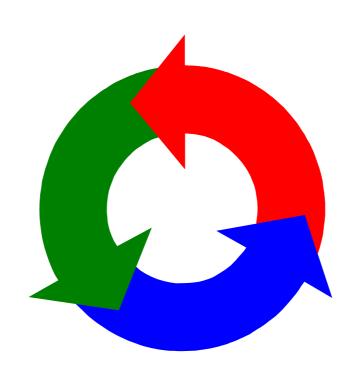


# DEVELOPMENT CONTROL PLAN NO.42 CONTAMINATED LAND MANAGEMENT



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# PART 1 - GENERAL INFORMATION

#### 1.1 Introduction

Land contamination is an important issue in the Leichhardt Local Government Area. The area's industrial history combined with an aging building stock and high vehicle use (which increases the risk of lead contamination) provides the potential for all sites in the municipality being contaminated.

This Development Control Plan (DCP) creates the framework to ensure that while carrying out its' planning functions, Council considers the possibility that a previous land use or surrounding environmental factors have caused contamination of the site, and the potential risk to health or the environment from that contamination.

This DCP relates to development classified under the Environmental Planning and Assessment Act (EP&A Amendment Act), 1997 and Leichhardt Local Environmental Plan 2000. The DCP is also in keeping with Council's obligations under the Local Government (Ecologically Sustainable Development) Amendment Act 1997 to apply the principles of ESD in its decision making process, including the 'Precautionary Principle', 'Intergenerational Equity', 'Conservation of Biodiversity' and 'Internalisation of Environmental Costs'.

#### 1.2 Title of this DCP

This DCP is called "Development Control Plan No 42 – Contaminated Land Management".

# 1.3 Adoption Date

This DCP was originally adopted by Leichhardt Council on 20 June 2000 and came into operation on the 4 July 2000.

This Plan, as amended, was adopted on 17 January 2001 and came into force when advertised on 24 January 2001.

# 1.4 Land to which this Plan applies

This DCP applies to all land within the Leichhardt Local Government Area with the exception of land affected by Sydney Regional Environmental Plan No.26 – City West.

# 1.5 Relationship of this Plan to other Environmental Planning Instruments

This DCP supplements the controls of Leichhardt Local Environmental Plan No. 20 and Leichhardt Interim Development Order No.27 (Leichhardt Planning Scheme Ordinance).

This Development Control Plan also supplements the controls of Leichhardt Local Environmental Plan 2000 and the accompanying Development Control Plan 2000.

This DCP has been prepared in accordance with the provisions of s.72 of the Environmental Planning and Assessment Act (EP&A Act) 1979, and clauses 15-24 of the Environmental Planning and Assessment Regulation, 1994.

Under s.26 and s.79c of the EP&A Act, Leichhardt Council is required to take this DCP into consideration, when making an LEP or when determining a development application.

# 1.6 Principles

This DCP is designed to provide a procedure for dealing with contamination issues as they arise in Council's planning, assessment and administrative roles and to ensure that Council carries out its legal responsibilities.

Key principles of the DCP are to:

- ensure that changes of land use will not increase the risk to health or the environment;
- avoid inappropriate restrictions on landuse;
- provide information to support decision making and to inform the community.

In achieving these principles Council will:

- consider the likelihood of contamination as early as possible in the planning and development control process;
- link planning options and decisions about development with the information available about contamination possibilities; and
- exercise statutory planning functions with a reasonable standard of care.

The DCP is primarily based on the Managing Land Contamination Package as it applies to Council. This includes: State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55), the Managing Land Contamination Guidelines and the Contaminated Land Management Act 1997 (CLM Act). References are made to these documents and they should be referred to for further information and clarification.

In addition to the Managing Land Contamination Package, the DCP also provides guidance and controls for managing the risk of lead contamination, a form of contamination that may not be readily detected under the Managing Land Contamination Package. This is particularly pertinent for home renovations that may be Exempt Development or where there is no obvious risk as a result of there being no change in use.

# 1.7 Contamination and Risk

#### 1.7.1 What is Contamination?

Contamination of land means the presence of a substance in, on or under the land at a concentration above the concentration at which the substance is normally found in that locality, such that there is a risk of harm to human health or some other aspect of the environment (s.5(1) of the CLM Act).

# 1.7.2 Assessing the Risks of Contamination

SEPP 55 requires that a consent authority must not consent to the carrying out of any rezoning or development of a site unless it has considered whether the site is contaminated, and, if it is contaminated, whether remediation is necessary in, over or under the land.

The need to consider whether the site is contaminated and whether or not a proposal is suitable with regard to contamination risk is also a requirement under section 79C of the Environmental Planning & Assessment Act and Council's general environmental obligations under the LGA.

It is recognised that many applications submitted to Council will have no contamination risks associated with them, however it must also be recognised that all sites in the municipality have the potential to be contaminated. Ultimately, Council needs to be satisfied that a site is suitable for permissible and or proposed uses, or can and will be made suitable by remediation. A precautionary approach will be adopted to ensure that any land contamination issues are identified and dealt with early in the planning process.

# 1.7.3 When is remediation required?

There are three broad circumstances where remediation will be undertaken.

- The most prevalent is when Council receives a Development Application or Rezoning Proposal and through the assessment process contamination issues are identified. If the contamination poses a risk to health or the environment, then remediation or proposal changes will be required.
- 2. Remediation will also be required when the EPA issues a direction because contamination poses a significant risk to health or the environment under the current use of the site.
- 3. Remediation may also be carried out voluntarily where there are no current risks, for example, to increase the value of the site.

