



# Guidelines for assessment under the Bathing Water Directive and reporting for the 2016 bathing season

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## Version History

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1.0	12/10/2016	Lidija Globevnik Luka Snoj Gašper Šubelj	First draft	ETC/ICM
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## 1 Introduction

The present document is prepared in parallel with the data call for the season 2016. It is an update of the guidance document prepared for the data call for the season 2015. The assessment rules for bathing waters for which a four-season dataset is not available have been since 2015 omitted (“transitional assessment”) and are not in use anymore.

The aim of this document is to introduce the national reporter into the Reportnet assessment procedure as well as to describe the methodology for assessment of bathing water quality according to the rules of Directive 2006/7/EC, and also according to the EEA principles. The methodology described is the basis for assessment procedures for the 2016 season. In 2017, all EU bathing waters will be assessed under the rules of Directive 2006/7/EC for the second time. The assessment under the transitional period (according to limit values of Directive 76/160/EEC) have been discarded already for assessment of bathing water quality for 2015 bathing season and will not be in use anymore.

## 2 Bathing water quality assessment

### 2.1 Bathing water monitoring and quality assessment provisions

For the 2016 season, all bathing waters will be assessed under the monitoring and quality assessment requirements of Directive 2006/7/EC. According to Art. 4 of the BWD, Member States shall ensure that sets of bathing water quality data are compiled through the monitoring of the parameters set out in Annex I of the BWD<sup>1</sup>. Consequently, the data is quality assessed.

In summary, the sampling requirements as set out in Art. 4 and Annex IV of the BWD can be summarised as follows:

- **taking a pre-season sample** - taken shortly before the start of the bathing season;
- **taking a minimum of four samples per season**<sup>2</sup>;
- **an interval between sampling dates never exceeding one month** - if, for any reason, it is not possible to take the sample at the date scheduled in the monitoring calendar, a delay of four extra days is allowed. Thus, the interval between two samples should not exceed one month + four days and interval between three samples should not exceed 66 days. Member States are advised to report the monitoring calendar to allow checking of sampling dates and delays<sup>3</sup>.

The monitoring rules described above must be met for all identified bathing waters. If these rules are satisfied, the bathing water is categorised as 'sampling frequency satisfied'. If at least one monitoring requirement is not fulfilled, the bathing water is categorised as 'sampling frequency not satisfied'.

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<sup>1</sup> Intestinal enterococci (ConcIE) and Escherichia coli (ConcEC).

<sup>2</sup> According to Annex IV, three samples are sufficient if the bathing season does not exceed eight weeks or if the region is subject to special geographical constraints.

<sup>3</sup> According to Art. 3.8, Member States shall report any suspension of the monitoring calendar to the Commission, giving the reasons for the suspension. They shall provide such reports on the occasion of the next annual report provided for in Article 13 at the latest.

In order to assess the quality of as many bathing waters as possible, bathing waters categorised as 'sampling frequency not satisfied' can still be quality assessed if there is a reasonable volume of samples available (at least four (three) samples per season that are more or less equally distributed throughout the season).

Assessment of the bathing water quality is possible when the bathing water sample dataset (at least 16 samples<sup>4</sup>) is available for four consecutive seasons. However, less than four bathing seasons can be used for the assessment if the bathing water is newly identified or any changes impacting bathing water quality have occurred (Article 4.4 of Directive 2006/7/EC). Bathing waters are accordingly classified to one of the bathing water quality classes (excellent, good, sufficient, or poor).

For the purpose of completing the information sheet in Reportnet (also see under section 2.4.) for bathing waters which cannot be quality-assessed, the following statuses are defined:

- 'not enough samples': not enough samples have been provided for the 2016 season or throughout the whole assessment period;
- 'new': classification is not yet possible because the bathing water is newly identified and a complete set of samples is not yet available;
- 'changes': classification is not yet possible after changes affecting the bathing water's quality have occurred;
- 'closed': bathing water is closed temporarily or throughout the bathing season.

Samples taken during short-term pollution can be disregarded if they are replaced by an additional sample taken seven days after the end of the short-term pollution. One additional sample shall also be taken to confirm that the incident has ended. This sample will not be part of the set of bathing water quality data.

