



# Identification, reporting and classification of contaminated sites in Western Australia

## *Contaminated Sites Guidelines*

**Version: Final**

June 2017

## Document version history

Date	Author	Version	Approved by
26/6/2017	Janet Macmillan Principal Contaminated Sites Officer	Final	Dan Volaric A/Director General
17/9/2015	As above	Draft released for consultation	Jason Banks Director General

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# 1 Purpose

The purpose of this document is to provide guidance on the identification, reporting and classification of contaminated sites in Western Australia (WA) within the legislative framework provided by the [Contaminated Sites Act 2003](#) (CS Act) and the [Contaminated Sites Regulations 2006](#) (CS Regulations); and the revised national site assessment framework provided in the [National Environment Protection \(Assessment of Site Contamination\) Measure 1999](#) (NEPM).

This document includes guidance on:

- how to identify and report known or suspected contaminated sites;
- the classification of contaminated sites and action(s) required;
- how to access information on known and suspected contaminated sites;
- disclosure requirements during land transactions;
- regulatory notices;
- certificates of contamination audit; and
- transfer of responsibility for remediation.

This guideline has been prepared to assist site contamination practitioners and the wider community in understanding the operation of the CS Act and CS Regulations. It may be referred to by current and potential owners and occupiers, public authorities, industry, environmental practitioners, and other interested parties. However, it may also be necessary to discuss site-specific circumstances with the Department of Environment Regulation (DER), refer directly to the CS Act and CS Regulations, and/or seek specific legal advice.

This guideline applies to all Western Australian lands, inland waters and marine coastal waters within three nautical miles from the territorial sea baseline (lowest astronomical tide).

The guideline is intended for both internal and external audiences.



## 2 Introduction

This guideline has been prepared by DER to help landowners, industry, consultants and auditors and other interested parties understand the requirements for identifying and reporting contamination and other requirements of the CS Act and CS Regulations.

In WA, contaminated sites are regulated by DER through the CS Act and the CS Regulations (available from the WA [State Law Publisher website](#)). DER works in consultation with the Department of Health (DoH) in relation to public health issues arising from known and suspected contaminated sites.

The *National Environment Protection (Assessment of Site Contamination) Measure* (NEPM) provides guidance on the assessment of site contamination and is available on the [National Environment Protection Council \(NEPC\) website](#). When referring to the NEPM, practitioners should also consult this website for *errata* and additional information provided in the NEPM toolbox. The *National Environment Protection Council Act 1994* limits the scope of the NEPM to site assessment and therefore it does not include guidance on remediation of contaminated sites.

DER provides additional guidance specific to WA within the Contaminated Sites Guidelines (CSG), which includes this guideline. Published updates to the CSG will be made available on [DER's website](#).

The reader is advised to refer to the NEPM and DER guidelines when identifying known and suspected contaminated sites.

This guideline forms part of DER's CSG, which provide updated guidance and replace the guidelines within the Contaminated Sites Management Series (CSMS), as shown in the information box on the following page. The guidelines were updated to reflect:

- the commencement of the CS Act and CS Regulations (as some of the CSMS guidance was published before December 2006);
- amendment of the NEPM in May 2013; and
- process improvements developed during the statutory five-year review of the CS Act.

Contaminated Sites Guidelines	Contaminated Sites Management Series (superseded)
<p><i>Identification, reporting and classification of contaminated sites in Western Australia</i> (2017)  (this guideline)</p>	<p><i>Reporting of Known and Suspected Contaminated Sites</i> (2006)  <i>Site Classification Scheme</i> (2006)  <i>Certificate of Contamination Audit Scheme</i> (2000)</p>
<p><a href="#"><u><i>Assessment and Management of Contaminated Sites</i> (2014)</u></a></p>	<p><i>Development of Sampling and Analysis Plans</i> (2001)  <i>Community Consultation</i> (2006)  <i>Potentially Contaminating Activities, Industries and Landuses</i> (2004)  <i>Assessment Levels for Soil, Sediment and Water</i> (2010)  <i>Bioremediation of Hydrocarbon Contaminated Soils in Western Australia</i> (2004)  <i>The use of Risk Assessment in Contaminated Site Assessment</i> (2006)  <i>Reporting on Site Assessments</i> (2001)</p>
<p><i>Use of Monitored Natural Attenuation for Groundwater Remediation</i> (in preparation)</p>	<p><i>Use of Monitored Natural Attenuation for Groundwater Remediation</i> (2004)</p>
<p><i>The Western Australian Contaminated Sites Auditor Scheme</i> (2016a)  <i>Requirements for Mandatory Auditors' Reports</i> (2016b)  <i>Accreditation of Contaminated Sites Auditors</i> (2016c)</p>	<p><i>Contaminated Sites Auditors – Guidelines for Accreditation, Conduct and Reporting</i> (2009)</p>
<p><a href="#"><u><i>Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia</i> (DoH, 2009)</u></a></p>	<p>n/a</p>
<p><i>Contaminated Sites and the Landuse Planning Process</i> (proposed revision)</p>	<p><i>Contaminated Sites and the Landuse Planning Process</i> (2006)</p>

## 3 Key terms

### 3.1 Definitions relating to ‘site’

#### 3.1.1 Site

Section 3 of the CS Act provides the following definition of a site:

**“site”** means an area of land and includes –

- (a) underground water under that land; and
- (b) surface water on that land;

A site must be identified by the boundaries acknowledged under the relevant certificate(s) of title. This enables DER to use the state land administration system to identify and record known and suspected contaminated sites on the Contaminated Sites Register (not available online) and for lodging memorials under the CS Act. A site may comprise several land parcels or a single land parcel where the contaminating activities occurred. A deposited plan for interest purposes only (DP-IPO) registered with Landgate (refer to section 7.8 of this guideline) can be used to identify the contaminated part of a large land parcel.

#### 3.1.2 Source and affected sites

The CS Act differentiates between sites where contamination has originated, and sites that have become contaminated due to the movement or migration of contamination from another site, that is the offsite movement of contaminated groundwater, surface water, ground gases or soil.

Section 3 of the CS Act defines these types of sites as source sites and affected sites:

**“source site”** means a site –

- (a) on which contamination; or
- (b) on which a substance,

has originated and from which it has migrated to another site (the **“affected site”**) causing, or contributing to, contamination on that other site.

**“affected site”** means a site on which contamination is caused, or contributed to –

- (a) by contamination; or
- (b) by a substance,

which has migrated to that site from another site (the **“source site”**)

## 3.2 Definitions relating to ‘contaminated’

### 3.2.1 Contaminated

Contamination can be present in one or more environmental media at a site (such as soil, soil gas, ambient air, groundwater and surface water). It may be present in the solid, liquid or gaseous phases (for example soil or groundwater contamination giving rise to contaminant vapours in soil pore spaces). Section 4(1) of the CS Act defines ‘contaminated’ as:

**“contaminated”**, in relation to land, water or a site, means having a substance present in or on that land, water or site at above background concentrations that presents, or has the potential to present, a risk of harm to human health, the environment or any environmental value.

Information on circumstances when land, water and sites are not considered contaminated under the CS Act is provided in section 3.2.7.

Where non-exempt substances are present at above background concentrations, further assessment of those substances is required to assess the risk of harm to human health, the environment and environmental values.

The definition of **contaminated** provides the basis for the identification (section 5), reporting (section 6), management and remediation (refer DER 2014) of known and suspected contaminated sites in WA.

### 3.2.2 Substances that can present a risk of harm

The term substance is used in the definition of contaminated in the CS Act. DER may also refer to a substance as a **contaminant** or **potential contaminant**. A range of substances may be considered contaminants when present at above background concentrations. A contaminant may be:

- inorganic (for example metals or asbestos fibres);
- organic (for example, petroleum hydrocarbons);
- man-made (anthropogenic) (for example, pesticides or herbicides);
- radioactive (for example uranium, thorium or radon); and
- microbiological (for example, pathogens).

A contaminant can be present in one or more environmental media (such as soil, ambient air, airborne dust, groundwater, surface water and sediment) as a solid, liquid, vapour or gas (for example, contaminant vapours in soil pore spaces or ambient air and airborne soil or dust).

The potential for a contaminant to cause harm is dependent on its toxicity, concentration and the extent to which it occurs at a site. For example, metals such as cadmium and mercury have a higher toxicity, and may pose a risk at much lower concentrations than less toxic metals such as iron and aluminium. In addition, the presence of more than one contaminant may have an additive or synergistic toxic effect.

Contaminants present a risk of harm if there is a **complete or potentially complete** exposure pathway between the source of contamination and a receptor (for more detailed discussion refer to section 7 of DER (2014) and the NEPM).

### 3.2.3 Disturbance of naturally occurring substances

Some naturally occurring substances can present a risk of harm when they are disturbed, which may result in a site being considered contaminated.

In some cases, simply moving or concentrating a particular mineral within the landscape can increase the risk the material presents to the environment or human health. Examples include excavating asbestos/asbestiform minerals from an underground mine and placing the material on the surface in a waste rock dump; or concentrating and stockpiling of radioactive monazite from mineral sands processing.

In other cases, disturbance of a naturally occurring mineral can cause it to undergo chemical reactions, which may present a risk of releasing contaminants into the environment. An example is the disturbance of acid sulfate soils or reactive sulfide minerals, which can involve either physical excavation or *in-situ* exposure to oxygen by dewatering or groundwater abstraction.

Naturally occurring substances that are disturbed and result in site contamination require risk-based assessment and management to protect human health and the environment in the same way as other sources of contamination.

Refer to [section 6](#) and Appendix A of this guideline for information on reporting known or suspected contamination in accordance with the CS Act. Further information is also provided in the DER Fact Sheet *Mine Sites and the Contaminated Sites Act 2003*. DER may also be [contacted](#) for general advice in relation to site-specific conditions.

### 3.2.4 Background concentrations

The meaning of **background concentration** is not defined in the CS Act or Regulations. The NEPM, however, defines background concentrations as the naturally occurring, ambient concentrations of a substance in the local area of a site.

Ambient background concentration (ABC) is discussed in section 2.5.7 of Schedule B1 of the NEPM. The ABC of a contaminant is the soil concentration in a specified locality that is the sum of the naturally occurring background level and the contaminant levels that have been introduced from diffuse (non-point) sources by general human activity not attributed to industrial, commercial, or agricultural activities, for example motor vehicle emissions.

**For detailed guidance on determining background concentrations refer to the NEPM and DER (2014).**

### 3.2.5 Risk and risk of harm

The meaning of **risk** is not defined in the CS Act or Regulations. Risk is defined in the NEPM as the probability in a certain timeframe that an adverse outcome will occur in a person, a group of people, plants, animals and/or the ecology of a specified area that is exposed to a particular dose or concentration of a chemical substance, that is, it depends on both the level of toxicity of the chemical substance and the level of exposure.

The original definition of risk referred to 'hazardous agents' rather than 'chemical substance'. The change to 'chemical substance' was made in the May 2013 amendment to the NEPM to clarify the meaning of the term.

For detailed guidance on assessing risk of harm refer to the NEPM and DER (2014).

### 3.2.6 Environmental values

Section 3(2) of the CS Act provides for the use of definitions in the *Environmental Protection Act 1986* (EP Act) to apply to the CS Act, unless otherwise stated. The term **environmental value** is included in the definition of 'contaminated' in the CS Act and is defined in s.3 of the EP Act:

**environmental value** means –

- (a) a beneficial use; or
- (b) an ecosystem health condition;

**Beneficial use** is defined in s.3 of the EP Act:

**beneficial use** means a use of the environment, or of any portion thereof, which is —

- (a) conducive to public benefit, public amenity, public safety, public health or aesthetic enjoyment and which requires protection from the effects of emissions or of activities referred to in paragraph (a) or (b) of the definition of **environmental harm** in section 3A(2); or
- (b) identified and declared under section 35(2) to be a beneficial use to be protected under an approved policy;

**Ecosystem health condition** is defined in s.3 of the EP Act:

**ecosystem health condition** means a condition of the ecosystem which is —

- (a) relevant to the maintenance of ecological structure, ecological function or ecological process and which requires protection from the effects of emissions or of activities referred to in paragraph (a) or (b) of the definition of **environmental harm** in section 3A(2); or
- (b) identified and declared under section 35(2) to be an ecosystem health condition to be protected under an approved policy;

**Environmental harm** is defined in s.3A of the EP Act:

**environmental harm** means direct or indirect —

- (a) harm to the environment involving removal or destruction of, or damage to —
  - (i) native vegetation; or
  - (ii) the habitat of native vegetation or indigenous aquatic or terrestrial animals;
- or
- (b) alteration of the environment to its detriment or degradation or potential detriment or degradation; or
- (c) alteration of the environment to the detriment or potential detriment of an environmental value; or
- (d) alteration of the environment of a prescribed kind;

Environmental values may relate to land or water. Within the NEPM, environmental values of land are referred to in landuse categories, such as urban residential/public open space, commercial/industrial, and areas of ecological significance. The NEPM defines an area of ecological significance as one where the planning provisions or landuse designation is for the primary intention of conserving and protecting the natural environment (s.2.5.3 Schedule B1).

Examples of environmental values that may be relevant to a particular land parcel are presented in Table 1:

**Table 1: Examples of possible environmental values applicable to selected environmental media**

Environmental value	Soil	Groundwater	Surface water
Maintenance of ecosystem health	✓	✓	✓
Drinking water	n/a	✓	✓
Non-potable water use:			
irrigation (gardens and public open space);	n/a	✓	✓
agriculture/aquaculture;	n/a	✓	✓
industry (for example process water); and	n/a	✓	✓
recreation.	n/a	✓	✓
Aesthetics*	✓	✓	✓

\*If a site is only affected by aesthetic issues, the site does not need to be reported to DER as a known or suspected contaminated site. For further information on aesthetic considerations refer to DER (2014) and Schedule B1 of the NEPM.

The **current and reasonable potential uses** of water should be taken into account when considering whether a particular environmental value of water is relevant to a site.

Further information on environmental values is provided in DER (2014).

### 3.2.7 Substances excluded from the CS Act

There are a number of prescribed circumstances where land, water and sites are not considered contaminated for the purposes of the CS Act. Regulation 5 of the CS Regulations:

- (1) Surface water that is affected by eutrophication is not contaminated only because of the eutrophication.
- (2) Land, water or a site where the only substance that is present in or on that land, water or site at above background concentrations that presents, or has the potential to present, a risk of harm to human health, the environment or any environmental value is —
  - (a) part of a building or other structure; or
  - (b) wholly contained within a building; or
  - (c) sewage, effluent or liquid waste that is being treated, or has been treated, by a domestic sewage apparatus operated in compliance with regulations 15 to 19 of the *Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974*; or
  - (d) total soluble salts, present in a diffuse manner, as a result of salinisation, whether natural, anthropogenic or both; or
  - (e) an explosive substance contained within an unexploded ordnance; or
  - (f) a substance that is present as a direct result of the correct application of a fertiliser, herbicide or pesticide to land, subject to subregulation (3).
- (3) Subregulation (2)(f) does not apply in respect of land, water or a site if there has been a change to the use to which the land is put since the application of the fertiliser, herbicide or pesticide.
- (4) In this regulation —

**“correct application”**, in relation to a fertiliser, herbicide or pesticide means application in accordance with —

  - (a) any written law regarding the application of the fertiliser, herbicide or pesticide which was in force at the time of the application; or
  - (b) if no such written law was in force at that time, any relevant recommendation of the manufacturer or distributor of the fertiliser, herbicide or pesticide;

**“domestic sewage apparatus”** means an apparatus for the treatment of sewage (within the meaning of the *Health Act 1911* section 3) that treats less than 540 litres of sewage per day.

Sites where only excluded substances and conditions under r.5 are present do not require reporting to DER as known or suspected contaminated sites.



### 3.3 Definition of remediation

The CS Act provides the following definition of **remediation**:

**“remediation”** in respect of a site that is contaminated includes —

- (a) the attempted restoration of the site to the state it was in before the contamination occurred;
- (b) the restriction, or prohibition, of access to, or use of, the site;
- (c) the removal, destruction, reduction, containment or dispersal of the substance causing the contamination, or the reduction or mitigation of the effect of the substance;
- (d) the protection of human health, the environment or any environmental value from the contamination;

Although the CS Act definition of remediation includes measures to manage contamination such as restricting access or use of the site, the term **remediation** is commonly used in the literature to refer to active clean-up measures such as treating, removing or engineered means of containing contamination. The terms **remediation** and **management** are also used interchangeably in the literature.

In this document, the term **clean-up** is used when specifically referring to active and passive (for example, monitored natural attenuation) forms of remediation and **remediation** when the broader definition (under s.3 of the CS Act) is intended.

Further information to consider when assessing remediation options is provided in DER (2014).

### 3.4 Definition of person responsible

The CS Act includes provisions for determining responsibility for remediation and s.3 provides the following definition of a person responsible:

**“person responsible”**, in respect of a site classified as *contaminated — remediation required*, means a person responsible for remediation of the site in accordance with Part 3;

Part 3 of the CS Act deals with remediation of contaminated sites and includes the hierarchy of responsibility for remediation.

Decisions on responsibility for remediation can be made by the Contaminated Sites Committee (the Committee), but are not required in order for a person to be considered responsible by DER for the purposes of the CS Act, for example when issuing a notice under s.42.

Further information on the Committee’s procedures may be found on the Committee’s website: [www.csc.wa.gov.au](http://www.csc.wa.gov.au).

## 4 Legislative framework

In WA, contaminated sites are regulated by DER through the administration of the CS Act, which provides the framework for identifying, recording, managing and remediating of contaminated sites.