#### 1.7.4 Risk

Managing contamination involves considering risk to human health and the environment. The Site Investigation Process may only need to be carried out in

situations that are considered to present a risk to health or the environment. Particular care should be taken in the following situations:

- 1. The development, regardless of site history, will involve a sensitive use (Table 2). See appendix.
- 2. A vacant site is to be rezoned or redeveloped for residential purposes.
- 3. Redevelopment for industrial or commercial purposes.
- 4. Industrial site to be rezoned or redeveloped for commercial or residential use.
- 5. Commercial site is to be rezoned or redeveloped for residential use.

In determining the risk posed by contamination, the following issues should be considered:

- Whether the contamination of the site has already caused harm;
- Whether the substances are toxic or present in large quantities or concentrations;
- Whether there are routes whereby the substances may proceed from the source of the contamination to human beings or other aspects of the environment;
- Whether the uses or approved uses to which the site and adjoining sites are currently being put are likely to increase the risk of harm;
- Whether substances have migrated or are likely to migrate from the site (contaminants become mobile via surface water, ground water and air); and
- Any guidelines made or approved by the EPA on contamination and remediation.

Consideration of risk also includes risks arising during the construction and operation of the development. The former includes work safety issues, as well as the potential for construction to disturb contamination and cause off-site movement of chemicals.

Contamination issues must also be considered on sites that have been previously remediated to ensure that the site is suitable under current guidelines for the newly proposed use.

# 1.8 Significant Risk of Harm and Duty to Report Contamination

In all cases, if the subject site poses a <u>significant</u> risk to health or the environment, the EPA is to be notified for possible action under the Contaminated Land Management Act.

# 1.8.1 Significant Risk of Harm

'Significant risk of harm' only exists where that risk occurs under the current or approved use of the land. For this purpose, 'approved use' means the use to which the site can be put without development consent (or further development consent). Where a risk would arise because of a proposed change of use, the risk is dealt with through the development approval process.

'Significant risk of harm' refers to the status of a site where the contamination is considered to be serious and requires EPA regulatory intervention. In summary significant risk of harm is probable where:

- Contamination is located in a place where there will be an impact on human health or the environment.
- There is a particularly toxic contaminant that is likely to cause harm, even in small quantities, to any living thing with which it has contact, even when there is limited exposure.
- A contaminant is present at such concentrations or over such a large area as to present a high probability of harm.
- The contaminant is already causing harm.

For further information refer to the EPA Guidelines on Significant Risk of Harm from Contaminated Land and the Duty to Report.

# 1.8.2 Section 60 of the Contaminated Land Management Act ,1997.

Section 60 of the CLM Act requires that either the owner of land, or the person whose activities have caused the contamination that presents a significant risk of harm, notify the EPA as soon as practicable after they become aware that contamination is presenting a significant risk of harm.

The suspicion that there might be contamination that presents a significant risk does not give rise to a duty to report. A person becomes aware only when there is actual knowledge or evidence that a significant risk is present.

For example, a situation where a person would be considered to 'become aware' include:

- Receipt of a site audit statement or consultant's report stating that a site poses a significant risk.
- Report on samples received that highlight the concentration of contaminants well in excess of what is appropriate for the current approved use of the site.
- Where there is evidence that contamination is having a toxic effect e.g. obvious plant death.

#### 1.9 Abbreviations

The following abbreviations are used in this plan:

ANZECC Australian and New Zealand Environment and Conservation

Council

EP&A Act Environmental Planning and Assessment Act, 1979

DA development application
d(BA) Decibels – A weighted
DCP development control plan

EPA NSW Environment Protection Authority

LEP local environmental plan local government area

NEHF National Environmental Health Forum

RAP remedial action plan

PAH Polycyclic Aromatic Hydrocarbons

PCB Poly chlorinated biphenol

SEPP 55 State Environmental Planning Policy No. 55 – Remediation of

Land

#### 1.10 The use of 'Note' boxes in the Plan

The use of shaded boxes in the Plan provides extra information to the community to assist in understanding the Plan and the process Council will undertake in development assessment. The boxed text does not form part of the legal DCP instrument.

**Disclaimer:** Leichhardt Municipal Council has prepared this Policy in good faith, exercising all due care and attention in accordance with Part 7A of the Environmental Planning and Assessment Act 1979. No representation is made to the accuracy or completeness for the purpose of the Policy in respect to any particular user's circumstances. Users of this Policy should satisfy themselves concerning its application for their own needs, and where necessary, seek further information and clarification from Council.

# PART 2 – COUNCIL'S DECISION MAKING PROCESS

#### 2.1 Initial Evaluation

The initial task on all development applications and rezoning proposals is the carrying out of an Initial Evaluation. This will ascertain the likelihood of contamination and establish the risks present as they apply to the proposed use and subject site and whether further information is required from the applicant.

Generally the proponent must prove that the site is suitable for the proposal and provide the related documentation. Ideally the possibility of contamination would have been raised pre-submission. An application requires the proponent to fill in a 'contamination' checklist, which should alert the applicant of potential contamination issues. The proponent should then have carried out some investigation clarifying the situation.

An Initial Evaluation is to be carried out by <u>all</u> Assessment Officers prior to referring proposals to Environmental Health Officers.

# 2.2 Council Procedures for Zoning and Rezoning Proposals

Council will not include land in a zone that would permit a change of use of the land from the existing use unless:

- Council has considered whether the land is contaminated, and
- if the land is contaminated, Council is satisfied that the land is suitable in its contaminated state or will be suitable, after remediation, for all the purposes for which land in the zone concerned is permitted to be used, and
- if the land requires remediation to be made suitable for any purpose for which land in that zone is permitted to be used, Council is satisfied that the land will be so remediated before the land is used for that purpose.

