

# Chapter 17d

## Sewerage service explanatory factors

Covering:  
Sewage treatment works: loads

## Chapter 17d

# Sewage treatment works: loads

### Guidance

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. The three table format has been retained to enable easy completion of small treatment works efficiency modelling.

The purpose of these tables is to collect information on the sewage loads received by the various types and sizes of treatment works in each company.

This information will be used as explanatory factors in revising and updating our sewage treatment works models. These models are intended to provide assessments of the company's relative operating efficiencies.

The figures the company must report are the average daily loads received (in kg BOD<sub>5</sub>/day) by treatment works and sea outfalls in each of the various categories for works size and treatment method. The average daily load for each STW should be calculated as the total annual load received (in kg BOD<sub>5</sub>) by the STW, divided by 365 (this should reconcile with table 15 lines 2, 3 and 4 of the Annual Information return. Trade effluent loads should be converted to total (unsettled) COD before converting to BOD). The figure to be reported in the table is the sum of the loads received by each STW or outfall in each particular category. Loads should be consistent with actual loads treated therefore consistent with reported costs. If exclusions are made this will make processes appear more expensive. The convention outlined under the common definitions should be used to calculate the load for each STW. The company must include non-resident population when reporting loads.

The STW size banding used is the same as described in the commentary to table 17c and in the general guidance. The company must classify the size band of a works using resident population, no allowance should be made for non-resident population.

The classification of STWs by treatment method is described in the general guidance.

The company must check that the following data is consistent (but not necessarily equal). If they are not equal when compared in the same units please provide a brief explanation in your commentary.

- Total load receiving primary treatment in table 17d (line 7, column 1) should be consistent with total load receiving primary treatment in table 15 (line 3);
- Total load receiving secondary and tertiary treatment in table 17d (line 7, sum of columns 2–7) should be consistent with total load receiving secondary treatment in table 15 (line 2); and
- Total load receiving preliminary treatment in table 17d (line 7, column 8) should be consistent with total load receiving preliminary treatment in table 15 (line 4) (both include non-resident population).

The company should provide data relating to services provided by its PPP wastewater contractor operated works. This data should be included in the separate PPP table as indicated, with the total for NIW and PPP assets in the third table.

The company must also check that:

- Where loads have been reported in table 17d, corresponding costs are reported in table 17f; and
- Where loads have been reported in table 17d, corresponding works are reported in table 17c.

### **Company commentary**

The company should comment on:

- where there have been significant changes in the distribution of loads to various types or sizes of treatment works since this information was last reported; for example, where several small works have been replaced with a single works or where treatment methods have been upgraded; and
- any significant changes which will occur in the near future; for example, closure of existing works and diversion of sewage load elsewhere or forecasts of significant increase in effluent loads.

### **Guidance to Reporters**

Reporters should comment on:

- the accuracy of the reported figures, including PPP works; and
- whether the company has explained all the significant changes, and ensure that the company has highlighted any significant changes which will occur in the short to medium term; for example, as a result of works closures or the opening of new works and diversion of sewage flows.

## Table 17d line definitions

### A SMALL WORKS

<b>1</b>	Load received by STWs in size band 1	kg BOD <sub>5</sub> /day	0dp
<b>Definition</b>	<p>The average daily load received (in kg of BOD<sub>5</sub>/day) by STWs of size band 1 (&lt;= 15kg BOD<sub>5</sub>/day) for each treatment category. The convention outlined under the common definitions should be used to calculate the load for each STW.</p> <p>The company must classify the size band of a works using resident population only.</p> <p>The company must include non-resident population when reporting loads.</p>		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input : line 1 column 1 to 10 Calculation: line 1 column 11 is the sum of line 1 column 1 to 10		
<b>Responsibility</b>	Comparative Efficiency & Performance Team		

<b>2</b>	Load received by STWs in size band 2	kg BOD <sub>5</sub> /day	0dp
<b>Definition</b>	<p>The average daily load received (in kg of BOD<sub>5</sub>/day) by STWs of size band 2 (15 - 30kg BOD<sub>5</sub>/day) for each treatment category. The convention outlined under the common definitions should be used to calculate the load for each STW.</p> <p>The company must classify the size band of a works using resident population only.</p> <p>The company must include non-resident population when reporting loads.</p>		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input : line 2 column 1 to 10 Calculation: line 2 column 11 is the sum of line 2 column 1 to 10		
<b>Responsibility</b>	Comparative Efficiency & Performance Team		

<b>3</b>	Load received by STWs in size band 3	kg BOD <sub>5</sub> /day	0dp
<b>Definition</b>	<p>The average daily load received (in kg of BOD<sub>5</sub>/day) by STWs of size band 3 (30 - 120kg BOD<sub>5</sub>/day) for each treatment category. The convention outlined under the common definitions should be used to calculate the load for each STW.</p> <p>The company must classify the size band of a works using resident population only.</p> <p>The company must include non-resident population when reporting loads.</p>		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input : line 3 column 1 to 10 Calculation: line 3 column 11 is the sum of line 3 column 1 to 10		
<b>Responsibility</b>	Comparative Efficiency & Performance Team		

