



Managing asbestos in or on soil

March 2014

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This publication may contain work health and safety and workers compensation information. It may include some of your obligations under the various legislations that WorkCover NSW administers. To ensure you comply with your legal obligations you must refer to the appropriate legislation.

Information on the latest laws can be checked by visiting the NSW legislation website legislation.nsw.gov.au

This publication does not represent a comprehensive statement of the law as it applies to particular problems or to individuals or as a substitute for legal advice. You should seek independent legal advice if you need assistance on the application of the law to your situation.

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1. Introduction

This guide provides general guidance on the assessment and management of asbestos in soil. Managing asbestos in soil has implications for the current and future occupants of the land and/or any workers employed on the site.

The guidance provided in this document applies principally to legacies from poor historical onsite management of asbestos materials, and not to illegal disposal or landfilling activities related to waste generated offsite.

There are other mechanisms for managing:

- emergency situations – eg natural disasters, fires
- naturally-occurring asbestos
- management of derelict mine sites
- asbestos contamination in waste or recycled materials.

Advice relevant to these situations may be found in the citations in section 14 below.

A range of asbestos materials can be found at different residential properties, workplaces, or other sites. Depending on the type of material and its location several regulatory regimes can be relevant.

The objective of the approach outlined here is to ensure that proportionate and practicable controls are applied in accordance with regulatory requirements and in a manner commensurate with actual risk¹.

The principles underlying the guidance in this document are those endorsed by the NSW Heads of Asbestos Coordination Authorities (HACA) and contained in the *NSW Asbestos Blueprint (2011)*. Work health and safety, land-use planning and environmental legislation, and the amended *National environment protection (Assessment of site contamination) measure 1999 (April 2013)* are referenced where they apply.

Terminology consistent with industry standards has been used wherever possible.

2. Human health risk from asbestos in or on soil

Asbestos only poses a risk to human health when elevated levels of asbestos fibres are breathed in.

The likelihood of exposure occurring depends upon the potential for the asbestos material to release fibres, whether the asbestos material is contained or covered, and any operational control measures or personal protective equipment which have been applied to limit the generation and/or inhalation of airborne fibres.

Non-friable asbestos, previously referred to as 'bonded asbestos', in sound condition represents a low human health risk. However, friable asbestos materials or damaged, crumbling bonded asbestos, have the potential to generate, or be associated with, free asbestos fibres and therefore must be carefully managed to minimise the release of asbestos fibres into the air.

¹ The pragmatic approach described in the Western Australia Department of Health's *Guidelines for the assessment, remediation and management of asbestos-contaminated sites in Western Australia (2009)* has been particularly helpful.

3. Factors that influence how asbestos in soil is managed

The site history and information about how it came to be contaminated with asbestos provide useful insight into the nature of the issue and what further information may be needed. The principal considerations in determining how to manage asbestos in soil include:

- the form of the asbestos containing material, and how readily it generates airborne fibres
- the extent or scale of asbestos contamination on the property
- whether the asbestos is predominantly on the surface or is buried at depth
- the current and possible future uses of the affected land and whether these uses may materially affect the risk posed from the asbestos containing material.

These factors are considered in more detail in the following sections. If there is any uncertainty in how to assess these factors, it is recommended that independent expert advice is sought (see section 10, below).

4. Form of asbestos and potential to generate airborne asbestos fibres

The potential for materials containing asbestos to generate airborne asbestos fibres (at which point asbestos may become a human health risk) varies significantly depending upon the form of the asbestos material.

Non-friable asbestos is asbestos bound in a matrix such as cement or resin. 'Fibro' is the most common form of non-friable asbestos. When in a sound condition, the potential for these materials to release fibres is relatively low.

Friable asbestos is usually in the form of loose asbestos that is not bound together. The most common forms of friable asbestos are thermal lagging used on steampipes, boilers, as fire protection, ceiling insulation and the like, and raw asbestos waste from asbestos products manufacturing. Friable asbestos can usually be broken up or crumbled using hand pressure to generate free fibres. If it is disturbed, friable asbestos has the potential to generate significant quantities of airborne fibres, and because of this requires a high level of control.

