

# THE SOIL AND TECHNOLOGY GROUNDWATER ASSOCIATION

## SAGTA REPORT 10 - ORGANICS IN A RISK FRAMEWORK

### Introduction

The SAGTA Workshop on Organics in a Risk Framework and held on the 22<sup>nd</sup> September 1999 at National Grid, Leatherhead, had a number of key objectives which can be summarised as follows:

- to provide the basis for participants to derive an overview of contaminants of concern and the approaches and needs of sectors in addressing the implications in the risk assessment process;
- to build upon initial background work on organics by certain SAGTA Members with a view to extend the scope to embrace those contaminants which are of common interest to SAGTA members;
- to discuss current draft proposals for future work and debate and identify how SAGTA can contribute to the refinement/development of scoping and specification of research needs.

### Workshop Discussion and Conclusions

Perspectives by the attendees to the Workshop on current R & D:

- there is very little specific R&D work on TPH. Certain toxicological data is being collated from oilfield sources;
- the differences between the UK and USA approach were not perceived to be significant;
- thoughts about complex mixtures, including TPH, are being developed as is the strategy of assessment. An initiative to develop a coherent strategy would be welcomed.

It was agreed that there is a role for a TPH framework in the UK, with an emphasis on the ecological side of risk assessment, accepting that the human health aspects were already being catered for. SAGTA felt it important that its view that CLEA should be made more widely available be made known.

Discussions covered the potential of the US based TPH model being assessed and applied in the UK. It was generally agreed that this should be pursued through a Working Group, especially as CLEA does not address surface or groundwater, only human health. Additionally, Part IIA will require consideration of groundwater. The proposed way forward was that the Environment Agency would first further consider the proposal with particular regard to who is best placed to provide the lead in setting up such a Working Group and issuing invitations to participate.

An initial list of subjects to be considered as appropriate for the jurisdiction of the Working Group was proposed:

- analytical procedures;
- toxicological information and data;
- complex mixtures;
- human risk assessment procedures;
- ecological risk assessment procedures;
- aesthetic criteria;
- means of communication;
- fate and transport issues.

Other related points requiring consideration included whether:

- there should be an initial focus on TPH;
- then expand this to organics in general;
- clearly determine the end point of the exercise and;
- determine if a web-site should be initiated.

### ***Summary of Areas of SAGTA Contribution***

- SAGTA happy to sit on and contribute to the proposed Organics' Working Group.
- SAGTA happy to consider whether it would be happy to house the Organics' Working Group as a sub-group of its work programme.

### **Summary of the Presentations to the Workshop**

#### *An overview of organics in a risk framework*

Current conflicts in an overall risk-based approach and legislation were highlighted, coupled with the fact that legislation was changing. Analytical techniques still required further development in order to underpin the risk based approach. It was stated that there was a gradual harmonisation of European directives into UK law, and IPPC was also starting to use a risk basis.

Risk assessment and risk management were highlighted as being the way forward, and being regulator driven. Continued communication and the need for teamwork was stressed, as was successful validation.

#### *Regulators update/status report*

The Environment Agency provided an update on progress with respect to;

- guideline values and toxicity data;
- treatment of carcinogenic/non carcinogenic risks;
- regulatory lists of concern;
- treatment of petroleum hydrocarbons;
- toxicity based testing;
- analytical work;
- relevant on-going research;

#### *A Specification for the Accreditation of Laboratories Analysing Contaminated Soils (SALACS)*

The primary objective of the initiative is to create a maintained specification for the analysis of soils which would be acceptable to the laboratories, regulators, UKAS and users/purchasers of analytical data. SALACS would then, for example, hopefully define method critical details, validation protocol and QC requirements, provide a review process for methods and targets and facilitate a move to a performance base. The aim is to launch the specification in November 1999, gain accreditation from January 2000 onwards with a full implementation date of January 2001.

#### *Structure, Properties and Analysis of PCB's*

Presentation provided a background to PCB's and covered in more detail aspects on the physicochemical properties, toxicity and the analysis methods. Discussions following the presentation centred on the toxicity of congeners and the ability to undertake a successful and accurate analysis. It was stated that the USEPA utilise congener specific analyses in order to improve the associated risk assessments. It was concluded that very little success had been achieved with respect to on-site analysis.

### *Research to assess the effects of organics on the environment*

The primary objective of this research project was to understand what happens to cable oil in the environment, especially how it moves and what its effect is. The interactions between the oil and the soil and the effect on microbes were therefore investigated. While only half way through a four-year programme, initial results had facilitated the acquisition of permeability data and half-life data from remediation experiments. Bio-degradation products will be looked at further into the experimental programme.

### *TPH and the risk based approach to site assessment*

The presentation focused primarily on the TPH Criteria Working Group in the USA who's aim was to "*Develop scientifically defensible information for establishing cleanup levels for TPH that are protective of human health and the environment at hydrocarbon contaminated sites*". Specific topics discussed included risk based screening levels, toxicity, leaching factors and risk based methods. It was generally felt that TPH was a useful measure of risk, that TPH criteria should be specified according to product type and age, and a tiered approach should allow for simple and inexpensive analysis.

The approach was being utilised by some states within the USA whilst others are adapting it to cover different aspects. It was acknowledged that an integrated approach between the regulators and industry was needed and that future work was a prerequisite.

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