

# Letters

## SPOSH or tosh

*From Dr John Heathcote (Rec'd & Pub'd 8 Mar 2009)*

Sir, I do not entirely agree with the views expressed by Darren Wilcox. There are at least two issues.

Having spent much time thinking this matter through, I believe that DEFRA is right not to issue numerical values to define 'Significant Possibility Of Significant Harm' (SPOSH). There are real uncertainties in the science, both of estimating toxicity at very slight levels, and in modelling pathways affected by the idiosyncratic behaviour of humans interacting with geology.

SPOSH contains the word 'significant' twice. It is possible, using conservative assumptions, to derive a soil concentration where there is the possibility of significant harm to a person – the harm usually considered is death or heritable defect, which meets most people's definition of significant. Whether this possibility of harm is itself significant depends on many factors. How certain is the toxicology, especially of a mixture of substances affecting different metabolic pathways? How predictable is the behaviour of the receptor population? These are in part subjective. DEFRA/EA may be able to help us in establishing POSH, but it requires consideration of individual circumstances to determine if this is SPOSH. What is a tolerable risk in one circumstance may not be tolerable in another.

Some of the problem arises from what is a 'significant possibility'. The input data to the CLEA models include daily intake quantities for the potential toxins, which have been established as having a possibility of causing harm. The size of the possibility cannot be established clearly. However, the intake value for benzo[a]pyrene that underlies the calculation is 20 ng/kg body weight/day, and this is estimated in TOX<sub>2</sub> (DEFRA 2002) to be associated with a risk of 1e-5/lifetime, approximately 1e-7/yr, maybe. This is a very small risk. To put it in context, the equivalent risk from natural radiation is estimated by the Health Protection Agency to be 1.3e-4/yr, 3 orders of magnitude greater. The risk of death from other natural causes is even higher. Risks of 1e-7/yr are far too low to observe directly through epidemiological studies. HPA, being itself risk-averse, cautions against trying to scale the risk at higher concentrations (HPA, 2008).

It is interesting to consider the Radioactively Contaminated Land Regulations, made under the same legislation as the Contaminated Land Regulations. Here SPOSH is defined in the regulations as inter alia a dose of 3 mSv/yr, which produces a risk of 2e-4/yr, an increase of the same order of magnitude as the natural risk.

Having established that small amounts of arsenic or benzo[a]pyrene, or quite large amounts of radioactivity, are leading to a risk of harm that is greater than zero, it is for society to consider whether this risk of harm is significant and we wish to avert it, or unavoidable and we just live with it. If it is natural background we probably live with it.

At times it will involve some difficult decisions, and I would not wish to be the practitioner associated with that one in a million child fatality, but that is how the world is. It isn't an entirely safe world. Contaminated land practitioners, working both for developers and regulators, are needed to work together to agree when the possibility of harm is 'significant', i.e. something must be done, either remediation, or an alternative lower risk development.

- DEFRA, 2002. Contaminants in soil: collation of toxicological data and intake values for humans. Benzo[a]pyrene in soil. DEFRA and EA R&D report TOX<sub>2</sub>. ISBN 1 857 05741 4.
- HPA, 2008. Benzo[a]pyrene – use of excess lifetime cancer risk estimates. HPA-CLCN-1.

## To CPD or not to CPD?

*From Alan W Miller (Rec'd 5 Mar; Pub'd 11 Mar 2009)*

Sir, I read Prof. Manning's article To CPD or not to CPD? expecting to be persuaded by a factually balanced argument as to pro and cons; but feel somewhat dismayed by the fact that there are those who believe that compulsory CPD is not only desirable but inevitable – not to mention their condescending tone.

Mother often does know best; but who, in this case, would be conceited enough to presume to be mother? The P in CPD stands for Personal. It is and should remain a matter of choice how to *manage and develop our careers, and not something to be imposed by others*. I was amazed at Prof. Manning's dismissive comments about senior and retired members. I assume the author is not retired, so how does he know?

If someone fervently believes colonic irrigation is good for you, is that a reason to force everyone to take it? I think not. No, compulsory CPD can only appeal to those with OCD (Obsessive Compulsive Disorder) and those who make it their mission in life to impose their views on others for their own good, whether they like it or not.

Well, no more patronising do-gooders acting on my behalf, please. This is my career and I will decide when (or whether) I want my colon irrigated. Don't call me ... I'll call you!

*From Mark Davis (Rec'd 6 Mar; Pub'd 11 Mar 2009)*

Sir, I can but only wholeheartedly support the concept of CPD – CPD is important at any stage of a career and during any period – economically stable or not! To me, the core of any professional geologist's work consists of deliverables related to the project in hand. But one of the few ways that deliverables can be measured (outside of actually carrying out the work) is by attending related courses and workshops and using these to demonstrate your understanding of the professional aspects of geology.