

ANNEX II

Summary of general comments on the discussion paper 1.0 **(received before December 6th, 2002)**

This summary corresponds to general comments collected from several EAF Groundwater members on the GWD Discussion Paper, draft 1.0, before the 6th December 2002. Where relevant, a remark is made by the Commission in italic at the end of each specific comment or groups of comments. This annex is complemented by position papers from the Common Forum on Contaminated Land.

Definitions

- The definition of significant abstraction as it appears in the Discussion paper would imply that in practice nearly all groundwater is within aquifers and consequently within bodies of groundwater, which might be economically unfeasible. The volume of 10 m³/day only applies to drinking water use and should not be extended to the definition of groundwater bodies. This definition is not considered necessary as it is referred to aquifer, a term already defined in the WFD. *COM: Since this aspect is covered in the guidance document prepared by WG 2.7 “monitoring”, this definition has been withdrawn from the section 3 of the Discussion Paper, draft 2.0.*
- Significant flows to other groundwater bodies should be introduced in the definition of significant flow (in line with the minutes of the 4th EAF meeting). *COM: This definition is adequately covered by the Horizontal guidance on water bodies and was not recommended to be repeated in the GWD.*
- The purpose of introducing the definition of unpolluted groundwater is not indicated in the Discussion Paper and should be clarified. *COM: Unpolluted groundwater has to stay in its natural state.*
- It is considered unnecessary to introduce a further differentiation regarding the definition of significant and sustained trends above the requirement that where there is a statistically significant increase against the *status quo* – as calculated on the basis of WG 2.8 – the trend should also be considered significant and sustained. In other words, the definition related to an absolute or relevant increase is not particularly useful, since trends would be produced for varying increases in pollutant levels, depending on the concentrations found in the *status quo*. Furthermore, the results of WG 2.8 indicates that a monitoring period of 5 years is required in order to obtain reliable evidence, and there is no reason why this should deviate from these results. *COM: This has been taken into account in the GWD Discussion Paper, 2.0.*
- A definition would be needed for the term “deterioration”, making it clear that it refers to any statistically verified increase in the concentration of pollutants, i.e. even within the good status. *COM: This has been added to section 3 of the GWD Discussion Paper, 2.0.*

Groundwater chemical status

- It is not clear whether the definition of the *status quo* should only apply for groundwater bodies identified as being at risks: this should actually concern all groundwater bodies since it is necessary to identify trends and monitor potential changes for groundwater bodies which are also not classified as being at risk. In order to limit the amount of measuring work involved, however, it is felt that the initial characterisation of such groundwater bodies (not at risk) should include a list of pollutants for which trend identification is required, based on human activities. Consequently, the analysis of substances which are not used or released into groundwater would be unnecessary. *COM: The status quo definition clarifies that it should apply to all groundwater bodies. No list of pollutants is given for trend identification since it should in principle be applied to all pollutants.*
- The discussion paper implies that the initial characterisation phase should be completed by the end of 2004, which seems to be on a very short term. According to Article 8(2) of the WFD, the measurement programmes need not to be operational before the end of 2006. Consequently, it would be unreasonable to require a finalised establishment of the *status quo* by the end of 2004. Because the GWD will not enter into force before 2004 at the earliest, a provision is required, stipulating when the analysis will take place, and whether or not statements from the Member States' existing measurement networks (meeting the requirements) are to be included. However, a reliable statement on the *status quo* must be available in time (i.e. at the latest) for the 2009 management plan. *COM: This has been corrected in the GWD Discussion Paper, 2.0.*
- Is quality status applied on the overall groundwater body or only parts of groundwater bodies? Maybe part is used for drinking water, part is in contact with surface water, part has no direct use or contact. Is quality of a groundwater body the same as quality of its "worst" part? *COM: The discussion paper considers the status assessment of groundwater bodies, according to specific controls (common indicators, use, interactions, risks)..*
- The proposal does not clearly recognise that the existing "no deterioration" objective refers to the status of water bodies as set out in the WFD (Article 4(1)bi). Instead, it adds to the confusion by introducing the term *status quo* in the context of the existing quality of groundwater, as a benchmark for trend reversal. *COM: It is indeed proposed to start from the actual status of the groundwater to identify significant and upward sustained trends. Otherwise, how would it be possible to identify such trends? The Discussion Paper, 2.0, adds a section on the "no-deterioration" clause.*