Council, in accordance with Clause 6(4) of SEPP 55, will require a preliminary investigation to be submitted with zoning and rezoning proposals where the land concerned is:

- "(a) land that is within an investigation area,
- (b) land on which development for a purpose referred to in Table 1\* to the contaminated land planning guidelines is being, or is known to have been, carried out.
- (c) to the extent to which it is proposed to carry out development on it for residential, educational, recreational or child care purposes, or for the purposes of a hospital-land:
  - (i) in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1<sup>\*</sup> to the contaminated land planning guidelines has been carried out, and

(ii) on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge)."

[NOTE: Table 1 in the *Managing Land Contamination Planning Guidelines* 1998, Department of Urban Affairs and Planning & NSW EPA is reproduced in Appendix 1]

In addition to the requirements outlined in clause 6(4) of SEPP 55, Council will also require a preliminary investigation to be submitted if Council has reasonable grounds to believe the land may be contaminated because of the land's history, condition, or other information known to Council.

Council's procedure for considering land contamination issues for zoning or rezoning proposals is shown in Figure 1.

#### 2.2.1 Spot Rezonings

When Council receives a request to undertake a spot rezoning where a specific development or land use associated with the proposal is known, Council may also require a detailed investigation to be undertaken prior to agreeing to rezoning the land.

# 2.2.2 General Rezonings

When Council receives a rezoning proposal that covers more than one property, or Council itself proposes generalised rezoning, it may be difficult for Council to be satisfied that every part of the land is suitable for the permissible use(s) at the rezoning stage. In these circumstances Council will consider the findings of a preliminary investigation, and may include provisions in a LEP or DCP to ensure that the potential for contamination and the suitability of the land for any proposed use is further addressed prior to the redevelopment of the land.

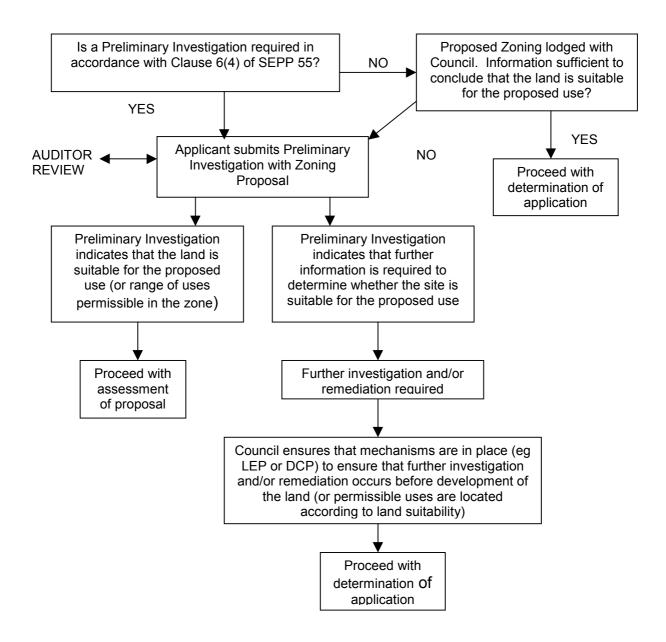
# 2.3 Council Procedures for Development Applications

In accordance with SEPP 55 (clause 7), Council will not consent to the carrying out of any development on land unless:

- it has considered whether the land is contaminated, and
- if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and
- if the land requires remediation to be made suitable for any purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.

The following chapters outline a detailed procedure of when Council will require information relating to site contamination issues to be submitted with development applications. Council's procedure for considering land contamination issues for development applications is shown in Figure 2.

FIGURE 1: COUNCIL PROCEDURE FOR CONSIDERING LAND CONTAMINATION ISSUES FOR ZONING AND REZONING PROPOSALS



# PART 3 – DETAILED PROCEDURE

# 3.1 Initial Evaluation – On All Applications and Proposals

The purpose of an initial evaluation is to ascertain the likelihood of site contamination and establish the risks present as they apply to the proposed use and subject site and whether further information is required from the applicant. It is essentially a check of recorded information and a visual assessment of the site and surrounds.

To ensure that all information gained through the investigation process is recorded appropriately and the property information system is updated, all land investigation records are to be forwarded to Strategic Environmental Planning Administration. This should be done even if contamination issues do not arise. This information should also be recorded in the assessment report.

#### 3.1.1 Check Council Records

- **Zoning** contamination is more likely to have occurred if the site is currently, or was previously zoned for industrial, agricultural or defence purposes.
- **Development & Building applications for the site** to check previous allowable uses and consents and refusals
- Property & Remediation files to indicate any correspondence, previous investigations and land use restrictions concerning contamination issues. These files should also indicate whether the site is regulated through licensing or other mechanisms by the EPA or other regulatory authorities.
- **Applicant provided information** this should be checked against information held by Council on the subject site and, if available, adjoining properties.
- **Table 1 activity** to determine if a past or current use is listed.

# 3.1.2 Site Inspection & Adjacent Sites

A Site Inspection will be required when issues are to be clarified, past or permissible uses are high risk uses (Table 1), or the application is for a change to a sensitive use (Table 2).

Contamination may result from activities that have taken place adjacent to the site or from activities not directly related to the site. Information concerning contamination impacts on sites immediately adjacent to the subject site should be obtained in determining whether or not a contamination risk exists. The gaining of information on adjacent sites that have been used or are being used for Table 1 activities is essential.