The CS Act includes known and suspected contaminated sites to be reported to DER by certain persons (refer to section 6.1 of this guideline) and all reported sites are recorded on the Contaminated Sites Register. Information on the Contaminated Sites Register can be accessed by the public via several methods (refer to section 9 of this document).

Reported sites are classified by DER, in consultation with the Department of Health (DoH), as one of seven classifications<sup>1</sup> (refer to [Table 2](#)), based upon the available information and risk they pose to human health and the environment. A site may be classified again, or the existing classification updated, when new information is submitted to DER and the Contaminated Sites Register is updated accordingly.

**Table 2: Site classifications under the CS Act**

classification
<ul style="list-style-type: none"><li>• <i>report not substantiated</i> (RNS);</li><li>• <i>possibly contaminated – investigation required</i> (PC–IR);</li><li>• <i>not contaminated – unrestricted use</i> (NC–UU);</li><li>• <i>contaminated – restricted use</i> (C–RU);</li><li>• <i>remediated for restricted use</i> (RRU);</li><li>• <i>contaminated – remediation required</i> (C–RR); and</li><li>• <i>decontaminated</i> (Decon).</li></ul>

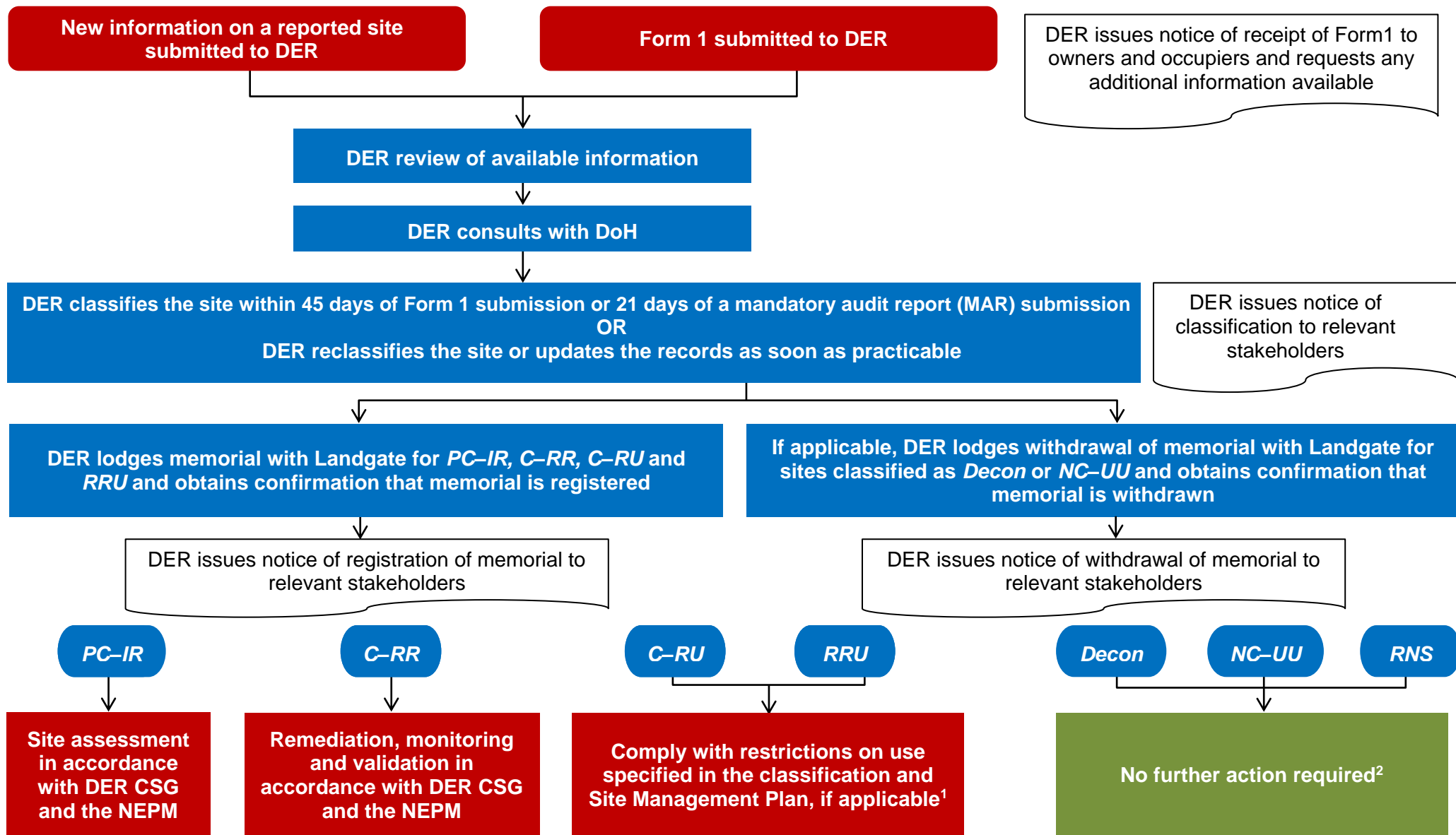
The CS Act allows the transfer of information on contaminated sites by providing for public access to information on the Contaminated Sites Register. Some of the classification categories include the registration of a memorial on the certificate of title for the land to ensure interested parties, such as owners, occupiers and planning authorities, are alerted to known or suspected contamination. The CS Act also requires DER to notify certain parties when a site is reported, classified and when a memorial is registered.

The CS Act includes provisions for DER to require action to be taken to investigate, monitor and/or remediate contaminated sites through regulatory notices, if appropriate action is not being taken voluntarily. It also provides a framework for determining responsibility for the remediation of contaminated sites and a system of appeals, which are decided by the Committee when requested by an eligible person.

[Figure 1](#) provides a schematic overview of DER's role in the process of the identification, reporting, classification and management of known and suspected contaminated sites.

<sup>1</sup> Listed in Schedule 1 of the CS Act.

**Figure 1: Schematic overview of the reporting, classification and management process for contaminated sites in WA**



**Notes:**

<sup>1</sup> Further assessment and remediation can be undertaken on a voluntary basis to allow restrictions on the use of the site to be altered or removed through the reclassification process. Such works may be necessary if the site is proposed for a more sensitive land use.

<sup>2</sup> Further assessment may be required as part of the planning process if the site is used for a potentially contaminating activity and a more sensitive land use, such as residential, is proposed.

## 5 Identification of known and suspected contaminated sites

### 5.1 Introduction

One of the objectives of the CS Act is to provide for the identification of contaminated sites. It defines the term contaminated and includes mandatory reporting of known and suspected contaminated sites to DER by certain persons (refer to section 6.1 of this guideline).

This section provides guidance on how to identify known and suspected contaminated sites that require reporting under s.11 of the CS Act. Reporting of known and suspected contaminated sites is discussed in [section 6](#) of this guideline.

### 5.2 Potentially contaminating activities and land uses

Contamination commonly occurs through accidents (such as leaks and spills) and/or poor site management practices which fail to prevent unlawful emissions/discharges<sup>2</sup> to the environment. Hence consideration of the current and historical activities undertaken at, and around, a site may give some indication of the potential for contamination to be present at the site. Some sites could have hosted more than one potentially contaminating activity during their history and all such activities should be considered for assessment purposes.

**A non-exhaustive list of potentially contaminating activities and land uses, and associated potential contaminants, is provided in Appendix B of [Assessment and management of contaminated sites](#) (DER 2014).**

If a site has been subject to a potentially contaminating activity or land use and indicators of potential contamination are present, then certain persons have a duty to report the site (refer to [section 6](#)). It should be noted, however, that a site is not necessarily contaminated solely because a potentially contaminating activity or land use has occurred on the site.

Although sites that are known to have been used for a potentially contaminating activity or land use do not need to be reported to DER if they do not have any indicators of potential contamination (examples are provided in [5.4](#)), they may still need to be investigated if a more sensitive land use is proposed (such as from industrial or agricultural use to residential use). If contamination is identified or suspected through this process, then the duty to report under the CS Act applies (refer to [section 6](#) of this guideline).

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<sup>2</sup>If a site is licensed under the EP Act, the limits on the quality and/or quantity of emissions/discharges are listed in the licence.

### 5.3 Known contamination

DER has interpreted the requirement in the CS Act to report a site that ‘the person knows is contaminated’ as referring to sites at which it is known that a substance is present that poses, or has the potential to pose, a risk of harm to human health, the environment or any environmental value.

A site is known to be contaminated where the site has a contamination source, a **credible pathway of exposure** and the presence of a receptor that is, or is likely to, experience harm from the presence of the contaminating substance(s). ***An actual risk of harm (for example one or more exposure pathways connect the source with a receptor) or potential risk of harm may be present (for example, a domestic bore could reasonably be installed or exist that would connect the source with a credible receptor).***

DER considers the below examples in Table 3 illustrate circumstances where a person would **know** that a site is contaminated, and which **a person with a duty to report a site would be required to report within 21 days** (refer to [Section 6](#) of this guideline). The examples may guide a person in making an informed decision on whether to report a site to DER, but are not intended to be an exhaustive list of circumstances.

**Table 3: Example scenarios to illustrate the identification of ‘known’ contamination under the CS Act**

Example scenario: Known contamination – actual risk of harm	
<p>A solvent leak from an underground storage tank at a commercial property has impacted soil and groundwater beneath the site.</p> <p>Concentrations in air and groundwater exceed generic assessment levels for vapour intrusion and non-potable uses of groundwater (such as garden irrigation) respectively at the site (Tier 1 risk assessment).</p> <p>Groundwater is used onsite for garden irrigation purposes.</p>	<p><b>Source</b></p> <ul style="list-style-type: none"> <li>solvent-contaminated soil and groundwater.</li> </ul> <p><b>Exposure pathways</b></p> <ul style="list-style-type: none"> <li>leaching of solvents from soil to groundwater;</li> <li>migration of contaminated groundwater;</li> <li>vapour emissions to outdoor air, buildings or service conduits; and</li> <li>irrigation of gardens with contaminated groundwater.</li> </ul> <p><b>Receptors</b></p> <ul style="list-style-type: none"> <li>onsite workers; and</li> <li>onsite groundwater.</li> </ul> <p><b>Source-pathway-receptor linkages</b> are complete and there is an <b>actual risk</b> of harm to:</p> <ul style="list-style-type: none"> <li>the health of onsite workers arising from exposure to solvent vapours in air (inhalation) or solvent-contaminated bore water (direct contact, incidental ingestion, inhalation); and</li> <li>the quality of onsite groundwater which may be unsuitable for irrigation purposes.</li> </ul>

Example scenario: Known contamination – potential risk of harm

<p>A diesel leak from an underground storage tank at a commercial property has impacted soil and groundwater beneath the site, and concentrations in groundwater exceed generic assessment levels for non-potable uses of groundwater at the site (Tier 1 risk assessment). The extent of diesel contaminated groundwater has not been determined.</p> <p>Groundwater is not used on the site.</p> <p>Groundwater may be used offsite for garden irrigation.</p>	<p><b>Source</b></p> <ul style="list-style-type: none"> <li>diesel-contaminated soil and groundwater.</li> </ul> <p><b>Exposure pathways</b></p> <ul style="list-style-type: none"> <li>ongoing leaching of diesel from soil to groundwater;</li> <li>migration of contaminated groundwater; and</li> <li>irrigation of gardens with contaminated groundwater.</li> </ul> <p><b>Receptors</b></p> <ul style="list-style-type: none"> <li>onsite workers (if a bore is installed);</li> <li>offsite residents with garden bores; and</li> <li>offsite groundwater environmental value.</li> </ul> <p><b>Source-pathway-receptor linkages</b> are potentially complete and there is a <b>potential risk of harm</b> to:</p> <ul style="list-style-type: none"> <li>the health of onsite workers arising from exposure to diesel-contaminated bore water if a bore is installed in the future (direct contact, incidental ingestion and inhalation);</li> <li>the health of offsite residents arising from exposure to diesel-contaminated bore water (direct contact, incidental ingestion and inhalation); and</li> <li>the quality of onsite and offsite groundwater which may be unsuitable for irrigation purposes.</li> </ul>
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Additional examples of known contamination are provided in [Appendix A](#).

## 5.4 Suspected contamination

DER has interpreted the CS Act requirements for the reporting of suspected contaminated sites. A person could reasonably suspect that a site is contaminated where site evidence leads to a conclusion that the site has **the potential to pose a risk** to human health, the environment or any environmental value.

**Suspected contamination** – site evidence reasonably leads a person to conclude that the site has the potential to pose a risk to human health, the environment or any environmental value.

In the opinion of DER, a site should not be suspected of being contaminated based solely on its current or former land use or because it is (or was) subject to a potentially contaminating activity if no indicators of possible contamination are present. However, DER considers that knowledge, or evidence of, certain activities and land uses such as:

- (a) landfilling other than with certified clean fill;
- (b) burial or illegal dumping of waste; and
- (c) use of fire-fighting foams containing PFOA, PFOS or related substances

provides sufficient grounds to suspect a site is contaminated and trigger reporting requirements under s.11 of the CS Act.

If the activities listed at (a)–(c) above are not relevant, DER recommends a site should be reported if:

- potentially contaminating activities and/or landuses have occurred on the site; and
- there are indicators of possible contamination (examples are provided in Table 4).

**Table 4: Example indicators of contamination**

Example indicators that could lead to a reasonable suspicion that contamination is present:
<ul style="list-style-type: none"> <li>• leakage to ground of a toxic substance from a storage tank or faulty bund which has occurred over a period of time;</li> <li>• non-trivial quantities (this amount will vary according to the properties of the substance) of chemicals or wastes are present on the ground surface or encountered in soil or fill (such as oil staining extending below the top 10 centimetres (cm) of soil) during site works or a site inspection;</li> <li>• evidence of a small spill or leak of a highly toxic substance which is likely to cause harm to anything with which it has contact, even in small quantities and with limited exposure;</li> <li>• inappropriate waste disposal (such as liquid solvents and or waste oil disposed to ground, soak well, soakage lagoon or onsite burial) has occurred;</li> <li>• demolition and construction waste is present and contains numerous fragments of possible asbestos-containing material; and</li> <li>• fill has been imported to level a site and the fill contains fragments of possible asbestos-containing material.</li> </ul>
Example indicators that could lead to a reasonable suspicion that contamination has migrated from the source of contamination to affect adjacent land downgradient and/or downwind of the source area:
<ul style="list-style-type: none"> <li>• NAPL is present in groundwater at, or close to, the site boundary: and</li> <li>• 'high' dissolved concentrations of a contaminant are present in groundwater at, or close to, the site boundary.</li> </ul>

DER considers that a person with professional knowledge of contamination issues, such as accredited contaminated sites auditors and certified contaminated site/contaminated land professionals, should apply their professional judgement when deciding if there are reasonable grounds for suspecting contamination is present. They should also apply this judgement if contamination may have migrated from the source area to affect adjacent areas of land.

DER considers the following example in Table 5 to be a situation where a person may **suspect** that a site is contaminated, which a person with a duty to report would be required to report as soon as reasonably practicable (refer to [Section 6](#) of this guideline).

**Table 5: Example scenario to illustrate suspicion of contamination**

Example scenario: Suspected contamination – potential risk of harm	
<p>Diesel has leaked from an above ground storage tank into a bund. A site inspection finds that the bund is cracked and soil staining extends below the surface.</p> <p>It is not known how long the bund has been cracked.</p> <p>Groundwater is used onsite for irrigation purposes.</p>	<p><b>Source</b></p> <ul style="list-style-type: none"> <li>• potential diesel-contaminated soil and groundwater.</li> </ul> <p><b>Exposure pathways</b></p> <ul style="list-style-type: none"> <li>• leaching of diesel from soil to groundwater;</li> <li>• migration of contaminated groundwater; and</li> <li>• vapour emissions to outdoor air, buildings or service conduits.</li> </ul> <p><b>Receptors</b></p> <ul style="list-style-type: none"> <li>• onsite workers; and</li> <li>• groundwater.</li> </ul> <p><b>Source-pathway-receptor linkages</b> are potentially complete and there is a <b>potential risk of harm</b> to:</p> <ul style="list-style-type: none"> <li>• the health of onsite workers arising from exposure to diesel vapours in air (inhalation) and diesel-contaminated bore water (direct contact, incidental ingestion and inhalation); and</li> <li>• the quality of onsite groundwater which may be unsuitable for garden irrigation.</li> </ul> <p>Note: Offsite receptors may need to be considered depending on site-specific circumstances</p>

Additional examples of suspected contamination are provided in [Appendix A](#). The examples provided may guide a person in making an informed decision on whether to report a site to DER, but are not intended to be an exhaustive list of circumstances.



## 5.5 Asbestos contamination

Due to the widespread use of asbestos in WA, it is a potential contaminant of concern at many sites. Where asbestos is only present on a site as part of a building or structure (such as a fence), it does not meet the definition of 'contaminated' and is not required to be reported under the CS Act (refer to section [3.2.7](#)). If demolition is poorly managed, asbestos fragments and fibres may enter soil, causing contamination that has the potential to pose a risk to human health.

Requirements for handling, demolition and removal of asbestos in buildings are regulated by DoH under the *Health (Asbestos) Regulations 1992* (Asbestos Regulations). In certain circumstances, low risk asbestos contamination involving non-friable, asbestos-containing materials (ACM) can be managed under the Asbestos Regulations by local government environmental health officers, in consultation with DoH. Further information is provided in *Management of Small-Scale Low-Risk Soil Asbestos Contamination* available from the [DoH website](#).

However, knowledge or suspicion that a significant quantity of ACM fragments have been mixed through the soil profile (for example, by bulk earthworks) will require the site to be reported under the CS Act. Further asbestos-related examples are provided in [Appendix A](#).

[\*Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia \(DoH, 2009\)\*](#) is the primary reference for assessing asbestos contamination in Western Australia.