Natural background concentrations

- The requirement of establishing natural background concentrations is not clearly stated in the Discussion Paper and will create a significant burden of work. If this approach is retained, it should be better justified. At this stage, it is not supported by some Member States, while being agreed by others.
- Support for the assessment of natural background concentrations is based on the reasoning that only in this way it is possible to develop an understanding of the

possible changes and influences caused by human activities, assess the associated risks, and expediently evaluate monitoring results. However, there is no need to specify background levels for those substances which are irrelevant due to prevailing geological circumstances.

Quality standards linked to groundwater chemical status

- The definition of good chemical status based on a limited set of EU standards is supported by some MS and stakeholders, with some reservations, e.g. regarding phosphate (not playing a role from a human health perspective or for the protection of groundwater itself), which is only linked to eutrophication risks of associated surface waters. Aluminium is an element of the first being washed out in case of acidification of soils and is hence a good indicator in this respect. Cadmium is a significant heavy metal from a human toxicological perspective, which can enter into the environment via sulphate fertilisers, in particular.
- Drinking water standards should be carefully reviewed before being used as GW quality standards. For quite a number of parameters, the use of materials and treatment chemicals is filling up a major part of the standard (for metals as well as organic substances). If GW quality standards are set at this level to indicate the good status, there will be no safety margin at all.
- Applying GW quality standards to average pollutant concentrations are unlikely to adequately address risks to human health or ecosystems. It is considered that standards do not equate to the precautionary principle and could undermine existing protection by potentially allowing “topping up”. Standards “imported” from other legislation may have little relevance to natural groundwater. *COM: GW quality standards are used to set up general boundaries between poor and good status, i.e. as common (screening) indicators. The “topping up” would in principle be avoided by the no-deterioration clause.*
- Standards related to groundwater should be fixed at the appropriate level and at the appropriate place. Only the local assessment of groundwater characteristics, uses and interactions with surface waters will enable to correctly establish them. However, the Commission proposal to set up standards to be complied in all parts of groundwater bodies does not follow this line of thinking. The proposed quality standards are largely taken from the Drinking Water Directive, which means applying public health criteria to all groundwaters, whereas the GWD should actually define environmental objectives. Furthermore, this proposal of “general standards” for all groundwaters appears to deviate from the on-going work on ecological and chemical status of surface waters. Whereas for surface waters standards for chemical status are designed to take into account the variability of typologies, i.e. the sensitivity of waters to various pollutants, the proposal of general standards for groundwater does not take into account the nature and importance of freshwater ecosystems and their relationships with groundwater. However, preliminary discussions have shown the high heterogeneity of the relationships between aquifers and rivers, in terms of either water flow or pollutant loads. *COM: The Commission recognises these difficulties but insists on the need to establish an, even limited, list of “common indicators” that would be legally-binding. A reduced list is hence proposed in the GWD Discussion Paper, 2.0.*