# 3.1.3 Is a Preliminary Investigation Required? (Site Investigation Process)

Clause 7(4) of SEPP 55 requires a Stage 1 – Preliminary Investigation when development that would involve a change of use is on:

- "(a) land that is within an investigation area,
- (b) land on which development for a purpose referred to in Table 1<sup>\*</sup> to the contaminated land planning guidelines is being, or is known to have been, carried out.
- (c) to the extent to which it is proposed to carry out development on it for residential, educational, recreational or child care purposes, or for the purposes of a hospital-land:
  - (i) in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1<sup>\*</sup> to the contaminated land planning guidelines has been carried out, and
  - (ii) on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge)."

[NOTE: Table 1\* in the *Managing Land Contamination Planning Guidelines* 1998, Department of Urban Affairs and Planning & NSW EPA is reproduced in Appendix 1]

Council may also require a preliminary investigation to be submitted when:

- Council has reasonable grounds to believe the land is contaminated because of the lands history, condition, or other information known to Council.
- The site has been investigated and/or remediated but there is insufficient information available about the nature and extent of contamination and/or remediation, or the circumstances have changed.
- There are restrictions on, or conditions attached to, the use of the site by a regulatory or planning authority that are, or may be, related to contamination, but there is insufficient information available about the nature and extent of contamination.
- The site is adjoining land that has been associated with activities that may cause contamination as listed in Table 1, and it is likely that this may have contaminated the subject premises.

If the Initial Evaluation suggests that the site is not contaminated and that further enquiry is not warranted then the planning process should proceed in the normal way.

# 3.2 The Site Investigation Process

The Site Investigation Process is comprised of four stages that may be initiated on the findings of each stage. The appropriate level of investigation is dependent on the circumstances of the case and as such, not all four stages may be required.

# 3.3 Stage 1 – Preliminary Investigation

The objectives of a Preliminary Investigation are to identify any past or present potentially contaminating activities and to provide a preliminary assessment of site contamination. A Preliminary Investigation is primarily used to establish that a site is not contaminated.

# a) What Information should a Stage 1 Preliminary Investigation contain?

The preliminary investigation typically contains a detailed appraisal of the site history and a report based on visual site inspection and assessment. Where information on site contamination is limited or where contaminating activities are suspected, some soil sampling may be warranted.

# b) What issues need to be considered?

- Has the proponent engaged a suitably qualified consultant to undertake the Preliminary Site Investigation?
- Is the information about the site's history adequate?
- Does it conform to relevant EPA guidelines?
- If there has been a contaminating activity, has adequate sampling been carried out?
- If the site history records are unreliable and Table 1 uses were permissible, is limited site sampling needed to confirm the site is not contaminated?

# c) Is a Site Audit required?

**Yes**, if site sampling was deemed necessary and undertaken and a conclusion that the site is not contaminated is drawn, and sensitive uses (Table 2) are proposed.

Council may also require a Site Audit in other circumstances. Refer to section 3.9- Site Auditing.

# d) Is a Stage 2 Detailed Investigation required?

A Detailed Investigation is necessary when a Preliminary Investigation indicates that the land is contaminated or that it is, or was, formally used for an activity listed in Table 1 and a land use change is proposed that has the potential to increase the risk of exposure to contamination. A Detailed Investigation will also need to be conducted as part of a remediation proposal.

Where the Preliminary Investigation shows a history of non-contaminating activities or through the assessment of sampling data the site is found to be suitable for the proposed use and in the absence of other contrary evidence no further investigation is required, then the planning process should proceed in the normal way.

#### 3.4 Stage 2 – Detailed Investigation

A Detailed Investigation is a <u>minimum</u> requirement for a site that is contaminated or is, or formerly was used for an activity listed in Table 1.

# a) What Information should a Stage 2 Detailed Investigation contain?

A Stage 2 Detailed Investigation should:

- define the extent and degree of contamination;
- assess the potential risk posed by contaminants to human health and the environment; and
- obtain sufficient information for the development of a remedial action plan (if necessary).
- include a statement that describes whether the site is suitable for the proposed use, or if remediation is necessary to make the site suitable for the proposed use.

If remediation is required, the report should also list the feasible remediation options available to remediate the site.

#### b) What issues need to be considered?

- Is the sampling program adequate?
- Have appropriate threshold criteria been used for the assessment?
- Do the levels of contamination preclude the proposed use?
- Does it conform to relevant EPA guidelines?

It should be noted that even if the site is contaminated it may not require remediation as the contamination levels may be within EPA guidelines for the proposed use. That is contamination levels do not preclude the proposed use.

#### c) Is a Site Audit required to assess the above considerations?

**Yes**, if the investigation has drawn the conclusion that the current contamination levels do not pose a risk for the intended use or during site works, and the proposed use is for a sensitive use (table 2).

Council may also require a Site Audit in other circumstances. Refer to section 3.9 – Site Auditing.

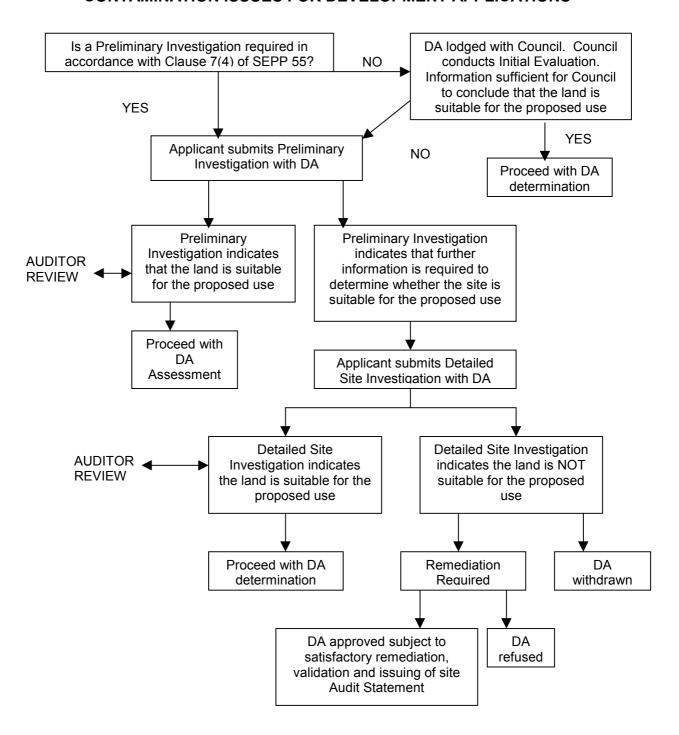
# d) Are Contamination Risks evident?

