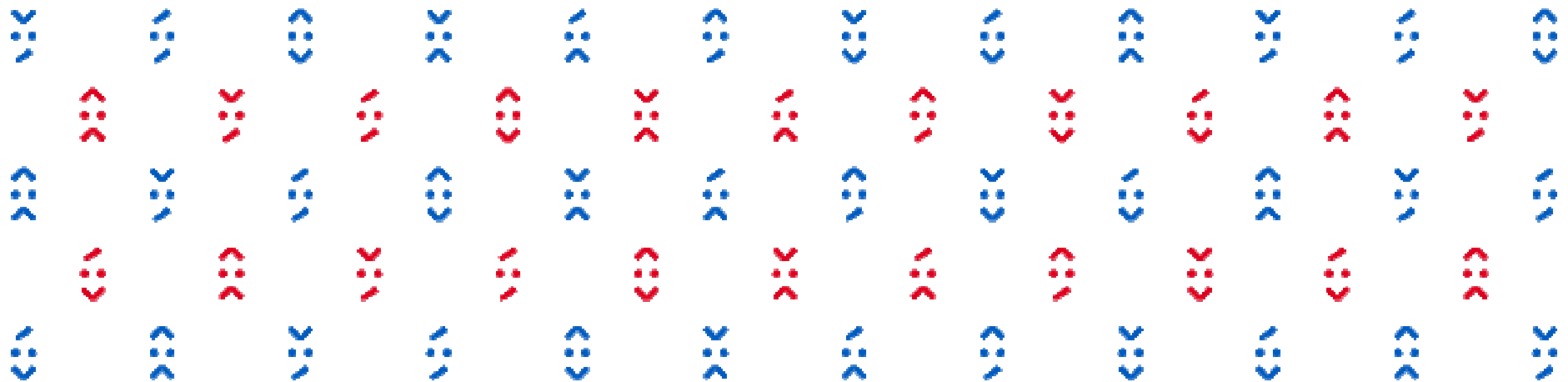


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Contaminated Land and Agriculture in England: An Overview.

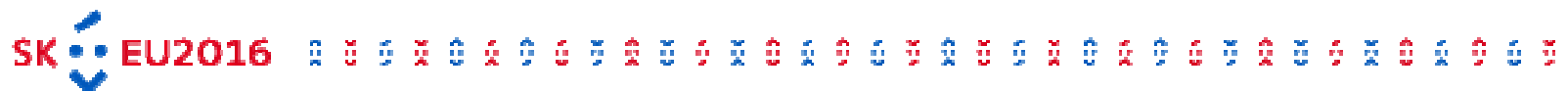
Steven J. Pye, Freelance Consultant, United Kingdom, sjpgas@yahoo.co.uk

International Conference CONTAMINATED SITES 2016
Bratislava, 12. – 13. 09. 2016



England's [not so] green and pleasant land.

Risk assessment on brownfield sites aimed at upper 1.00-1.50m of soil.





Former gas works site, Maldon, Kent, England. Remediation for residential development.



Before the 1970s, unlike industrial impacts on air and water and quality of life, land in England and its inherent soils had not been considered a valuable resource, taken as a convenience for whatever purpose, and all in the absence of statutory controls.



Explosion within private residential property at Loscoe, Derbyshire in March 1986 due to landfill gas migration from nearby site. Luckily, no fatalities.

1. **ICRCL 59/83 Guidance on the assessment and redevelopment of contaminated land.** 2nd ed, July 1987
2. **ICRCL 17/78 Notes on the development and after-use of landfill sites.** 8th ed, December 1990.
3. **ICRCL 18/79 Notes on the redevelopment of gasworks sites.** 5th ed, April 1986.
4. **ICRCL 23/79 Notes on the redevelopment of sewage works and farms.** 2nd ed, November 1983.
5. **ICRCL 42/80 Notes on the redevelopment of scrap yards and similar sites.** 2nd ed, October 1983.
6. **ICRCL 61/84 Notes on the fire hazards of contaminated land.** 2nd ed, July 1986.
7. **ICRCL 64/85 Asbestos on contaminated sites.** 2nd ed, October 1990.
8. **ICRCL 70/90 Notes on the restoration and aftercare of metalliferous mining sites for pasture and grazing.** 1st ed, February 1990.

The Inter-departmental Committee for the Redevelopment of Contaminated Land was established in 1976 and provided advice to Local Authorities, Consultants and Developers through publications. Established the Trigger Values System.



