



ENVIRONMENT AGENCY

**GROUNDWATER QUALITY AND THE DIRECTIVES :
CURRENT AND POTENTIAL FUTURE
IMPLEMENTATION**

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PLEASE NOTE

- MY OWN VIEWS;
- BASED ON CURRENT KNOWLEDGE;
- NO QUANTITATIVE ASPECTS - APOLOGIES TO WATER RESOURCES COLLEAGUES.

SETTING THE BASELINE



NEW GROUNDWATER DIRECTIVE - 2004/5?
(Protection of groundwater against pollution)
Mandated under Article 17 of Water FD

WATER FRAMEWORK DIRECTIVE - 2000

(2000/60/EC : establishing a framework for
community action in the field of water policy)

Whereas 51 - Measures must be at least as protective

EXISTING GROUNDWATER DIRECTIVE - 1980

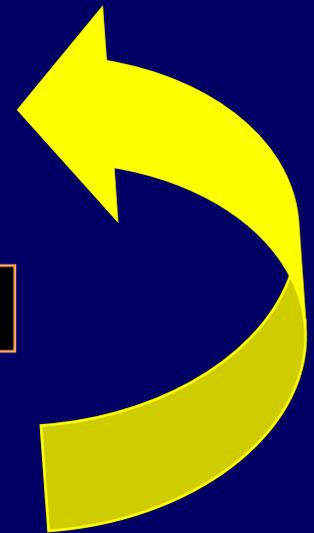
(80/68/EEC : protection of groundwater against
pollution by certain dangerous substances)

TO BE REPEALED IN DECEMBER 2013

+ NITRATES and PLANT PRODUCTS DIRECTIVES



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80/68/EEC - GROUNDWATER DIRECTIVE

- Controls releases of List I and List II substances by:
 - 1) Authorisation of discharges and disposals (prior investigation, requisite surveillance);
 - 2) “Appropriate measures” necessary to control other potential discharges;
- In UK we use various permitting regimes to implement 1) and powers to serve notices, combined with Codes of Practice to deal with 2);
- Risks from so-called “historically” contaminated land are dealt with by land use planning, Part IIA and Works Notices regimes, but active intervention is subject to 1) and 2).



80/68/EEC

- Not integrated with other legislation;
- Perceived to be ineffective for diffuse pollution;
- Not all pollutants;
- Not risk-based - inflexible:
 - permits for trivial discharges
 - zero discharge of List I at water table regardless of environmental significance.

Water FD

- Integrated approach;
 - Quality/Quantity & Surface/Groundwater;
 - Ecologically focused;
 - non - water Directives ?
- Combined approach for diffuse and point sources;
- Deals with all “pollutants”;
- Risk-based, focused on environmental outcomes with a flexible approach to controls (authorisation, general binding rules etc.)
- Unclear for prevent or limit



NITRATES DIRECTIVE

- Reduce and prevent water pollution from agricultural sources of nitrate;
- Nitrate Vulnerable Zones defined on actual or potential 50mg/l in groundwater;
- Action programmes and Codes of Good Practice;
- Vague compliance regime - is 50mg/l a standard?;
- Commission action against 12 out of 15 Member States;
- Effectiveness in preventing rising groundwater nitrate trends is questionable;
- No control over non-agricultural sources of nitrate.

PLANT PRODUCTS AND BIOCIDES DIRECTIVES (91/414 and 98/8)

- Authorisation/product marketing and use controls;
- 0.1 ug/l limit for plant products 1 metre below ground level (not a groundwater quality standard as such);
- Some pesticides withdrawn or use restricted;
- Large on-going review programme;
- Starting to be effective in reducing groundwater pollution;
- Disposals not covered.

WFD GROUNDWATER QUALITY OBJECTIVES

- Prevent or limit inputs of pollutants into groundwater:
 - **what do you prevent and what do you limit?;**
 - **why do you do this?;**
- Prevent deterioration in status of groundwater bodies;
- Implement measures to reverse any significant and sustained upward trend in the concentration of any pollutant
..... in order to progressively reduce pollution of groundwater:
 - **what is a significant and sustained trend?**
 - **where do you start?**



GROUNDWATER CHEMICAL STATUS

- GOOD means:
 - No saline or other intrusions;
 - Concentrations would not result in failure to achieve Article 4 objectives for surface waters + significant diminution of their ecological or chemical quality nor significant damage to dependent terrestrial ecosystems;
 - **Concentrations do not exceed quality standards in other relevant Community legislation, in accordance with Article 17.**

Status is mostly concerned with overall condition of groundwater bodies - large scale, big issues.