If contamination risks are evident then there are three options to choose from. These being:

- New proposal or adjustments to proposal.
- DA withdrawn or refused.
- Remediation.

Having established that contamination risks are evident and that remediation is required, it is necessary to establish whether or not consent is necessary for the remediation process before proceeding with the remainder of the Site Investigation Process. Under SEPP 55, remediation requires consent where there is a potential for significant environmental impacts – referred to as a Category 1 proposal.

FIGURE 2: COUNCIL PROCEDURE FOR CONSIDERING LAND CONTAMINATION ISSUES FOR DEVELOPMENT APPLICATIONS



#### 3.5 SEPP 55 AND REMEDIATION

SEPP 55 prevents applications for remediation being refused unless they would result in a greater risk to health or environment. In some situations remediation work itself has the potential for environmental impact and the planning process must ensure that these impacts are adequately identified and mitigated.

# 3.5.1 What are Category 1 Proposals – proposals that need consent?

Activity that is:

- Designated development, or
- Carried out or to be carried out on land declared to be a critical habitat, or
- Likely to have a significant effect on a critical habitat or a threatened species, population or ecological community, or
- Development for which another SEPP or REP requires development consent, or
- Carried out in an area or zone to which any classifications to the following apply under an environmental planning instrument:
  - (i) coastal protection
  - (ii) conservation or heritage conservation,
  - (iii) habitat area, habitat protection area, habitat or wildlife corridor,
  - (iv) environment protection
  - (v) escarpment, escarpment protection or escarpment preservation,
  - (vi) floodway,
  - (vii) littoral rainforest,
  - (viii) nature reserve,
  - (ix) scenic area or scenic protection,
  - (x) wetland.
- Work that is <u>not</u> carried out in accordance with the site management provisions contained in Part 5 of this DCP (Clause 9(f) of SEPP 55).

It should be noted that if a site is subject to a Remediation Order or is a Remediation Site, the Minister for Urban Affairs and Planning becomes the consent authority.

#### 3.5.2 How is remediation that requires consent enforced?

When remediation requires consent the following may occur:

- The applicant is requested to amend the DA to include a remediation proposal, or
- 2. The applicant is requested to submit a new and separate DA for the remediation.

The RAP needs to be assessed and determined prior to or in conjunction with the DA.

# 3.5.3 What are Category 2 – Proposals that do not need consent?

- Remediation work that is not listed above, or
- Regardless of the above:
  - (i) a remediation order has been given by the EPA,
  - (ii) may be carried out without consent under another SEPP or REP.

# 3.5.4 What is required if remediation does not need consent?

If remediation does not require consent then two options can be used:

- 1. Imposing **conditions** on the development consent for the use, requiring remediation to be carried out and validated either before other work commences or before occupation of the site, or
- 2. Issuing a **deferred commencement** consent under section 80(3) of the EP&A Act for the use, and requiring remediation to be carried out and validated before other work commences.

# 3.5.5 Remediation and Designated Development

Remediation is often carried out in conjunction with other development to make the site suitable for that development. SEPP 55 contains rules that apply to designated development and remediation. Refer to Clause 15 of the SEPP.

#### 3.6 Assessment of Remediation Works

The procedure for the assessment of development applications that involve remediation works will differ depending on the type of development. Council's procedure for considering site remediation proposals is shown in Figure 3.

Remediation assessment requires the consideration of reports, plans and monitoring programs to establish whether or not the work will contribute to a net improvement in environmental quality, reduce health risks and/or promote the economic use and development of the site.

This assessment will require referral to EPA Guidelines and/or the adoption of a Site Audit, the cost of which is borne by the proponent.

Sites should be managed on a case by case basis in accordance with the following hierarchy. This is a systematic approach to minimising risks and involves considering a range of options at each particular site, including:

- 1. Avoidance of contamination in the first place.
- 2. On-site treatment of contaminants.
- 3. Off-site treatment of contaminants.
- 4. Removal of contaminants from the site and placement/disposal elsewhere.
- 5. On-site containment, immobilisation or isolation of contaminants.
- 6. Reducing exposure by restricting human access to the contaminants.

In situations where the proposed remediation involves on-site containment of contaminated material, the need for a continuing monitoring program will need to assessed by both the proponent's consultant and Council. Council may require an environmental management plan to be prepared for the ongoing monitoring and maintenance requirements.

To ensure that future owners of the site are aware of the contaminated material and any requirements for ongoing monitoring and/or maintenance, Council may impose a consent condition requiring a covenant to be registered on the title of the land giving notice of the existence of the on-site containment of contaminated material. The covenant could also bind the owners and future owners to the responsibility for ongoing maintenance of the contaminated material, ongoing monitoring and any future rehabilitation works required.