(Primary) - Environmental Protection Act 1990 – enacted April 2000

(Secondary) - Contaminated Land Regulations 2000
(Revised 2006 to include radioactive land)

Defra Statutory Guidance, revised 2012

Technical Guidance including Risk Assessment Criteria.

CLR11: Model Procedures for the Management of Land Contamination,
DEFRA/Environment agency 2004

Contaminated Land Legislation in England: “The Part 2A Regime”



“Contaminated land” is any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land that –

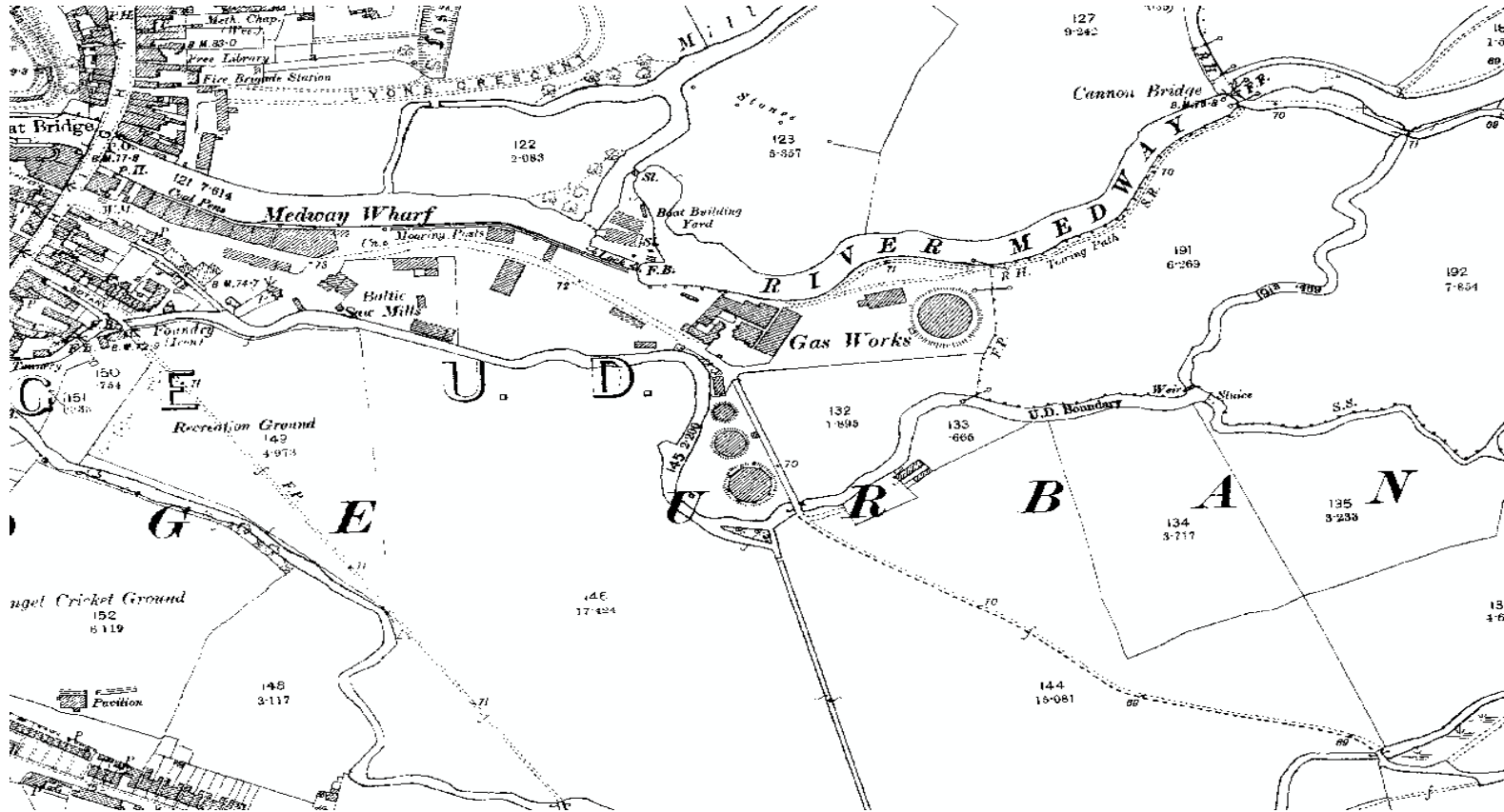
(a) significant harm is being caused or there is a significant possibility of such harm being caused; or