Schedule B1 of the *National environment protection (Assessment of site contamination) measure 1999 (April 2013)* (scew.gov.au) provides more comprehensive definitions of the various forms of asbestos and how to identify them. Independent expert advice should be sought (see section 10, below) if it is not clear what form of asbestos is present.

5. Assessing and managing 'non-friable' asbestos ('fibro') in or on soils

Often fragments of bonded asbestos material such as fibro are present in or on the soil surface as a result of incomplete clean-up following the demolition of structures that contained asbestos cement products. Where asbestos material is buried throughout the soil stratum (below 10cm) as a result of onsite disposal of demolition wastes, the approach outlined in section 7 should be applied.

Where fragments of non-friable asbestos (eg fibro cement) are identified on the soil surface, then the fragments may be removed by hand-picking, tilling or screening (applying suitable work health and safety practices). A fact sheet *How to deal with asbestos fibro in soil at home* (catalogue no. WC01254) provides advice to homeowners on how to manage small quantities of fibro sheet and fragments found at home. A grid pattern should be applied to ensure a structured and systematic approach to assessment and removal.

Upon completion, no visible asbestos fragments should be present on the surface. Where practicable, the top 10cm of wetted soil should be gently raked to expose any residual asbestos fragments. The collected material should be securely wrapped in plastic sheeting and taken to an appropriate landfill (see section 8, below).

If the site is a workplace (as defined in the work health and safety legislation), only workers who have been appropriately trained in asbestos removal techniques, that include identification, safe handling and suitable control measures, may conduct asbestos removal work or asbestos related work at a workplace. Safe Work Australia has published *How to safely remove asbestos code of practice (2011)* which provides additional information on safety standards when removing asbestos.

For non-friable asbestos totalling greater than the equivalent of 10 square metres of fibro sheet or fragments, only a class A or B asbestos removal licence holder may conduct the asbestos removal work. If there is uncertainty about the quantity of asbestos material, a licensed removalist must be engaged.

All workers involved in removing fragments of non-friable asbestos constituting a total of greater than 10 square metres of fibro, must hold current certification showing that they have successfully completed the approved non-friable removal course.

Soil sampling for the detection of asbestos fibres released from fragments of non-friable asbestos such as fibro is not required where the non-friable asbestos product is in good condition – ie it is not weathered or damaged and is unlikely to release fibres unless carelessly handled.

For more complex sites, the *National environment protection (Assessment of site contamination) measure 1999 (April 2013)* identifies criteria for assessment and remediation of non-friable asbestos in soil. Independent expert advice should be used when applying these quantitative measures (see section 10, below).

For further information on management techniques for non-friable asbestos, see the *Management of asbestos in the non-occupational environment* (enHealth 2005) and *Public health and contamination of soil by asbestos cement material 2010* (WA Department of Health 2010).

6. Assessing and managing ‘friable’ asbestos in or on soil

If friable asbestos is identified in or on soil, all the following actions are recommended:

- isolate and secure the area by installing warning signs and a temporary barricade (eg marker tape) around the affected area to prevent anyone from accidentally disturbing the materials and generating airborne asbestos fibres
- to minimise the release of fibres into the air keep soil damp (but not flooded); and, if it is safe to do so, cover the area with plastic sheeting
- engage an independent expert (see Section 10, below) as soon as practicable to provide specialist advice on how to manage the situation.

In NSW, only class A asbestos removal licence holders are permitted to conduct asbestos removal work or asbestos related work that involves friable asbestos. All workers involved in friable asbestos removal work must hold current certification in relation to the approved friable removal course².

Where friable asbestos is present only a licensed asbestos assessor may undertake air monitoring, risk assessments and issue clearance certificates for removal work.

The *National environment protection (Assessment of site contamination) measure 1999 (April 2013)* identifies criteria for assessment and remediation of friable asbestos in soil. Independent expert advice should be used when applying these quantitative measures (see section 10, below).

7. Asbestos materials buried at depth in soil

Asbestos only presents a risk if fibres may become airborne and breathed in. Where non-friable or friable asbestos is present in soil at depth (greater than 0.5 metres below the soil surface), the asbestos material should not be disturbed unless it is for the purpose of site remediation, redevelopment or site management. Any remediation work should be conducted in a controlled manner in accordance with protocols for contaminated sites assessment and management³.