If monitoring during abnormal situations is suspended, new samples shall be taken as soon as possible after the end of the abnormal situation to replace missing samples (Article 3.7 of Directive 2006/7/EC).

## 2.2 Percentile evaluation

According to Annex I and Annex II of Directive 2006/7/EC, status calculation is done based on percentile evaluation. Standards are separate for inland waters and for coastal and transitional waters.

Percentile evaluation of the log<sub>10</sub> normal probability density function of microbiological data acquired from the particular bathing water the percentile value is derived as follows:

- Take the log<sub>10</sub> value of all bacterial enumerations in the data sequence to be evaluated. (If a zero value is obtained, take the log<sub>10</sub> value of the minimum detection limit of the analytical method used instead.)
- Calculate the arithmetic mean of the log<sub>10</sub> values ( $\mu$ ).
- Calculate the standard deviation of the log<sub>10</sub> values ( $\sigma$ ).

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<sup>4</sup> According to Art. 4.3 and Annex IV, 12 samples are sufficient if the bathing season does not exceed eight weeks or if the region is subject to special geographical constraints.



The upper 90-percentile point of the data probability density function is derived from the following equation:

<b>upper 90-percentile = antilog (<math>\mu + 1,282 \sigma</math>).</b>
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The upper 95-percentile point of the data probability density function is derived from the following equation:

<b>upper 95-percentile = antilog (<math>\mu + 1,65 \sigma</math>).</b>
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Table 1: Classification standards for inland waters

<b>Parameter name</b>	<b>Excellent</b>	<b>Good</b>	<b>Sufficient</b>	<b>Poor</b>
Intestinal enterococci (IE) (cfu/100ml)	200 (95-percentile evaluation)	400 (95-percentile evaluation)	330 (90-percentile evaluation)	The set of bathing water quality data for the last assessment period shows percentile values for microbiological enumerations that are worse than the 'sufficient' values.
<i>Escherichia coli</i> (EC) (cfu/100ml)	500 (95-percentile evaluation)	1000 (95-percentile evaluation)	900 (90-percentile evaluation)	

Table 2: Classification standards for coastal and transitional waters

<b>Parameter name</b>	<b>Excellent</b>	<b>Good</b>	<b>Sufficient</b>	<b>Poor</b>
Intestinal enterococci (IE) (cfu/100ml)	100 (95-percentile evaluation)	200 (95-percentile evaluation)	185 (90-percentile evaluation)	The set of bathing water quality data for the last assessment period shows percentile values for microbiological enumerations that are worse than the 'sufficient' values.
<i>Escherichia coli</i> (EC) (cfu/100ml)	250 (95-percentile evaluation)	500 (95-percentile evaluation)	500 (90-percentile evaluation)	



### 2.3 Assessment with Bathing Water groups

Art. 4.5 of Directive 2006/7/EC describes the terms for grouping bathing waters; they must be contiguous, have received similar assessments for the preceding four years and have bathing water profiles for which common risk factors have been identified. This typically means that bathing waters can be grouped if they have similar physical, hydrological and geographical characteristics and if they are subject to the same risk of pollution and bathers' exposure to health risks. For that purpose bathing water profiles should be established.

When a bathing water is part of a group and not monitored, it can get the quality classification from a representative bathing water. Although not specifically mentioned in Directive 2006/7/EC, but for the purpose of classification, in the assessment, the samples obtained during the season from any of bathing waters in the group will be treated as one set of samples for the group. The classification is done on the basis of this sample set. Each bathing water in a group gets this classification. All bathing waters in the group are represented in final [BWD database](#) and [State of bathing water map viewer](#).

### 2.4 Status definition

For the purpose of completing the information sheet in Reportnet (also see under section 2.1) for bathing waters which cannot be quality-assessed, the statuses which do not reflect water quality are defined.

“New” bathing water is a bathing water which is newly identified and for which the representative dataset is therefore not available yet. A bathing water is categorised as “changes” if the necessary dataset collected after the changes that affect (or could have affected) bathing water quality, is not available yet.

