

TES Bretby is the UK's premier environmental testing laboratory producing high quality analytical data for more than 20 years. As a Mowlem plc business, we provide a comprehensive range of environmental analytical services to consulting, industrial and government clients situated within the UK, Europe and across many countries world-wide.

Our main business aim is to provide you with meaningful data, not just facile numbers.

## New Waste Acceptance testing protocols.....

The Landfill Directive necessitates change in the way we dispose of waste to reduce both the volume and degree of hazard. It prescribes three classes of landfill namely, inert, non-hazardous and hazardous and introduces limit values for contaminants as described in the following table.

Parameter	Inert waste Landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
<b>Parameters determined on the waste</b>			
Total organic carbon	3%	5%	6% <sup>1</sup>
Loss on ignition			10% <sup>1</sup>
BTEX (mg/kg)	6		
PCBs 7 Congeners (mg/kg)	1		
Mineral oil C <sub>10</sub> – C <sub>40</sub> (mg/kg)	500		
PAHs	To be set		
pH		>6	
Acid Neutralisation Capacity (ANC)		To be evaluated	To be evaluated
<b>Limit values (mg/kg) for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg</b>			
As (arsenic)	0.5	2	25
Ba (barium)	20	100	300
Cd (cadmium)	0.04	1 (UK 0.1)	5 (UK 1)
Cr (chromium total)	0.5	10	70
Cu (copper)	2	50	100
Hg (mercury)	0.01	0.2 (UK 0.02)	2 (UK 0.4)
Mo (molybdenum)	0.5	10	30
Ni (nickel)	0.4	10	40
Pb (lead)	0.5	10	50
Sb (antimony)	0.06	0.7	5
Se (selenium)	0.1	0.5	7
Zn (zinc)	4	50	200
Cl (chloride)	800	15000	25000
F (fluoride)	10	150	500
SO <sub>4</sub> (sulphate)	1000	20000	50000
TDS (total dissolved solids) <sup>2</sup>	4000	60000	100000
Phenol index	1		
DOC (Dissolved organic carbon)	500	800	1000

<sup>1</sup> Either TOC or LOI must be used for hazardous wastes

<sup>2</sup> Optional replacement for chloride and sulphate values

Organic contaminants, TOC and/or LOI and ANC are carried out directly on the granular waste **not** on the leachate.

This suite of testing is described in the Environment Agency's "Guidance on Sampling and Testing of Wastes to meet Landfill Waste Acceptance Procedures", recently out for consultation, and is available on their web site. The leach test (BS EN 12457-3) is a two stage leach test, the first stage being at a liquid solid ratio of 2:1, followed by an 8:1 ratio for the second stage leach on the residue from Stage 1.

Deionised water is used as the leachant and each test requires continuous agitation for 24 hours, 6 hours for Stage 1 and 18 hours for Stage 2. Each solution is then filtered through a 0.45µm filter prior to analysis. This process yields two solutions for analysis as described in the Table above. The results of each analysis are combined and re-calculated to give results on the original waste as mg/kg leachable on a dry weight basis.

## Can I schedule this testing?

Yes, of course you can. We introduced this methodology over a year ago and have been carrying out this testing on a regular basis. If the testing should change as a result of the consultation, we'll keep you informed. We require a 2kg sample for the leach test.

## Need more information?

Please e-mail sales@tes-bretby.co.uk

## Meeting Point

### Elaine Draycott

Elaine is our leachate expert, having worked with us for over seven years. She has spent the last four years working on leachate preparation protocols:



- NRA R&D Note 301
- DIN 38414
- CEN 2 stage leach protocols to BS EN 12457-3

Our leachate laboratory is fully equipped with 100 shaker positions and a recently upgraded filtration manifold utilising high grade 0.45µm filters. We can process up to 50 samples per day dependent on analytical requirements. Elaine enjoys the varied nature of the work which demands her excellent organisational skills.



## PRESS! Bio-accessible metals

Now available at TES.....see next issue for further details.

## CONTACT US

For further information about any of the issues raised in this bulletin or to discuss your analytical requirements please contact:

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