# 3.6.1 Category 1 Remediation Work

Category 1 remediation work, as defined in clause 9 of SEPP 55, is work that requires consent. Category 1 remediation work is advertised development unless the remediation work is Designated Development or State Significant Development. All category 1 remediation work must be advertised for 30 days pursuant to s. 29A of the Environmental Planning and Assessment Act.

## 3.6.2 Category 2 Remediation Work

Category 2 remediation work is all remediation work that is not category 1 remediation work. In accordance with clause 16 of SEPP 55, prior notice of category 2 remediation work to Council is required at least 30 days before commencement of works.

In addition to the information that must be submitted to Council in clause 16(2) of SEPP 55, Council will require the following information to be submitted at least 14 days prior to the commencement of category 2 remediation works:

- two copies of any Preliminary Investigation, Detailed Investigation and Remedial Action Plan for the subject site.
- contact details for the remediation contractor and party responsible for ensuring compliance of remediation work with all relevant regulatory requirements (if different to remediation contractor).

All category 2 remediation work shall be conducted in accordance with the site management provisions as described in Part 5. Category 2 remediation work that does not comply with the site management provisions shall be classified as category 1 remediation work and will require consent.

Although consent is not required for category 2 remediation work, Council will need to be satisfied that the site is suitable for the proposed use when considering any subsequent development applications for the subject site. Hence it is recommended that comprehensive records are maintained during the remediation and validation works for all sites.

# 3.7 Stage 3 – Site Remedial Action Plan (RAP)

The RAP is based on information gained from the previous stages and should demonstrate how contamination risks are to be reduced to acceptable levels and illustrate the clean up objectives and criteria for the site.

If development consent is required then a RAP <u>must</u> be considered with the development application for approval.

# a) What issues need to be considered?

- Is it practical or appropriate to remediate the site for the proposed use?
- In considering health and environmental impacts; are the clean up criteria appropriate for the future use of the site?
- Are the remediation objectives clearly stated?
- Are the proposed plans for remediation work acceptable? Do they include an operational plan, OH&S plan, site environmental management plan, community relations plan, contingency plan?
- Does the proposal require approvals from regulatory authorities? If so, which regulatory authorities?
- Is the remediation work proposed to be supervised by an appropriately qualified consultant?

# b) Is a Site Audit Necessary?

Yes, all RAPs are to be audited.

#### c) Is the RAP acceptable?

If the RAP is not acceptable to the auditor then it should be modified or the DA refused.

# 3.8 Stage 4 – Completion of Remediation Work: Validation and Monitoring

For remediation works that require consent, a notice of completion must be submitted in accordance with clause 18 of SEPP 55. This will normally be achieved by Council placing a condition on any consent granted requiring the submission of a validation and monitoring report prior to the issuing of a construction certificate.

Validation must confirm statistically that the remediated site complies with the clean-up criteria set for the site by the RAP, or where there is no RAP, against standards endorsed by the EPA. Where targets have not been met, the reasons for such failure must be stated along with the proposed additional site works needed to achieve the original objectives. The report must also confirm that all licences, approvals and development conditions have been complied with.

The validation and monitoring report is to be submitted within 30 days after remediation works have been completed, and prior to the commencement of building construction works.

Council may also require a similar notice of completion for remediation works that do not require consent.

# a) Who should produce the Validation Report?

The same consultant that conducted the rest of the site investigation process.

# b) On-site Containment

Where on-site containment of contamination is proposed a monitoring program needs to be assessed. The monitoring program would include the proposed monitoring strategy, parameters to be monitored, monitoring locations, frequency of monitoring, and reporting of requirements.

# c) What issues need to be considered?

The following issues need to be considered when assessing a Validation Report or Monitoring Program:

- Is the validation and monitoring program adequate?
- Is there a clear statement on the suitability of the proposed site use?
- Is there any ongoing site management requirements? Are reporting and monitoring mechanisms and proposals adequate?
- Are there any other uncertainties?
- Adequacy of information on title?

# d) Is a Site Audit necessary?

**Yes**, all validation and monitoring reports are to be audited.

# 3.9 SITE AUDITING

A Site Audit is an independent review of any or all stages of the site investigation process, and results in the issuing of a *site audit statement (or a site audit summary report)*. Site Audits can assist Council in providing comment on or verifying information contained in *Site Investigation Reports* and can specify an acceptable use or range of uses for the site.

Note: See section 47(1) of the Contaminated Land Management Act for further information.

## 3.9.1 Site Audit Statements

A site audit statement provides a clear statement about what land use is suitable for the site, including any conditions on that suitability (eg to maintain capping). When an accredited auditor for contaminated land is requested to conduct a site audit, they must also prepare a site audit statement.

A site audit statement may only be issued by a NSW EPA accredited auditor for contaminated land. A copy of all site audit statements must be given to the EPA and Council at the same time as the site auditor gives the statutory site audit statement to the person who commissioned the site audit.

# 3.9.2 When is a Site Audit necessary?

Council may request a site audit to be undertaken at any or all stages in the site investigation process. In accordance with the Managing Land Contamination Planning Guidelines, Council will require a site audit to be prepared if it:

- "• believes on reasonable grounds that the information provided by the applicant is incorrect or incomplete;
- wishes to verify whether the information provided by the proponent has adhered to appropriate standards, procedures and guidelines; or
- does not have the internal resources to conduct its own technical review."

Council will inform the proponent if a site audit is required after it has conducted a review of the submitted contamination reports and associated documentation. The proponent is responsible for engaging a NSW EPA accredited auditor for contaminated land to perform a site audit.

For category 2 works, Council may elect to have the proposed works and notice of completion (validation report) to be independently audited.

