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Staged approach to site assessments

Contaminated sites should be investigated and managed in a staged manner. A staged approach to contaminated site assessments is the progressive investigation of a site based on the level of information required. This method builds up a picture of the contamination status of a site over time so that contaminated areas can be identified and managed, while excessive resources are not dedicated to sites or areas that are less likely to be contaminated. It is a nationally recognised best practice method for investigating and reporting on contaminated sites.

All stages of site assessment should include the relevant stage of risk assessment, which also includes a comprehensive knowledge of the source, pathway and receptor in each case. Risk assessment is covered separately in Fact Sheet 13, *Contaminated sites risk assessments*.

Stages of Site Assessment

- **Preliminary Site Investigation (PSI):**

Involves collecting background knowledge, such as historical and geographical information to determine if past or present land uses have the potential to cause contamination. A PSI does not normally include soil or water testing. The Department of Environment and Conservation (DEC) may classify a site as *uncontaminated*, and no further investigations are necessary if the available data determines that contamination is not likely. If it is determined that contamination may exist, then the site is likely to be classified as *possibly contaminated – investigation required*, and a detailed site investigation may then be required.

- **Detailed Site Investigation (DSI):**

Involves soil and/or groundwater testing to determine if contaminants are present on the site. A DSI can also identify substance types, concentrations and location. Further DSIs may be required to accurately delineate the extent of contamination, particularly in groundwater.

- **Remediation:**

If contamination is causing, or may cause an adverse effect on human health or the environment, it must be remediated (cleaned up). This may involve treating it on site, treating it at an off-site specialised treatment centre or excavating contaminated soil and disposing of it to landfill.

The method of remediation may vary depending on:

1. the type and extent of contamination;
2. where the contamination is (soil, sediments or ground/surface water); and
3. the risk that the material poses.

- **Validation:**

Following remediation, it must be proven that all contamination has been removed or successfully treated. This includes sampling treated soil or where soil material has been excavated, sampling the walls and floor of the excavation pit. Validation of groundwater requires ongoing groundwater monitoring over a pre-determined period of time.

- **Monitoring:**

Where in-situ (on site) remediation methods are used, ongoing monitoring of the remediation process is required to ensure contamination levels are dropping (i.e. the remediation is working). This is generally in the form of regular soil or groundwater monitoring. Monitoring events are often conducted at regular intervals to take into account seasonal changes in groundwater levels. A contingency plan is often required (i.e. a change in remedial method or further remediation) if the chemical levels identified during monitoring exceed a pre-determined trigger level.



Need more information?

DEC has published a series of fact sheets and administrative and technical guidelines to assist with the assessment, management and remediation of contaminated sites in Western Australia; these are available by going to www.dec.wa.gov.au/contaminatedsites.

Further information is available by mail from the address below or by calling the Contaminated Sites Section on 1300 762 982.

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