



The Association of Geological Surveys of the European Union
(EuroGeoSurveys)
in their position as
custodians to their national natural resources
and
guardians of their terrestrial environment

present their contribution to the
Discussion Paper
(Draft 1.0)

Proposed framework structure of the Directive establishing strategies to prevent and control pollution of groundwater (GWD)

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This paper sets out the opinion of EuroGeoSurveys (The Association of the Geological Surveys of the European Union) to the DG Environment Discussion Paper (Draft 1.0): Proposed framework structure of the Directive establishing strategies to prevent and control pollution of groundwater (GWD).

About EuroGeoSurveys

EuroGeoSurveys is a European non-profit association, which works solely in the public interest. It is constituted by the Directors of the national Geological Survey Organisations (GSO's) of all fifteen-member states of the European Union plus Iceland, Norway, Switzerland, Bulgaria, Czech Republic, Hungary and Poland, and can draw on the expertise of over 7000 professionals. Its main aim is to provide the entire range of European Union institutions with expert, balanced and practical pan-European advice and information as an aid to problem-solving and policy formulation in areas such as the use of natural resources (minerals, water, energy, soils and land), and the sustainable management of environmental issues and natural hazards.

EuroGeoSurveys functions as:

- *A Virtual Geological Survey*, to assist the European Union to obtain joint technical advice from the Geological Surveys of the Member States and the Accession Countries;
- *A Virtual Data Centre*, to provide the policy makers, the industry and the public with easy accessible, uniform quality controlled geoscience data;
- *A Virtual Centre of Excellence*, to combine the best of geo-expertise to further develop technology and know-how in the field of natural resources and terrestrial environment;
- *A Virtual Geoscience Permanent Education Network*, to improve the awareness of the public, industry and authorities of the opportunities offered by geoscience.

Each member Survey reports to its government on the state of the country's landmass and Earth resources and maintains large geosciences information banks. EuroGeoSurveys is thus a network of national topic centres, each of which provides government and industry with comprehensive, objective baseline information to support decision-making on natural resource (minerals, energy, water, soils), environmental issues, such as the holistic monitoring and preservation of the environment and natural and man induced hazards, e.g. earthquakes, volcano eruptions, flooding, sea level changes. EuroGeoSurveys promotes Survey work to the EU institutions as relevant to European problem solving in these issues and has contributed opinions on minerals research, groundwater resource policy, the urban environment and the content of new RTD Framework Programmes.

EuroGeoSurveys formulates forward strategy in a number of technology areas which reflect priorities on the EU agenda: information and knowledge transfer; sustainable land use planning; CO2 disposal; natural resource demands; natural geohazards (including earthquakes); clean water, urbanisation, pollution and waste management; quality of the coastal and marine environment; land instability; impacts of climate change; and effective international cooperation in the Developing World, PHARE and TACIS programmes.

EuroGeoSurveys is part of the Forum of Directors of European Geological Surveys (FOREGS), a platform for discussion of European resource and environmental issues by the Council of Europe countries.

Introduction

Having taken notice off the following documents:

- Discussion Paper Draft 1.0: Proposed framework structure of the Directive establishing strategies to prevent and control pollution of groundwater (GWD), dd. 8.11.2002
- Directive 2000/60/EC
- Directive 1998/83/EC

Taking into account the fact that most of the members of the Association of Geological Surveys of the European Union have the task of monitoring of the quality and use of groundwater, either by law or by historic inheritance, on the list of their core business, and although a number of experts belonging to one of the members of EuroGeoSurveys, have participated and still participate in the expert advisory forum, EuroGeoSurveys would like to contribute to the discussion on the establishment of the Framework structure of the directive establishing strategies to prevent and control pollution of groundwater.

The present contribution to the discussion is based not only on the vast expertise available within its member organisations, but also builds on the memoranda of the national committees on the implementation of the Water framework directive.

As such, EuroGeoSurveys has the following contributions to the Discussion Paper, Draft 1.0 on the Proposed framework structure of the Directive establishing strategies to prevent and control pollution of groundwater (GWD):

Discussion

Paragraphs refer to those of the Discussion Paper

1. Background

We would like to point out that in relation to the Article 3 and article 13 of the WFD, Groundwater bodies are not always related to the extension of river basin districts, indeed, groundwater bodies may communicate across river catchment borders. Therefore, a provision should be made in order to allow for the co-ordination of administrative arrangements as well as for the establishment of management plans across the boundaries of river catchment basins in those areas where groundwater communication is established or expected to happen on a regular or occasional basis.

The criteria for the assessment of the chemical status of groundwater based on the basic criteria defined in Annex V.2.3. of the WFD and on the establishment of a core list of substances and parametric values set out at EU level, should include all the major ions found in water (Na^+ , K^+ , Ca^{2+} , Mg^{2+} , Cl^- , SO_4^{2-} , NO_3^- , HCO_3^- , and possibly CO_3^{2-}), as these elements can be used as quality control indicators for the laboratory analysis and are at the same time essential in the studies for the evolution of groundwater chemistry and for the application of groundwater chemical models. (Groundwater chemical modelling is suggested for assessing natural background concentration of groundwater, Paragraph 4(5) of the Discussion Paper)

Among the measures to prevent and limit pollution and to prevent deterioration of groundwater quality, attention should also be given to the issues of the re-use of treated waste water in certain groundwater recharge areas, but also in river basins in communication with groundwater bodies since in those type of waters, higher concentrations of substances considered to be endocrine disruptors may be present (estrogens, anti-inflammatory medicaments and antibiotics have already been detected in groundwater). We therefore suggest a base-level monitoring measurement in specific and risk areas, for indicator chemicals to be repeated at appropriate time intervals.