OTHER KEY CHANGES

- Delineation and characterisation of groundwater bodies (what is at risk of not meeting good status and why);
- Drinking Water Protected Areas - give protection to ensure no deterioration in quality in order to reduce purification treatment at abstraction sources (NB. aim to objective);
- It is implicit that you use standards to address local issues;
- Can derogate from status objectives based on disproportionate cost and technical feasibility and aim for less stringent objectives (NB but not no-deterioration);
- Justifications to be reported, published in RBMPs and subject to public consultation.

THE ARTICLE 17 MANDATE

- “ European Parliament and Council shall adopt specific measures to prevent and control groundwater pollution aimed at achieving good groundwater chemical status...”

could clarify prevent or limit and identify measures

- Measures shall include (according to Annex V):
 - criteria for assessing good chemical status;

but only needs to clarify the indent on relevant standards

- criteria for identifying significant and sustained trends and definition of starting points for trend reversal.
- Measures to be included in Programme of Measures.

ARTICLE 17 WORK PROGRAMME

- Expert Advisory Forum meetings started in Nov 2001 - official MS representatives and technical advisors + European level NGO's, Industry etc.;
- 5 EAF meetings, 2 Commission discussion papers and two draft proposals;
- Final proposal to European Parliament and Council in September 2003;
- Rapporteur appointed by European Parliament - sent report to Environment Committee in March 2004;
- No progress to date in Council and EP Environment Committee has now deferred consideration;
- Awaiting EP elections - Directive by 2005?



CONSULTATION

- Submitted to Parliamentary Scrutiny Committees;
- Scrutiny debate in Parliament in January 04;
- Regulatory Impact assessment prepared (assumptions);
- Public consultation on proposal;
- Defra Stakeholder meetings;
- Agencies and UKTAG providing technical support to Government.

COMMISSION'S PROPOSAL

- Sets EU-wide status definition standards for nitrates and pesticides (note NVZ exclusion);
- Mandatory thresholds (standards) for 10 named substances and any others that impact on status based on results of characterisation - but set at national or groundwater body level;
- New reporting requirements and potential for a further Directive to set more EU wide standards;
- Complex trend assessment and reversal criteria;
- Prevention of indirect discharges of items 1-6 in Annex VIII of the Water FD.

ISSUES WITH COMMISSION'S PROPOSAL

- Redefines instead of building on Water FD terms;
- Unnecessary detail e.g. Annexes;
- Drafting is inconsistent with the Water FD and internally inconsistent;
- Peculiar compliance regimes;
- Unnecessary reporting - not linked to Water FD;
- Allows MS to take social and economic costs into consideration in **setting** standards - would compromise Water FD objectives;

Although the proposals lack clarity and would need extensive amendment they cover the main areas and would be capable of negotiation.



RAPPORTEUR'S AMENDMENTS (Env.Comm.)

- Re-introduces most of the issues thrown out by the EAF and the Commission;
- Introduces concept of absolute no deterioration in quality, then exemptions to cover some problem areas;
- EU wide standards for 13 substances based on ? Drinking Water standards;
- Effectively excludes most diffuse pollution and historic contamination sources;
- Arbitrary exclusion of fixed area or percentage of a groundwater body from status assessment.