For sites where asbestos is found at depths between 10cm and 0.5 metres, a site-specific assessment should be undertaken to determine an appropriate management strategy. For guidance on assessment methods, refer to Western Australia’s Department of Health’s *Management of small-scale low-risk soil asbestos contamination (2009)* and *Guidance note on identification, assessment and management of asbestos contamination in regional public areas (2011)*.

For more complex sites, where asbestos is distributed throughout the soil stratum, the *National environment protection (assessment of site contamination) measure 1999 (April 2013)* identifies criteria for asbestos in soil that are unlikely to generate elevated levels of airborne asbestos. These criteria provide a useful yardstick for assessment and clean-up of more complex sites that contain significant quantities of buried asbestos. Independent expert advice should be used when applying these quantitative measures (see section 10, below).

It is important to ensure that owners and future purchasers are aware of the presence of asbestos so that they can apply appropriate precautions if/when the land is disturbed or redeveloped. In NSW, therefore, the presence of buried asbestos at concentrations above the *National environment protection (Assessment of site contamination) measure 1999 (April 2013)* criteria, should be noted on the section 149 planning certificate issued under the *Environmental Planning and Assessment Act 1979* (legislation.nsw.gov.au) or be captured on the land title.

Implementation of an asbestos management plan or environmental management plan can aid in the management of the risks associated with any asbestos that remains on a site.

Information that could be included in a management plan is available in Appendix E of WA Health’s *Guidelines for the assessment, remediation and management of asbestos-contaminated sites in Western Australia – May 2009* (public.health.wa.gov.au).

² *Class A asbestos removal licence: remove friable asbestos* (catalogue no. WC03527) workcover.nsw.gov.au

³ For more information on contaminated sites assessment and management protocols, please refer to the *Guidelines for the NSW site auditor scheme (2nd Edition) (DEC 2006)* epa.nsw.gov.au and the *National environment protection (Assessment of site contamination) measure 1999 (NEPC 2013)* scew.gov.au

8. Management of asbestos waste

There are regulatory requirements under clause 42 of the *Protection of the Environment Operations (Waste) Regulation 2005* that apply to the management of asbestos waste, including:

- Waste must be stored on the premises in an environmentally safe manner.
- Non-friable asbestos material must be securely packaged at all times.
- Friable asbestos material must be kept in a sealed container.
- Asbestos-contaminated soil must be wetted down.
- All asbestos waste must be transported in a covered, leak-proof vehicle.
- Asbestos waste must be disposed of at a landfill site that can lawfully receive this waste. Always contact the landfill beforehand to find out whether asbestos is accepted and any requirements for delivering asbestos to the landfill.
- It is illegal to dispose of asbestos waste in domestic garbage bins.
- It is also illegal to re-use, recycle or dump asbestos waste.

9. Regulation of asbestos in soil under the *Contaminated Land Management Act 1997* and reporting requirements under section 60

In general, the presence of asbestos does not warrant that a site be notified to the NSW Environment Protection Authority (EPA) under the *Contaminated Land Management Act 1997* (CLM Act).

Sites may be regulated under the CLM Act where the EPA determines that there is 'significant contamination' of land, such as where the scale and nature of the contamination is giving rise to actual or potential harm to human health or the environment. This could occur where there are elevated levels of asbestos fibres in air and the responsible party is not addressing the source of the risk.

Examples of such regulated sites may include former asbestos manufacturing sites (eg James Hardie) and/or their asbestos waste disposal sites or large emplacements of friable material such as thermal lagging from power stations. These sites should be notified to the EPA under section 60 of the CLM Act and, following assessment, may be subsequently regulated by the EPA.

Incidents of illegal dumping, or sites that contain non-friable asbestos material (such as fibro) do not need to be reported to the EPA under section 60 of the CLM Act as these would be managed under the framework outlined in the sections above. Incidents of illegal dumping can be reported to the local council or to EPA's Environment Line (13 15 55).