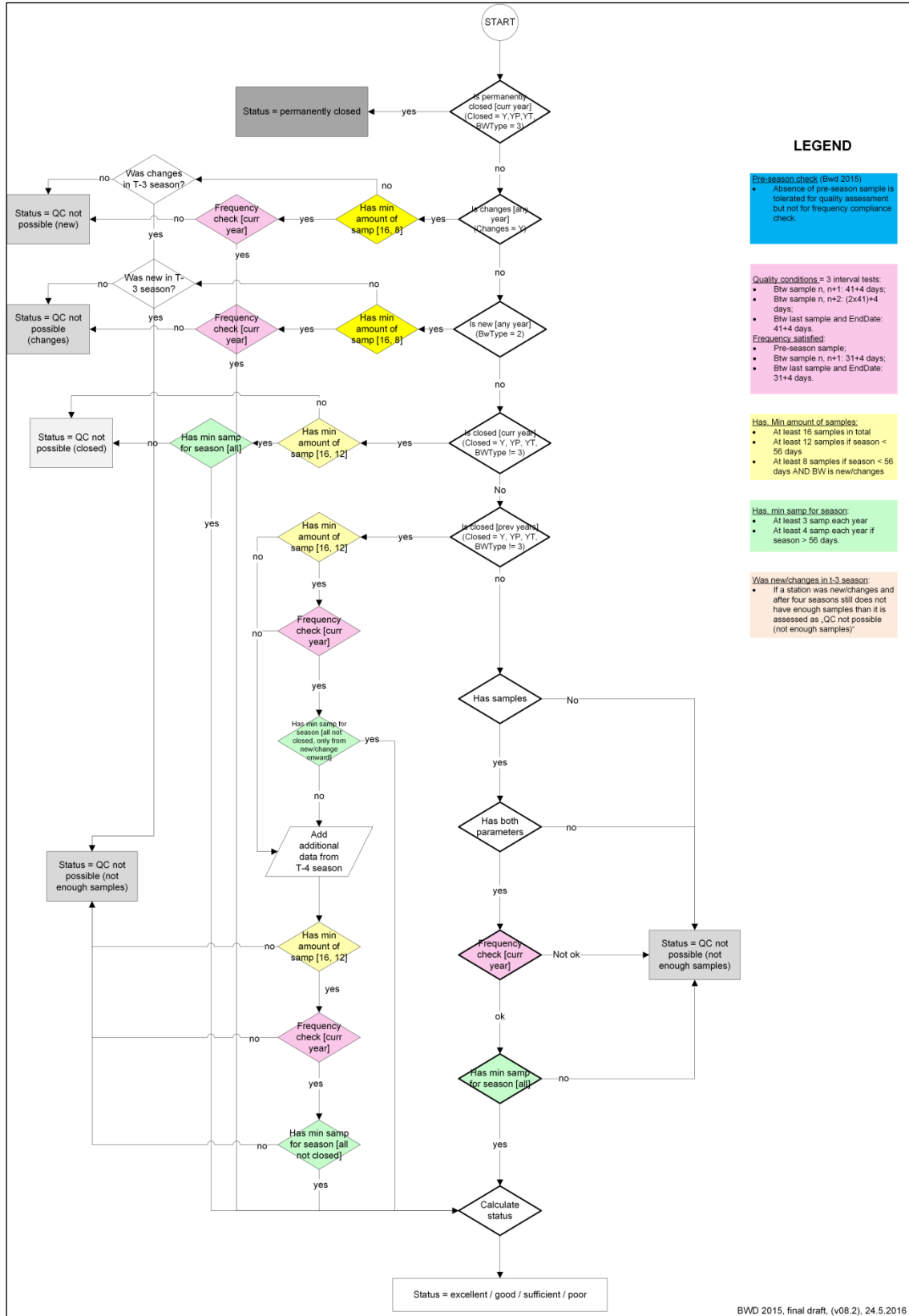
For bathing waters that are reported as “closed” the reasons for closing them will be analysed. If a bathing water is closed due to poor quality or any other reasons which do not physically disable sampling (e.g. lack of water, construction, erosion of access paths), it needs to be sampled (monitored) and samples reported, as it has been officially identified as a bathing water according to art. 3 of Directive 2006/7/EC and its provisions hence apply.