(b) significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused;

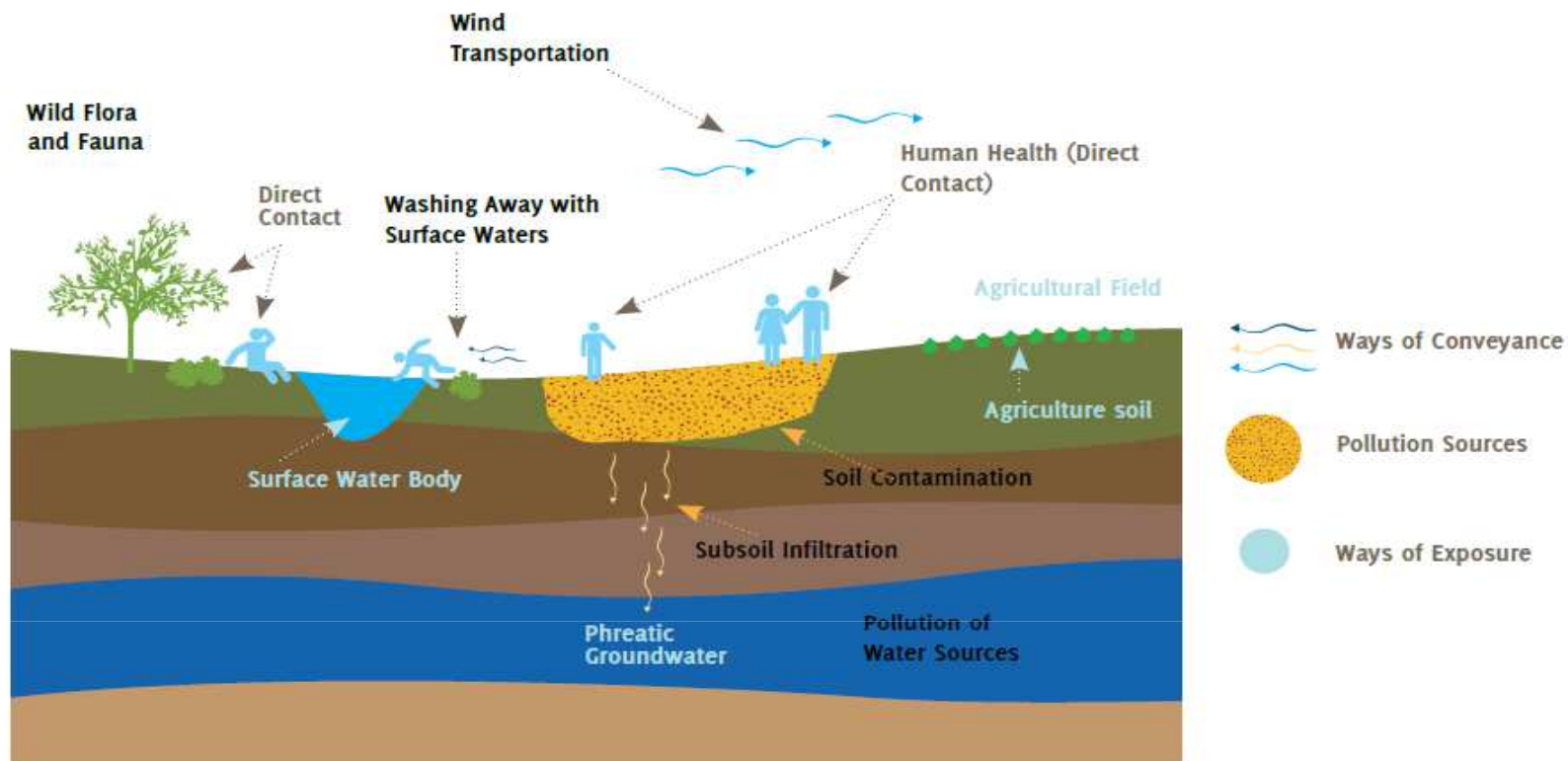
“Harm” means harm to the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes harm to his property

A REGULATORS DUTY:
SUSPECT – INSPECT – RISK ASSESS – DETERMINE - REMEDIATE

The Part 2A Legal Definition.



