

## **IMPLEMENTATION OF THE FRAMEWORK DIRECTIVE AND OTHER DIRECTIVES RELATED TO THE WASTE WATER TREATMENT IN THE CZECH REPUBLIC**

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### **1. BASIC LEGAL REGULATIONS IN THE CZECH REPUBLIC**

Protection of water against pollution in the Czech Republic is regulated under Act No. 254/2001 Coll. on water (the Water Act) and the related accompanying regulations, of which the most important are Government Decree No. 61/2003 on indicators and values of released contaminants of surface waters and waste waters, the requirements for allowing the release of waste waters into surface waters and the sewage system and on sensitive areas and Government Decree No. 103/2003 Coll. on the identification of vulnerable areas and application and storage of fertilizers and farm fertilizers, rotation of crops and realization of anti-erosion measures in these areas. The first government decree is intended for water regulatory offices permitting the release of waste water from point pollution sources; it does not address non-point and diffuse pollution sources, however, it contains requirements for determining emission limits using the combined method. The second decree is aimed at non-point and diffuse agricultural sources of pollution.

The operation of public sewage systems and municipal waste water treatment plants is limited by Act No. 274/2001 Coll. on water supply and sewage systems for public use and on certain changes to the law (the Act on Water Supply and Sewage Systems) and the related accompanying regulations, of which the most important is Ministry of Agriculture Regulation No. 428/2001 Coll. The regulation, among others, sets qualitative requirements for drinking water.

A special act for the protection of water quality is Act No. 76/2002 Coll. on integrated pollution prevention and control, the integrated pollution register (the Act on Integrated Prevention), which relates to selected (larger) sources of pollution. Accompanying regulations related to the best available techniques and the creation of an integrated pollution register are linked to the act. These are Government Decree No. 63/2003 Coll. on the methods and scope of securing the system of the exchange of information on the best available techniques and Government Decree No. 368/2003 Coll. on the integrated pollution register.

There further exist a number of other regulations which set requirements for the quality of surface waters for various uses of water. The most important ones are: Government Decree No. 71/2003 Coll. on setting surface waters appropriate for the life and reproduction of original breeds of fish and other water organisms and on ensuring and assessing the quality of such waters, which, among other things, determines the quality requirements for fish zones of surface waters, and Ministry of Health Regulation No. 135/2004 Coll. which sets the hygienic requirements for swimming pools, baths and hygienic limits of sand in sand pits of outdoor

play areas. This regulation accompanies Act No. 258/2000 Coll. on Public Health Protection and determines the requirements for the quality of surface waters used for swimming.

## **2. THE SITUATION OF THE IMPLEMENTATION OF COMMUNITY LAWS RELATED TO THE WASTE WATER TREATMENT**

In the opinion of the Ministry of the Environment (ME), the implementation of Community Law is complete and it is now only necessary to fulfill the implemented regulations. In May of this year, the Ministry prepared an ME Action Plan for introducing the needed measures for the realization of the tasks coming out of the EU Framework Directive.

The implementation of Community Law related to the waste water treatment was carried out in Czech Republic by the "Euro Amendment" to the Water Act, i.e. by Act No. 20/2004 Coll., on the one hand, and on the other hand by Government Decree No. 61/2003 Coll. which respected the 15 EU Directives, primarily Council Directive 91/271/EEC on the treatment of municipal waste water, Council Directive 76/464/EEC on dangerous substances and its 7 sub-directives and Directive of the European Parliament and Council 2000/60/EC. Government Decree No. 61/2003 Coll., however, also respected the requirements on water quality of Council Directive 75/440/EEC on the quality of raw potable water (implemented by Act No. 274/2001 Coll. on water supply and sewage systems and accompanying Ministry of Agriculture Regulation No. 428/2001 Coll.), Council Directive 76/160/EEC on bathing water (implemented by Act No. 258/2000 Coll. on Public Health Protection and accompanying Ministry of Health Regulation No. 135/2004 Coll.) and Council Directive 78/659/EEC on fish life (implemented by Act No. 254/2001 Coll. on water and Government Decree No. 71/2003 Coll.).