- No justification or explanation is given for the selection of particular substances at EU level and the proposed numeric values. The compliance regime (i.e. where and how the standards are applied) is confused and applies different regimes to bodies at risk and bodies not at risk, maintaining the averaging approach in some scenarios, but taking individual values in others. This will lead to inconsistent reporting. The fundamental issue is that the environmental purpose the standards are expected to serve is completely unclear as are their benefits. *COM: A justification is included in the GWD Discussion Paper, 2.0, as well as a classification of the compliance regime.*
- The inclusion of chlorides and sulphates are questionable since those ions are not considered as pollutants in the EU legislation. Although they may be used as indicators of saline water intrusion, conductivity may be used instead, as established in Annex V.2.3.2 of WFD. *COM: Other arguments have been given for selecting these parameters, which are kept in the list.*
- The number of chosen parameters for the EU list could be reduced without diminishing the statement on good chemical status. For example, mineral oil hydrocarbons are not particularly mobile and are actually only found in groundwater as a result of accidental pollution; they should hence be excluded from the characterisation of groundwater chemical status (however, they are significant with respect to the evaluation of point sources). The salts sulphate and chloride should be maintained in the list since sulphates leach out from construction site rubble and slag heaps and may be a principal indicator of nitrate depletion in the soil if content levels rise. Chloride may be indicative of leaks in the sewerage system, as well as of traffic-related emissions (road salt) or intrusion of salt water. A shorter list could comprise: nitrate (50 mg/l), ammonium (0.5 mg/l – for reducing conditions in the groundwater body a higher quality target should be set), pesticides (0.1 µg/l, 0.5 µg/l in total), aluminium (0.2 mg/l), cadmium (5 µg/l – in Germany, background levels are about 0.5 µg/l so a lower target would be appropriate), volatile chlorinated hydrocarbons (10 µg/l), sulphate (250 mg/l), and chloride (240 mg/l – in Germany, the background levels for sulphate and chloride are half to one-quarter of these concentrations, i.e. a lower quality target would be justified, especially as the aforementioned concentrations are generally not reached as a result of anthropogenic activity). In the case of chlorinated hydrocarbons, the total sum of chlorinated hydrocarbons from tetrachloroethylene and trichloroethylene should not exceed 10 µg/l. Where applicable, decomposition products such as cis-1,2-dichloroethene should also be included. *COM: These recommendations have partly been taken into account in the revised list of EU parameters in the GWD Discussion Paper, 2.0.*
- The application of common standards will require new derogation for “naturally contaminated” groundwater. *COM: Simply indicating that a “naturally contaminated” GW would be excluded for use as drinking water, derogation would not required, i.e. the possible “poor status” due to high occurrence of substances would only mean that the GW should not be used for human consumption, without requiring imposed measures.* It should be made sure that information on background levels will be available.
- A quality standard of 50 mg/l for nitrates is not so “good” as an environmental standard, considering the eutrophication risks for associated surface waters (25 mg/l would be more suitable). Possible limits for organic matter and microbiological contamination should be added. Arsenic should be considered.

- Complementary standards to be set by Member States should be better defined. What do we mean by “values”? Values that are relevant over the entire MS or values that may be very regional, depending on groundwater use and interactions? Is “values” the same as “concentrations”, or can they also concern other parameters (e.g. effect of a signal parameter, like specific sensitive bacteria).
- The question was posed to which point should the point sources-related standards be met. At the point source itself? At a defined point?