<b>4</b>	Load received by STWs in size band 4	kg BOD <sub>5</sub> /day	0dp
<b>Definition</b>	<p>The average daily load received (in kg of BOD<sub>5</sub>/day) by STWs of size band 4 (120 - 600kg BOD<sub>5</sub>/day) for each treatment category. The convention outlined under the common definitions should be used to calculate the load for each STW.</p> <p>The company must classify the size band of a works using resident population only.</p> <p>The company must include non-resident population when reporting loads.</p>		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input : line 4 column 1 to 10 Calculation: line 4 column 11 is the sum of line 4 column 1 to 10		
<b>Responsibility</b>	Comparative Efficiency & Performance Team		

<b>5</b>	Load received by STWs in size band 5	kg BOD <sub>5</sub> /day	0dp
<b>Definition</b>	<p>The average daily load received (in kg of BOD<sub>5</sub>/day) by STWs of size band 5 (600 - 1500kg BOD<sub>5</sub>/day) for each treatment category. The convention outlined under the common definitions should be used to calculate the load for each STW.</p> <p>The company must classify the size band of a works using resident population only.</p> <p>The company must include non-resident population when reporting loads.</p>		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input : line 5 column 1 to 10 Calculation: line 5 column 11 is the sum of line 5 column 1 to 10		
<b>Responsibility</b>	Comparative Efficiency & Performance Team		

## B LARGE WORKS

<b>6</b>	Load received by STWs in size band 6	kg BOD <sub>5</sub> /day	0dp
<b>Definition</b>	<p>The average daily load received (in kg of BOD<sub>5</sub>/day) by STWs of size band 6 (&gt;1500kg BOD<sub>5</sub>/day) for each treatment category. The convention outlined under the common definitions should be used to calculate the load for each STW.</p> <p>The company must classify the size band of a works using resident population only.</p> <p>The company must include non-resident population when reporting loads.</p> <p>Where a works load is split into two treatment streams in table 17b, the works should be reported consistently with the classification in table 17b, line 8.</p>		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input : line 6 column 1 to 10 Calculation: line 6 column 11 is the sum of line 6 column 1 to 10		
<b>Responsibility</b>	Comparative Efficiency & Performance Team		

<b>7</b>	Total loads rec'd (daily average all size bands)	kg BOD <sub>5</sub> /day	0dp
<b>Definition</b>	Total of the average daily load (in kg BOD <sub>5</sub> /day) received by each type of sewage treatment works (for all sizes). The figures reported here should be consistent with those reported in table 15. Line 7 column 1 should reconcile with table 15 line 3. The sum of line 7 columns 2 to 7 should reconcile with table 15 line 2. Line 7 column 8 should reconcile with table 15 line 4.		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Calculated: each column in line 7 is the sum of lines 1 to 6.		
<b>Responsibility</b>	Comparative Efficiency & Performance Team		

### C SMALL WORKS WITH AMMONIA CONSENTS

<b>8</b>	Load rec'd by small STWs w. NH <sub>3</sub> consents (5 - 10mg/l)	kg BOD <sub>5</sub> /day	0dp
<b>Definition</b>	The average daily load (in kg BOD <sub>5</sub> /day) received by small sewage treatment works (those receiving <= 1500 kg BOD <sub>5</sub> /day) with ammonia (NH <sub>3</sub> ) consents which are less than (or equal to) 10mg/l but greater than 5mg/l. Note that the loads received by small STWs with ammonia consents must also be reported in lines 1-5 above to ensure that the total loads calculated in line 7 that are correct.		
<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>	Load rec'd by small STWs w. NH <sub>3</sub> consents (<= 5mg/l)	kg BOD <sub>5</sub> /day	0dp
<b>Definition</b>	The average daily load (in kg BOD <sub>5</sub> /day) received by small sewage treatment works with ammonia (NH <sub>3</sub> ) consents of 5mg/l or less. Note that the loads received by small STWs with ammonia consents must also be reported in lines 1-5 above to ensure that the total loads calculated in line 7 that are correct.		
<b>Primary Purpose</b>	Informing relative performance and efficiency assessments.		
<b>Processing rule</b>	Input		
<b>Responsibility</b>	Comparative Efficiency & Performance Team		

## CHANGE CONTROL SHEET

### CHAPTER 17d

2008/1.0	First issue of chapter for the SBP period
2009/1.0	Second issue of chapter for the SBP period - - Addition of PPP and Total tables and necessary guidance
2010/1.0	Third issue of chapter for SBP period - No changes
2011/1.0	First issue of chapter for the PC10 period - No changes