SERVICES:

ENGINEERED BARRIERS, CONTAINMENT & ENCAPSULATION

OVERVIEW:

In-ground barriers can be used to isolate and contain contaminants below the surface, breaking the pathway between contaminant source and receptor.

Walls and soil capping technologies are used to isolate contaminants and break pollutant linkages, allowing regeneration to proceed.

OUR ADVANTAGES:

- Often a very cost-effective technique, allowing contaminant sources to remain on-site or undisturbed
- Good sustainability aspects – unnecessary materials movements and physical treatments can be eliminated or reduced
- Our extensive experience of a range techniques ensures the very best solution is used for each individual site

TECHNIQUES:

Top surface barriers or caps can be constructed in a number of ways:

- Impermeable geosynthetic membrane materials, such as HDPE, LDPE
- Impermeable geosynthetic clay liners
- Compacted clay – either site won or imported
- 'Natural' capping systems – well established, shallow rooting vegetation in conjunction with subsurface drainage layers can dramatically reduce infiltration via a combination of evapotranspiration and drainage

Vertical side barriers

- Bentonite slurry cut-off walls – supports the sides of the excavation, typically allowing narrow, deep cut-offs to be created.
- Grout curtains and deep soil mixing (DSM) – cement bentonite slurry mixtures are added into the ground to reduce permeability
- Shallow open trenches and excavations can be lined with geosynthetic membranes or filled with compacted clay. This provides a very cost effective barrier against horizontal migration
- Hydro-milling – for very deep cut-offs or cut-offs extending into rock

Basal Barriers can be formed:

- Using compacted clay or geosynthetic membranes where the material to be contained will be excavated and moved to the containment cell.
- Where the material is to remain in-situ, deep soil mixing or jet grouting can be used to modify the permeability of the ground by drilling through the contaminant mass from the surface.