A bathing water may not operate due to renovation or construction works, or cannot be accessible due to other obstacles in its vicinity. If bathing at such a site is not prohibited or advice against bathing to prevent bathers' exposure to pollution (part of season or whole season) has not been issued and the bathing water cannot be sampled, the monitoring can be suspended. Any suspension of the monitoring calendar should be reported to the EC in advance for the bathing sites concerned to be considered compliant with BWD provisions (Article 3.8). When constructions last for the whole expected bathing season, such a season is not part of a four-year dataset needed for the assessment. The bathing season for such a site can also be shortened by-excluding the period of the construction works. The monitoring calendar should be adopted accordingly. Such a bathing site will be either classified according to its quality or classified either as “closed” or “not enough samples”. It may also be excluded from the list of identified bathing waters in the season 2016 if these works have been reported in advance.

Table 3: Status definition of bathing waters considering all combinations of achieved IE and EC statuses.

<b>Parameter status (2006/7/EC)</b>	<b>IE: Excellent</b>	<b>IE: Good</b>	<b>IE: Sufficient</b>	<b>IE: Poor</b>
<b>EC: Excellent</b>	Excellent	Good	Sufficient	Poor
<b>EC: Good</b>	Good	Good	Sufficient	Poor
<b>EC: Sufficient</b>	Sufficient	Sufficient	Sufficient	Poor
<b>EC: Poor</b>	Poor	Poor	Poor	Poor

## 2.5 Algorithm for assessment of bathing water quality under the Directive 2006/7/EC



BWD 2015, final draft, (v08.2), 24.5.2016



### 3 References

EC, 2006, Directive 2006/7/EC of the European Parliament and of the Council of 15 February 2006 concerning the management of bathing water quality and repealing Directive 76/160/EEC, OJ L 64, 4.3.2006, pp. 37–51.

European bathing water quality in 2013.

Url: <http://www.eea.europa.eu/publications/european-bathing-water-quality-in-2013/>

European bathing water quality in 2014.

Url: <http://www.eea.europa.eu/publications/european-bathing-water-quality-in-2014/>

European bathing water quality in 2015.

Url: <http://www.eea.europa.eu/publications/european-bathing-water-quality-2015> Guidelines on assessment under the New Bathing Water Directive and transition period. 5. November 2010.

Url: [http://forum.eionet.europa.eu/x\\_wise-reporting/library/bathing\\_directive/reporting\\_bathing\\_2010/data\\_dictionaries/assessment\\_season2010\\_1](http://forum.eionet.europa.eu/x_wise-reporting/library/bathing_directive/reporting_bathing_2010/data_dictionaries/assessment_season2010_1)

Guidelines on assessment under the New Bathing Water Directive and transition period – reporting for 2013 bathing season. 23.october 2013. Url:

[http://forum.eionet.europa.eu/x\\_wise-reporting/library/bathing\\_directive/reporting-bathing-season-2013/bwd\\_guidance-assessment\\_season2013](http://forum.eionet.europa.eu/x_wise-reporting/library/bathing_directive/reporting-bathing-season-2013/bwd_guidance-assessment_season2013).

Guidelines on assessment under the New Bathing Water Directive and transition period – reporting for 2014 bathing season

Url: [http://forum.eionet.europa.eu/x\\_wise-reporting/library/bathing\\_directive/reporting-bathing-season-2014/bwd\\_guidance-assessment\\_season2014](http://forum.eionet.europa.eu/x_wise-reporting/library/bathing_directive/reporting-bathing-season-2014/bwd_guidance-assessment_season2014)

Guidelines for assessment under the Bathing Water Directive and reporting for the 2015 bathing season

Url: [http://cdr.eionet.europa.eu/help/BWD/BWD\\_Guidance\\_for\\_assessment\\_season2015\\_fin.pdf](http://cdr.eionet.europa.eu/help/BWD/BWD_Guidance_for_assessment_season2015_fin.pdf)