Appendices 2-6 of the 2018 Charging Consultation

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App 2. **Introduction to Appendices 2-6**

The following appendices provide supporting documentation covering the detail of the implementation. A number of the appendices will be used directly in the revised Environment Assessment Scheme (link) or amend the Charging Scheme Guidance (Link).

The Impact assessment (appendix 1), the draft legal scheme and respondent information form are kept as separate documents. Each appendix can be printed out individually or together depending on the impact on your organisation.

App 3. **Abstraction - detailed methodology**

We have received comments, both during the 2015 consultation and in workshops, that the charges should reflect actual water used. We have done this and the following sets out the proposed methodology.

The current method uses the permitted abstraction rate per day, multiplied by a seasonality factor, multiplied by a length affected / consumption factor.

How do you propose to use the actual abstraction data?

The new total Environment Component score for abstraction uses actual / licenced rates in a ratio of 60:40. The licenced abstraction rate calculation is the same as before. The actual abstraction data returns calculation is given below.

If the licenced abstraction rate is above a certain threshold then any complete abstraction data returns will be used as part of the score. If no abstraction data returns are submitted then the permitted licence limit will be assumed to be abstracted for the full period.

Where the submitted data return abstraction data is used then the average abstraction over the summer and winter period is calculated. As with the current method this flow is then square rooted and multiplied by the relevant winter or summer abstraction factor then by the length affected / consumption factor.

Why do you not just use actual abstraction rate?

SEPA has to assess the impacts of water abstraction at the permitted level. In addition the when the environment can least cope with water being abstracted (i.e during drought conditions) this is the period most likely to give rise to the highest abstraction rates for certain water courses and therefore SEPA assessment work.

We intend to allow those wishing to reduce their permitted abstraction rate using an administrative variation. We appreciate that many licences have abstraction rates well in excess of the actual amount they expect to use.

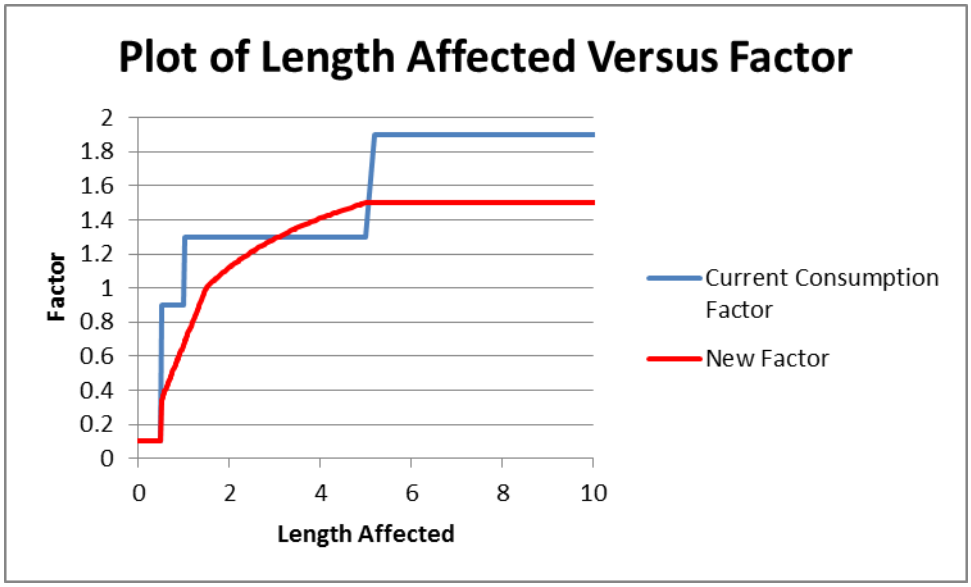
In addition we would encourage abstractors to fit metering since we intend by 20/21 to only use abstraction data returns that use metering as part of the charging scheme calculation.

What abstraction data have you used?

The abstraction data is based currently on the 2014 and 2015 data returns since these are the only complete years we have currently. We will expand this to include the 2016 data returns for the 2018 charges.

Why have you changed the length affected factor calculation?