The Part 2A Regime only concerns historical contamination primarily due to past industrial activities including waste disposal sites. Radioactive contaminated land is included but contamination through diffuse pollution and man's natural activities is excluded together with normal background levels.



Part 2A Risk Assessment adopts the **Source-Pathway-Receptor** concept to identify plausible contaminant linkages on which to build a Conceptual Site Model.

Emphasis has been on chronic human health risks through direct and indirect exposure to contaminated soil.

- Information was submitted by 197 of 326 Local Councils in England.
 - Since April 2000 more than 11,000 sites have been inspected.
- 511 sites have been determined, the majority posing unacceptable risks to human health with **Arsenic, Lead and Benzo-a-pyrene** the most common substances causing contamination.
- 85% of determined sites remediated to date with >£52million granted from public monies.
- The polluter pays concept has not/could not be invoked without large expense and long legal proceedings.

[Environment Agency](#): Dealing with contaminated land in England. A review of progress from April 2000 to December 2013 with Part 2A of the environmental Protection Act 1990 (published April 2016).



Rear garden in Epsom, Surrey, (2005) one of 18 remediated under the Part 2A regime: BaP the single guilty contaminant.

TOPICS.

1). Introduction: the importance of soil to society

2). Contaminated land

Funding for remediation

Data gathering on contaminated land

3). Soil carbon and climate change

4). Agricultural soil protection: incentives and regulations

5). Monitoring soil trends

House of Commons Environmental Audit Committee: **SOIL HEALTH** (published May 2016).

The planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution and remediating and mitigating despoiled, degraded, derelict, contaminated land where appropriate.

Planning policies and decisions should also ensure that a site is suitable for its new use taking account of **ground conditions from former activities such as mining, pollution arising from previous uses** and any proposals for mitigation including **land remediation or impacts on the natural environment arising from that remediation**. After remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990.

Where a site is affected by contamination responsibility for securing a safe development rests with the developer and/or landowner.

Contaminated Land in context derived from Paragraphs 109, 120 and 121 of the National Planning Policy Framework, 2012.



England's green and pleasant land.

- **Effects of contaminants in soils on Crop Plants as primary Receptors.**
- **Effects of contamination in soils on Livestock as primary Receptors.**
- **Mentioned the complexities of soil/contaminant interactions and impact on availability and uptake.**
- **Considered human health exposure through food consumption and that legislative controls were already in place (Food Safety Act 1990).**
- **Concluded that as long as the scenario relates to crops and livestock simple and alternative practices or ultimately changes of land use would be available to remove the contaminant pathway.**

[Contamination of Agricultural Land as it relates to Part 2A of the Environmental Protection Act 1990](#). General Information from the Ministry of Agriculture, Fisheries and Food, issued 2000 (re-issued as CLAN 04/04, Defra).

Non Human Receptors	Significant Harm
<ul style="list-style-type: none"> • crops, including timber; • livestock; • other owned or domesticated animals; • wild animals which are the subject of shooting or fishing rights. 	<p>A substantial loss in value has occurred only when a substantial proportion of the animals or crops are dead or otherwise no longer fit for their intended purpose.</p> <p>Food should be regarded as being no longer fit for purpose when it fails to comply with the provisions of the Food Safety Act 1990.</p> <p>Where a diminution in yield or loss in value is caused by a contaminant linkage, a 20% diminution or loss should be regarded as a benchmark for what constitutes a substantial diminution or loss.</p>

Adapted from Table 2: Property Effects – HM Government Contaminated Land Statutory Guidance 2012.



Opinions can differ as to what might constitute potential contamination and agricultural land. Old lime kiln in Cumbria.



Typical site: Redundant agricultural buildings to be renovated and a change of use under planning law. How much contamination? What might lie within the soil.



A Local Planning Authority might require a full Part 2A type action, none at all or a compromise. Simple risk questionnaire available but not common.



One prime aspect to address is fuel storage and leakage.



Storage of Agrochemicals – herbicides, pesticides and fertilizers and fuel/oil leakage from vehicles.



Text

Asbestos is also a prime consideration, roofing and also in the soil.



Agricultural land scheduled for future development. But to what extent should/must contamination be assessed.



Agricultural land has not impacted on the Part 2A regime nor been directly affected but more serious still prevail.



Soil erosion from maize field, March 2016.



Thank you for your kind attention