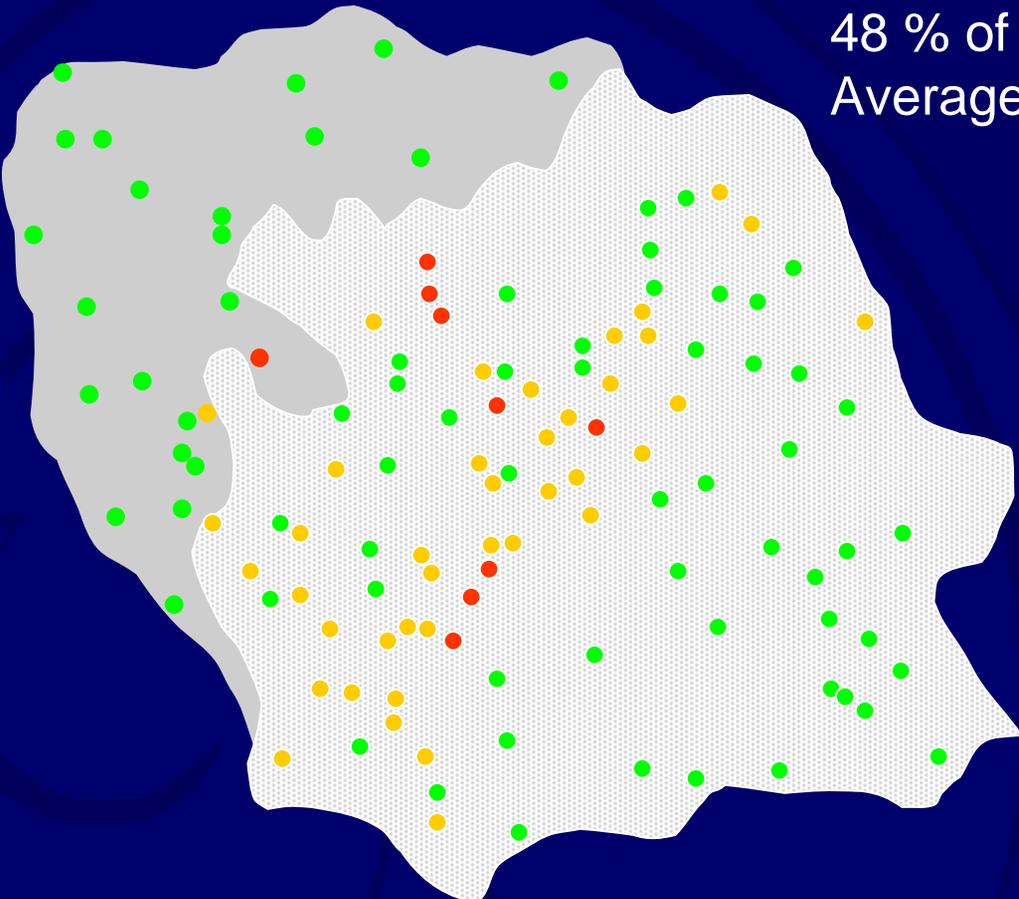
The amendments further complicate the Commission's proposal and some measures would be unworkable or unachievable - they do not seem to form a realistic basis for negotiation.

ISSUES WITH EU WIDE STATUS DEFINITION STANDARDS

- Are not very effective - tend to be overridden by local standards to protect receptors;
- Standards proposed are numeric values taken from other Directives but without the same compliance regimes - completely different in effect;
- Not risk-based, would not give common levels of protection and could act against Water FD objectives:
- Groundwater must protect surface ecology - this is not necessarily reliant on the same chemical values to achieve good status;
- The agreed target for a dependent surface water may not even be good status;
- How do you factor in natural background?



EFFECT OF VARYING GROUNDWATER BODY SIZE



48 % of monitoring sites > 0.1 µg/l
Average concentration for body = 0.08 µg/l

Increase water body size
Average concentration
0.08 µg/l ➔ 0.07 µg/l

Average or aggregated quality depends on the size of the body and monitoring point location. It cannot provide a common level of protection.

Average concentration of atrazine (µg/l)