## 6 Reporting known and suspected contaminated sites

### 6.1 Persons who may report and persons with a duty to report a site

**Any** person who has reasonable grounds to know or suspect that a site is contaminated **may** report that site to DER<sup>3</sup> using the prescribed form (refer to section [6.3.1](#)). However, under s.11(4) of the CS Act, the following persons have a **duty** to report a site to DER<sup>4</sup> if they know or suspect that the site is contaminated:

The following persons have a duty to report a site under subsection (3) —

- (a) an owner or occupier of the site;
- (b) a person who knows, or suspects, that he or she has caused, or contributed to, the contamination;
- (c) an auditor engaged to provide a report that is required for the purposes of this Act in respect of the site.

***It is an offence to report a site maliciously and without reasonable grounds for suspecting or knowing contamination is present.***

In practice, several people may know or suspect that a site is contaminated and have a duty to report it. For example, the owner(s), occupier(s) and the contaminated sites auditor would have a duty to report when a mandatory auditor's report is required under the CS Regulations.

If a person with a duty to report a site has any doubt as to whether the site has already been reported by another person, DER recommends that they either report the site or contact DER via email at [contaminated.sites@der.wa.gov.au](mailto:contaminated.sites@der.wa.gov.au) or call the Contaminated Sites Hotline on 1300 762 982 for further information.

If a client commissions a site investigation as part of a due diligence assessment and did not cause or contribute to contamination at the site, then they would not have a duty to report unless they were an owner or occupier of the site. However, in the event that the person who commissioned a site assessment and/or technical advice (such as a non-mandatory audit report) from an auditor in connection with a land transaction elects to proceed with the purchase or lease of the property, the duty to report known and suspected contamination by the new owner/occupier will be triggered as soon as that person becomes the legal owner or occupier. A copy of any relevant commissioned technical information, including auditor advice and consultant report(s), should be forwarded to DER by the new owner/occupier as appropriate, with a Form 1 report of known or suspected contamination.

<sup>3</sup> S.11(1).

<sup>4</sup> Under the *Interpretation Act 1984* – person or any word or expression descriptive of a person includes a public body, company, or association or body of persons, corporate or unincorporate. For a company, the duty to report may be triggered as soon as any employee knew or suspected that a site was contaminated.

The identity of a person making a Form 1 report is confidential and cannot be released by DER, including in a response to any information request described in [section 9](#) of this guideline.

Environmental consultants have a professional duty of care to ensure that their procedures are consistent with protection of human health and minimising detrimental impacts to the environment.

Environmental consultants should provide their clients with progress reports (including results) of site investigations to enable their client to fulfil their reporting duties. It is not good practice for a consultant to wait until the relevant technical report is completed before informing their client of the presence of known or suspected contamination and/or providing advice on whether the site should be reported to DER as a known or suspected contaminated site. Likewise, it would not be appropriate for a client to wait until they received a copy of the final site investigation report before reporting the site to DER.

### 6.1.1 Penalties for failing to report

Timely and accurate reporting of known and suspected contaminated sites is critical to the effective operation of the CS Act in protecting human health, the environment and environmental values. Hence there are significant penalties for failing to report in accordance with the provisions of the Act (refer Table 6).

**Table 6: Summary of offences regarding failing to report known and suspected contamination in accordance with the CS Act**

Offence	Penalty*	Section of the CS Act
Failure to report a site within the statutory timeframes <sup>5</sup>	\$250,000 and a daily penalty of \$50,000	s.11(3)
Malicious reporting without reasonable grounds to believe or suspect that the site was contaminated <sup>6</sup>	\$250,000	s.11(9)
False or misleading reporting, with reckless disregard as to whether the information is false or misleading, or to fail to disclose materially relevant information	\$125,000 and a daily penalty of \$25,000	s.94

\* The maximum penalties for bodies corporate are five times these amounts (*Sentencing Act 1995*).

<sup>5</sup> s.11(3) of the CS Act.

<sup>6</sup> s.11(9) of the CS Act.

It is a defence to a charge of failing to report a known or suspected contaminated site if a person knew or believed on reasonable grounds that:

- the site had already been reported to DER;
- DER had already been notified of the contamination or suspected contamination under s.72 of the EP Act (refer to 6.2 below); or
- the site was, or was to be, reported under an approved program of reporting under s.12 of the CS Act.

If a person with a duty to report has any doubt as to whether a site has already been reported, then it is best to report.

## 6.2 Notification of waste discharges under the EP Act

It is a legal requirement that discharges of waste to the environment that have caused or are likely to cause pollution, material environmental harm, or serious environmental harm must be reported as soon as practicable to the Chief Executive Officer (CEO) of DER. For further information refer to DER (2015).

Discharges of waste may be a consequence of an emergency, accident or malfunction or, alternatively, may be of a prescribed kind, or occur otherwise than in accordance with a works approval, licence or requirement of an environmental protection notice.

Certain industrial premises with the potential to cause emissions and discharges to air, land or water are regulated under Part V of the EP Act.<sup>7</sup> A works approval under the EP Act must be obtained before constructing a prescribed industrial premises. It is an offence to cause an emission or discharge from prescribed premises unless that emission or discharge is authorised under a licence. Licence conditions may include the requirement to carry out regular groundwater sampling to monitor the effectiveness of management measures to prevent emissions and discharges to the environment.

***A Ministerial Statement under Part IV or a licence under Part V of the EP Act may permit the proponent/licensee to emit or discharge substances up to a specified limit. However, a licence does not negate statutory obligations under the CS Act.***

Under s.72 of the EP Act, companies must report discharges of waste likely to cause pollution or environmental harm, as soon as practicable. In the case of licensed premises, ***this requirement applies to both the licensed area and areas offsite.*** For further information refer to DER (2015).

Contamination issues at the site will be regulated under the CS Act, while all licence matters will continue to be regulated under the EP Act.<sup>8</sup>

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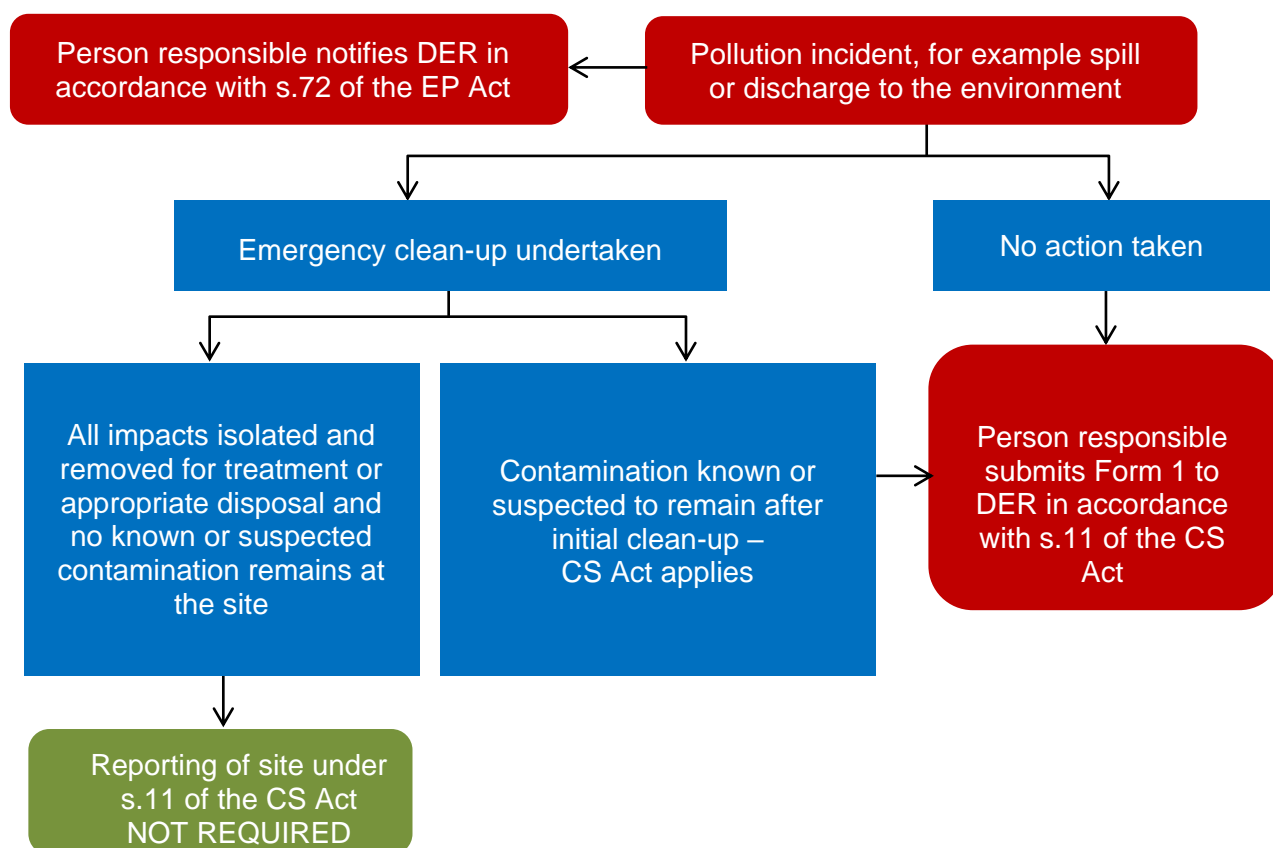
<sup>7</sup> The prescribed premises categories are listed in Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations).

<sup>8</sup> DER regulates Part V licensed premises and the Office of the Environmental Protection Authority (EPA) is responsible for monitoring compliance with Part IV Ministerial Conditions.

For further information on prescribed premises and relevant DER contact details refer to [DER's website](#).

Impacts associated with waste discharges/pollution incidents should be cleaned up promptly<sup>9</sup> to mitigate risks to human health, the environment and environmental values and also to prevent the site from becoming contaminated. If residual impact (soil and/or groundwater contamination remaining after the initial clean-up is completed) remains, the site will be subject to regulation under the CS Act.

**Figure 2: Summary of procedure for determining if a site should be reported as a known or suspected contaminated site as a result of a pollution incident**



For more information on reporting and managing pollution incidents, refer to [DER's website](#).

Example scenarios and recommendations for reporting under the CS Act are included in Appendix A.

<sup>9</sup> Timeframes are site-specific; however, in most cases emergency clean-up action should be completed within a few days to several weeks of the pollution incident occurring or being discovered.

## 6.3 How to report a known or suspected contaminated site

### 6.3.1 Prescribed form for reporting known or suspected contamination

A report of a known or suspected contaminated site is made by submitting a completed and signed [Form 1](#) together with copies of all supporting information to DER. Known and suspected contamination must be reported on separate copies of the form (for further information on the number of forms to submit refer to 6.3.3).

**To be valid, a [Form 1](#) must be signed and all mandatory information provided. DER will return any forms that are not valid.**

The form is prescribed under the CS Act and can be downloaded from DER's website at [www.der.wa.gov.au/your-environment/contaminated-sites](http://www.der.wa.gov.au/your-environment/contaminated-sites).

**The prescribed Form 1 does not allow known and suspected contamination to be reported on the same form.**

### 6.3.2 Information to be included in the 'report of a known or suspected contaminated site'

The following information is required in the report:

- the name, address and contact details of the person reporting the site;
- the status of the person submitting the report (that is, the polluter, site owner, site occupier, auditor or other relationship to the site such as environmental consultant, neighbour or member of the public);
- the site details/description (sufficient to identify the land);
- copies of the certificate(s) of title for each land parcel being reported (mandatory only when the person has a duty to report – [refer to section 6.1](#));
- details of the known or suspected contamination (including type of contamination and the reason(s) why contamination is known or suspected);
- copies of all information known to be materially relevant to the contamination status of the site (such as photographs and site records); and
- copies of all technical reports (electronic and hard copy) relating to the investigation, monitoring or remediation of the site (if not previously provided to DER).

**Copies of the current certificate(s) of title for each land parcel must be attached when the person submitting the report has a duty to report.<sup>10</sup>**

Sites must be reported according to their current land title/reserve details. It is helpful to attach a map confirming the location of the contamination, particularly where the land has been subdivided, or if the report relates to a small area of concern located within a large parcel of land. This could include an area of suspected contamination adjacent to a mechanical workshop on a large rural property.

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<sup>10</sup> Under s.11 or s.12 of the CS Act.

The cadastral details and other relevant information on all reported sites are added to the Contaminated Sites Register. For details on how to access this information refer to Section 9 of this document.

**Send completed and signed Form 1(s) plus all supporting information to the address indicated on the form.**

**Completed electronic copies of Form 1 cannot be accepted as a signature is required for the form to be valid.**

### 6.3.3 Requirements for separate and combined reporting: How many forms?

A single [Form 1](#) may be used to report more than one parcel of land where the suspected **or** known contamination being reported has a common source, or is associated with a particular activity or land use that extends across multiple properties. It may be helpful to complete a separate [Form 1](#) for each land parcel where different land uses, contaminants, site ownership and/or occupation apply. Example scenarios are provided in Table 7.

**The prescribed Form 1 does not allow known and suspected contamination to be reported on the same form.**

**Table 7: Example scenarios to illustrate the number of forms to complete**

Example scenarios to illustrate how many Form 1s should be submitted	
A fuel leak from a service station results in groundwater contamination of the service station and adjacent residential properties.	<b>Two</b> Form 1s – one for the service station (source site) and one for the related residential properties (affected sites).
Groundwater contamination associated with a fuel leak from a service station has been reported to DER. Further monitoring establishes that contaminated groundwater has migrated offsite and has affected an additional property.	A new Form 1 (or other notification) is required – for the affected additional property.
A former market garden on a single cadastral lot is proposed to be subdivided and developed for residential land use. A preliminary site assessment identifies three areas of suspected contamination across the site resulting from: <ul style="list-style-type: none"> <li>• visual evidence of diesel leaking from an above ground storage tank;</li> <li>• illegal dumping/fly tipping of asbestos; and</li> <li>• visual evidence of spills of organochlorine pesticides in a storage shed with an earthen floor.</li> </ul>	<b>One</b> Form 1 for the title/reserve number, which describes the nature and location of each area of suspected contamination.

A new [Form 1](#) must be provided to DER if:

- contamination is known or suspected to have spread/migrated beyond the cadastral boundaries of the site that has already been reported.

DER recommends that a new Form 1 or other notification (such as a letter or email to [contaminated.sites@der.wa.gov.au](mailto:contaminated.sites@der.wa.gov.au)) is submitted to DER if:

- additional contamination occurs at the site as a result of further pollution incidents; and/or
- additional contamination is identified that is materially different in nature or location to the contamination already reported.

## 6.4 Timeframes for reporting

### 6.4.1 Statutory timeframes

The statutory timeframes for reporting known and suspected contamination<sup>11</sup> are listed in Table 8:

**Table 8: Statutory timeframes for reporting known and suspected contamination**

State of knowledge	Reporting timeframe
Known contamination	Within 21 days after the day on which the person* first knew that the site was contaminated, or such later period as the CEO approves in writing before the expiry of that 21 days.
Suspected contamination	As soon as it is reasonably practicable to do so.*

\* Where a company owns or occupies the site, the duty to report may be triggered as soon as any employee of that company has sufficient information to know or suspect that the site is contaminated.

### 6.4.2 What do the statutory timeframes mean?

In DER's view, the phrase "as soon as reasonably practicable" is intended to impose a time limit – this is a limit to be assessed by reference to considerations of reasonable practicality. This time limit is to be determined objectively, meaning that a duty-holder (the person with a duty to report) must meet the standard of behaviour expected of a reasonable person in the duty-holder's position. They must also take into account the object of the CS Act "to protect human health, the environment and environmental values by providing for the identification, recording, management and remediation of contaminated sites in the State".

DER believes this determination requires consideration of a wide range of surrounding circumstances regarding each particular matter, where what is practicable is not narrow or restrictive. A requirement to report suspected contamination arguably does not include to do so as soon as possible. However, DER believes a duty-holder ought to consider **reporting upon receiving sufficient information for them to suspect contamination of a site** (refer section [5.4](#)).

<sup>11</sup> s.11(3) of the CS Act.



**DER does not consider it appropriate for the duty holder to wait until the extent or seriousness of the contamination has been delineated.**

Environmental consultants have a professional duty of care to ensure that their procedures are consistent with protection of human health and minimising detrimental impacts to the environment.

Environmental consultants should provide their clients with progress reports (including results) of site investigations to enable their clients to fulfil their reporting duties. It is not good practice for a consultant to wait until the relevant technical report is completed before informing their client of the presence of known or suspected contamination and/or providing advice on whether the site should be reported to DER as a known or suspected contaminated site. Once in possession of the relevant information, the client has a duty to report the site via a Form 1. In this example, the duty to report would be triggered on receipt of the first progress report providing sufficient information to know or suspect contamination of the site.

## 6.5 Notification that a site has been reported

DER is required, within 14 days of receiving a [Form 1](#) report, to notify each owner and occupier of the land identified that a report has been made, unless the owner or occupier has themselves reported the site. Each owner and occupier is notified in writing, and requested to provide all information to DER which is materially relevant to the contamination status of the site.

DER will take all materially relevant information into account when determining the appropriate classification of the site.

## 6.6 Submission of additional information after a site has been reported

Once a site has been reported, any new information (hard copy and electronic format) should be provided to DER as soon as reasonably practicable (refer to section [7.9](#) of this guideline).

As an example, DER considers that a timeframe of three weeks from the date of receipt of a technical report from a consultant could be considered reasonable for forwarding a copy of the report to DER in this context.

## 7 Classification of reported sites

### 7.1 Classification categories

DER classifies sites, in consultation with DoH, in accordance with the site classification scheme ([Table 9](#)).

