

Key Principles for the Remediation & Management of Contaminated Sites

(Distilled from ANZECC/NHMRC 1992 Guidelines)

1. Prevention

- 1.1 Contamination, or further contamination, of a site should be prevented. Steps need to be taken to minimise the creation of additional contaminated sites and to prevent the further contamination of already contaminated sites.
- 1.2 Appropriate precautionary measures need to be taken when decommissioning industrial premises and developing sites where potentially contaminating activities have taken place

2. Management

- 2.1 Contaminated site management strategies should reflect the need to protect all segments of the environment, both biological and physical (air, land and water, including groundwater). During the assessment and remediation of sites, there should be appropriate controls in place to control emissions to air, land and water.
- 2.2 The fundamental goal of remediation should be to render a site acceptable and safe for long-term continuation of its existing use or proposed use where a change of land use is part of the remediation strategy, and maximise to the extent practicable its potential future uses.
- 2.3 Clean-up should not proceed if the process is likely to create a greater adverse effect than leaving the site undisturbed. This decision would need to be revised in the light of new technologies or clean-up strategies becoming available.
- 2.4 A multi-disciplinary approach is essential to the effective clean-up of contaminated sites.
- 2.5 Consideration must be given to public and occupational health and safety in the development of any strategy to assess, remediate and manage a contaminated site.
- 2.6 The preferred hierarchy of options for site clean up and management is :
 - i) on-site treatment of the soil, so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level
 - ii) off-site treatment of excavated soil, so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level, after which it is returned to the site.

If it is not possible for either of the two above options to be implemented, then other options for consideration should include :

- i) removal of contaminated soil to an approved site or facility, followed by (where necessary) replacement with clean fill
- ii) isolation of the contamination on-site in an appropriately designed and managed containment facility
- iii) a less sensitive land use to minimise the need for remedial works which may include partial remediation
- iv) Leaving contaminated material in-situ providing there is no immediate danger to the environment or community and the site has appropriate management controls in place.

2.7 In cases where a limited number of highly localised “hot-spots “ are involved, responsible authorities may agree to mixing these with clean soil or subsoil to reduce the concentration of contaminants to acceptable levels. However, it should be emphasised that this is not seen as a preferred clean-up strategy.

2.8 Contaminated soil should be regarded as potentially hazardous waste and as such should be subject to the same controls over its use, storage, transport and ultimate disposal as industrial waste.

3. Implementation Strategies

3.1 It is essential to report to the relevant authorities the existence of contaminated sites and pollution incidents which are likely to lead to contamination.

3.2 Site owners should be required to advise prospective buyers or developers that a site is contaminated, based on standards and/or legislation established in the relevant jurisdiction.

3.3 Consideration needs to be given to amending legislation, if required, to require clean-up actions to be recorded on land title or some other database, along with the need for further clean-up action if the land-use is to be changed.