10. Obtaining independent expert advice on asbestos in soil

The assessment of asbestos in soil should only be conducted by a competent person who has acquired through training, qualification or experience, the knowledge and skills to identify, investigate and assess asbestos and to develop appropriate risk management strategies.

If occupational hygienists are engaged to provide advice, they should:

- be certified as a full member of the Australian Institute of Occupational Hygienists Incorporated
- have experience in relation to asbestos identification, handling and disposal
- have current professional indemnity insurance.

WorkCover's website contains listings of licensed asbestos assessors and licensed asbestos removalists.

Where friable asbestos is present, it is a legal requirement that only a WorkCover Licensed Asbestos Assessor may undertake air monitoring and risk assessments, and issue clearance certificates for removal work.

The testing of all samples must be undertaken at a laboratory accredited by nata.asn.au (or its mutual recognition agreement partners).

For the appropriate classification of asbestos waste, the competent person should be independent and have previous experience in classifying waste in accordance with the *Waste classification guidelines* and the *Protection of the Environment Operations Act 1997*.

11. Relevant Government Agencies

The local council may be contacted where asbestos in or on soil is found on a residential or non-workplace property. Local councils can provide advice on planning requirements, information on land restrictions or the existence of other information about a particular parcel of land, and details of the appropriate facilities for receiving asbestos-contaminated waste.

The EPA should be contacted where asbestos is found on a licensed premises (under the *Protection of the Environment Act 1997*), public land, or where the contamination may be considered significant under the CLM Act (see section 9). The EPA may also provide advice on the transport and disposal of asbestos waste materials.

WorkCover should be contacted for asbestos identified in or on soil at a workplace or if there are questions or concerns about asbestos removalists or asbestos remediation works.

The *Asbestos blueprint* (catalogue no. WC03508) (workcover.nsw.gov.au) provides a complete list of roles and responsibilities of government agencies.

12. Additional guidance on the assessment and management of asbestos in or on soil

- *National environmental protection (Assessment of site contamination) measure 1999*, Schedules B1 and B2, NEPC (2013) scew.gov.au
- *Guidelines for the assessment, remediation and management of asbestos-contaminated sites in Western Australia – May 2009*, Western Australia Health (2009) public.health.wa.gov.au
- *Public health and contamination of soil by asbestos cement material 2010*, Environmental health guideline Western Australia Health (2010) public.health.wa.gov.au
- *Asbestos: A guide for householders and the general public – May 2012*, enHealth (2012) health.gov.au
- *Management of asbestos in the non-occupational environment*, enHealth (2005) health.gov.au
- *How to safely remove asbestos code of practice*, Safe Work Australia (2011) workcover.nsw.gov.au

13. Further advice or assistance

- NSW Heads of Asbestos Coordination Authorities (HACA)
Ph. 13 10 50 workcover.nsw.gov.au

Information for Homeowners and Renovators

- NSW Government – *How to deal with asbestos in soil at home* (catalogue no. WC01254)
- NSW Government – *Fibro and asbestos: A renovator and homeowner's guide* (catalogue no. WC00315)
- NSW Government – *How to safely remove asbestos: code of practice* (catalogue no. WC03561)
- Asbestos Awareness asbestosawareness.com.au

Guidance on selecting an environmental consultant

- epa.nsw.gov.au

Testing laboratories

- Australian National Association of Testing Authorities (NATA) nata.asn.au Ph. 9736 8222

Find an asbestos license holder asbestos and demolition license holder

- Search workcover.nsw.gov.au

14. Information on related topics

Safely disposing of asbestos waste

- NSW EPA, Waste and Resource Recovery epa.nsw.gov.au
- NSW EPA Environment Line Ph. 13 15 55