**Table 9: CS Act classification of sites**

Category of classification*	Criterion
<i>Report not substantiated</i>	A report under s.11 or s.12 provides no ground to indicate possible contamination of the site
<i>Possibly contaminated – investigation required</i>	There are grounds to indicate possible contamination of the site
<i>Not contaminated – unrestricted use</i>	After investigation, the site is found not to be contaminated
<i>Contaminated – restricted use</i>	The site is contaminated but suitable for restricted use
<i>Remediated for restricted use</i>	The site is contaminated but has been remediated so that it is suitable for restricted use
<i>Contaminated – remediation required</i>	The site is contaminated and remediation is required
<i>Decontaminated</i>	The site has been remediated and is suitable for all uses

\* CS Act Schedule 1.

Example scenarios and how they would be classified by DER are provided in [Appendix B](#). Further information on the site classification process is provided in section 7.2.

### 7.2 The review and classification process

#### 7.2.1 Initial review of information

When a site is reported, it is classified based on the information available to DER at that time in relation to:

- the nature and extent of contamination; and
- the risk that the contamination poses, or potentially poses, to human health, the environment and any environmental value.

DER's assessment process involves a critical review of the available technical information to establish if the data presented are likely to be accurate and representative of site conditions. DER considers whether the information can be relied upon to assign an appropriate site classification and to determine what further action,

if any, is required to be undertaken. The reliability of technical information is assessed by taking into account applicable standards and guidance material relating to the assessment and management of site contamination (refer to Table 10) and, in particular, the NEPM and DER Contaminated Sites Guidelines.

**Table 10: Information to be taken into account by DER when classifying sites**

<i>In classifying a site the CEO is to take into account –</i>	Example documents	Example considerations
(a) <i>any relevant guidelines;*</i>	NEPM DER Contaminated Sites Guidelines	<ul style="list-style-type: none"> <li>• The presence and concentrations of substances above background concentrations and generic assessment levels.</li> <li>• The risk that substances pose, or potentially pose, to human health, the environment and environmental values.</li> </ul>
(b) <i>currently accepted industrial standards;*</i> and	Friebel & Nadebaum (2011) Simpson <i>et al.</i> (2005)	<ul style="list-style-type: none"> <li>• Whether site investigations have adequately characterised the known and potential contamination.</li> </ul>
(c) <i>any other information the CEO considers relevant;*</i>	Site-specific information	<ul style="list-style-type: none"> <li>• Whether the land and groundwater are suitable for the current and/or proposed land use as relevant for the site.</li> <li>• Whether contamination is migrating offsite to affect other land.</li> </ul>

\* With respect to the identification, assessment, classification or management of contamination [CS Act Part 2 Division 2 s.13(4)].

If appropriate, DER will request further details from the person submitting the information or any other relevant party, such as the site owner, if the site has been reported by a third party. DER may also verify or seek additional information from other sources. This can include DER-held information such as licence information and geographic information system data relating to land ownership, landuse, zoning and relevant environmental values, and information provided by other State departments and the local government authority. In some cases, DER may also undertake a site visit to assess site conditions.

### 7.2.2 **Threshold to classify a reported site as *possibly contaminated* – investigation required**

If a report does not provide sufficient grounds to indicate possible contamination of a site, DER is likely to classify the site as *report not substantiated* (RNS). No further action will be taken by DER to require investigation or management unless additional information regarding contamination or suspected contamination at the site becomes available.

If limited information is included on the Form 1 report, DER may undertake an inspection of the site as part of the process of determining an appropriate site classification.

Sites are classified RNS when:

- there is insufficient information available to DER to suspect that a site is contaminated; and
- site investigations have not been undertaken, or were very limited in nature and/or extent.

However, DER considers that knowledge, or evidence, of certain activities and land uses such as:

- landfilling other than with certified clean fill;
- burial or illegal dumping of waste; and
- use of fire-fighting foams containing PFOA, PFOS or related substances

provides sufficient grounds to suspect a site is contaminated and to trigger reporting requirements under s.11 of the CS Act. These sites are likely to be classified by DER as *possibly contaminated – investigation required*.

Sites may be classified as RNS if they have been reported based on the landuse alone (unless captured by exceptions above) and there are no secondary indicators of contamination. If secondary indicators of contamination are present, then the site is likely to be classified as *possibly contaminated – investigation required*. Examples are provided in Table 11.

**Table 11: Examples to illustrate circumstances when sites may be classified as *report not substantiated* or *possibly contaminated – investigation required* based on land use and the absence/presence of secondary indicators of contamination**

Classification as <i>report not substantiated</i>	Classification as <i>possibly contaminated – investigation required</i>
A site has been reported under s.11 or 12 on the basis of historical use as a service station. DER follow-up with the site owner indicates there are no indications of fuel losses and no physical indications of impacts from fuel losses or from other potentially contaminating activities on the site.	A site has been reported under s.11 or s.12 on the basis of historical use as a service station, and DER follow-up with the site owner indicates there have been multiple fuel losses from underground storage tanks at the site.
	A site has been reported on the basis of historical use as a service station and groundwater investigations undertaken as a due diligence exercise have detected hydrocarbons in groundwater.
A site has been reported on the basis of a tanker spill of 500 litres of diesel on the	A site has been reported on the basis of a tanker spill of 500 litres of diesel on the side

Classification as <i>report not substantiated</i>	Classification as <i>possibly contaminated – investigation required</i>
side of a road. The diesel and impacted soil is recovered and validation sampling confirms that all impacted material has been removed.	of a road. The diesel and impacted soil is recovered; however, validation sampling confirms that not all the impacted material was removed.
A site was reported due to fly tipping of construction and demolition waste at the site containing asbestos-containing material (ACM). The material was immediately removed from the site and there were no remaining signs of any contaminated materials.	A site was reported due to fly tipping of construction and demolition waste at the site including ACM. The material was not removed immediately and the DER site inspection revealed that ACM had been pushed into the soil profile by subsequent site activity.
A site has been reported due to the presence of a tailings storage facility. DER enquiries ascertain there are no secondary signs of contamination (such as visible seepage, vegetation deaths, soil staining or odours).	A site is reported on the basis that it contains a landfill that has received uncontrolled fill over a number of years.
A site has operated as a fuel depot for a number of years. DER enquiries confirm there are indications of hydrocarbon staining present; however, these are confined to sealed hard stand areas of the site and there is no reason to believe that any oil spills extended beyond the sealed surface.	A site has operated as a fuel depot for a number of years. There are indications of hydrocarbon staining on some hard stand areas which extend onto unsealed areas. The report states that the staining is the result of on-going fuel losses over a number of years.
<p>A site has been reported due to metals detected in groundwater at concentrations exceeding drinking water criteria in a highly mineralised area.</p> <p>DER confirms that the dissolved metals are associated with the type of mineralisation present.</p>	<p>A site has been reported due to metals detected in groundwater at concentrations exceeding drinking water criteria in a highly mineralised area.</p> <p>DER confirms that the dissolved metals are not commonly associated with the type of mineralisation present.</p>

Additional example scenarios and how they would be classified by DER are provided in [Appendix B](#).

**In contrast to a classification of *not contaminated – unrestricted use (NC-UU)*, a classification of RNS does not imply that a site is free from contamination, only that there is insufficient information to provide grounds that the site is contaminated or possibly contaminated at that point in time.**

### 7.2.3 Consultation with the Department of Health and other agencies

DER consults and seeks agreement with DoH prior to finalising all site classifications.<sup>12</sup>

DoH officers carry out a brief review of all site classifications; however, DER will request more detailed technical advice in relation to:

- assessment, management or remediation of asbestos;
- quantitative or detailed human health risk assessment;
- potential risks to public health; or
- radiological impacts (Radiological Council of Western Australia).

The timeframe for DoH to carry out its detailed review will depend on the complexity of the issues, current workloads and availability of staff. Following the DoH consultation process, site classifications are reviewed and approved by a CEO-delegated officer and the site classification is recorded on the Contaminated Sites Register.

### 7.3 Timeframe for classification

DER aims to classify a reported site within 45 days of receiving the [Form 1](#) report.<sup>13</sup>

The CS Act allows DER to extend the time to classify the site if necessary – known as ‘stop-the-clock’. If DER decides to stop-the-clock, formal notification will be provided to the relevant persons within 45 days of receiving the [Form 1](#) report.

DER may decide to stop-the-clock if significant new information (which is likely to affect the site classification), is likely to be submitted to DER in the near future. For example, DER may decide to stop-the-clock if it:

- is aware that a mandatory auditor’s report (MAR) is anticipated to be submitted for the site within three months;
- is aware that site investigations or remedial works are nearing completion and are anticipated to be reported within two months;
- requires more time to complete its technical review due to the quantity of information provided or to obtain detailed technical advice from DoH; and/or
- requires more time to arrange and undertake an inspection of the site prior to classification.

**DER will consider a request for an extension of the time in which a site will be classified provided that the relevant person confirms the type of information that will be submitted and the date by which it will be provided to DER.**

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<sup>12</sup> s.13(5).

<sup>13</sup> In accordance with s.14 of the CS Act.

## 7.4 Persons required to be notified of a site classification

DER is required to ensure that reasonable attempts are made to provide notice of a site classification no later than 10 days after the date of classification to the following parties:<sup>14</sup>

- (a) each owner of the site;
- (b) an occupier of the site;
- (c) any relevant public authority;
- (d) any other person whom, in the opinion of the CEO, there is particular reason to notify;
- (e) a person who made the relevant report under section 11 or 12; and
- (f) in respect of a site classified *contaminated – remediation required*, each person who, in the opinion of the CEO, may be responsible for remediation of the site.

The notice of site classification does not specifically identify the recipient as being one or more of the relevant persons listed above. Following receipt of a notice of classification, the recipient should consider why they have received the notice. If a recipient is unsure as to why they have received the notice they may contact DER for more information. Recipients may also wish to consider whether they should seek legal advice as to their position.

## 7.5 Content of a ‘notice of site classification’

### 7.5.1 Overview

The notice of classification outlines the nature and extent of contamination, the reasons for classification, and any restrictions on use that apply to the site. The CS Act requires that the notification includes the following information:

- a statement that the site has been classified under the CS Act;
- the site classification category;
- a description of the location and extent of the site sufficient to identify it;
- the reasons for the classification of the site with reference to guidelines/standards and any other information taken into account;
- the restrictions on use where applicable;<sup>15</sup>
- details of any appeal available under the CS Act in respect of the classification of the site or inclusion of land in the site; and

<sup>14</sup> s.15 CS Act.

<sup>15</sup> Applies to sites classified as *contaminated – restricted use, remediated for restricted use and contaminated – remediation required*.

- where applicable, details of mandatory disclosure requirements before change of ownership occurs or a lease or mortgage is registered.<sup>16</sup>

DER will generally include a map showing the location of the classified site and other relevant information as described in [section 7.5.6](#).

#### **Queries about a notice of site classification**

Recipients may call the contaminated sites information line **+61 8 1300 762 982** for assistance in understanding what the site classification means and what action may be required. Callers should be ready to provide the reference number in the top right-hand corner of the notice of classification.

#### **7.5.2 Nature and extent of contamination**

The notice of classification provides a summary of the ‘nature and extent of contamination’ present at the site which specifies:

- the types of contaminants that have been identified at the site;
- the environmental media that are known or suspected to be contaminated (soil, soil vapour, groundwater, surface water, ambient air or sediment); and
- the extent and location, including depth, of the contamination on the site.

#### **7.5.3 Reasons for classification**

A notice of classification of a site will specify the reasons for classification of the site. The ‘reasons for classification’ are intended to inform the reader of the events that have occurred at the site, the contamination that has been identified and how this relates to the classification category for the site. The information provided generally includes:

- why the site was reported to DER (for example, because a spill had not been promptly cleaned up or visual indications of contamination were present);
- why an assessment of site contamination was undertaken (such as in relation to the sale of the site, a planning condition or in response to the site being classified by DER);
- the findings of investigations that have been undertaken at the site to date –
  - the contaminants identified at the site in soils, groundwater, sediment, surface water and/or soil vapour (as applicable);
  - the contaminants which exceed relevant guidelines, such as generic screening levels or site-specific risk-based criteria, used to assess the potential risk posed by the contamination;
  - the outcome of any risk assessment carried out; and

<sup>16</sup> Applies to sites classified as *contaminated – restricted use, remediated for restricted use* and *contaminated – remediation required*.



- gaps or significant uncertainties in the site information (such as contamination which has not been fully delineated or other limitations in the scope of work carried out);
- details of remediation and validation works undertaken and whether these works are complete, whether remedial targets have been met and if contamination remains at the site;
- a comment on the suitability of the site for its current or proposed land use;
- a concluding statement that summarises the reason(s) for the site classification category;
- an acknowledgement that the site classification is based on the information available to DER at the time of classification and that the contamination status of the site may have changed since the date of classification; and
- an advisory note recommending that if groundwater is being (or proposed to be) abstracted, analytical testing should be carried out to determine whether it is suitable for its intended use.

#### 7.5.4 Restrictions on use

A notice of classification of a site will specify the restrictions on the use of the site if applicable.<sup>17</sup> Restrictions on use are not applicable to all site classifications (refer to Table 12).

**Table 12: Site classification and restrictions on use**

Site classification	
Restriction on use applicable	Restriction on use not applicable
<i>Contaminated – restricted use</i>	<i>Report not substantiated</i>
<i>Remediated for restricted use</i>	<i>Possibly contaminated – investigation required</i>
<i>Contaminated – remediation required</i>	<i>Not contaminated – unrestricted use</i>
	<i>Decontaminated</i>

Restrictions on use vary depending on site-specific circumstances. Restrictions may apply to the type of land use the site is considered suitable for, such as commercial/ industrial, or may relate to specific aspects of how activities at the site are to be managed. Some typical examples of restrictions on use are provided in [Table 13](#).

<sup>17</sup> s.15(4) Cs Act.

**Table 13: Examples of restrictions on use applicable to certain classified sites**

Example scenario*	Potential restriction on use**
The concentration of dissolved petroleum hydrocarbons in groundwater at a residential property exceeds the domestic non-potable use criteria.	No groundwater abstraction unless appropriate analysis and treatment is undertaken prior to use.
Hydrocarbons in groundwater present a potential vapour intrusion risk.	Buildings are required to be designed and constructed with appropriate vapour mitigation measures (such as impermeable membranes and passive venting) where there is a risk to human health.
Concentrations of metals in shallow soils exceed residential health-based criteria but are below industrial health-based criteria.	The use of the site is restricted to commercial/industrial uses and is not suitable for sensitive uses such as residential use, without further assessment and, if required, remediation.
A screening risk assessment has indicated that hydrocarbon-impacted soils at depths greater than two metres below ground level have the potential to affect the health of workers undertaking intrusive works.	A site-specific health and safety plan is required to address the health risks to workers undertaking intrusive works two metres or more below ground level.
Contaminated material is contained onsite in a purpose-built containment cell.	Periodic inspection and groundwater monitoring is required in perpetuity to ensure that the integrity of the containment cell is maintained (typically in accordance with a specific site management plan).

\*Refer to DER (2014) for information on assessment and application of criteria.

\*\*For illustration only – additional restrictions may be applicable depending on site-specific conditions.

### 7.5.5 Site management considerations when ‘restrictions on use’ are not applicable

If restrictions on use are not applicable to the site classification (for example sites classified as *possibly contaminated – investigation required*), DER may provide recommendations for site management in the ‘notice of classification’ under ‘other relevant information’.

Advice on site management practices is particularly relevant for sites classified as *possibly contaminated – investigation required* where contamination has been identified but the significance of that contamination (that is, the risk to human health the environment and environmental values and whether remediation is required) has yet to be established.

## 7.5.6 Other relevant information

DER may provide additional information in the notice of classification that it considers relevant to persons required to be notified (refer to [section 7.4](#)) and/or people seeking information on a specific site. This can include a prospective buyer or lessee, an environmental consultant carrying out investigations or a neighbour or other member of the community.

The following information may be provided if considered relevant to the site:

- whether DER considers the site meets the definition of a source or affected site;
- whether DER considers any of the requirements for a mandatory auditor's report (MAR) specified in r.31(1) of the CS Regulations apply to the site; and/or
- any actions DER considers necessary at the time of classification to assess or manage contamination that has been identified or is potentially present at the site, and the timeframe for those actions to be completed (refer to [section 8](#) of this guideline).

## 7.6 Appeals against site classifications

### 7.6.1 Persons who can appeal a site classification

Site classifications can be appealed by certain persons, as listed in [Table 14](#).

**Table 14: Category of classification and appeal rights**

Category of site classification	Persons who can appeal*
<i>report not substantiated</i>	Person who reported the site
<i>possibly contaminated – investigation required</i>	Owner Occupier given notice of the site's classification
<i>not contaminated – unrestricted use decontaminated</i>	Owner Occupier given notice of the site's classification
<i>contaminated – restricted use remediated for restricted use contaminated – remediation required</i>	Owner Occupier given notice of the site's classification Person responsible for remediation

\* Further information is provided in s.18 of the CS Act.

### 7.6.2 Timeframe to lodge an appeal against site classification

The CS Act provides for a minimum 21-day appeal period; however, the notice of classification may specify a longer period, typically 45 days from when the relevant person is given the notice of classification.

### 7.6.3 Decision-making body for appeals against site classification

Appeals on classification are dealt with by the Committee and must be dealt with and determined in accordance with Part 8 of the CS Act. An appeal must be received by the Committee within the specified timeframe to be valid.

#### **Contaminated Sites Committee**

The Committee is an independent statutory committee set up under s.33 of the CS Act. The Committee comprises three to five people, appointed by the Minister for Environment, with suitable expertise to make decisions for the purposes of the CS Act.