The waste water treatment is also governed by Council Directive 96/61/EC on integrated pollution prevention, which was implemented by Act No. 76/2002 Coll. on integrated pollution prevention and control, the integrated pollution (the Act on Integrated Prevention, which is accompanied by Government Decree No. 63/2003 Coll. on the methods and scope of securing the system of the exchange of information on the best available techniques and Government Decree No. 368/2003 Coll. on the integrated pollution register.

## **3. THE DEVELOPMENT OF THE CONSTRUCTION OF TREATMENT PLANTS OF MUNICIPAL WASTE WATER**

The main construction of treatment plants of municipal waste water was started in the Czech Republic after World War II (the construction of classical mechanical-biological treatment plants with biofilters and activated sludge process), mass construction, however, begun after 1989, when mechanical-biological treatment plants with the activated sludge process and with elimination of nutrients were constructed. The situation of the release of BOD<sub>5</sub> a COD from towns in the Czech Republic in 1990 and 2004 is evident from Tab. 1.

As part of the accession negotiations a transition period for fulfilling Council Directive 91/271/EEC was negotiated so the 3 gradual terms were set, with 31 December 2002 for 18

populated areas above 10,000 p.e., 31 December 2006 for a further 36 populated areas above 10,000 p.e. and finally 31 December 2010 for all the remaining 733 populated above 2,000 p.e. The stated terms are related both to the construction of the waste water treatment plants as well as the construction of sewage systems.

Table 1 – Released Quantity of BOD<sub>5</sub> and COD from towns in the Czech Republic in 1990 and 2004.

year	thous. tons/year		efficiency (%)		CZK/m <sup>3</sup>
	BSK <sub>5</sub>	CHSK	BSK <sub>5</sub>	CHSK	sewage charges
1990	91.9	225.2	54.1	50.0	1.22
2004	5.8	32.3	97.2	92.9	19.39

Currently, the expert public has been interested in also setting requirements for both N and P for agglomerations with 2,000 to 10,000 p.e.

#### 4. COMBINED METHOD OF DEFINING EMISSION LIMITS

The Directive of the European Parliament and Council 2000/60/EC setting the framework for activities of the Community in the area of water policy (Framework Directive) in Article 10 requests that the so called combined approach to point and diffuse sources of pollution is applied. The principle of the combined method is defined in Article 10(2) and 10(3) in a complicated and rather unclear manner.

The combined approach was implemented in Article 6(11) of Government Decree No. 61/2003 Coll. and the definition is given in Article 2(j) of the Decree as a method of setting the emission limits that will provide for simultaneous compliance with the emission standards included in Appendix No. 1 to the Decree and the target water quality objectives included in Appendix No. 3 to the Decree and the target water status identified in Appendix No. 2 to the Decree with respect to the best available techniques in manufacturing and available technology of waste water treatment.

It is important to note that Government Decree No. 61/2003 Coll. is intended for allowing for waste water discharges into surface waters from pollution point sources; therefore, it does not apply to diffuse sources of pollution. That is given by the fact that the Decree was prepared according to an authorisation included in Article 38(5) of the Water Act and that Article 38 deals with discharge of waste water from point sources of pollution. The Water Act does not recognize the term “surface and diffuse pollution sources” (according to the Framework Directive – “diffuse pollution sources”), only Article 33 deals with agricultural diffuse sources of pollution, without even using that term.

The deadline for reaching thus defined emission limits has been set to 22 December 2012, and for dangerous and especially dangerous substances (priority and priority dangerous substances) the deadline is 31 December 2009.

Appendix 2 to the Government Decree No. 61/2003 Coll. in Article 9 identifies reaching good status of surface water bodies by 22 December 2015. However, good status has not been set, yet. Therefore, the so called “Draft goals of good status of surface and groundwater bodies”

[1] have been identified for the needs of work on Article 5 of the Framework Directive. However, the Draft Goals are not in compliance with the water quality objectives of the Directive – neither from the point of view of values, nor from the point of view of statistical interpretation of the values<sup>1</sup>. Article 11(3) of the Framework Directive also implies that the Measure Programmes that have to provide for compliance with the environmental objectives defined in Article 4 of the Framework Directive related both to the point pollution sources and the diffuse sources causing the pollution.