Trend identification and reversal

- Trends have to be assessed for all pollutants provided with a quality target, independently from the good status achievement. In addition, the trend of other substances posing a risk to the GW body should be analysed (as a result of the identification of risks, following the initial characterisation). Trend analysis should be performed on the basis of average concentrations within a GW body, using the statistical tool provided by WG 2.8. Every identified trend has to be reversed. Starting point for trend assessment are not considered necessary because values averaged over a whole GW body are used.
- Graduated measures for limiting and reversing a trend are to be taken, depending on the concentration when the trend is identified. The more significant the trend and the closer it comes to reaching or even exceeding the quality goal, the far more-reaching and binding these measures should be. At the same time, it is acknowledged that the proposal to set the starting point for trend reversal at 50% of the quality standard would be a step in the right direction.
- A Europe-wide standard procedure should be defined for the statistical proof of a trend, based on minimum monitoring requirements. Every significant trend should be reversed, which provides a good protection regime for keeping unpolluted groundwater in its present status. A starting point for reversing a trend in the form of a percentage value of a quality standard is only possible for the EU-wide standards adopted as GW quality standards. *COM: This is recognised in the GWD Discussion Paper, 2.0, but extended to locally-derived standards.*
- The proposals for the trend reversal objective do not take account of the environmental significance of a trend and propose different requirements for point and diffuse sources of pollutants. This is likely to be unworkable in practice: it may not always be feasible to distinguish between diffuse and point sources and, in any case, the environmental objectives are the same for both types of pollution. As such, therefore, the starting points for trend reversal should not be different. *COM: This has been taken into account.*
- The establishment of starting points for trend reversal as given/prefixed percentages of selected standards is questionable. A more elaborated criterion should be developed, which would take into account the level of concentration of the pollutant, the slope/intensity of the upward trend, and the standard limit. The rationale of that criterion should be based on a risk analysis.
- Proof of a statistically significant trend is only possible if there are considerable influences from land use that have manifested themselves in groundwater. A long

period of time passes before a groundwater body reacts to the described fundamental changes from anthropogenic activities. For a trend beginning now with a monitoring period of six years, the initial plan of measures in 2009 cannot contribute to reversing the trend, since the measuring network according to the WFD will only have to be operational in 2007.

- It should be noted that the trend objective applies to all groundwater, whereas characterisation applies to groundwater bodies. Trend reversal must not become a status assessment criterion, as implied in this document. *COM: This is in principle clarified in the GWD Discussion Paper, 2.0.*
- Trend monitoring is only necessary for those substances which are used in the respective groundwater body, as reported in the initial characterisation. Substances which cannot be released by human activity do not need to be monitored. Furthermore, as already mentioned, a monitoring period of at least five years and considerations of the results of WG 2.8 are essential to the identification of a trend. *COM: This has been considered in the GWD Discussion Paper, 2.0.*

Combined approach

- The “combined approach” is supported but clarifications are required on how the 80/68/EEC Directive will be continued. This particularly concerns Lists I and II, which should be revised, and in which consideration should also be given to those priority substances relevant to groundwater. The “prevent or limit” clause should be central to the protection of groundwater quality. Proposed measures are restricted to point sources and are much weaker: for example, there is no mechanism for identifying pollutants that should be prevented from entering groundwater (equivalent to List I). *COM: The “prevent list” (List I of 80/68/EEC) has been included again in the draft with slight modifications, limiting all other pollutants (no listing).*
- The “prevent and limit” clause should be based on comparison of monitoring results with background values and application of trend analysis if background values are exceeded.

Protected areas / Unpolluted groundwater

- Taking into account of protected areas is an essential issue for a pragmatic approach of groundwater management, enabling to adapt prevention efforts and pollution control to specific cases. It is a guarantee that a case-by-case approach for each groundwater body would ensure a homogeneous protection of European groundwaters. However, the consideration of individual data for each of these protected areas seems to be inapplicable; it would actually mean to report on thousands of data from groundwater abstraction catchment areas. A synthetic report per groundwater body, indicating that fixed objectives for protected areas have been respected, would be a more reasonable and more efficient approach.
- The prevention of contamination of groundwater bodies should concern all groundwater bodies, not only protected areas, i.e. there should be no splitting of groundwater protection in two. Groundwater whose pollutant concentrations are

close to the natural background levels should be retained in this state. It must be possible to achieve this objective without designating separate protected areas.

- No details of how conservation areas should be identified are provided. Objectives for such areas are incoherent. Inputs for all pollutants from point sources must be prevented – which is impossible. The requirements for diffuse sources are unclear.
- Unpolluted GW nearly free from anthropogenic influences has to be retained in its natural state. A minimum requirement is the retention of the *status quo* by the application of the no-deterioration clause. The natural background concentrations should not be exceeded by more than a factor of two. For anthropogenic substances, the lower limit of the application range of European analytical standards should be used instead of background values.