As at 31 May 2017, the Committee comprises two contaminated sites auditors and two legal practitioners in addition to the Chair.

For further information on the site classification appeal process:

Website: [www.csc.wa.gov.au](http://www.csc.wa.gov.au)

Email: [admin@csc.wa.gov.au](mailto:admin@csc.wa.gov.au)

Phone: +61 8 6467 5201

### 7.6.4 Appeals against site classification and further information not considered at the time of classification

DER determines the appropriate classification for a site-based on the information held at the time of classification. In some cases, there could be further relevant information which was not available to DER at that time.

If an appeal has been lodged, the new information should be submitted to the Committee for consideration. The Committee will request advice from DER as part of the process of considering the appeal.

If the additional information supports a different classification, the point at issue in the appeal can sometimes be resolved to the mutual satisfaction of DER and the appellant. If the appellant voluntarily withdraws the appeal, DER can proceed to reclassify<sup>18</sup> the site on the basis of the additional information with preservation of appeal rights for the new classification.

The Committee's decision in relation to appeals against site classification is final and without further appeal.

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<sup>18</sup> Under s.13(2) of the CS Act.

## 7.7 Memorials on certificates of title

### 7.7.1 Registration of memorials

Under s.58, a memorial is lodged by DER and registered on the certificate(s) of title by Landgate as soon as practicable if one or more circumstances (listed in [Table 15](#)) apply to all or part of the land. Memorials are not registered where a site does not have a certificate of title, such as road reserves and parcels of unallocated crown land.

Written notification of registration of a memorial and a copy of the memorial will be given as soon as practicable to the land owners, the Western Australian Planning Commission (WAPC), the local government authority and, if relevant, other authorities (such as the Metropolitan Redevelopment Authority).

Memorials are typically registered on the certificate(s) of title within two to four weeks of the site being classified.

**Table 15: Registration of memorials on certificates of title**

Categories of classification and other circumstances where a memorial is registered on the certificate of title
<ul style="list-style-type: none"><li>• Sites classified as:<ul style="list-style-type: none"><li>○ <i>possibly contaminated – investigation required;</i></li><li>○ <i>contaminated – remediation required;</i></li><li>○ <i>contaminated – restricted use; and</i></li><li>○ <i>remediated for restricted use.</i></li></ul></li><li>• Sites subject to an investigation notice, clean up notice or hazard abatement notice.</li><li>• Sites subject to a charge on the land in favour of the State or public authority nominated by the Minister for Environment.</li></ul>

### 7.7.2 Purpose of memorials

Memorials on the certificate of title serve to advise owners, potential owners or occupiers of the contamination status of the land and also to alert planning authorities to the presence of contamination. If a memorial is registered under the CS Act with respect to the site classification, planning authorities have a duty under s.58(6) of the CS Act to seek and take into account the advice of DER prior to granting approval for:

- subdivision or amalgamation of the land (WAPC); and/or
- any proposed development of the land (local government authorities and redevelopment authorities).

### 7.7.3 Restricted instrument memorials

Under s.58(5) DER can specify that land classified as *contaminated – remediation required* is not to have any instrument affecting the land registered or accepted for

registration unless DER consents in writing to the registration. This means that if a restricted instrument memorial is registered, the site cannot be sold, or a lease registered on the certificate of title, without obtaining DER's written consent.

A restricted instrument memorial is most likely to be registered on a site that is severely contaminated or is a source site (that is, contamination has migrated offsite and affected adjacent properties).

All requests for consent must be submitted to DER in writing (letter format) and include a copy of the sale/lease/mortgage contract (final draft) ensuring that all parties are correctly referenced. In considering whether to provide consent, DER may request information/evidence from the parties involved, for example information that demonstrates the responsible persons:

- understand the nature and extent of contamination at the site;
- understand the extent of remediation required (including any associated further assessment of contamination, community engagement, validation of remediation and auditor involvement) and the timeframe over which remediation is to be carried out; and
- understand the likely costs involved and have the financial capacity to undertake the remediation and associated works and activities.

#### 7.7.4 Withdrawal of memorials

DER will lodge a 'withdrawal of memorial' with Landgate when circumstances permit a memorial, with respect to contamination, to be withdrawn:

- land subject to a memorial has been reclassified as *decontaminated* or *not contaminated – unrestricted use*;
- a regulatory notice is cancelled;
- the charge on the land is recovered or no longer required; or
- a decision is made on appeal with respect to excluding land from a classification or notice applied under the CS Act.

Landgate will register the withdrawal of the memorial on the certificate(s) of title. Once the memorial has been withdrawn by Landgate, DER will provide written notification and a copy of the 'withdrawal of memorial' to all relevant parties.

### 7.8 Differentiating contaminated and non-contaminated parts of a land parcel

The location of site contamination is described in general terms in the site classification (for example, soil contamination is present in the northern half of the site). Although useful for small/medium sized urban blocks, this general description may not be sufficiently accurate to provide meaningful information for large land parcels.

It is possible for DER to distinguish between the contaminated and uncontaminated parts of a land parcel so that the site classification and any associated memorial can be applied to the relevant portion only. The process requires the landowner/proponent

(applicant) to register a **deposited plan for interest purposes only** (DP-IPO) with Landgate.

The applicant is advised to superimpose the proposed DP-IPO on a copy of a current aerial image of the site and surrounding area to ensure the contamination is totally contained within the proposed DP-IPO boundaries and that it includes an adequate buffer between the contaminated and uncontaminated areas. DER recommends that the proposed DP-IPO boundaries are forwarded with the aerial image to DER for agreement before engaging a suitably qualified surveyor to prepare the DP-IPO and lodging with Landgate.

Note DER will only accept a DP-IPO for large land parcels (such as pastoral leases and mining tenements) and 'large' rural, industrial and urban blocks prior to subdivision to minimise the administrative burden and costs associated with registering and removing of memorials.

For further information on DP-IPOs, refer to the Landgate *Survey and Plan Practice Manual* available from the [Landgate website](#) and/or contact DER Contaminated Sites on +61 8 1300 762 982.

## 7.9 Submission of new information after the site has been reported and/or classified

After the site has been reported, any new information should be provided to DER as soon as reasonably practicable. As an example, DER considers that a timeframe of three weeks from the date of receipt of a technical report from a consultant could be considered reasonable for forwarding a copy of the new report to DER in this context.

When new information is submitted, DER assesses whether any details in the reasons for classification or other records should be updated or whether the site should be reclassified. New information includes but is not limited to:

- clarification of certain details such as the site history and location of site infrastructure;
- submission of additional monitoring data; and
- submission of additional reports such as site investigation, remediation and validation reports.

If significant new information is submitted, DER will reclassify the site.<sup>19</sup> Significant new information includes but is not limited to:

- a site investigation report indicating that the original basis for classifying a site was fundamentally flawed but nonetheless supports the original or an alternative classification of the site;
- a report of additional site investigation works undertaken at the site in accordance with the NEPM and DER (2014) that results in a significant update to the conceptual site model; and

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<sup>19</sup> s.13(2) CS Act.

- a report of substantial remediation works undertaken at the site which supports the original or an alternative classification of the site.

There is no statutory timeframe provided in the CS Act for DER to review new information and, where applicable, reclassify the site. DER aims to review new information as soon as possible, but this is likely to take at least 45 days.

If the site is reclassified, DER provides notice of classification to the relevant parties as described in [section 7.4](#) and the classification may be appealed within the period stated in the Notice of Classification ([section 7.5](#)).

If the site is not reclassified, DER provides written notice that the reasons for classification have been updated (similar to a notice of classification) and/or a copy of the updated basic summary of records (refer to section 9) to the owner and occupier, and other relevant persons. A right of appeal is not applicable if DER updates the relevant records but does not reclassify the site.

It is an offence under s.94 to provide false or misleading information or to fail to disclose materially relevant information when responding to a DER request to provide information on a site.

## 7.10 Summary of restrictions on use and memorials

**Table 16: Summary of site classifications and applicability of restrictions on use and memorials on title**

Category of classification*	Restriction on use applicable	Memorial on certificate of title applicable
<i>report not substantiated</i>	no	no
<i>possibly contaminated – investigation required</i>	no	<b>yes</b>
<i>not contaminated – unrestricted use</i>	no	no
<i>contaminated – restricted use</i>	<b>yes</b>	<b>yes</b>
<i>remediated for restricted use</i>	<b>yes</b>	<b>yes</b>
<i>contaminated – remediation required</i>	<b>yes</b>	<b>yes</b>
<i>decontaminated</i>	no	no



## 7.11 Change in land use and planning conditions

DER may recommend that a site contamination planning condition requiring investigation (and remediation if necessary) is imposed in circumstances where:

- there is a change to a more sensitive land use and a potentially contaminating activity is being or has been undertaken at the site; or
- residual contamination remains after site clean-up works have been undertaken.

Example scenarios are provided in Table 17 (below).

**Table 17: Example scenarios to illustrate whether a planning condition relating to site contamination is likely to be recommended by DER**

Scenario	Site classification	Planning condition required if proposed for more sensitive land use
A contaminated service station is fully remediated so that it is suitable for any land use, and validation confirms it poses no risk to human health, the environment or relevant environmental values. The site <b><i>continues to be used as a service station</i></b>	Decontaminated	<b>Yes</b> , as the site has continued to be used as a service station.
A contaminated service station is <b><i>decommissioned, fully remediated and validation</i></b> confirms it poses no risk to human health, the environment or relevant environmental values.	Decontaminated	<b>No</b> , if the site is not subject to any further potentially contaminating activities.
A contaminated service station is <b><i>partially remediated</i></b> and validation confirms it is suitable for <b><i>continued commercial use as a service station</i></b> and that it poses no risk to the environment or relevant environmental values.	Remediated for restricted use	<b>Yes</b> , as the site has continued to be used as a service station.

For sites classified as *report not substantiated, decontaminated, not contaminated – unrestricted use* and where a potentially contaminating activity will continue to be carried out, DER may recommend that the potential for contamination be reassessed if a change to a more sensitive land use is proposed in the future.

## 8 Action required in response to site classifications

### 8.1 Persons required to take action

The polluter pays principle is included in the object<sup>20</sup> of the CS Act:

Those who generate pollution and waste should bear the cost of containment, avoidance or abatement.

The CS Act sets out responsibility for remediation and includes a hierarchy of responsible persons.<sup>21</sup> DER recommends that people refer to this hierarchy when considering whether they should take action to investigate or remediate a site. It is acknowledged that the hierarchy of responsibility can be difficult for a layperson to understand and apply; however, DER is unable to provide site-specific guidance on the application of the hierarchy.

Persons who are potentially responsible for remediation are advised to seek legal advice on their particular circumstances and, if appropriate, apply to the Committee for a decision on who is responsible for remediation and to what extent. In making a decision about a person's responsibility to remediate a site, the Committee takes into account:

- the hierarchy of responsibility for the remediation of contaminated sites as prescribed in s.24 of the Act;
- all available information on the nature and extent of known contamination of the site – currently and historically;
- the use to which the site has and is currently being put and the activities that have been carried out at the site which may have caused or contributed to the contamination;
- the contents of any notice of a proposed decision by the Committee that is given to a person;
- any previous decision made by the Committee as to responsibility for remediation of the site;
- any submission made to the Committee in response to a notice of a proposed decision; and
- any reports on the matter provided to the Committee by DER and any other matters or information provided to the Committee that the Committee considers relevant.

Further information on the Committee's procedures can be found here:

[www.csc.wa.gov.au](http://www.csc.wa.gov.au).

A decision on responsibility for remediation by the Committee is not required in order for a person to be considered responsible by DER for the purposes of the CS Act. For example, DER may issue a regulatory notice to persons who would be considered responsible for remediation by DER, if action to investigate or remediate a site is not being undertaken voluntarily (refer to section [11](#) of this guideline).

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<sup>20</sup> s.8 of the CS Act.

<sup>21</sup> Part 3 Division 1 of the CS Act.

With respect to remediation of source and affected sites (refer to definitions in [section 3](#) of this guideline), subject to certain limitations (refer s.27 of the CS Act), owners of affected sites are generally not responsible for remediation of contamination that has migrated to their property from another site.<sup>22</sup>

## 8.2 Priority for action

The wording of the site classification itself (for example *possibly contaminated – investigation required*) provides a broad indication of the action required to address known and/or suspected contamination at the site. However, the actions and timeframes for action will vary according to site-specific circumstances.

When classifying a site, DER will assess the risk to human health, the environment and environmental values on the available information and assign either a high, standard or low priority to the site based on the assessed risk. [Table 18](#) lists the site classifications that require action and how they may be prioritised. High priority sites require prompt action, whereas the timeframe for action is more flexible for standard priority sites. Some low priority sites may not require any action unless there is a change to a more sensitive landuse. Timeframes are discussed in section 8.3.

**Table 18: Site classifications and priority for action**

High priority	
<i>contaminated – remediation required</i>	Remediation of the site is required to mitigate risks to human health, the environment or environmental values, therefore, <b>prompt action is required</b> to evaluate remedial options and take remedial action. This may include further investigation of the nature and extent of contamination and risk assessment to determine appropriate remedial targets.
<i>possibly contaminated – investigation required</i>	Potential risks are evident but there are significant uncertainties on the nature and extent of contamination and/or risks to receptors. <b>Prompt action is required</b> to investigate the site and assess potential risks associated with contamination.

<sup>22</sup> Sections 27(2a) and 27(2b) of the CS Act.

Standard priority	
<i>possibly contaminated – investigation required</i>	Contamination is contained within the site boundaries and potential risks appear to be moderate to low, therefore the timeframe for investigation is less urgent than a high priority site but is still necessary.
<i>contaminated – restricted use and remediated for restricted use</i>	Action is required in accordance with the restrictions on use of the site and, if applicable, the site management plan (SMP).
Low priority	
<i>possibly contaminated – investigation required</i>	Contamination has been identified but, based on the available information, is not likely to pose a risk to human health, the environment or environmental values unless there is a change in land use. There is no information to suggest that a specific restriction on the use of the site is required.

The actions required and timeframes for action to be taken are usually specified in the Notice of Classification. Examples of factors that are taken into account by DER in assessing the priority for action are provided in [Table 19](#) and indicative timeframes are provided in Table 20 and Table 21. Further information on timeframes is provided in section [8.3](#).

**Table 19: Factors considered by DER in assessing the priority for action at sites classified as *possibly contaminated – investigation required***

Examples of factors considered by DER in assessing the priority for action at sites classified as <i>possibly contaminated – investigation required</i>
<ul style="list-style-type: none"> <li>• proximity and sensitivity of human and ecological receptors;</li> <li>• sensitivity of the current/proposed land use;</li> <li>• extent of contamination and contaminant characteristics, such as carcinogenicity, toxicity, volatility, mobility, bioavailability and bioaccumulation, persistence in the environment and rate of transport;</li> <li>• potential for complete exposure pathways, such as known groundwater abstraction and/or presence of volatile contaminants in the shallow subsurface (potential for vapour intrusion);</li> <li>• potential for preferential pathways, such as fractured rock geology and service trenches;</li> <li>• potential for contaminant migration onto adjacent sites;</li> <li>• level of stakeholder/community concern;</li> <li>• adequacy of data available; and</li> <li>• whether appropriate action is being undertaken voluntarily in a reasonable timeframe.</li> </ul>

Some site classifications do not require any further action unless there is a material change in conditions. For example, contamination is not known or suspected to be present at sites classified as *not contaminated – unrestricted use, decontaminated or report not substantiated* and therefore no action is required provided no new contamination of the site occurs or is identified. However, sites where potentially contaminating activities are being carried out may require action if proposed for a more sensitive use.

### 8.3 Timeframes for action

If action is required to address contamination at a site, DER includes an ‘**action required**’ section within the notice of classification or subsequent correspondence. DER will specify the broad actions considered necessary to address data gaps and uncertainties so that risks can be adequately characterised and/or remedial actions taken to protect human health, the environment and environmental values. Timeframes for actions to be implemented or completed may also be included.

DER acknowledges that some organisations have a large number of sites requiring action. For example, this can include companies that operate multiple service stations across the State, or local government authorities responsible for numerous landfills. In these circumstances, the person or organisation should develop a prioritised schedule to undertake necessary works that takes into account the potential risks to human health, the environment and environmental values, as well as any logistical factors such as quarantine requirements.

DER encourages persons responsible for multiple sites and/or sites with logistical challenges to discuss their proposed schedules and progress with the Department in order to demonstrate that appropriate action is being taken.

Copies of Sampling and Analysis Quality Plans (SAQP), community engagement plans and technical reports should be submitted to the auditor in the first instance unless otherwise advised by DER.

#### 8.3.1 High priority sites

Due to the significant risks to human health, the environment and/or environmental values posed by high priority sites, appropriate and prompt action should be undertaken. A guide to timeframes for action to be undertaken is provided in Table 20:

**Table 20: Guide to timeframes for action at high priority sites**

Action required	Indicative timeframes
<ul style="list-style-type: none"> <li>engage an environmental consultant and advise DER of investigation strategy;</li> <li>engage a contaminated sites auditor if required<sup>23</sup> and submit notification of auditor engagement (Form G) to DER; and</li> <li>submit preliminary site investigation (PSI) and/or data gap analysis report to the auditor and DER.</li> </ul>	<b>Within three months</b>
<ul style="list-style-type: none"> <li>finalise SAQP and submit to the auditor (if relevant);</li> <li>finalise community engagement plan (as part of PSI or SAQP) and submit to the auditor and DER;</li> <li>carry out community engagement – before site works or decisions that may affect stakeholders; and</li> <li>submit a detailed site investigation (DSI) report to the auditor and DER (additional detailed investigation works would normally be expected to be completed within a further 6–9 months depending on their complexity).</li> </ul>	<b>Within six months</b>
<ul style="list-style-type: none"> <li>if remediation is required, submit remedial action plan (RAP) to the auditor or DER (timeframes for remedial actions to be specified in the RAP).</li> </ul>	<b>Within nine months</b>

### 8.3.2 Standard priority sites

The timeframe for undertaking action at standard priority sites reflects the actual or potential risk posed by contamination in the context of ongoing uses or a proposed change in use of the site. A guide to timeframes for action to be undertaken on standard priority sites is provided in [Table 21](#).