3. Definition

Under paragraph 2,

” ’significant abstraction’ refers to groundwater bodies used, or intended to be used, for the abstraction of more than 10 m³ of drinking water a day on average. Geological strata capable, even locally, of permitting such levels of abstraction therefore qualify as aquifers.”

We would like to point out that very many geological materials or strata are capable of producing such low rates of water. Hence, we consider the measuring and monitoring program to be overly ambitious and costly.

4. Assessment of groundwater chemical status

Paragraph 2 stipulates that the assessment would be partly based on the basic requirements and criteria defined in Annexes II.2.1 and V.2.3 of the WFD. This implies that the basic requirements and the criteria for the GWD are different from those for the WFD either by limiting the number of requirements and criteria, or by extending them, or even by choosing completely different requirements and criteria. Although the technical details are suitably covered by the horizontal guidance on water bodies and the IMPRESS guidance documents, some room for interpretation still seems to be left open.

5. Quality standards linked to groundwater chemical status

Paragraph 1 indicates that the selection of the core list of substances and concentration values has not yet been made. We assume therefore that Table 2 has been included for discussion.

The values given in table 2 appear to be drinking water limits. It seems unrealistic to expect that all groundwater have to meet with the drinking water standards, in order to have good chemical status. This would automatically result in excessive remediation cost.

Nickel and aluminum concentration limits (0.2 mg/l and 50 mg/l) are values that are commonly exceeded in streams and springs in large catchment areas both in the Nordic states and in karstic areas. In order to prevent lengthy discussions and disputes, further specification may be required (e.g. is the concentration a total concentration, incl suspended colloids?)

Of course, “the spirit” of the GWD is that table 2 does not in itself consist a limitation on the number and the choice of the criteria and that natural background can be taken into account; however, room for interpretation will always lead to legal disputes.

“For non-synthetic substances (e.g. metals), background levels should be assessed in order to take the natural variability into account. Derogation may be requested for groundwater containing naturally high levels of non-synthetic substances, which can be clearly differentiated from

anthropogenic inputs. It would hence be for each of the river basin authorities to identify the background levels in groundwater.”

The terminology: “non-synthetic substance is rather vague. The substances meant under the discussion paper might better be defined as naturally occurring components. In addition, acid rains, anthropogenic activities such as aggregate (gravel pits) production afforestation/deforestation and climate change may affect acidity of soil water and release the aforementioned metals. The differentiation of anthropogenic inputs may appear far from clear to the authority that may feel forced not to allow derogation.

We can see this happen in certain areas in Europe, e.g. Finland, where authorities must take into consideration the letter rather than the spirit of legislation.

Also in areas where historically, mining has occurred, the distinction between natural contamination and pollution due to mining may be impossible.

The document suggests that groundwater bodies will have “poor status” if natural contaminants exceed the prescribed limits. However, the status criteria in Annex V of the WFD refer to the pollutants and in Article 2, pollution is defined as the result of human activity, rather than natural occurrence.

If naturally occurring high concentrations in groundwaters have to be removed, this may affect dependent ecosystems. Presumably, derogation would apply here, but the status would remain invariably “poor”.

Paragraph 2 leaves some room for interpretation in the sense that values for complementary substances will have to be risk-analyzed, based on a number of criteria. Its wording of this paragraph seems to imply that these values for complementary substances can vary from one groundwater body to another, or even from one part of a groundwater body to another part.

Paragraph 3 stipulates as basis for the definition of the groundwater chemical status, among others: “general EU-wide standards applied to all groundwater as a matter of precautionary principle, subject to derogation regarding naturally contaminated groundwater ”

Natural contamination should be somehow defined in GWD. In WDF the term pollution is clearly defined as an anthropogenic activity. If contamination is synonymous to pollution, how can it be natural? Is contamination by definition reserved for natural causes compared to pollution that could be reserved for anthropogenic activity? Such terminology should be clearly defined.

Paragraph 3 refers to several levels to be considered when defining a groundwater chemical status in relation to quality standards:

- (1) general EU wide standards that seem to be drinking water standards (EC Directive 98/83/EC) for many of the substances listed in Table 2, meaning that all groundwater are to be considered as possible drinking waters. A further differentiation between groundwater of good chemical status (for drinking water purpose) and groundwater of poor chemical status (not suitable for drinking water) with an intermediate group of groundwaters in natural equilibrium with their geological and environmental setting may be considered.
- (2) Drinking water standards, that are largely comparable to the standards under (1)
- (3) Surface water standards: our question is: how do, according to the GWD, the surface water standards relate to the groundwater standards and what guidelines are intended to determine the likely impact of groundwater pollution/contamination on associated surface waters.

9. Specific measures for point sources of pollution and protected areas

Under paragraph 2 where specific measures to protect the groundwater within protected areas are defined, we would like to see added the following requirement:

- Restrict the re-use of wastewaters that are not guaranteed free of medicines and/or endocrine disruptors.

10. Identification and reversal of significant and sustained upward trends

Under paragraph 3, two indicative targets are put forward to apply to set up starting points for trend reversal:

There is a contradiction in the terminology used:

- “For pollutants issued from diffuse sources, value set at 50% of the standard;” (is it meant here: 50% of the level of the EU-wide parameter, or 50% of the quality standards set out by Member States?)

Conclusion:

EuroGeoSurveys welcomes the initiative and appreciates the effort already invested in the discussion paper on the “Proposed framework structure of the Directive establishing strategies to prevent and control pollution of groundwater (GWD)”.

EuroGeoSurveys however recognises a number of potential pit-falls in the draft as some further definition of terminology, or evaluation of the relation between different legal frameworks may be required.

To that end, EuroGeoSurveys suggest to perform an Impact Assessment evaluation.

EuroGeoSurveys is willing and prepared and has the required expertise to contribute to such an Impact Assessment.