Risk zones

- The introduction of “risk zones” for point sources is an interesting new proposal for assessing the particular situation of point sources, which generally do not affect an entire groundwater body. This alleviates the EAF’s fears that every point source would need to be viewed as a groundwater body. The suggestion that these risk zones should not be included when assessing the status of the surrounding groundwater body, and that instead monitoring should be adapted to the local situation, might offer a useful solution, although more concrete details are required.
- Similarly to protected areas, the reporting of individual data for each of the zones seems to be a heavy work with little utility.
- A definition of risk zone would be welcome (looking at the Megasite EC-funded project). There is a lack of clarity over the objectives that are applicable to such areas or zones. It is not feasible to report on every individual point sources as the number will be enormous.
- The management of a contaminated site (seen as a point source pollution) is a different exercise – at a different scale – than to manage a river basin. The assessment tools for “old contaminated sites” have to be more differentiated, usually staged or tiered approaches (even using generic values as the first tier), site specific and risk based.
- A concrete designation of risk zones is not considered to be necessary. Instead, representation by means of a red dot in the respective groundwater body is adequate. Representation of every single point source would not be practicable. The GWD would need to contain detailed provisions stipulating how such risk zones are to be handled. Member States should be required to outline their criteria for the logging and assessment of point sources, the nature of monitoring, and the requirements which must be met during remediations. The timetable of the WFD should be retained, even though it seems unlikely that all point sources will be rehabilitated by the year 2027.

Specific measures for point sources pollution

- A difference should be made between new and historical pollution; limit pollution according to BATNEEC and Risk Based Land Management concepts.
- Some of the restoration obligations are completely unrealistic and will simply result in widespread applications of derogation, not to the desired environmental improvement.
- Point sources causing a risk of failing the good status should be addressed with a common methodology and common principles. Measures should be defined on a local level, including the setting of restoration targets.
- Measures to enhance GW status are defined by Article 11 of WFD. They should be proportional to the identified risk and to the deviation from good status. It should be clear that, generally speaking, point sources are not decisive for describing the status of a groundwater body.

Monitoring and reporting

- The WFD sets out the requirements for monitoring, which need not to be operational until December 2006, but the proposal relies on the assumption that monitoring data will be available by December 2004. The new proposals for monitoring do not follow current requirements and, when combined with the proposed approach to standards, the resulting costs could be enormous, unwarranted, and of little environmental benefit. *COM: This has been corrected in the GWD Discussion Paper, 2.0.*
- The occurrence of stratified pollution and averaging results pose risk that pollution is underestimated. *COM: This should be avoided by monitoring GW bodies in the recharge zone and possibly at deeper levels.*
- Reporting an arithmetic mean of measurement results from groundwater bodies or group of bodies has been critically examined by the EAF. However, the achievements of WG 2.8 indicate that meaningful results can be obtained with the procedures proposed therein, provided that groundwater bodies have been designated in such a way that they refer to a uniform area. With this in mind, it is proposed that this procedure be introduced for all groundwater bodies, since it is the only way of obtaining an adequate representation of the status of groundwater bodies. However, a representativeness index should be dispensed with, and evidence that the measurements points are distributed throughout the groundwater body in such a way that they cover the risks and faithfully reflect the status of the groundwater body should be recognised. Consequently, in order to obtain a better picture of the risk situation, there is a need for concretisation of the measurement points and the frequency of analysis for those groundwater bodies determined as being at risk. In this respect, no special provisions are found necessary for protected areas.
- Support is given on the proposal of a separate designation of groundwater bodies having background levels which exceeds the levels of good status due to natural factors. However, as this is not attributed to human activity, the groundwater body should be represented in green with grey stripes.