<sup>23</sup> The circumstances when an auditor is required to be engaged are listed in regulation 31 of the CS Regulations. Further information on the contaminated sites auditor scheme is provided in DER (2016).

**Table 21: Guide to timeframes for action at standard priority sites**

Action required	Indicative timeframes
<ul style="list-style-type: none"> <li>engage an environmental consultant and advise DER of site investigation strategy;</li> <li>engage a contaminated sites auditor if required<sup>24</sup> and submit notification of auditor engagement (Form G) to DER; and</li> <li>submit preliminary site investigation (PSI) report to auditor or DER as appropriate for the site.</li> </ul>	<b>Within six months</b>
<ul style="list-style-type: none"> <li>finalise sampling and analysis quality plan (SAQP);</li> <li>finalise community engagement plan (as part of PSI or SAQP);</li> <li>carry out community engagement (before site works or any decision that may affect stakeholders); and</li> <li>submit detailed site investigation (DSI) report to the auditor or DER as appropriate for the site (subsequent stages of detailed investigation should reasonably be completed at 6–12 month intervals).</li> </ul>	<b>Within nine months</b>
<ul style="list-style-type: none"> <li>if required, submit site management plan (SMP) to auditor/DER as appropriate for the site.</li> </ul>	<b>Within 18 months</b>
<ul style="list-style-type: none"> <li>comply with restrictions on use; and</li> <li>carry out actions specified in the SMP.</li> </ul>	<b>As specified in the site classification and SMP</b>

### 8.3.3 Low priority sites

A site classified as *possibly contaminated – investigation required* may be considered low priority if there is sufficient conceptual understanding of the site to indicate that the substances present are unlikely to pose an unacceptable risk to human health, the environment or environmental values under the current conditions and land use. A detailed example is provided in [Table 22](#).

A low priority rating for a site classified as *possibly contaminated – investigation required* implies that there is insufficient information to classify the site as *not contaminated – unrestricted use*, *contaminated – restricted use* or *remediated for restricted use*.

Low priority sites classified as *possibly contaminated – investigation required* are required to be investigated (r.31 – overseen by an auditor if required) to characterise the nature and extent of contamination at the site. However, DER typically does not

<sup>24</sup> The circumstances when an auditor is required to be engaged are listed in regulation 31 of the CS Regulations. Further information on the contaminated sites auditor scheme is provided in DER (2016a).

specify timeframes for action to be completed. Timeframes may be driven by the owner or occupier wanting to sell or otherwise exit the site, or develop it for a more sensitive land use. The classification and memorial on the certificate of title ensure that the requirement for investigation is triggered if the site is proposed for subdivision or amalgamation or development.<sup>25</sup> Example circumstances are provided in Table 22.

**Table 22: Example scenario for a low priority site classified *possibly contaminated – investigation required***

Example scenario: Low priority <i>possibly contaminated – investigation required</i>	
<p><b>Former domestic landfill</b></p> <p>A site was reported to DER by the local government authority (LGA) on the basis that the site was used as a domestic landfill during the 1970s to 1990s. Anecdotal information indicates that a small number of nearby residents used the site to deposit household waste, which was periodically burned and covered with a layer of gravel.</p> <p>The site is currently a large bushland reserve.</p> <p>No intrusive investigations have been carried out to assess the nature or extent of waste material at the site.</p> <p>It was concluded from a site inspection that landfilling activities were likely to have occurred in an isolated area of the site, which was indicated by the limited area of soil disturbance and vegetation regrowth. There were no secondary signs of contamination (soil staining, surface fragments of asbestos containing materials, or evidence of vegetation stress).</p> <p>The reserve is not intended for public recreation and no paths or parking areas are provided and vehicle access is restricted.</p> <p>The site will be inspected annually by the LGA, and additional rehabilitation is proposed to increase vegetation cover in the disturbed area.</p> <p>There are no sensitive potential environmental receptors near the site (such as rivers, lakes, conservation reserves or known endangered species habitats) and groundwater is not used in this area for potable or non-potable uses.</p>	<p><b>Comment</b></p> <p>As landfilling with unknown waste materials is inherently a potentially contaminating activity, the site would be classified as <i>possibly contaminated – investigation required</i>.</p> <p>However, as potential impacts are unlikely to pose a substantial risk due to the current absence of sensitive receptors and viable exposure pathways, DER would consider the site a low priority.</p>

<sup>25</sup> s.58(6) of the CS Act.



**Table 23: A list of example circumstances that could result in a requirement for a site investigation at a low priority site**

Triggers for action at low priority sites
<ul style="list-style-type: none"><li>• a more sensitive use is proposed at the site – this includes more frequent access or occupation of the site despite no change in actual land use;</li><li>• an operational site is to be decommissioned;</li><li>• significant ground-disturbing works are proposed, for example installation of below-ground infrastructure;</li><li>• groundwater abstraction is proposed to be undertaken at the site;</li><li>• reports of ecological damage (for example fish kills or vegetation death);</li><li>• health complaints (for example headaches or nausea) from people visiting the site, or living nearby;</li><li>• site is in, or near, an area declared as a public drinking water source area; and/or</li><li>• increased community concern.</li></ul>

The owner/occupier of a site classified as *possibly contaminated – investigation required* that is considered to be low priority, may voluntarily undertake investigations at any time and submit the results to DER for assessment. As discussed in [section 7.9](#), DER will review the additional information and, as applicable, update the reasons for classification or reclassify the site.

#### 8.4 Progress reporting

The submission of technical reports, which detail the work carried out, is required to demonstrate that appropriate action is being taken in response to a site classification of *possibly contaminated – investigation required* or *contaminated – remediation required*.

It is recommended that the environmental consultant, or the person responsible for undertaking the works, informs DER (and the contaminated sites auditor if relevant), when key milestones are met. This will provide a formal record of progress being made to investigate, manage and/or remediate the site(s). For example, it is recommended that DER is advised in writing of the following milestones:

- engagement of an environmental consultant;
- engagement of an accredited contaminated sites auditor;
- finalisation of a SAQP and estimated schedule of works;
- finalisation of a site remediation plan and estimated schedule of works; and
- any other milestone event relevant to the investigation, management or remediation of the site.

DER Contaminated Sites Officers are available via telephone, or face-to-face, to talk with owners, auditors and consultants and provide general advice or discuss general management strategies for a site.

**DER contact details:**

**Email address**

[contaminatedsites@der.wa.gov.au](mailto:contaminatedsites@der.wa.gov.au)

**Telephone**

1300 762 982

DER will consider taking enforcement action (refer to [section 11](#)) if the timeframes specified in the Notice of Classification are not met and DER has not been contacted to discuss possible alternative timeframes.

## 9 Access to information

### 9.1 How to access information on the contaminated sites register

The CS Act includes provisions for the identification and recording of the location and nature of contaminated sites on the Contaminated Sites Register and for public access to information on contaminated sites. Public access to information on the Contaminated Sites Register is summarised in [Table 24](#). The information included in a basic and detailed summary of records is discussed in [section 9.1.1](#), and the public contaminated sites database is discussed in [section 9.1.2](#).

**Table 24: Summary of public access to information on contaminated sites**

Access option	Information available	Timeframe	How to access
1 Online contaminated sites database	Basic summary of records (BSR) for sites classified RRU, C–RU and C–RR.	Immediate	DER <a href="#">website</a> no fee
2 Basic summary of records (BSR) request to DER	BSR for all classified sites. <sup>1</sup>	10 working days	Submit a <a href="#">Form 2</a> \$30 fee
3 Detailed summary of records (DSR) request to DER	BSR for all classified sites <sup>1</sup> plus: <ul style="list-style-type: none"> <li>• details of any certificate of contamination audit issued;</li> <li>• list of any technical reports related to the site in DER’s possession (and access to those reports); and</li> <li>• any other information or documents DER considers appropriate.</li> </ul>	10 working days	Submit a <a href="#">Form 2</a> \$300 fee
4 Freedom of Information (FOI) request to DER	Information not available through a BSR or DSR for all sites on the Contaminated Sites Register such as correspondence, file notes and information held under the EP Act (for example complaints and pollution incidents).	45 days	Submit an <a href="#">FOI application</a> fees apply
5 Landgate property interest report	BSR for sites classified RRU, C–RU and C–RR <sup>2</sup> .	~60 minutes	<a href="#">Landgate website</a> fees apply

<sup>1</sup> If a BSR or DSR request is received for a site that is awaiting classification, DER will notify the applicant, prioritise classification of the site and provide the full response when the site has been classified. For a DSR, a list of technical reports held by DER will be provided in the meantime.

<sup>2</sup> For all other sites, the property interest report returns a ‘nil response’ and the applicant is directed to request a BSR via submission of a Form 2.

### 9.1.1 Summary of records

The CS Act requires that DER provides public access to its records on contaminated sites in the prescribed manner. The public can obtain a basic or detailed summary of records as indicated in [Table 23](#).

A basic summary of records (BSR) is intended to provide a summary of the contamination status of a site together with information relevant to the regulation of the site under the CS Act. A BSR includes the following information, as relevant for the site:

- site identification details;
- category of classification;
- the nature and extent of known contamination;
- any restrictions on use of the site;
- the reasons for classification, with reference to any guidelines, standards and other information taken into account;
- other relevant information;
- actions required;
- wording of the memorial (if relevant to the classification);
- any regulatory notice that applies to the site; and
- any appeal or request for a decision on responsibility for remediation that has been lodged with the Committee.

A detailed summary of records (DSR) includes the information provided in a BSR as well as any certificate of contamination audit (CCA) given for the site; a list of technical reports held on file by DER; and any other information or documents from records that the DER CEO considers appropriate.

Payment of the DSR application fee includes access to the technical reports and other records specified in the DSR. DER provides digital copies (via email or disc) of the requested reports along with the DSR response if possible; however, digital copies of all reports may not be available. In these instances, hard copies are made available for viewing and copying at DER's offices at a mutually convenient time. Alternative arrangements may be considered for applicants located in non-metropolitan areas.

BSR and DSR requests are processed by DER in the order they are received. A written response is usually issued within 10 working days providing sufficient information has been included in the [Form 2](#) request to identify the site.

***The identity of the person reporting the site is confidential and is not included in a BSR or DSR response.***

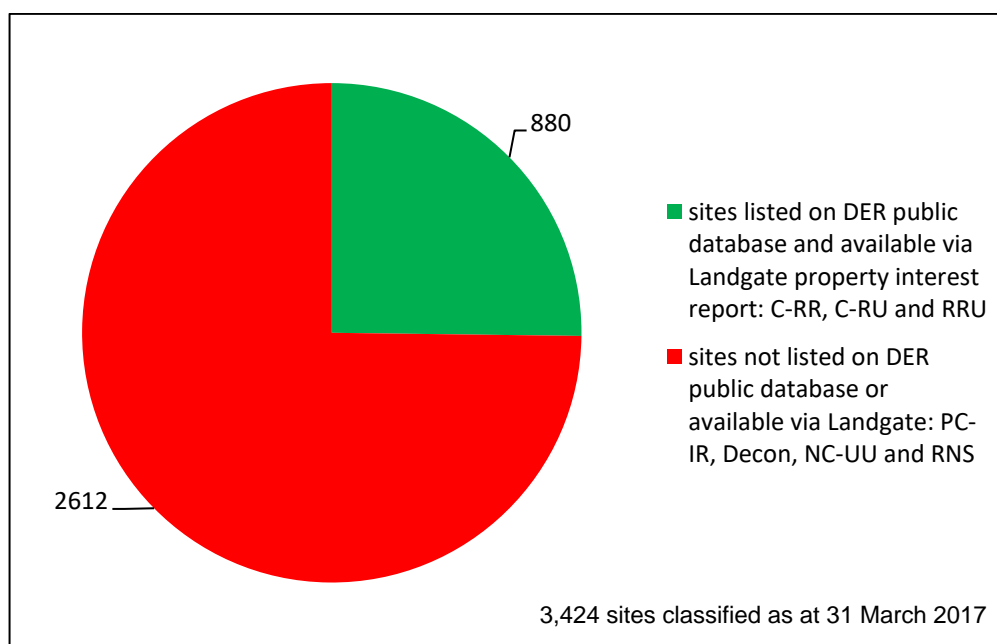
### 9.1.2 Contaminated sites database

The publically available contaminated sites database includes sites that have been confirmed to be contaminated and are classified as:

- *contaminated – restricted use;*
- *remediated for restricted use; and*
- *contaminated – remediation required.*

As shown in [Figure 3](#), the number of sites listed on the contaminated sites database represents about a quarter of the total sites included on the Contaminated Sites Register (at 31 March 2017). If a site does not appear on the contaminated sites database, DER recommends interested persons check whether the subject site appears on the Contaminated Sites Register by written application ([Form 2](#)) to DER and payment of the prescribed fee (\$30 for a BSR and \$300 for a DSR).

**Figure 3: Proportion of classified sites on the contaminated sites database and the reported sites register**



Submitting a [Form 2](#) to DER is the only way to access information on reported sites awaiting classification or sites classified as *report not substantiated, possibly contaminated – investigation required, not contaminated – unrestricted use, and decontaminated*.

## 9.2 Freedom of Information

Access to other information held by DER not included in a BSR or DSR can be requested under the *Freedom of Information Act 1992*. The request must specify the type of information being requested.

The identity of a person reporting a known or suspected contaminated site is confidential and this information, or any information that could lead to identification of the person making the report, is not available under Freedom of Information (FOI).

***The identity of the person reporting the site is confidential and is not included in a response to an FOI request.***

For more information about making a FOI request, visit DER's [website](#).

## 9.3 Community engagement

Community engagement is an integral part of contaminated site assessment and management. The scope of community engagement necessary for any particular project will depend on the size of the project and the likely level of community interest or concern. Community engagement may include involvement in decision-making as well as supplying information.

A community engagement plan should include details of how stakeholders will be kept informed, what information will be provided and when it will be provided. Relevant stakeholders should be provided with the contact details of persons who can provide current information and respond to comments and complaints.

**All persons who commission works to assess and manage a contaminated site should ensure that relevant stakeholders are provided with appropriate access to information on the site(s). This includes access to all relevant technical information for affected site owners, such as copies of site investigation and monitoring reports.**

Owners or occupiers of affected sites seeking detailed information on the progress of assessment or remediation works (including access to technical reports) should contact the person(s) responsible for the source site. Stakeholders may contact DER for assistance with obtaining the relevant contact details if they have not been contacted by the person(s) responsible for the source site.

An investigation notice (refer to section 11 on regulatory notices) may be issued by DER to enforce community engagement if appropriate action is not undertaken voluntarily.

Refer to [Schedule B8](#) of the NEPM and DER (2014) for more information on community engagement and risk communication.

## 10 Disclosure of contamination during land transactions

### 10.1 Mandatory disclosure requirements

Landowners must provide written disclosure on the prescribed form ([Form 6](#)) at least 14 days before the completion of a transaction which would result in another person becoming an owner, mortgagee or lessee of land that comprises all or part of a site classified as *contaminated – restricted use*, *contaminated – remediation required* or *remediated for restricted use*, or land that is subject to an investigation, clean up or hazard abatement notice.<sup>26</sup>

DER recommends that disclosure is provided at least 14 days before:

- settlement date for a sale;
- the date the mortgage is registered for a mortgage; and
- the date the lease is signed for a lease.

In some instances, it may be necessary for multiple parties to provide disclosure concurrently. A typical example is where:

- an owner provides disclosure to a purchaser; and at the same time
- the purchaser provides disclosure to a mortgagee in anticipation of becoming the site owner and taking out a mortgage.

DER recommends that the information required (refer Table 25) to complete the [Form 6](#), such as the site classification, nature and extent of contamination and the restrictions on use, is obtained directly from the current BSR for the site.

**Table 25: Mandatory information to be disclosed in [Form 6](#)**

Information required to be disclosed (Form 6)
<ul style="list-style-type: none"><li>• site owner details;</li><li>• site identification details (copy of certificate of title and local government area);</li><li>• the site classification and any notice given under Part 4 of the CS Act;</li><li>• the nature and extent of all identified contamination at the site; and</li><li>• the restrictions on use that apply to the site.</li></ul>

To ensure consistency in information, DER recommends that a copy of the current BSR is attached to [Form 6](#) as part of the disclosure procedure. A BSR for sites classified as *contaminated – restricted use*, *contaminated – remediation required*, or *remediated for restricted use* may be obtained free of charge from the contaminated sites database on DER's [website](#).

<sup>26</sup> s.68 of the CS Act.

A [Form 6](#) must be signed by the owner and provided to the potential owner/mortgagee/lessee and a copy submitted to DER.

**DER recommends that the owner should ensure the form is signed by the potential purchaser(s), lessee(s) or mortgagee(s) to acknowledge receipt of the disclosed information.**

**Form 6** – Landowner’s disclosure before completion of land transaction – is available on [DER’s website](#).

## 10.2 Discretionary disclosure

No formal disclosure is required under the CS Act with respect to land that is classified as *possibly contaminated—investigation required*. The memorial on the certificate of title should alert potential purchasers, lessees or mortgagees of the classification under the CS Act. However, DER recommends that prospective purchasers, lessees and mortgagees are made aware of the contamination status (and associated classification) of the property by the owner at the earliest opportunity to minimise potential delays in the land transaction process. A copy of the current BSR for the site may be obtained by submitting a request to DER ([Form 2](#), \$30 fee).