The definition of the combined method shows that this is a regional problem – the system of pollution sources and the system of interest profiles or sections of the course with the requirements for water quality stand against each other. And because it is a regional problem, discharge of waste water from a specific point pollution source cannot be allowed regardless of the conditions on the course above and below the source of pollution. That is why it was decided to prepare methodological instructions for water regulatory offices on how to proceed when issuing permits.

The Water Research Institute of T.G.M. in Prague first prepared an analysis of the issues and then the first version of the methodological instructions titled “Defining Emission Limits Using the Combined Approach” [2]. Because the customer (the Ministry of the Environment) did not narrow down the conditions for the material, eight possible alternatives of solving the combined approach issue were outlined. At the same time, the customer was asked to narrow down the conditions of preparing the methodology instructions.

The number of alternatives of resolving the issues of the combined method of setting the emission limits was given by the fact that there are or will be 2 sets of requirements for water quality (water quality objectives of the Government Decree No. 61/2003 Coll. and the environmental quality standards or the Draft goals of good status of water), whether or not diffuse sources of pollution will be considered and whether the water quality requirements will relate to the point of discharge of waste water or to a different place of the water body and whether or not self-cleaning will be considered.

The customer (the Ministry of the Environment) in April 2005 narrowed the terms of reference so that the water quality objectives are supposed to be equal to the draft or environmental goals for the good status of water bodies. The calculations should relate (at least for the first period of processing the water basin plans) to the lower end of the water body and self-cleaning would not be considered for the calculations. The requirement for equality of the water quality objectives of the Decree and the draft or environmental goals for good status of water bodies means that we need to take into account diffuse sources of pollution.

## **5. SENSITIVE AREAS IN THE CZECH REPUBLIC**

The Czech Republic has decided that the entire territory of the country will be a sensitive area under Council Directive 91/271/EEC. The decision was based on the fact that Germany has declared the river basin of rivers falling into the North Sea and the Baltic Sea sensitive areas

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<sup>1</sup> The water quality objectives in the Decree are characterized as values with a probability of compliance of 90% (it says 95% by mistake), while the Draft Goals are characterized as medians.

and Article 5(5) of Council Directive 91/271/EEC stipulates that the river basin above the sensitive areas is to be considered a sensitive area as well. Because the river basin of the Elbe River and Odra River represent 72.5 % of the Czech Republic's territory, the entire territory of the country was declared a sensitive area.

## 6. PRECONDITION OF FURTHER DEVELOPMENT

The Ministry of the Environment of the Czech Republic wants to amend Government Decree No. 61/2003 Coll., however, it is not clear whether this will be a large amendment or only cosmetic changes. It is clear that water quality objectives of the Decree should be identified again so that they are comparable to or equal to the environmental quality standards (or environmental goals for good status of water bodies). It is not suitable to have two sets of requirement for quality of water with different statistical interpretations, different usage (including or excluding diffuse sources of pollution) and different deadlines for reaching the goals (2012 x 2015)<sup>2</sup>. Due to the considerations of the amendment, work on the methodology instructions has been paused.

### Background Materials

[1] Rosendorf, P, Prchalová, H. Rieder, M. (2004): *Pracovní cíle dobrého stavu vodních útvarů povrchových a podzemních vod (Draft Goals of Good Status of Surface and Ground Water Bodies)*, Water Research Institute of T.G.M., Prague & Czech Hydrometeorological Institute, Prague

[2] Nesměrák, I. (2005): *Stanovení emisních limitů kombinovaným způsobem (Combined Method of Defining Emission Limits), Report on Work on Goal 1018 for the Year 2004*, Water Research Institute of T.G.M., Prague

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<sup>2</sup> The industry tried to soften the requirements of Government Decree No. 61/2003 Coll. especially in the area of dangerous substances because the requirements of the Decree are stricter than Council Directive 76/464/EEC, however, it was established that Council Directive 76/464/EEC was closely followed.