Information on Fire Damaged Sites with Asbestos

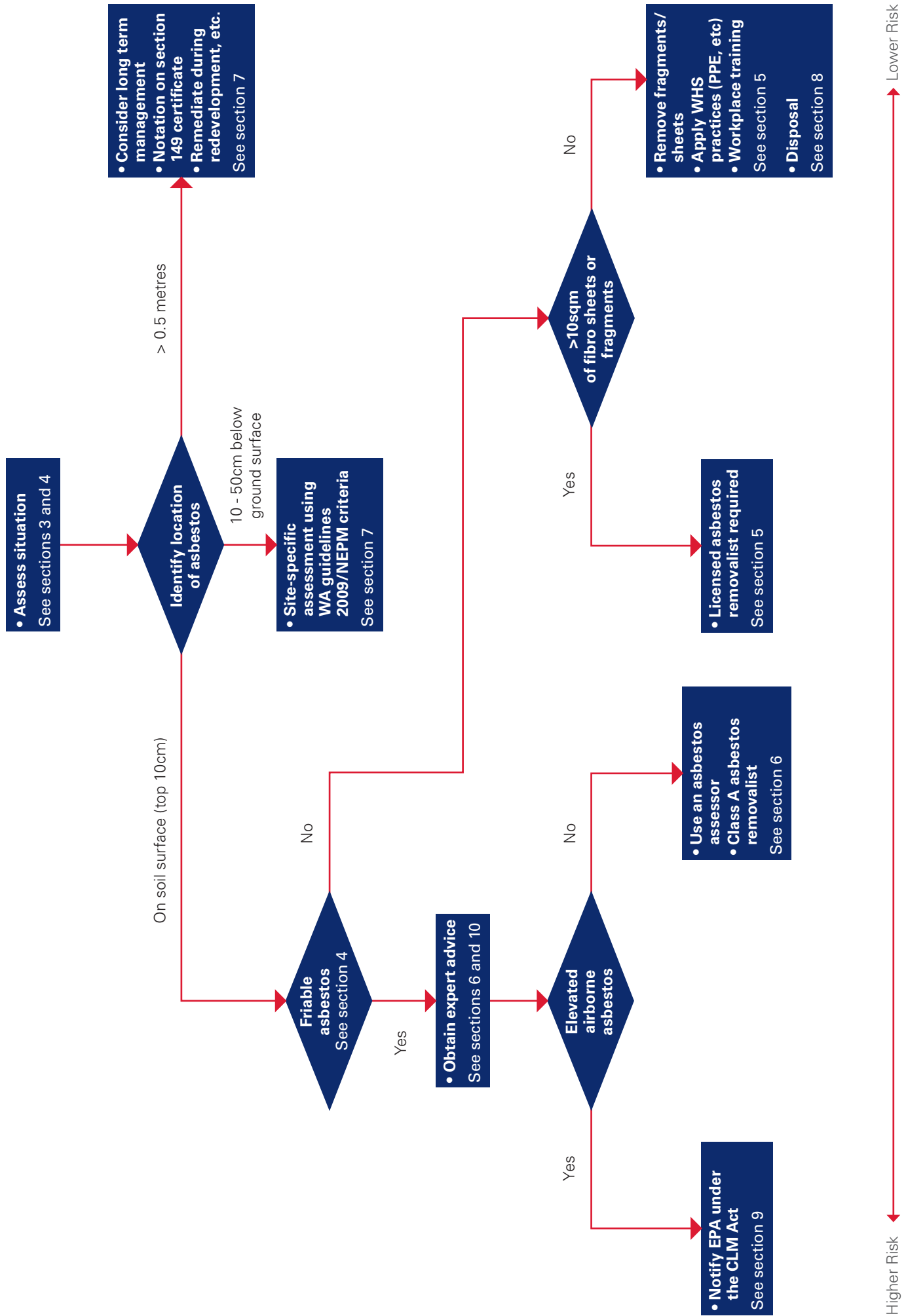
- NSW EPA, Waste and Resource Recovery epa.nsw.gov.au
- NSW EPA Environment Line Ph. 13 15 55

James Hardie legacy sites

- NSW EPA, Contaminated Sites epa.nsw.gov.au
- NSW EPA Environment Line Ph. 13 15 55

Information on mine sites and naturally occurring asbestos

- Derelict Mines Program Ph. 1300 736 122 dpi.nsw.gov.au
- NSW EPA Environment Line Ph. 13 15 55 epa.nsw.gov.au
- NSW Government WorkCover Authority of NSW, Work Health and Safety, Asbestos Ph. 13 10 50 workcover.nsw.gov.au
- NSW Ministry of Health. Contact a public health unit Ph. 1300 066 055 health.nsw.gov.au



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