**DER recommends that landowners act prudently and make prospective lessees aware of the contamination status when leasing out known and suspected contaminated sites, including the potential risk to human health, the environment and environmental values arising from the proposed use of the site under the lease.**



# 11 Notices

## 11.1 Overview

Notices are enforcement tools available to DER to assist with the appropriate and timely management of site contamination issues. The three types of contaminated sites notices are:

- investigation notice;
- clean up notice; and
- hazard abatement notice.

A notice must specify the name and address of the person to whom it is given, the reason for which it is given, a description of the location and extent of the site sufficient to identify it, and details of any available appeal. Additional details included in a notice are shown in [Table 26](#) below.

**Table 26: Summary of types of regulatory notices applicable to site contamination**

	Circumstances in which DER may issue the notice	Notice is to describe
Investigation notice s.49	There are grounds to indicate the possible contamination of a site; and appropriate action to investigate, monitor or assess the site is not being, or has not been, taken.	The form of investigation, monitoring and assessment to be undertaken; and the content and form of information that is to be reported to the CEO and specific requirements as set out in s.49(4), (5) and (6).
Clean up notice s.50	A site is classified as <i>contaminated – remediation required</i> ; and the CEO believes on reasonable grounds, that appropriate action to remediate the site is not being, or has not been, taken.	The form of remediation and monitoring to be undertaken; and the content and form of information that is to be reported to the CEO and specific requirements as set out in s.50(4), (5) and (6).
Hazard abatement notice s.51	In the opinion of the CEO, a site is contaminated and there is an immediate and serious risk of harm to human health, the environment or any environmental value (a “hazard”).	The actions required to be taken to abate the hazard; and the content and form of information that is to be reported to the CEO and specific requirements as set out in s.51(3).

## 11.2 Persons to whom a notice may be given

A notice is binding on each person to whom it is given, which may include one or more persons as set out in s.42(1):

- (1) The CEO may, in his or her discretion, give a notice to any of the following persons—
  - (a) if given in relation to a site classified as *contaminated —remediation required*, a person responsible for remediation of the site;
  - (b) a person who, in the opinion of the CEO, would be a person responsible for remediation of the site if the land to which the notice relates was land that comprised all, or part, of a site classified as *contaminated—remediation required*;
  - (c) an owner or occupier of land that comprises all, or part, of the site to which the notice relates.

Under s.48 of the CS Act, if a notice is binding on the owner of a site, it will also become binding on a person who becomes an owner of the site during the period that the notice is in force. A copy of the notice is provided to owners and occupiers not bound by the notice.

**A notice given to a person, who is not the owner or occupier of a site, may become binding on an owner or occupier who refuses access to the site, as set out in s.54 of the CS Act.**

## 11.3 Complying with a regulatory notice

A notice will specify the reasons it has been issued and what actions are required to be completed at the site, for example investigation or remediation (clean-up) and the timeframe for completion.

A notice will typically require the recipient to engage a suitably experienced and qualified environmental consultant to prepare and implement plans for the investigation and/or remediation of the site, and to prepare and implement a community engagement plan.

In accordance with s.44, a person on whom the notice is binding is required to engage an accredited contaminated sites auditor to report on the actions taken to comply with the requirements of the notice.

Failure to comply with the requirements and timeframes specified in a notice is an offence. The penalty is \$500,000, with daily penalties of up to \$100,000 for an individual and five times those amounts for a body corporate.

## 11.4 Appeal rights

Investigation and clean up notices may be appealed in accordance with s.52 and s.79 of the CS Act. Appeals are determined by the Committee. Under s.52:

- (1) Subject to subsection (5), a person on whom an investigation notice or a clean up notice is binding may appeal against a requirement of the notice.
- (2) Subject to subsection (3), a person may appeal against a decision of the CEO—
  - (a) under section 42(1) to give the person a notice; or
  - (b) under section 54(1)(d) that a notice is binding on the person.

Appeals against notices must be received by the Committee within the specified timeframe to be valid. The notice will specify the appeal period, which must be a minimum of 21 days.

The requirements of an investigation notice or clean up notice are suspended pending the determination of the appeal by the Committee.

**The Committee's decision in relation to appeals against regulatory notices is final and without further appeal.**

**Contact the Committee for further information on the appeal process:**

**Website:** [www.csc.wa.gov.au](http://www.csc.wa.gov.au)

**Email:** [admin@csc.wa.gov.au](mailto:admin@csc.wa.gov.au)

**Phone:** +61 8 6467 5201

Appeal rights with respect to hazard abatement notices are intentionally limited as they are issued to ensure prompt action to protect human health, the environment and environmental values from immediate and serious harm.

## 12 Certificate of contamination audit

### 12.1 Purpose of a certificate of contamination audit

A certificate of contamination audit (CCA) is intended to provide government assurance to landowners and potential landowners regarding the contamination status of a site, or a portion of a site, and its suitability for a particular land use.

A CCA is to classify the site and specify the nature and extent of all identified contamination. In some circumstances, contamination that was present but not identified at the time the certificate was issued may become the responsibility of the State to remediate.<sup>27</sup>

A CCA can only be issued when DER is certain about the contamination status of a site where, based on the information provided to DER, the site can be classified:

- *not contaminated – unrestricted use;*
- *contaminated – restricted use;*
- *remediated for restricted use;*
- *contaminated – remediation required; or*
- *decontaminated.*

If a site is classified as *possibly contaminated – investigation required* or *report not substantiated* then there is insufficient information for DER to be certain about the contamination status of the site and a CCA cannot be issued.

#### Transfer of responsibility for remediation under s.30 of the CS Act

The transferring party must obtain a CCA for the site before, or as part of, requesting DER approval of the transfer transaction.

The CCA must be representative of site conditions at the time of the proposed transfer in order for DER to provide approval for the transfer.

### 12.2 Request for a certificate of contamination audit

Under s.62 of the CS Act:

<sup>27</sup> s.29(1)(b) CS Act.

- (1) Any of the following persons may, in the prescribed form, request a certificate of contamination audit from the CEO in respect of land—
  - (a) the owner of the land;
  - (b) the occupier of the land;
  - (c) a person responsible for remediation of a site of which the land comprises all, or part;
  - (d) a person on whom a notice under Part 4 in respect of the land is binding.
- (2) If a request for a certificate of contamination audit is made in respect of land by a person who is not the owner of the land a copy of the request is to be given by that person to the owner within 14 days after the day on which the request was made.

Section 62(3) and r.29(2) set out how a request for a certificate is to be made. The request is to be on the prescribed form ([Form 3](#))<sup>28</sup> and accompanied by certain information, including:

- a certified copy of the current certificate(s) of title for the land;
- copies of technical reports or documents on investigations or assessments regarding the nature or extent of any contamination of the land;
- details of any remediation of the land, including any reports or documents on that remediation and validation;
- a mandatory auditor's report on the land prepared by an accredited contaminated sites auditor;
- a recommendation as to classification and, where relevant, any recommended restrictions on land use;
- any other information prescribed;
- any other information requested by the CEO to enable the CEO to deal with the request; and
- the prescribed fee (\$4,125 as at 1 June 2017).

If a request for a CCA does not include the specified information, or the information provided is inadequate, DER may decline to deal with the request<sup>29</sup> and request further information as is necessary. DER will provide a brief explanation if the request for a CCA is refused.

### 12.3 Issuing a certificate of contamination audit

DER is required to make a determination within 45 days of receiving a request for a CCA, or within 45 days of receiving the additional information requested by DER following an initial request for a CCA. DER may extend the period<sup>30</sup> if there are particular circumstances which affect DER's ability to issue the CCA.

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<sup>28</sup> s.62(3) and r.29(2).

<sup>29</sup> s.62(4) CS Act.

<sup>30</sup> In accordance with s.63(2)(b).

After considering a request for a CCA, DER will:

- provide a CCA in the prescribed form to the person who requested it; or
- classify the land, or part of the land, as *possibly contaminated – investigation required*, and not issue a CCA.

DER will issue a CCA when satisfied, on reasonable grounds, that all contamination that can be identified has been identified according to relevant guidelines, accepted standards and any other relevant information. If a site is classified as *possibly contaminated – investigation required*, further investigation of the site will be necessary which results in the site being reclassified as one of the qualifying classifications (refer section 12.1) before a CCA can be issued.

A CCA is only representative of the contamination status of the site **at the time of issue**. A CCA does not address contamination that may have been caused after the certificate was issued.

## 13 Transferring responsibility for remediation

### 13.1 Memorials on title and effect on land transfers

Under s.58 of the Act, a memorial on title will be placed on all sites classified as:

- *contaminated – remediation required*;
- *contaminated – restrictive use*;
- *remediated for restrictive use*; or
- *possibly contaminated – investigation required*.

Under s.58(5), the CEO of DER may specify that an instrument affecting land classified as *contaminated – remediation required* is not to be registered or accepted for registration by Landgate unless DER consents in writing to that registration.

Landowners/occupiers of properties classified as *contaminated – remediation required* should be aware of the nature of the memorial registered with respect to contamination on their land and act accordingly in the event of a future land transaction.

### 13.2 Transferring responsibility to another person

The responsibility for remediation of a site may be transferred under s.30 of the CS Act from one person to another by agreement and with the written approval of DER.

The person responsible for remediation must provide the following information<sup>31</sup> to DER with a request for approval for transfer of responsibility:

- a statement to the effect that the person transferring responsibility believes on reasonable grounds, that the person to whom responsibility is to be transferred, has the financial capacity to carry out the required remediation, and setting out the details of that financial capacity; and
- a CCA and accompanying MAR, or a request for a CCA (as described in [section 12](#) of this guideline).

If insufficient information is provided for DER to be satisfied that a transferee has the required financial capacity to undertake the necessary remediation of the site, DER may request further information before making a decision as to whether to approve the transfer.

In circumstances where the degree of responsibility for remediation is uncertain and this has a material influence on the likely proportionate cost of remediation, DER may delay making a decision until the Committee has made its decision on responsibility for remediation.

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<sup>31</sup> s.30(4) of the CS Act.

DER recommends that parties considering a transfer of responsibility for remediation contact DER to discuss the process and to identify any site-specific factors which might affect the form or content of the agreement.

Under s.30(6) of the CS Act:

A person must not provide information or make a statement under subsection (4) or (5) that the person knows is false or misleading in a material particular.  
Penalty: \$250,000, and a daily penalty of \$50,000.

### 13.3 Transferring responsibility to the State

Responsibility may be transferred, in certain circumstances,<sup>32</sup> to the State, with the approval of the Minister, if:

- the subject land is to be transferred to the State (or a public authority);
- the person who is responsible for remediation is the owner of the land; and
- the Minister has provided written approval.

**DER recommends that parties considering a transfer of responsibility for remediation contact DER to discuss the process and to identify any site-specific factors which might affect the transfer.**

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<sup>32</sup> Set out in s.30(1)(b) of the CS Act and r.63 of the CS Regulations.



## References

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## Appendices

### Appendix A – Example scenarios of known or suspected contaminated sites and recommendation for reporting

Situation	Example scenario	Contamination status		Report under s.11 of the CS Act?
		Reason to suspect	Known	
Commercial/industrial				
Leaking solvent storage tank	<p>Solvents leaking from a tank have entered soil and groundwater and the concentrations in groundwater are above the generic assessment levels (referenced in DER 2014) relevant to the site.</p> <p>The groundwater from the site discharges to a nearby creek and has the potential to cause harm to the environmental values of the creek such as the creek ecology and people swimming or fishing in the creek.</p>		✓	Yes
Chemical spill	<p>A large spill from a chemical tank at an industrial plant has leaked through a surface bund and entered soil and groundwater. The groundwater discharges to a nearby wetland; vegetation at the groundwater discharge area is dead and/or shows signs of stress.</p>	✓		Yes
Liquid waste disposal in a soak well	<p>A soak well located outside a mechanical workshop has been used for many years to dispose of liquid wastes including degreasers (chlorinated solvents) and waste oils.</p> <p>As the site is near a wetland, shallow groundwater is likely to be present. It is also likely that chlorinated solvents in the seepage from the soak well would have impacted soil and groundwater, and that the impacted groundwater would discharge into the nearby wetland.</p> <p>In this example there is an assumed source (chlorinated solvents seeping from the soak well), a suspected pathway (groundwater) and receptor (groundwater, users of groundwater and a wetland).</p>	✓		Yes

Situation	Example scenario	Contamination status		Report under s.11 of the CS Act?
		Reason to suspect	Known	
Liquid waste disposal in a soak well	A soak well has been used for many years to dispose of liquid wastes including degreasers (such as petroleum hydrocarbon based solvents). Although the solvents used can degrade under surface (aerobic) conditions, the solvents may persist in groundwater.	✓		Yes
Liquid waste disposal in a soak well	A soak well has been used for many years to dispose of liquid wastes including waste oils. Although waste oils can degrade under surface (aerobic) conditions, contaminants may persist in groundwater.	✓		Yes
Wastewater treatment plant	A wastewater treatment plant has a series of ponds that are used to treat wastewater. The final pond is unlined and infiltrates the treated water to ground. The water quality in the final, unlined pond is known to be high in nutrients (nitrogen compounds and phosphate). Groundwater samples collected as part of routine monitoring identified high concentrations of nutrients in bores down hydraulic gradient from the pond. The extent of nutrient impact, presence of other potential contaminants (such as metals, pharmaceutical compounds and per- and polyfluoroalkyl substances) and the presence of other potential receptors is unknown.	✓		Yes
Machinery storage depot	An unsealed area of a depot where machinery is stored shows signs of fuel and oil leaks and spills. The staining extends at least 10cm below the surface of the soil; however, the total depth of staining has not been determined. It is possible that a large quantity of fuel and/or oil has leaked/been spilt over time resulting in soil, and possibly groundwater, containing petroleum hydrocarbons at concentrations which could pose a risk to human health, the environment or environmental values.	✓		Yes
Chemical spill	A spill of a significant volume of a highly toxic liquid chemical occurred at an industrial site. Emergency clean-up of the spill area, involving removal of impacted	✓		Yes

Situation	Example scenario	Contamination status		Report under s.11 of the CS Act?
		Reason to suspect	Known	
	<p>soil, was completed soon after the spill occurred. However, validation sampling was not carried out to confirm that all impacted soil had been removed.</p> <p>Based on the sandy soil profile and the volume of the spill, it is suspected that the chemical may have reached groundwater.</p>			
	<p>A spill of a minor volume of liquid chemical occurred at an industrial site. Emergency clean-up of the spill area, involving removal of impacted soil, was completed without delay after the spill occurred. Excavation of impacted soils continued until residual soil staining and soil odours could not be detected. The clean-up procedure (illustrated with photographs) was documented in a report at the time of the incident. Depth to the water table is 20m below ground level.</p> <p>In this case, there is no reason to suspect that the spilled chemical reached groundwater based on the absence of residual soil impact, the small volume of the spill and depth to groundwater.</p>	n/a	n/a	No
Petroleum fuel storage and distribution				
Service station	<p>Inspection of inventory records for a site has identified a loss of fuel product over time. Integrity testing of the underground storage tanks and associated pipework confirms a leak is present through which fuel could reach soil and underlying groundwater.</p> <p>In this scenario there is an identified contamination source (leaking tanks) and there are suspected pathways and receptors (groundwater).</p>	✓		Yes
Groundwater impacted by petroleum hydrocarbons beyond site boundary	<p>Groundwater sampling and analysis at a former service station have shown groundwater to be heavily impacted, such that the concentration in groundwater indicates that petrol product may be present at the water table. A plume of highly contaminated groundwater has migrated beneath neighbouring residential properties. Hydrocarbon vapours from the plume may potentially migrate through soil and into houses and cause a risk of harm from inhalation of vapours.</p>		✓	Yes

Situation	Example scenario	Contamination status		Report under s.11 of the CS Act?
		Reason to suspect	Known	
	The information indicates there is a source of volatile contaminants (petrol-impacted groundwater), pathway (groundwater and vapour migration) and receptor (residents). The former service station site has already been reported to DER; however, the residential properties over the plume have not and should be reported.			
Groundwater impacted by petroleum hydrocarbons beyond site boundary	<p>Groundwater impact (confirmed by groundwater testing) from a former service station has migrated offsite and petroleum hydrocarbons have been detected in water sampled from a domestic irrigation bore located on an adjacent residential property.</p> <p>This is a known risk due to the likely exposure of residents to the irrigation water (skin contact and/or inhalation of vapours).</p> <p>The former service station site has already been reported to DER; however, the residential property with the bore has not and should be reported.</p>		✓	Yes
Landfills, filling and illegal dumping				
Uncontrolled fill	<p>A. Excavations have identified a layer of fill that appears to contain waste materials (indicated by the presence of non-natural materials such as brick and/or discoloured and odorous materials). The fill material represents a suspected source of contamination that could leach metals or other contaminants to groundwater and may adversely impact the water quality of wetlands or domestic irrigation bores. It may also present a risk to human health if substances such as asbestos are present.</p>	✓		Yes
	<p>B. A low-lying area of a rural property has been filled with sand imported from backyard pool excavations in the Perth metropolitan area. Records indicate that the fill material was sourced from locations that are not located in areas of medium or high risk for potential acid sulfate soils and the locations have not been used for potentially contaminating activities. The sand is not stained or odorous and there is no evidence of waste materials within the sand fill.</p>	n/a	n/a	No