Statement of the EU Common Forum (November 2002)

This statement focuses on the issue of management of contaminated sites within the framework of the coming Daughter directive on Groundwater and represents the views of the experts of the EU Common Forum on Contaminated Land and Groundwater¹ present in Berlin on Nov 21-22, 2002 and not necessarily the view of the EU Member States. The statement is a contribution to the discussion paper from DG Environment dated Nov 8, 2002.

Summary

1. We strongly support the principles of prevention of groundwater contamination, prevention of deterioration of groundwater quality and improvement of the current quality of groundwater where necessary and achievable, as set in the Water Framework Directive.
2. Groundwater is ubiquitous beneath the land surface. It has influence on many different receptors with differing sensitivities. Contaminants in the soil may pollute the groundwater in such a way that there is or may be a negative impact on human health, on drinking water or process water supply, on terrestrial ecosystems or on surface water quality. These groundwater issues in relation to already existing contaminations are important and need to be specifically addressed in the future daughter directive.
3. For a variety of scientific and economic reasons, a risk based approach is the most appropriate way to manage and improve the groundwater quality threatened or impacted by contaminated sites. All the contamination on the surface and beneath the ground must be properly managed, so that the relevant receptors are protected in a sustainable way. These points were clearly underlined in the CARACAS and CLARINET² reports and are practised today effectively by Member States.
4. We therefore strongly recommend that historically contaminated sites and risk zones are not controlled by binding EU-wide quality standards within the daughter directive requiring remediation actions in order to achieve the good status by the end of 2015.
5. We strongly support an approach for the management of historical contaminated sites based on the Risk Based Land Management concept as formulated by the European CLARINET project to achieve the general objectives of the Water Framework Directive. In particular, the development and the implementation of management plans for risk zones including historical contaminated sites may be an appropriate tool. In this way water protection and sustainable land use may be better integrated.

¹ The EU Common Forum on Contaminated Land and Groundwater is an expert group of national and regional regulators from the EU-Member States, Accession countries and EFTA-countries, specialised in contaminated land and groundwater management. Its mission is the following: being a platform for exchange of knowledge and experiences; establishing a discussion platform on policy, research, technical and managerial concepts of contaminated land; being a platform for initiating and following-up of international projects; offering an exchange of expertise to the European Commission and to European networks.

² CARACAS and CLARINET (1996-2001) are European partnership projects (incl. regulators, scientific organisations, industry) initiated by the EU Common Forum and launched within the EC Research Programmes in the field of risk assessment and management of contaminated land.

Specific remarks on the discussion paper

Chapter 3: Definitions

- Agreement on the definition on “point sources” and “historical contamination”.
- Need for definition of “risk zone”: a group of point sources of pollution including historical contaminated sites, within a specific area, which together make a significant flux of pollution which can affect one or several receptors (eg megasites, as studied in the Welcome-project³).
- Need for definition of status quo.

Chapter 5: Quality standards

Point 1:

- Groundwater is ubiquitous beneath the land surface and therefore can impact on many different receptors with differing sensitivities. Groundwater is a sink for contaminants, has a limited self-purifying capacity and often requires active intervention and cleaning approaches which themselves may have severe environmental impact and high cost. Groundwater contamination is often complex and widespread, receptors are highly variable and geological uncertainty is high. For these reasons, drinking water standards may fail to be protective to sensitive terrestrial or surface water ecosystems. In addition, in a number of geological and hydrogeological situations there will be hardly any feasibility to meet the proposed values even in a much longer term than 2015.
- The proposed values are thus that they may never be met in a feasible way under historically contaminated sites, as experienced in Member States. We therefore strongly recommend that historically contaminated sites and risk zones are not controlled by binding EU-wide quality standards within the daughter directive requiring remediation actions in order to achieve the good status by 2015. In this context, the timeframe of 2015 could not be met and a specific regime to reach good groundwater status at contaminated sites is therefore necessary and should be based on a Risk-based land management approach.

