

Risk Assessment of Petroleum Hydrocarbons in Groundwater

Policy issues for hydrocarbon contamination in groundwater

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Outline

- ➔ Background
- ➔ Why do we care?
- ➔ European and domestic legislation
- ➔ Policy issues and examples
- ➔ Summary of differences

Background

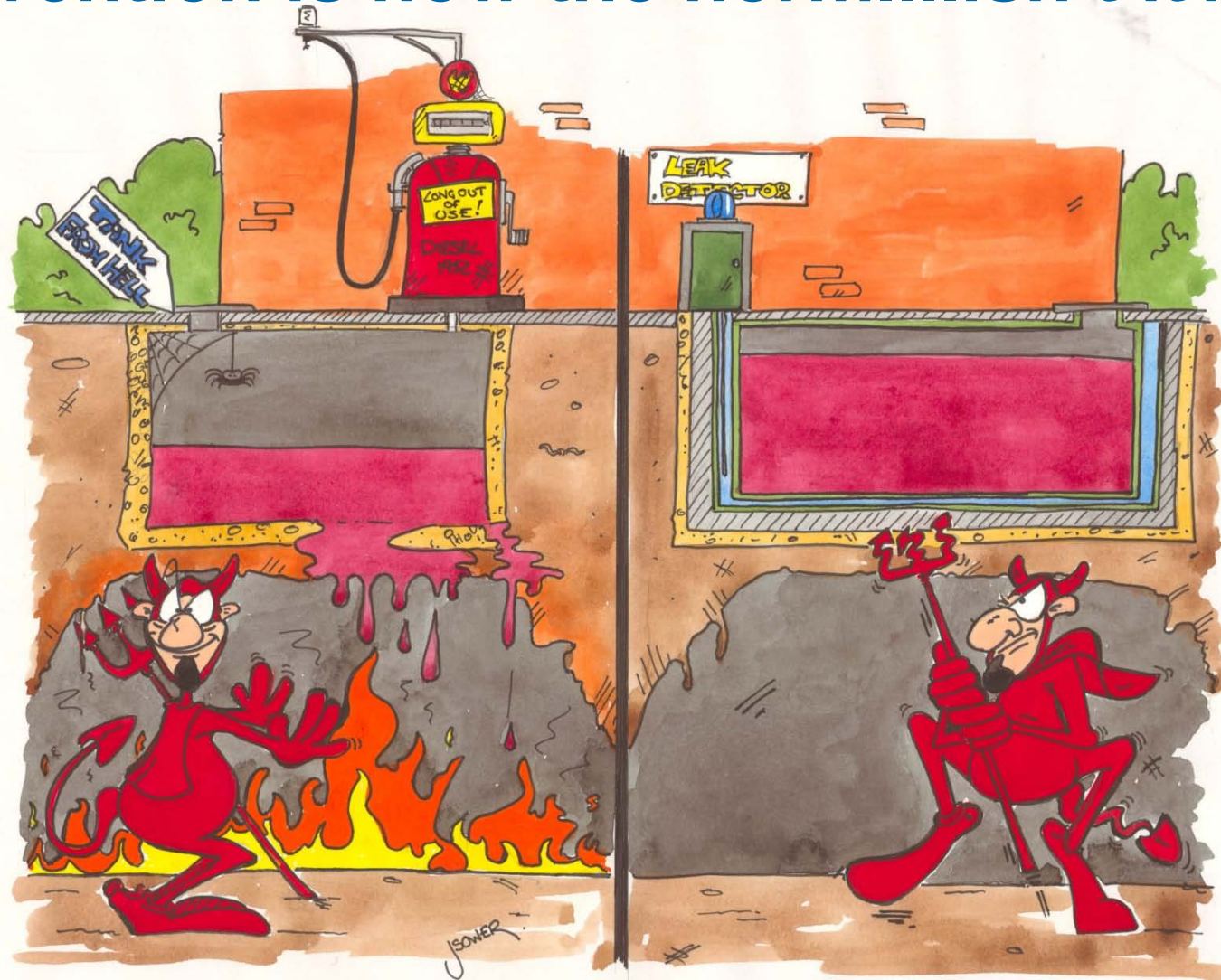


- ➔ Many contaminated groundwater problems are a result of history
- ➔ Some have been around for many decades...

Some are more recent...



But things have changed, pollution prevention is now the norm...isn't it?