For sites which have complex issues associated with either the contamination assessment or remediation it is wise to engage a NSW EPA accredited auditor for contaminated land early on in the site assessment process.

# 3.9.3 What does Council require from a Site Auditor?

- An independent review
- A Site Audit Statement which includes a land suitability statement,
- A Site Audit Summary Report
- A review and verification of all information provided by the proponent.

In addition to the above points, the following are examples of issues that Council may request an accredited auditor for contaminated land to address when conducting a site audit:

- Has the contaminated land consultant complied with all EPA endorsed standards, procedures and relevant guidelines?
- What further investigations or remediation is required before the land is suitable for any specified use or range of uses?
- Whether the auditor considers that the proposed remediation is adequate, and if undertaken, will render the site to be suitable for the proposed use?

- Whether it can be concluded that there is no unacceptable off-site migration of contaminants, particularly via ground water?
- Whether the contamination conditions at the site are suitable for in-ground absorption of stormwater?

Either the proponent or the appointed NSW EPA accredited auditor for contaminated land shall liaise with Council during the preparation of the site audit to ensure that the scope of the site audit addresses the concerns raised by Council.

Before issuing a site audit statement, the site auditor must prepare and finalise a summary site audit report. The EPA *Guidelines for the NSW Site Auditor Scheme* outlines what must be included in a site audit report.

Site Audit Statements may be conditional, particularly where there is going to be on site management of contamination. Consequently the release of a Construction Certificate should be dependent on conditions established in the auditing of a validation and monitoring program.

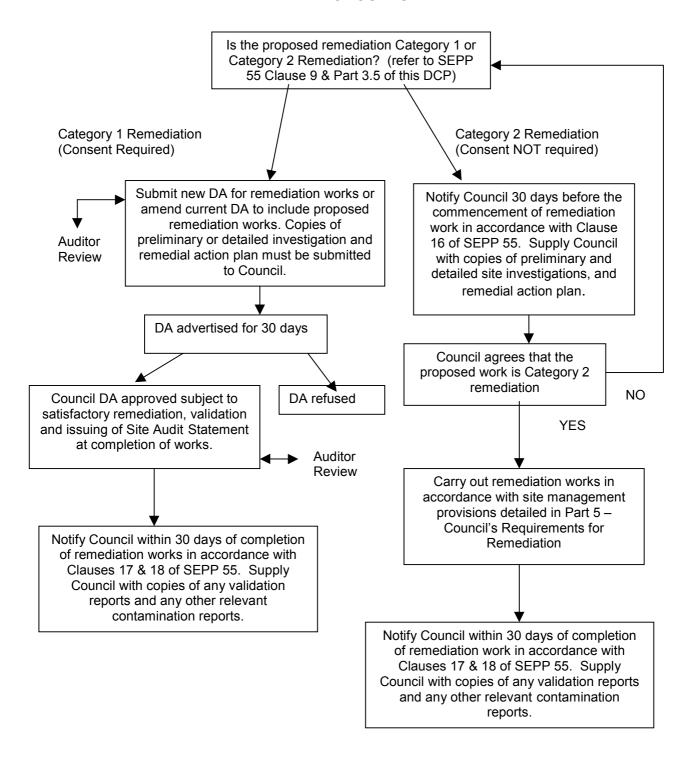
Auditors may also provide reports concerning the progress of remediation in advance of a formal site audit statement. Such reports may facilitate the progress of staged developments by providing Council with confidence as to the eventual outcome of remediation, and indicating the likely form of the forthcoming site audit statement.

#### 3.9.4 Where can I get a list of EPA accredited site auditors?

An up to date list of NSW EPA accredited site auditors can be obtained from from the EPA's pollution line, 131 555 or the following web site:

www.epa.nsw.gov.au

FIGURE 3: COUNCIL PROCEDURE FOR CONSIDERING SITE REMEDIATION PROPOSALS



# PART 4 - PROCEDURE CHECK LIST

# STEP 1 – INITIAL EVALUATION – ON <u>ALL</u> APPLICATIONS – TO BE CARRIED OUT BY ASSESSMENT OFFICER BEFORE REFERAL TO EHS OFFICER

Council Records	The following sources should be checked in order to determine whether there is potential for contamination.	YES	NO
Zoning	Was the site previously zoned for industrial, agricultural or defence purposes?		
Development & Applications	Do permissible uses and/or any consent allow for industrial, agricultural or defence purposes?		
Property & Remediation Files	Do these files indicate any correspondence, previous investigations and/or land use restrictions concerning contamination issues? Is the site contaminated?		
Land Contamination Map	Has the site been identified as having a possible contamination issue?		
Adjacent Sites	Information concerning contamination impacts on sites immediately adjacent to the subject site should be obtained in determining whether or not a contamination risk exists.		
	Is any of the above information applicable to adjacent sites?		
Applicant Information	Does information provided by the applicant suggest contamination issues?		
	Is information inconsistent with Council records?		
Site Inspection	A Site Inspection will be required when issues are to be clarified, the application is for a sensitive use or there are contamination risks from adjacent sites.	YES	NO
	Does a site inspection reveal any contamination risks?		
Site Investigation Process	If you answer <b>YES</b> to any of the following, proceed to Step 2 – Site Investigation Process.	YES	NO
	Are there indications that contamination is, or may be present owing to the historical use of the site, or Council has insufficient information with which to draw or dismiss that conclusion.		
	Is the land within an Investigation Area?		
	Is a Table 1 Activity a past or present use?		_
	Is a sensitive use proposed and there is incomplete knowledge on whether or not a Table 1 activity had been carried out?		