Point 3:

- How is the quality status of a groundwater body defined when it contains several risk zones or prevention zones? Is it equal to the lowest quality status found in either of those zones or is it the quality of the groundwater body without the zones? If the first option is taken, it may well be so that most groundwater bodies will have a poor quality due to a poor quality of a single failure in one monitoring point in one of the specific zones. It definitely needs to be clarified in the future Directive.

³ The overall objective of the WELCOME project is to produce management tools for the coherent management of contaminated megasites

Point 4:

As presented above, the considered parameters and the proposed values in the table on EU-wide parameters hardly seem appropriate for the assessment of the chemical status of groundwater at historically contaminated sites and in risk zones. A risk based approach should be followed.

Chapter 6: Monitoring

- Generic monitoring requirements aimed at management of groundwater bodies (see CIS Working Group 2.7) do not seem to be appropriate for contaminated sites. A site-specific monitoring plan should be set up as part of the management plan, taking into account pressures, receptors and impacts. The issue of monitoring the impact of contaminated sites should be dealt with either technical guidance or consensus of technical experts (eg ISO, CEN, ...).
- The remark on the contaminated plume seems more appropriate under chapter 9 on contaminated sites and protected areas.

Chapter 7: Groundwater status

Point 2:

- The requirement for reporting of individual points is not appropriate, as it will generate enormous dataflows without benefit. The reporting should be aggregated at the 'risk zone' level; data resulting from monitoring are part of the management strategy to deal with the pollution problems; this is an issue for the individual site manager and the authorities and has no relevance to overall reporting requirements of the Water Framework Directive.

Chapter 8: Control of pressures and impacts

Point 2:

- The reference to "BAT" should refer to the definition in the IPPC directive.

Point 4:

- It seems to us that this chapter is dealing only with activities that may cause soil or groundwater pollution, not with existing soil contamination that may provide a source of groundwater pollution, as this is dealt with in the next chapter. This needs to be clarified.

Chapter 9: Measures for point sources

We welcome the proposal for specific measures for contaminated sites caused by historical activities. In addition to the proposal, we would suggest the following approach for the setting up of a framework for management plans of "historical contaminated sites" which show or may have an impact on groundwater⁴. This could be done at the level of a single site, a collection of sites or a risk zone.

⁴ "historical contaminated sites" are contaminated sites which show or may have an impact on groundwater due to activities which took place before the entry into force of the Daughter Directive.

The main objectives of such management system would be the following:

- To monitor specifically groundwater contamination due to historical contaminated sites and its impact on existing or identified future receptors;
- To assess the risks linked with the contaminated sites on a case by case approach and based on the present and future uses of the groundwater body;
- On the basis of the monitoring and risks assessment, to establish a specific management plan for the protection of groundwater in order to limit the risks and to ensure in particular that
 - receptors (such as drinking water supply, surface water or vulnerable territorial ecosystem) are not endangered,
 - the contaminated plume does not extend as far as technically and economically feasible beyond an area to be defined. This area may comprise a limited expansion of the plume, providing compliance with the Water Framework Directive objectives is met.
- The management plan shall in particular consider the measures to
 - prevent at source, as far as technically and economically feasible, the degradation of groundwater,
 - limit when necessary and as far as technically and economically feasible the extension of the contaminated plume beyond a defined limited area ;
 - improve the water quality;
 - restrict the use of the site and of the groundwater to avoid the degradation of the water resources;
 - inform the potential users of the site and of the groundwater of the potential risks of groundwater degradation.
- The Member States shall ensure the proper implementation of the management plans on "historical contaminated sites" or risk zones.

Chapter 10: Trends

- Trends for plumes caused by historically contaminated sites, as they can be considered as single point sources, should be assessed by means of the future behaviour of the contaminated plume (expanding, stable or shrinking).
- Trend assessment is relevant in individual contaminated site assessment and risk zone assessment. As argued above, this is a matter for site management and not for the reporting on Ground Water Bodies. The reporting on trends for groundwater bodies should focus on risk zones which can get impacted by several historically contaminated sites.