whether all assumptions have been revealed, and on the reasonableness of any assumptions made.
- comment on whether equivalent population figures have been reported on a consistent basis to previous years, whether they are consistent with figures reported on other tables of the annual information return and whether these are consistent with the figures used by NIEA for the equivalent calendar year.

**Table 15 line definitions**
**A SEWAGE – LOADS**

<b>1</b>	Trade effluent load receiving secondary treatment (BOD/year)	tonnes	1dp
<b>Definition</b>	This is the total trade effluent BOD pollution load receiving secondary treatment (or better) in tonnes BOD/year. This must be as billed and charged. This is the trade effluent load received by the works at which secondary treatment is provided.		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input		
<b>Responsibility</b>	Comparative Efficiency & Performance Team		

<b>2</b>	Total load receiving secondary treatment (BOD/year)	tonnes	1dp
<b>Definition</b>	This is the total load in tonnes BOD/year that receives secondary treatment (or better) at treatment works. The total load includes load from domestic population, trade effluent, tankered loads and holiday population.		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input		
<b>Responsibility</b>	Comparative Efficiency & Performance Team		

<b>3</b>	Total load receiving primary treatment only (BOD/year)	tonnes	1dp
<b>Definition</b>	This is the total pollution load in tonnes BOD/year that receives primary treatment. The total load includes load from domestic population, trade effluent, tankered loads and holiday population. Exclude effluent receiving only preliminary treatment and any load which receives secondary treatment or better.		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input		
<b>Responsibility</b>	Comparative Efficiency & Performance Team		

<b>4</b>	Total load receiving preliminary treatment only (BOD/year)	Tonnes	1dp
<b>Definition</b>	This is the total pollution load in tonnes BOD/year that receives only preliminary treatment. The total load includes load from domestic population, trade effluent, tankered loads and holiday population. Exclude any effluent which receives no treatment, or which receives primary treatment or better.		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input		
<b>Responsibility</b>	Comparative Efficiency & Performance Team		

<b>5</b>	Total load entering sewerage system (BOD/year).	Tonnes	1dp
<b>Definition</b>	This is the total pollution load in tonnes BOD/year that is discharged to the sewerage system. The total load includes load from domestic population, trade effluent, tankered loads and holiday population. Include loads discharged directly to sewage treatment works. Load shall be allocated between the NIW only and PPP tables on the basis of responsibility for the receiving works.		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input		
<b>Responsibility</b>	Comparative Efficiency & Performance Team		

<b>6</b>	Equivalent population served (resident)	000	2dp
<b>Definition</b>	Equivalent population should be calculated on the basis of 60g BOD <sub>5</sub> per capita per day. Domestic population, trade effluent and tankered in effluents should be included in calculation. No account should be taken of holiday population.		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input		
<b>Responsibility</b>	Network Regulation Team		

<b>7</b>	Equivalent population served (resident) (numerical consents)	000	2dp
<b>Definition</b>	Equivalent population should be calculated on the basis of 60g BOD <sub>5</sub> per capita per day. Domestic population, trade effluent and tankered in effluents should be included in calculation. Imported effluents should be included in calculation. No account should be taken of holiday population.		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input		
<b>Responsibility</b>	Network Regulation Team		

## B SEWERAGE SERVICE – FACILITIES

<b>8</b>	Number of sewage treatment works	nr	0dp
<b>Definition</b>	Total number of sewage treatment works. Do not include screened overflows or screened outfalls as sewage treatment works.		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input		
<b>Responsibility</b>	Comparative Efficiency & Performance Team		

<b>9</b>	Treatment capacity available (BOD <sub>5</sub> /day)	Tonnes	1dp
<b>Definition</b>	The average annual total treatment capacity available in BOD <sub>5</sub> /day within the company's area of supply.		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input		
<b>Responsibility</b>	Network Regulation Team		

<b>Lines 10 to 13</b>	Not used
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## C SEWAGE – SLUDGE DISPOSAL

<b>14</b>	Percentage unsatisfactory sludge disposal	%	2dp
<b>Definition</b>	Percentage of total sludge disposal that is unsatisfactory. Give reasons for unsatisfactory disposal in the commentary and the percentages affected.		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input		
<b>Responsibility</b>	Network Regulation Team		

<b>15</b>	Total sewage sludge produced	ttds	1dp
<b>Definition</b>	The total amount of sewage sludge produced during the report year expressed in thousands of tonnes of dry solids of sludge produced.		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input		
<b>Responsibility</b>	Network Regulation Team		

<b>16</b>	Total sewage sludge transfer to PPP (from NI Water)	ttds	1dp
<b>Definition</b>	Total sewage sludge transferred from NI Water to the PPP concessionaire expressed in thousands of tonnes of dry solids of sludge transferred. The amount of sludge transferred by NI Water should equal the amount of sludge received by the PPP concessionaire. If this is not the case, the company should provide an explanation in its commentary.		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input		
<b>Responsibility</b>	Network Regulation Team		

17	Total sewage sludge disposal	ttds	1dp
<b>Definition</b>	<p>Total for all sewage sludge disposal. This should include disposal to farmland, landfill, incineration, composting and other routes. The NI Water figure should exclude sludge transferred to the PPP concessionaire. The PPP figure should include disposal of sludge received from NIW.</p> <p>If the amount of sewage sludge disposed of is more than 5% different from the amount produced adjusted for the amount transferred to PPP or received from NI Water, please give an explanation in the commentary.</p>		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input		
<b>Responsibility</b>	Network Regulation Team		

## CHANGE CONTROL SHEET

### CHAPTER 15

2008/1.0	First issue of chapter for the SBP period.
2009/1.0	Second issue of chapter for the SBP period. <ul style="list-style-type: none"> <li>- reporting requirements for the company and reporter in relation to equivalent population figures added</li> <li>- line 1 definition amended</li> <li>- Tables amended for PPP and NIW+PPP reporting</li> </ul>
2010/1.0	Third issue of chapter for the SBP period. <ul style="list-style-type: none"> <li>- Additional sewage sludge to be reported from 1<sup>st</sup> April 2007.</li> <li>- Lines 1 to 7 definitions amended to expand on coverage of each line.</li> <li>- Requirement for commentary expanded to include a statement of the components of sewage loads and the basis for deriving each component.</li> </ul>
2011/1.0	First issue of chapter for the PC10 period. <ul style="list-style-type: none"> <li>- Reinstatement of line 5 in the PPP only table to ensure consistency of reporting (i.e. load treated does not exceed load entering system).</li> <li>- Lines 10 – 13 deleted.</li> <li>- Line 17 deleted.</li> </ul>
2012/1.0	Second issue of chapter for the PC10 period. <ul style="list-style-type: none"> <li>- Clarification on reporting sludge disposal by NI Water and by the PPP contractor (introductory text and line 16 definition).</li> <li>- Lines 16 and 17 added to clarify sludge transfer and disposal.</li> </ul>
2013/1.0	Third issue of chapter for the PC10 period. <ul style="list-style-type: none"> <li>- No changes.</li> </ul>