The previous length affected factor went up in steps (e.g. from 0 to 500 m it was taken as 0.1 but from 500 - 1300 it was 0.9). These step changes whilst overall giving a reasonable attributing of work / charge they would not be consistent with the new guidance on the length affected. The following graph plots the proposed new and the current factors against length affected.



How does the length affected factor change?

The graph above shows the change. This is based on the following set of rules.

Rule	**Length factor**
0 <= Length <= 0.5 km	0.1
0.5 km < Length < 1.5 km	Length/1.5
1.5 km <= Length < 5.0 km	1 + 0.956 log (Length/1.5)
Length >= 5 km	1.5

A3.1 Abstraction Methodology

Original Method

Score = Length affected X [Seasonal Weighting X √(Permitted Abstraction)]

New Method

Total Score = 0.4 X Permitted Abstraction Score + 0.6 X Actual Abstraction Score

Where

Permitted Abstraction Score = Length affected X [Relevant Seasonal Weighting X √(Permitted Abstraction)]

Note: Relevant seasonal weighting is 1 if all year round, 0.21 for winter only or 0.79 summer only – the seasonality factors have not changed.

Actual Abstraction Score = Length affected X ([Seasonal Winter Weighting X √(Winter Average Abstraction)]+[Seasonal Summer Weighting X √(Summer Average Abstraction)])

A3.2 Length affected guidance

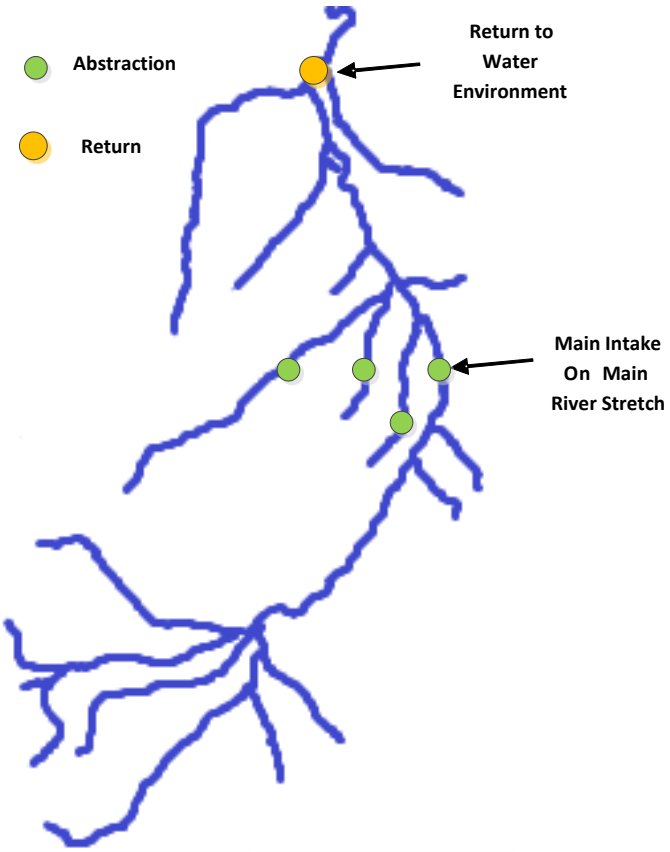
The length affected will be determined by the distance, measured along the river, between an abstraction point and the point at which the water is returned to the water environment.

Where an abstraction is taken from a river and returned to an estuary or coastal waters the length is calculated from the distance along the river from the abstraction point to the tidal limit.

For groundwater abstractions the length affected is calculated from the straight line distance from the abstraction point to the point at which the water is returned to the water environment. Where a groundwater abstraction is returned to an estuary or coastal water the length affected is the calculated straight line distance from the abstraction point to the coastline.

If a single licence authorises multiple abstractions that affects different river stretches within the same river catchment the length affected is calculated as the distance along the river from the main abstraction to the point where the water is returned to the water environment. The length affected of such abstractions is calculated to determine the main impact of a licence.

Example: hydropower scheme with four abstractions in the same catchment, the length affected has been calculated from the main intake on the main stretch of the river to the point at which water is returned to the water environment. The combined length affected of all intake locations has not been used in the calculations and the final length affected for use in charging is the river length distance between the main intake and the return point.



If a single licence authorises multiple abstraction that affects different river stretches from different river catchments and water is returned to the water environment to different catchments then a length affected factor of 1.5 will be applied.