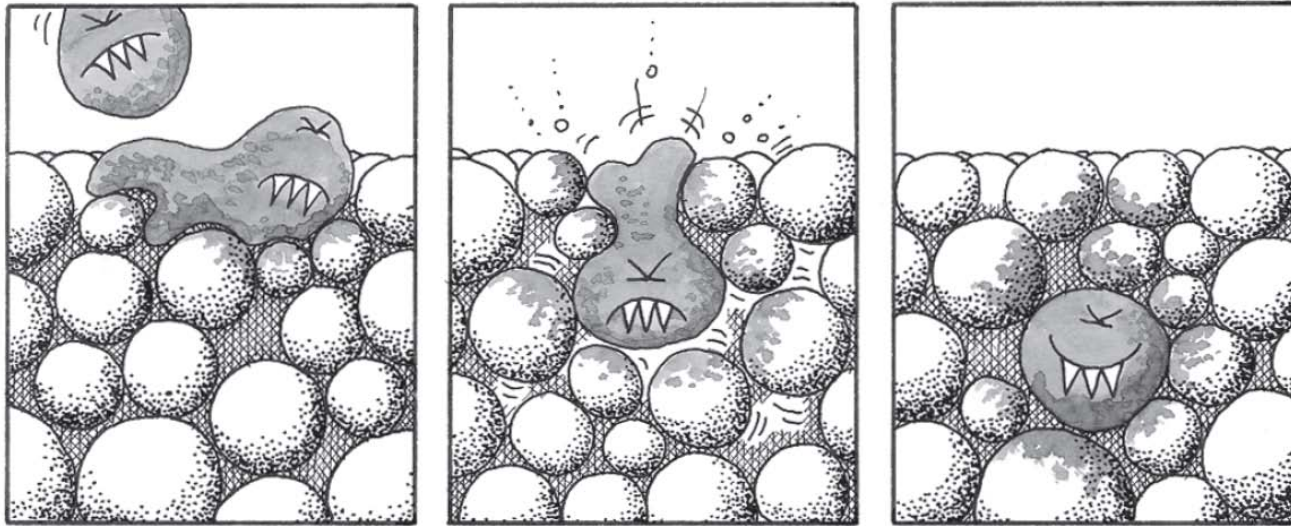
Why do we care?

- ➔ Nationally it supplies 30% of drinking water
- ➔ Up to 80% in parts of the country
- ➔ Baseflow
- ➔ Groundwater dependent ecosystems
- ➔ Shrimps!



Key policy issues

1. Governments set Policy
2. We all act on or deliver these policies
3. Hydrocarbons don't care about policies



European legislation (EU Policy)