Situation	Example scenario	Contamination status		Report under s.11 of the CS Act?
		Reason to suspect	Known	
	C. Excavations have found that a rural property has been filled by sand from an unknown source. The sand fill contains evidence of construction and demolition waste (such as wooden planks, bricks and tiles) including fragments of asbestos cement sheeting.	✓		Yes
Historical landfill	A public recreation area is located on an historical landfill site. The local council is responsible for maintenance of a sand cover over the waste. The council periodically undertakes inspections and fills areas of subsidence with 'clean sand'. The landfill is known to have accepted demolition waste and general domestic waste.	✓		Yes
Operating landfill	Routine groundwater monitoring of an operating landfill indicates that landfill leachate has impacted groundwater. The extent of impact has not yet been delineated and the possible presence of other receptors (in addition to groundwater), has not been determined.		✓	Yes
Illegal dumping	Dumping of small quantities (1–2 domestic trailer loads) of inert building waste (bricks and sand) and green waste (lawn clippings and tree prunings) has occurred at a vacant site. No potential sources of contamination, such as asbestos-containing materials, have been identified within the waste material.	n/a	n/a	No
Domestic/residential				
Domestic septic tank	A domestic septic tank has been properly maintained and received only household domestic wastewater. <i>The CS Regulations contain exemptions from the definition of contaminated in the Act for sewage, effluent or liquid waste which is or has been treated in "a domestic sewage apparatus" (treating less than 540 litres of sewage per day) that is operated and maintained correctly.</i>	n/a	n/a	No
Termite treatment –	Pesticides have been applied to a house pad or around stumps at regular intervals in accordance with label requirements to prevent termite damage.	n/a	n/a	No

Situation	Example scenario	Contamination status		Report under s.11 of the CS Act?
		Reason to suspect	Known	
domestic property	<i>The CS Regulations contain exemptions from the definition of “contaminated” in the Act for substances present as a result of the correct application of fertilisers, herbicides and pesticides to land, provided there has not been a change to the use to which the land is put since the fertiliser, herbicide or pesticide was applied.</i>			
Demolition and termite treatment	One or more buildings (such as educational and training establishments and former hospitals) have been demolished; however, the building pads are still in place. Pesticides were applied to the building pads or around stumps at yearly intervals while the site was in use to prevent termite damage.  <i>The exemption relating to the correct application of fertilisers, herbicides and pesticides to land no longer applies as there has been a change of land use since the pesticide was applied.</i>		✓	Yes
Agriculture/farming				
Farm – application of pesticides and other chemicals	A farmer has applied herbicides, pesticides and fertilisers to soil in accordance with manufacturers’ specifications, to aid in crop production. (The exemption in r.5 applies.)	n/a	n/a	No
Change of land use from agriculture	A former agricultural area, where herbicides, pesticides and fertilisers have been applied in accordance with manufacturer specifications, has been rezoned for residential use.  Site investigations are undertaken by the developer in order to comply with a condition of subdivision approval for residential use, and identify metals and pesticides in soil at concentrations above the relevant screening criteria for residential land use.		✓	Yes
Farm – pesticide storage shed	A farm has a shed where herbicides/pesticides are stored. There is a history of spills and leaking storage drums, and the leaked chemicals have infiltrated into the soil adjacent to the slab floor of the shed. No plants or weeds are observed to grow in the soil around the shed.	✓		Yes

Situation	Example scenario	Contamination status		Report under s.11 of the CS Act?	
		Reason to suspect	Known		
Farm – cattle or sheep dip area	A farm has an area that was historically used for sheep or cattle dipping over a number of years. Chemicals which are persistent in the environment, such as arsenic and organochlorine pesticides, are known to have been used. The dipping bath was not sealed and the adjacent draining pen was unsealed.	✓		Yes	
Asbestos					
Asbestos roofing and fencing	A house roof and surrounding fence are made of fibre cement and are in good condition; however, the fibre cement contains asbestos. <i>Regulation 5 includes an exemption from the definition of contaminated for substances which are part of a building or structure, or are wholly contained within a building. Asbestos cement material which is part of a structure (here a house and fence), does not require reporting to DER.</i>	n/a	n/a	No	
Asbestos fence removal	A contractor engaged to remove a residential fence constructed from asbestos-containing material (ACM) demolishes the fence by snapping the panels off at ground level, leaving fencing stubs below-ground. No other fragments of ACM are present at the site.	A. Following consultation with relevant Local Government Environmental Health Officers, and Department of Health, the fence stubs are completely removed and disposed of offsite.	n/a	n/a	No
		B. The fencing stubs are left in place and covered with soil.	✓		Yes
	Following demolition of a small asbestos containing structure	A. The fragments are in good condition (that is not crumbly and are firm to hand pressure), and there has not been any soil disturbance in the area that	no	no	No



Situation	Example scenario		Contamination status		Report under s.11 of the CS Act?
			Reason to suspect	Known	
Asbestos structure demolition	(such as an outhouse or shed) at a residential property, fragments of ACM are observed on the soil surface in a localised area.	may have buried fragments. Following consultation with relevant Local Government Environmental Health Officers, and Department of Health, the fragments are removed and disposed of offsite.			
		B. The fragments are highly degraded (soft and easily crumbled) and earthworks have been undertaken after the demolition works which may have buried some fragments.	✓		Yes
Mining					
Mine site –tailing storage facility	A. Routine groundwater monitoring of a tailings storage facility (TSF) has identified groundwater impacts are associated with the TSF. The extent of impact has not been delineated and the possible presence of receptors has not been determined.		✓		Yes
	B. Potentially contaminating tailings are stored and contained within a purpose built TSF. There is no information to suggest that the integrity of the TSF has been compromised, and routine groundwater monitoring has not identified any potential contaminants at concentrations above natural background conditions.		no	no	No
Abandoned mine site – waste rock dump	A former mine site has been abandoned and rehabilitation of its waste rock dump is incomplete. The dump contains pyrite minerals, and seepage water at the base of the dump is acidic and contains orange/brown precipitates.		✓		Yes
For more examples associated with the mining industry, refer to DER's fact sheet ' <i>Mine Sites and the Contaminated Sites Act 2003</i> '					

Situation	Example scenario	Contamination status		Report under s.11 of the CS Act?
		Reason to suspect	Known	
Acid sulfate soils				
Acidic soils	<p>Soils and sediments excavated (or dredged) from acid sulfate soil landscapes have the potential to generate sulfidic acidity following exposure to atmospheric oxygen. Acidic soils can represent a source of contamination that could impact underlying groundwater and down hydraulic gradient surface water. Depending on the volume of soil excavated, treatment with an acid neutralising media (such as lime) may be required to prevent acidification.</p> <p>Untreated, acidic (low pH) soil stockpiles have the potential to result in degradation of ecosystems and generation of acidic 'scalds'.</p>	✓		Yes
Stockpile of acid-generating soil	<p>A stockpile of acid-generating soil has been left untreated (not treated with lime to neutralise acidity) at a site and shows signs of acidic runoff. The stockpile is not located within a sealed bunded area.</p> <p>The acid runoff represents a source of contamination that could impact underlying soils and groundwater.</p>	✓		Yes
Groundwater acidification	<p>Within acid sulfate soil landscapes, the dewatering of soils (a temporary lowering of the groundwater table), to facilitate the excavation of soil and/or installation of underground infrastructure (such as pipes, pump stations, basements or tunnels), has the potential to cause groundwater to acidify. The temporary lowering of the groundwater table allows ingress of oxygen and catalyses the oxidation of sulfidic minerals (such as pyrite) within the soils. Excessive sulfidic acidity can consume available alkalinity and result in low pH (acidic) groundwater conditions.</p> <p>Groundwater quality monitoring undertaken following the excavation and/or dewatering of soils within an acid sulfate soil landscape has detected sustained acidic, low pH conditions and/or concentrations of dissolved metals (such as arsenic) above that of background conditions:</p>	✓		Yes

Situation	Example scenario	Contamination status		Report under s.11 of the CS Act?
		Reason to suspect	Known	
	<ul style="list-style-type: none"> <li>• Acidic groundwater may represent a potential risk to groundwater dependent ecosystems (including wetlands, lakes, streams or rivers).</li> <li>• The use of bore water containing elevated concentrations of metals (such as arsenic) may represent a potential risk to ecosystems and human health.</li> </ul>			

## Appendix B—Examples of site classifications

Category of classification	Example scenario
<i>report not substantiated</i>	<p>A service station site was reported on a Form 1 by a former occupier on the basis that the site had been used as a service station since the 1970s.</p> <p>DER discussion with the person reporting the site revealed they had no knowledge or records of spills or leaks at the site or complaints such as water in fuel or odours at neighbouring properties.</p> <p>DER contacted the current owner and operator of the site who confirmed that fuel storage infrastructure was subject to regular integrity testing and no irregularities had been noted to date.</p> <p>An inspection of the site by DER officers did not identify any evidence of contamination such as stained/odorous surfaces, odours from the onsite garden irrigation bore or vegetation stress.</p> <p><i>Although service stations and fuel storage facilities are potentially contaminating activities, land use alone provides insufficient grounds to suspect that the site is contaminated. However, a contamination assessment would be necessary if the site was proposed for a more sensitive land use and should also be carried out during the decommissioning/replacement of any underground infrastructure.</i></p>
<i>not contaminated – unrestricted use</i>	<p>A large parcel of land was proposed to be redeveloped for residential use. During the planning approval process it was identified that market gardening activities had been undertaken in a portion of the site. A site contamination condition was included in the planning approval.</p> <p>A preliminary site investigation was carried out, which provided a detailed history of the site, identified areas that were used for market gardening and chemical storage, and confirmed that no other potentially contaminating activities had been carried out at the site.</p> <p>Detailed site investigation of the area formerly used for market gardening and storage did not identify any potential contaminants of concern in soil or groundwater above relevant ecological or health-based screening criteria.</p> <p><i>Appropriate investigations, undertaken in accordance with the NEPM and DER guidelines, demonstrated that the site is not contaminated.</i></p>
<i>possibly contaminated – investigation required</i>	<p>A site is reported to DER on a Form 1 due to its historical use as a municipal landfill between the 1960s and 1980s.</p>

Category of classification	Example scenario
	<p>A review of historical aerial imagery suggests that landfilling activities may have occurred in the western portion of the site for approximately 20 years.</p> <p>DER discussions with the owners of the site and the former managers of the landfill reveal the waste cells were not lined (the surrounding rock is permeable), and the facility accepted a variety of waste types during its operation, including putrescible wastes.</p> <p>A basic risk assessment, including the development of a conceptual site model, indicates that the site may pose a risk to nearby residents, an adjacent conservation wetland and people using the site for recreation.</p> <p><i>Further investigation is required to characterise the waste material and determine if any of the potential exposure pathways are complete.</i></p>
<i>contaminated – remediation required</i>	<p>During the installation of below-ground reticulation at a primary school oval, workers observe fragments of slag and metal in shallow soils. A preliminary site investigation indicates that a portion of the oval had historically been used for the disposal of foundry and metal-working waste from an adjacent industrial area. The site is reported to DER on a Form 1 by the school administrator.</p> <p>Detailed soil investigations confirm that shallow soils contain metals such as lead, copper, nickel and cadmium at concentrations several times higher than the relevant health-based screening criteria. The risk assessment indicates that there is a potentially complete exposure pathway to occupiers of the site (for example, students).</p> <p><i>Remediation and/or management of contamination is required to mitigate unacceptable risks to human health and render the site suitable for the current landuse.</i></p>
<i>contaminated – restricted use</i>	<p>During the decommissioning of a service station, soils adjacent to fuel storage infrastructure were suspected of containing petroleum hydrocarbons as they were stained and odorous. The site was reported as a suspected contaminated site to DER on a Form 1 by the owners of the site.</p> <p>Detailed site investigations confirmed that hydrocarbons (such as from petrol) were present in soils at a depth of two to three metres below ground level and were confined to the central portion of the site. The concentrations of hydrocarbons in soil do not exceed health screening levels for vapour inhalation and direct contact for commercial/industrial land use, but do exceed the criteria for residential land use.</p> <p>Hydrocarbons (such as from petrol) were also present in groundwater beneath the site at three metres below ground level at concentrations that exceed screening criteria for non-potable use of groundwater, such as garden irrigation. The groundwater plume is delineated and found to be confined to within the</p>

Category of classification	Example scenario
	<p>boundaries of the site. Monitoring data is used to assess the natural attenuation of contaminants in groundwater in accordance with DoE (2004). Several lines of evidence indicate that the plume is naturally attenuating and unlikely to migrate beyond the boundaries of the service station site.</p> <p>No remedial work has been carried out at the site.</p> <p><i>Based on the results of the Tier 1 screening risk assessment and evidence of natural attenuation of hydrocarbons in groundwater, although the site is contaminated, contamination at the site does not pose a risk to human health provided the use of the site is restricted as follows:</i></p> <ul style="list-style-type: none"> <li>• <i>land use restricted to commercial/industrial landuses (excluding child care centres, schools or other sensitive uses);</i></li> <li>• <i>no construction of basements (as suitability of the site for basement structures was not assessed);</i></li> <li>• <i>groundwater abstraction restricted; and</i></li> <li>• <i>a site-specific health and safety plan is prepared for any sub-surface works involving works at depths greater than 1.5 metres below ground level.</i></li> </ul>
remediated for restricted use	<p>A former car wrecking yard is proposed for subdivision and redevelopment for residential use. Conditional planning approval for the subdivision is obtained, which requires a contamination assessment and, if necessary, remediation of contamination to make the site suitable for residential use. An accredited contaminated sites auditor is engaged to audit the contamination assessment of the site and prepare a mandatory audit report.</p> <p>Detailed site investigations identified hydrocarbons (such as from diesel and oil) in soils at concentrations that exceed health screening levels for direct contact and vapour inhalation for residential land use. Hydrocarbons (such as from diesel and oil) and lead were also identified in groundwater beneath the site at concentrations that exceed screening criteria for non-potable use of groundwater, such as garden irrigation.</p> <p>Based on the results of the initial Tier 1 screening risk assessment, a decision is made to remediate contaminated soil at the site to a depth of four metres below ground level by excavation and disposal offsite. Soil validation sampling and a Tier 2 risk assessment demonstrate that soil remaining at the site below four metres does not pose a human health risk to future residents.</p> <p>The groundwater plume is delineated and found to be confined within the boundaries of the site and monitoring data is used to assess the natural attenuation of contaminants in groundwater in accordance with DoE (2004). Several lines of evidence indicate that the plume is naturally attenuating and unlikely to</p>

Category of classification	Example scenario
	<p>migrate beyond the boundaries of the subdivision.</p> <p><i>Following remediation and groundwater monitoring, the risk assessment demonstrates that although the site is contaminated, contamination at the site does not pose a risk to human health and the site is suitable for the residential land use, provided the use of the site is restricted as follows:</i></p> <ul style="list-style-type: none"> <li>• <i>no construction of basements (as suitability of the site for basement structures was not assessed); and</i></li> <li>• <i>groundwater abstraction is restricted.</i></li> </ul>
<i>decontaminated</i>	<p>Poor demolition practices during the removal of a house constructed from asbestos-containing material (ACM) resulted in the dispersal of fragments of ACM in surface soils at the site. Inspections indicated that earthworks undertaken following the demolition had mixed ACM fragments into the soil profile.</p> <p>Remedial works were undertaken at the site by appropriately qualified and experienced professionals and documented in a technical report that was submitted to DER. <i>A mandatory audit report was not required to be submitted<sup>33</sup> as the ACM had not spread beyond the site boundaries (single residential lot) and there was no relevant planning condition.</i></p> <p><i>The report was reviewed by DER and DoH, and it was found that the works were undertaken in accordance with DoH asbestos guidelines and that soil had been successfully remediated to a standard suitable for all land uses.</i></p> <p><i>There are no other known or suspected sources of contamination at the site and no restrictions on use of the site are deemed necessary.</i></p>

<sup>33</sup> The circumstances which require a mandatory audit are listed in regulation 31.

## Abbreviations

ABC	Ambient background concentration
ACM	Asbestos-containing material
Asbestos Regulations	<i>Health (Asbestos) Regulations 1992</i>
ASS	Acid sulfate soils
BSR	Basic summary of records
CCA	Certificate of contamination audit
CEO	Chief Executive Officer
C-RR	<i>contaminated – remediation required</i>
C-RU	<i>contaminated – restricted use</i>
CS Act	<i>Contaminated Sites Act 2003</i>
CS Regulations	<i>Contaminated Sites Regulations 2006</i>
Committee	Contaminated Sites Committee
CSG	Contaminated Sites Guidelines
CSM	Conceptual site model
CSMS Guidelines	Contaminated Sites Management Series of Guidelines
Decon	Decontaminated
DER	Department of Environment Regulation (WA)
DoE	Department of Environment (now DER)
DoH	Department of Health (Western Australia)
DSI	Detailed site investigation
DSR	Detailed summary of records
EP Act	<i>Environmental Protection Act 1986</i>
FOI	Freedom of information
DP-IPO	Deposited plan for interest purposes only
MAR	Mandatory audit report



NC-UU	<i>not contaminated – unrestricted use</i>
NEPC	National Environment Protection Council
NEPM	<i>National Environment Protection (Assessment of Site Contamination) Measure 1999</i>
PC-IR	<i>possibly contaminated – investigation required</i>
PSI	Preliminary site investigation
r	Regulation
RAP	Remediation action plan
RRU	<i>remediated for restricted use</i>
RNS	<i>report not substantiated</i>
s	Section
SAQP	Sampling and analysis quality plan
SMP	Site management plan
SRP	Site remediation plan
TSF	Tailings storage facility
WA	Western Australia
WAPC	Western Australian Planning Commission
WIN Database	Water Information System Database