If the length affected is ≥5km then a length affected factor of 1.5 will be applied.

Where there is no return of water, effectively water is consumed so a maximum consumption factor of 3.5 is applied. We will take water as being consumed where there is either a long stretch of the water body which has the abstracted water removed from it or is not returned. This is taken as less than 30% returned more than 5 km downstream, or over 95% is not returned (any distance downstream).

App 4. **Waste data returns methodology**

The response to the 2015 consultation (section 5.9) outlined that we would review how charges for the waste sector are calculated. The following outlines how we proposed to calculate the environmental component score from 2018. This score will continue to be based on your waste data returns.

A4.1 Summary of Changes

Change 1: Sum Scores of Low, Medium and High Material Hazard Band

In the original calculation the score was calculated on each Material Hazard Band (small, medium, high) independently and only added it up if for that band it was greater than 1. Now we sum all the values then check whether the total is greater than 1.

Why is this done?– it is to avoid the perverse aspect that: if a waste is re-categorised as say Medium from High, it can result in a higher score. This happen when there was a score for Medium Hazard Band wastes was above 1 and that of High was below 1. This is not likely to happen in other media (water, air) since most would not be transferred to other pollutants. The impact is small.

Change 2: EWC "99" Codes Hazard Band

In the first model all EWC "99" codes were set to "medium" even when the majority of other codes under the sub-classifications associated with the "99" codes may be "high" or "low". Annex 1: "99" Code Changes shows the revised codes.

Why is this done? If the 99 code defaults to Medium then it does not reflect the rest of that sub-categorisation. It also encourages using the more accurate classifications that might be relevant.

Change 3: Recycled metals reclassified

A number of codes for recyclable metals are classified as "medium" and they have now been set to "low".

Why is this done? Industry raised the question whether these materials should have a lower classification. After reviewing with inspectors and policy officers it was agreed that generally these materials do not require significant work in assessment and support and therefore could be set to "low". See Annex 2 for the reclassified codes.

Change 4: Reduction in thresholds (overall)

The waste thresholds used were set based on the relative issues around the material hazard band and the waste activity that was being undertaken. The thresholds have been cut by 30%.

Why is this done? For all the Environmental Scores for each media the aim is to capture between 90-95% of the environmental component scores and therefore concentrate this on the larger sites where more support is undertaken. An assessment was made and a 30%

reduction gave the right level of capture. This is estimated to increase the number of sites with a direct waste environmental score from 201 to 242 (out of a possible 880 sites).

A4.2 Annex 1: "99" Code Changes

The following is the full list of "99" sub codes before and after the change.

EWC Code	Original Definition	Amended 99 Codes Definition	EWC Code	Original Definition	Amended 99 Codes Definition
01 03 99	Medium	Medium	06 09 99	Medium	High
01 04 99	Medium	Medium	06 10 99	Medium	High
01 05 99	Medium	Medium	06 11 99	Medium	Medium
02 01 99	Medium	Medium	06 13 99	Medium	High
02 02 99	Medium	Medium	07 01 99	Medium	High
02 03 99	Medium	Medium	07 02 99	Medium	High
02 04 99	Medium	Medium	07 03 99	Medium	High
02 05 99	Medium	Medium	07 04 99	Medium	High
02 06 99	Medium	Medium	07 05 99	Medium	High
02 07 99	Medium	Medium	07 06 99	Medium	High
03 01 99	Medium	Medium	07 07 99	Medium	High
03 02 99	Medium	High	08 02 99	Medium	Medium
03 03 99	Medium	Medium	08 03 99	Medium	High
04 01 99	Medium	Medium	08 04 99	Medium	High
04 02 99	Medium	Medium	09 01 99	Medium	High
05 01 99	Medium	High	10 01 99	Medium	Medium
05 06 99	Medium	High	10 02 99	Medium	Medium
05 07 99	Medium	High	10 03 99	Medium	High
06 01 99	Medium	High	10 04 99	Medium	High
06 02 99	Medium	High	10 05 99	Medium	High
06 03 99	Medium	High	10 06 99	Medium	High