- > 0.1 – 0.5
- 0.01 – 0.1
- 0 – 0.01

IMPACT OF NITRATE STANDARD IN DAUGHTER DIRECTIVE PROPOSAL

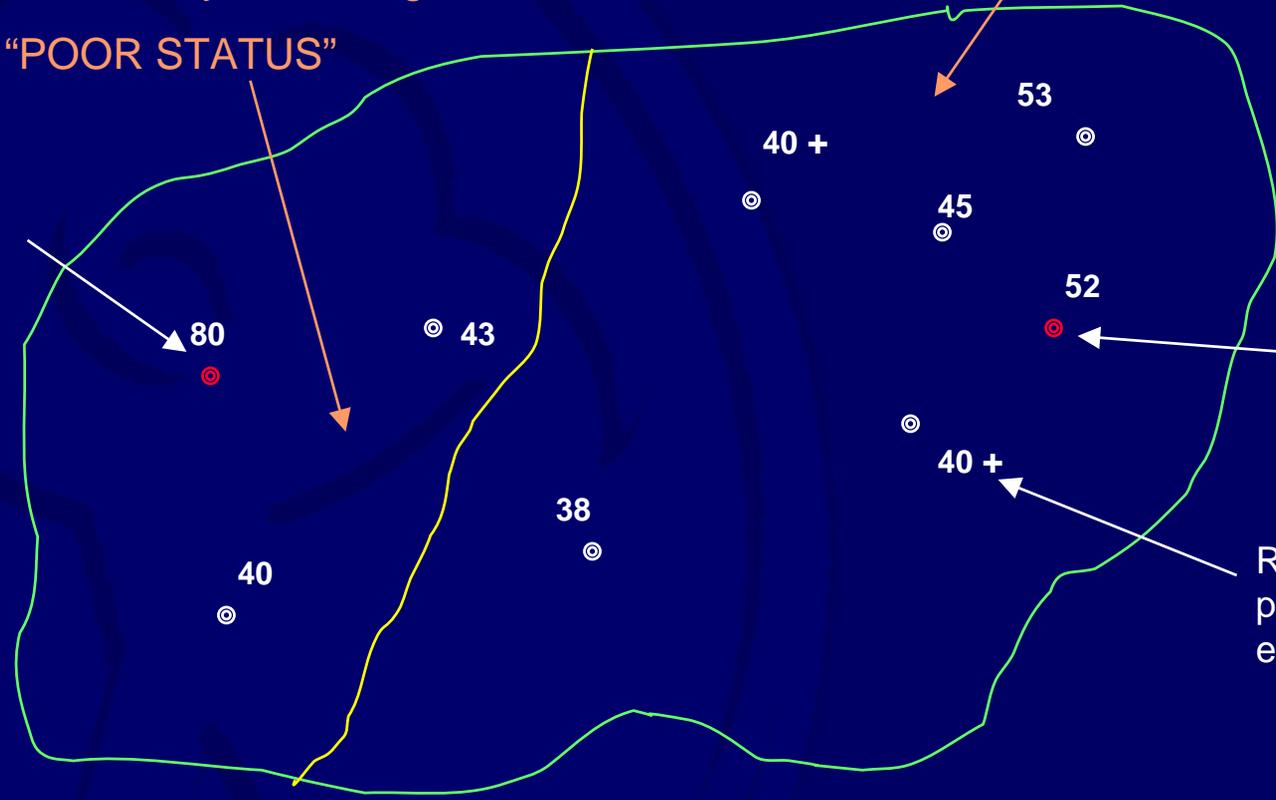
Exclude all NVZs from 50 mg/l status definition standard

Average nitrate concentration in rest of groundwater body = 54.3 mg/l

GROUNDWATER + SURFACE WATER NVZ (not poor status)

“POOR STATUS”

Urban source primary driver for measures



Urban source of nitrate excluded from measures

Rising trend predicted to exceed 50 mg/l

ASSUMES SPATIAL AVERAGE IS APPLIED - BUT PROBLEMS PERSIST WITH POINT COMPLIANCE



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SOME DRAFTING PRINCIPLES

- Avoid arbitrary subdivisions of bodies - they create anomalies;
- Borrowed standards must come with the same compliance regimes to have comparable outcomes;
- Clear compliance criteria and/or performance targets;
- Measures should apply to all inputs of pollutants;
- Take account of/use the derogations etc. in the Water FD;
- At all times use the terminology in the Water FD;
- Consider impact on other aspects of the Water FD - quantitative status, surface water objectives etc.
- KEEP IT SIMPLE.



AN ALTERNATIVE PROPOSAL

Good Status :

- Apply nitrates and pesticides controls as intended in source Directives + Drinking Water Protected Area requirements;
- Derive thresholds (standards) at a local level to a common methodology to protect the receptors noted in the rest of the existing definition of good status.

Trends

- Identify environmentally significant upward trends and oblige MS to define starting points for measures that are most cost-effective in achieving reversal;
- Replace complex Annexes with performance criteria for monitoring etc..

Prevent or Limit:

- Introduce an aim to prevent objective for most hazardous pollutants (consistent with Article 16);
- Limit **all other inputs of pollutants** to prevent pollution (consistent with Water FD objective);
- Introduce derogation when limitation would be technically unfeasible or disproportionately expensive (similar to Article 4.5);
- Introduce an EU prevent list adapted from Article 16 (priority substances) complemented by MS lists based on hazard assessment.

For all measures:

- Publish all relevant information, including reasons for derogations etc. in the RBMPs - i.e **keep to existing reporting and public consultation mechanisms.**

CAN WE WAIT FOR A DIRECTIVE?

- **Article 17 Default clauses:**
 - Member States must produce their own criteria by December 2005;
 - if not, trend reversal shall take place at 75% of quality standards set out in applicable Community legislation.
- We will still have to implement a new Directive to fit in with the Water FD timescales - this compresses the RBMP work for groundwater. Do we have the resource?
- **Significant business risk in waiting for the Directive.**

**THANK YOU FOR
LISTENING**



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