➔ Many Directives include aims to protect or improve groundwater

Water Framework

EQS

Groundwater

Environmental
Liability

Nitrates

Mining Waste

IPPC

IED

Landfill

Biocidal Products

Plant Protection Products

Waste Framework

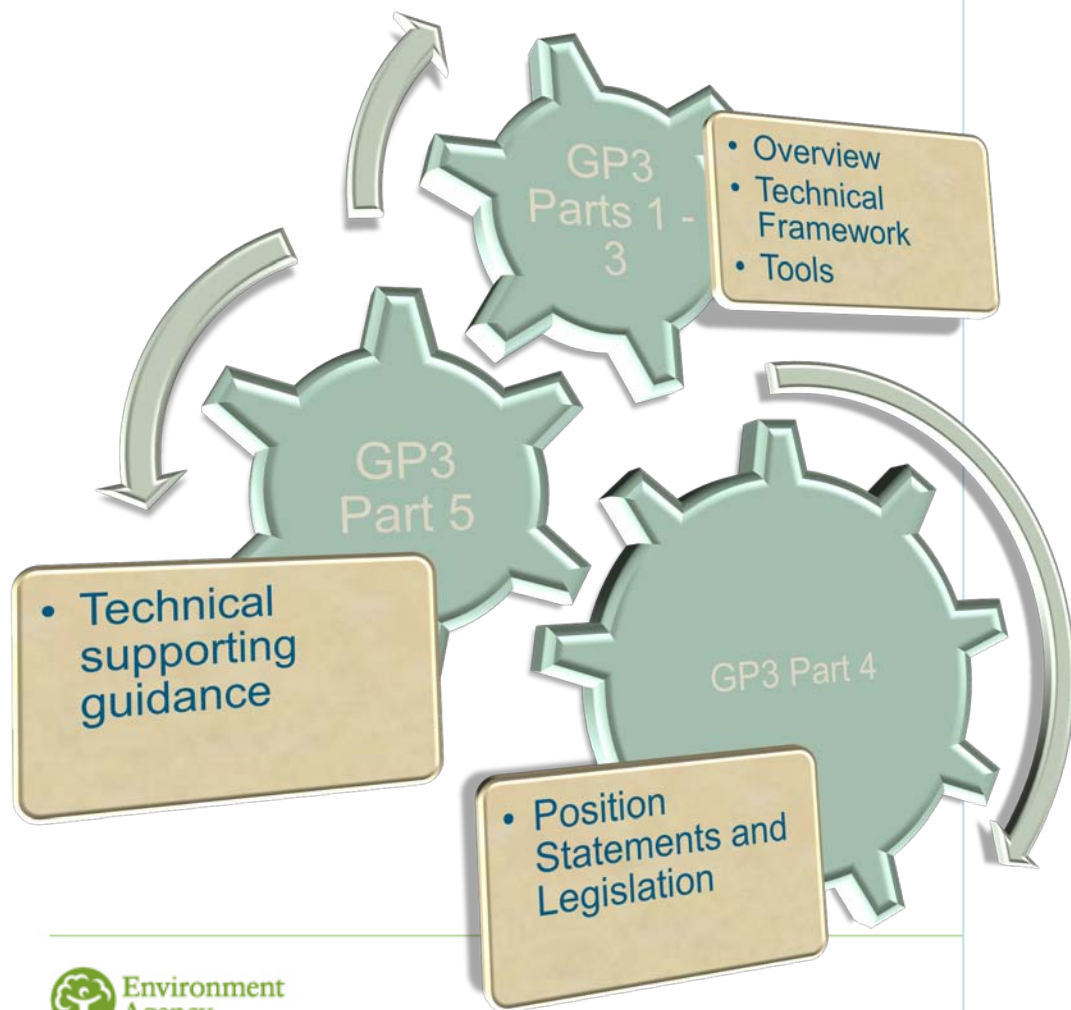
Water and Groundwater Directives

- ➔ Define our key objectives for groundwater
 - ➔ Good status
 - ➔ Prevent and limit
 - ➔ Reversing trends
 - ➔ Drinking water protection
- ➔ Inform what we try to achieve and require, but distinct differences across legislation

Domestic legislation (Govt. Policy)

- ➔ Some directly implement Directives
- ➔ Others are stand alone or partly implement Directives e.g.
 - ➔ Anti Pollution Works
 - ➔ Environmental Permitting
 - ➔ Part 2A contaminated land
 - ➔ Town and Country Planning

GP3



Groundwater Protection: Principles and Practice (GP3) Part 4 – Position Statements and Legislation

Revision of Part 4 – DRAFT for Consultation

Different aims or approaches

- ➔ Laws – in many cases these set the objective or standard
- ➔ Policy / policy decisions – at all levels of government (EU to local authority)
- ➔ Expectation – what society accepts today
 - ➔ Changing ‘good’ practice and environmental awareness

Planning policy

- ➔ RIP PPS23
- ➔ NPPF issued in March
- ➔ “The planning system should:
 - ➔ ...prevent... development from contributing to...water...pollution”
 - ➔ enhance the environment by remediating and mitigating...contaminated...land”
- ➔ “responsibility for securing safe development rests with the developer and/or landowner”.

Planning (cont)

- ➔ “Planning policies and decisions should also ensure that the site is suitable for its new use”
- ➔ “taking account of ground conditions..., pollution arising from previous uses and any proposals for mitigation including land remediation”
- ➔ For groundwater pollution, broadly the same as before?

Part 2A significant water pollution

- ➔ “pollution of controlled waters” means the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter
- ➔ Section 86 of the Water Act 2003
- ➔ Significant pollution of controlled waters
- ➔ Currently occurring or...



SPOSPoCW!

Categories 1-4 water

1

- ⇒ EDR damage
- ⇒ Drinking water needs treatment
- ⇒ statutory surface water EQS
- ⇒ upward trend in GW

2/3

- ⇒ Significant concentrations at appropriate compliance point
- ⇒ Taking account of costs/benefits

4

- ⇒ Minor entry
- ⇒ Not discernable
- ⇒ Authorised discharge

Environmental Permitting

- ➔ SCR approach to prevent pollution and manage records that show this
- ➔ “return the site...to a satisfactory state...aim to restore a site to the condition it was in before the facility was put into operation”
- ➔ where it “is unsustainable or not practical to do this, then the contamination should be removed as far as practicable”

Why ‘no deterioration’?

“This may be significantly stricter than the ‘suitable for use’ test of the contaminated land regime in Part 2A of the EPA 1990 and similar controls on redevelopment. While ‘suitable for use’ is appropriate for pre-existing contamination, it is not the right test for the preventive environmental permitting regime”.

Defra’s Environmental Permitting Core Guidance 2010

Industrial Emissions Directive

- ➔ **Defra currently considering implementation**
- ➔ Adopts a no deterioration approach to new contamination
- ➔ Baseline reports needed in some circumstances
 - ➔ must include soil and groundwater measurements
- ➔ Directive also sets minimum soil and groundwater monitoring frequencies

Summary of the differences

Part 2A	Suitable for <u>current use</u> <i>Making the most of a bad situation</i>
Planning	Safe and suitable for <u>proposed use</u> <i>Taking the opportunity to ensure future safety</i>
EPR / IED	No deterioration <i>Restoring the environment following operational failures</i>
EDR	No deterioration and compensation <i>Restoring the environment and compensating for major harm following operational failures</i>

Summary

- ➔ Why we care about hydrocarbons in groundwater
- ➔ Policy drivers for risk assessment
- ➔ Differences in aims or objectives
- ➔ Lots of similarities in methods, tools, guidance, uncertainties and evidence gaps