EWC Code	Original Definition	Amended 99 Codes Definition	EWC Code	Original Definition	Amended 99 Codes Definition
06 04 99	Medium	High	10 07 99	Medium	Medium
06 06 99	Medium	High	10 08 99	Medium	High
06 07 99	Medium	High	10 09 99	Medium	High
06 08 99	Medium	High	10 10 99	Medium	High
10 11 99	Medium	High	19 01 99	Medium	High
10 12 99	Medium	Medium	19 02 99	Medium	High
10 13 99	Medium	Medium	19 05 99	Medium	Medium
11 01 99*	Medium	High	19 06 99	Medium	Medium
11 02 99	Medium	High	19 08 99	Medium	High
11 05 99	Medium	High	19 09 99	Medium	Medium
12 01 99	Medium	High	19 11 99	Medium	High
13 08 99*	High	High	20 01 99	Medium	Medium
16 01 99	Medium	High	20 03 99	Medium	Medium
16 07 99	Medium	High			

A4.3 Annex 2: Recycled Metals

The following is a list of metals than have been reclassified from "medium" to "low".

16 01 17 ferrous metal Non-Hazardous

16 01 18 non-ferrous metal Non-Hazardous

17 04 01 copper, bronze, brass Non-Hazardous

17 04 02 aluminium Non-Hazardous

17 04 04 zinc Non-Hazardous

17 04 05 iron and steel Non-Hazardous

17 04 06 tin Non-Hazardous

17 04 07 mixed metals Non-Hazardous

19 12 02 ferrous metal Non-Hazardous

19 12 03 non-ferrous metal Non-Hazardous

20 01 40 metals Non-Hazardous

A4.4 Annex 3: Revised Methodology

MANAGEMENT OF WASTE

Calculation of Environmental Score

1. In order to calculate the Environmental Score for waste management, the following steps are applied:

Step 1 Calculating the weight of material managed

2. The waste data returns are used to calculate the average annual tonnage for each EWC code over the relevant three years. The Environmental Assessment Scheme (EAS) uses the European Waste Category (EWC) Table B returns, which are made by all permitted waste management sites. EWC Table B records the type and quantity of waste entering a site.

Step 2 Assess the environmental significance

3. There are two factors used to assess the environmental significance.

i) Risk posed by the material handed. Each EWC code is categorised as high, medium or low risk using Appendix B4 Table 4-1. Each risk category has been allocated factor (Table B2)

ii) How the material is handled. This takes account of whether material is recovered/recycled, energy is recovered, or everything disposed (also shown on Table B2).

Table B2

Material hazard and waste management activity factors

Material hazard band	Factor	Waste management activity	Factor
Low	1	Material recovery/recycling	1
Medium	4	Energy recovery only	3
High	5	Disposal (landfill)	5

4. For waste going to each type of waste management activity (material recovery/recycling, energy recovery only, disposal (landfill)) they are then split by the material hazard band that has been given for each waste EWC code (Appendix B4).

5. The tonnages of waste with the same material hazard band and treated in the same class of waste management activity are divided by the corresponding thresholds given in Table B3 (e.g. waste classed as “High Risk” and is subject to waste management activity of “recovery” would have a threshold of 8,400).

6. To illustrate this an example is given below.

7. For a site which undertakes recovery of the material with an average throughput of 680 tonnes/yr classed as high hazard and 63320 tonnes/yr of medium. You would do the following calculation:

EWC Code	Material hazard band	Description of Waste	Tonnes / yr	Threshold	Score
13 02 08	High	Waste Oil	680	8,400 (recovery, high risk)	0.08
17 04 07	Medium	mixed metals	63320	*10,500* (recovery, medium risk)	6.03
Total					6.11

The waste thresholds are taken from the following table (which is table B3 but with emphasised text for the example).

Material hazard band	Waste management activity			
	Material recovery/recycling		Energy recovery only	Disposal (landfill)
	All onsite treatment	Everything else not covered by the other columns	Waste which is incinerated	Waste which is landfilled
Low risk	42,000	42,000	14,000	8,400
Medium risk	10,500	10,500	3500	2100
High risk	8,400	8,400	2800	1680

Step 3 Summing the waste throughput score

8. You sum the scores for the site waste management activities to give a total waste throughput score. Any resulting total waste score below 1 is then discarded.

Step 4 Normalising the data

9. Take the square root of the total score in Step 3 to give the Environmental Score for waste management.

Table B3

Waste throughput thresholds by treatment / disposal mechanism

Material hazard band	Waste management activity			
	Material recovery/recycling		Energy recovery only	Disposal (landfill)
	All onsite treatment	Everything else not covered by the other columns	Waste which is incinerated	Waste which is landfilled
Low risk	42,000	42,000	14,000	8,400
Medium risk	10,500	10,500	3500	2100
High risk	8,400	8,400	2800	1680

App 5. **Inclusion of Further Chemicals for the Water Quality Score**

As part of the consultation it was outlined that we would review with the view to extend the number of chemicals, we have now done this. The chemicals we intend including in the Environment Assessment Scheme under appendix B2 and the threshold values we intend to use are given in the following table.

The chemicals we selected were on the basis of the potential impact on the environment and whether we had data to allow us to assess the potential load on the environment.

Pollutant	Receiving Water	Threshold	Reference ([1])
Anthracene	Inland waters	0.1	WT-SG-53 – 2015 Standards
	Transistional waters	0.1	
	Coastal waters	0.1	
Cyanides - total as CN	Inland waters	1	WT-SG-53 – 2014 Standards
	Transistional waters	1	
	Coastal waters	1	
Deltamethrin	Inland waters	No EQS	WAT-SG-53 Table9a. AA for AMX
	Transistional waters	0.003	
	Coastal waters	0.003	
Emamectin benzoate	Inland waters	No EQS	WAT-SG-53 Table9a
	Transistional waters	0.00022	
	Coastal waters	0.00022	
Phenols - total as C	Inland waters	7.7	WAT-SG-53 2014 Standards
	Transistional waters	7.7	
	Coastal waters	7.7	
Triclosan	Inland waters	0.1	WAT-SG-53 2015 Standards
	Transistional waters	0.1	
	Coastal waters	0.1	
Azamethiphos	Inland waters	0.02	WAT-SG-53 Table 8
	Transistional waters	0.02	
	Coastal waters	0.02	

[1] Supporting Guidance (WAT-SG-53): Environmental Quality Standards and Standards for Discharges to Surface Waters

A5.1 SPRI Returns for Marine Cage Fish Farms – Nitrogen

We also undertook a review of the amount of nitrogen which is released into the environment. There are two studies which we have considered and they show there is a lower level of nitrogen released than previously estimated. The SPRI calculation uses a formula based on previous work. We have reduced the nitrogen released by 23%. The longer term solution will be to refine the SPRI calculation for future submissions.

App 6. **Glossary of Terms**

Environmental Service means the carrying out, operation or maintenance of any Activity, which is in the view of SEPA, solely for the benefit of the environment, not being for commercial purposes or in implementation of a statutory duty or condition of an authorisation. SEPA Guidance, updated from time to time, is available via the website or on request;

Authorisation - is the generic term we are using in this consultation to cover all the permissions that we issue: including permits, licences, registrations, notifications and exemptions.

Regulatory Support – covers work on Regime Support and Sector Management

References

Interim Guidance on Compliance Monitoring (Inspection and Sampling) DRM-G-006

H1 Annex F v2.2 December 2011

Horizontal Guidance Note IPPC H1 V6 - July 2003

EH40 - EH40/2005 Workplace exposure limits 2nd Edition 2011

Abbreviations

ATR - Activity Time Recoding system

BATC - Best Available Technique conclusions (BATC) review.

BRT - SPRI Reporting Threshold

CAR - Water Environment (Controlled Activities) (Scotland) Regulations 2011;

CAS - Compliance Assessment Scheme

CLAS - Corporate Licensing Administration System

DREAM - Dynamic Regulatory Effort Assessment Model

EAL - Environmental Assessment Level

EAS - Emissions Assessment Scheme

ELMS - Environment Events Database

EWC - European Waste Category

EQS - Environmental Quality Standard

NEMS - National Environmental Monitoring System

PPC – Pollution Prevention and Control

SPRI - Scottish Pollutant Release Inventory

WEWS - Act Water Environment and Water Services Act 2003

WLP - Work Load Planning Data