# STEP 2 - THE SITE INVESTIGATION PROCESS

Level of investigation required	The Site Investigation Process is comprised of four stages that may be initiated on the findings of each stage. The appropriate level of investigation is dependent on the circumstances of the case and as such, not all four stages may be required.	YES	NO
Detailed Investigation	Is the site known to be Contaminated?		
	Is a table 1 activity a past or present use?		
	Are records incomplete, and a Table 1 activity was a lawful use under past zonings and a sensitive use is proposed?		
	Is the site within an investigation area?		

If you answer YES to any of the above, proceed to a Stage 2 – Detailed Investigation.

If no then a Stage 1 - Preliminary Investigation is required.

Stage 1 Preliminary Investigation	The preliminary investigation typically contains a detailed appraisal of the site history and a report based on visual site inspection and assessment. Where information on site contamination is limited or where contaminating activities are suspected, some soil sampling may be warranted.	YES	NO
Information to be considered	Is the information about the sites history inadequate?		
	Has there been a contaminating activity?		
	If site records are unreliable and Table 1 uses were permissible does site sampling confirm contamination?		
	Is the report inconsistent with EPA guidelines?		

If the sampling program demonstrates the potential for, or the existence of contamination, or you answered <u>YES</u> to any of the above a Stage 2 – Detailed Investigation is required.

If no, then the planning process should proceed in the normal way.

	Site Audit Go	to Part 3.9 'Site Audit' to determine Site Audit requirements
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To ensure that all information gained through the investigation process is recorded appropriately and the property information system is updated, all records are to be forwarded to Strategic Planning Administration. This should be done even if contamination issues do not arise.

Stage 2 Detailed Investigation	A Detailed Investigation should provide information about the extent and degree of contamination, and include an assessment of the risk posed by the contaminants to health and the environment.	YES	NO
Information to be considered	Do the levels of contamination preclude the proposed use?		
Site Audit	Go to Part 3.9 'Site Audit' to determine Site Audit requirements. The audit will verify whether the report is adequate, and has adhered to appropriate standards, procedures and guidelines.		

If the level of contamination precludes the proposed use then further action will be required before the planning process can proceed in the normal way. Three options can be selected:

- 1. Remediation
- 2. New or adjustments to the proposal
- 3. DA withdrawn or refused

Remediation	Is remediation the selected option?		
If remediation is the selected option then SEPP 55 needs to be consulted to determine			

whether or not approval is required for the remediation process.

Proposal	Is the proposal a Category 1 development?	

If the proposal is Category 1 work, consent is required, and the proposal will need to be amended, or a new application for remediation is to be submitted. A Stage 3 – Site Remedial Action Plan will also need to be submitted.

If the application is not a Category 1 development then consent is not required for the remediation process. However conditions will need to be placed on the approval, or a deferred commencement issued.

To ensure that all information gained through the investigation process is recorded appropriately and the property information system is updated, all records are to be forwarded to Strategic Planning Administration.

Stage 3 Site Remedial Action Plan (RAP)	The RAP is based on information gained from the previous stages and should demonstrate how contamination risks are to be reduced to acceptable levels and illustrate the clean up objectives and criteria for the site.	YES	NO
Site Audit	Go to Part 3.9 'Site Audit' to determine Site Audit requirement will verify whether the following issues have been considered		audit
Issues to be considered	Is it practical or appropriate to remediate the site? In considering health and environmental impacts are the clear appropriate for the future use of the site? Are the remediation objectives clearly stated? Are the proposed plans for remediation work acceptable? Do an operational plan, OH&S plan, site environmental manage community relations plan, contingency plan? Does the proposal require approvals from regulatory authorit is the remediation work proposed to be supervised by an approposal consultant?	they ind ment pla	clude an,
RAP	Is the RAP adequate?		

The RAP should be advertised for a 30 day period. Proceed to Stage 4 – Validation and Monitoring.

If the RAP is not adequate then it should be modified or the application refused.

To ensure that all information gained through the investigation process is recorded appropriately and the property information system is updated, all records are to be forwarded to Strategic Planning Administration.

Stage 4 Validation and Monitoring	Validation confirms whether clean up objectives have been attained and whether any further remediation work or restriction on land use is required. The same consultant that conducted the rest of the site investigation process should conduct it.
Site Audit	<ul> <li>Go to Part 3.9 'Site Audit' to determine Site Audit requirements. The audit will verify whether the following issues have been considered:</li> <li>Confirmation that the site complies with the clean-up criteria set for the site and that all licences, approvals and development conditions have been complied with.</li> <li>A clear statement on the suitability of the proposed use.</li> <li>If there is to be ongoing site management requirements, are the reporting and monitoring mechanisms adequate.</li> <li>Any other uncertainties.</li> </ul>

Where targets have not been met, the reasons for such failure must be stated along with the proposed additional site works needed to achieve the original objectives.

To ensure that all information gained through the investigation process is recorded appropriately and the property information system is updated, all records are to be forwarded to Strategic Planning Administration.

# PART 5 – COUNCIL'S REQUIREMENTS FOR REMEDIATION

Council has identified a number of site management provisions for the conduct of category 2 remediation. These provisions have been formulated to ensure that category 2 remediation work does not adversely impact on the environment or public amenity.

All category 2 remediation works shall be conducted in accordance with the site management provisions listed below.

Category 2 remediation work that does not comply with the site management provisions outlined in this section will be classified as category 1 remediation work and will require consent.

Development applications lodged for category 1 remediation works should identify any areas of non-compliance with the site management provisions listed below and identify any alternative site management measures to be implemented.

**Note**: It is the responsibility of those remediating a site to ensure compliance with all relevant environmental legislation and regulations. Compliance with the site management provisions outlined below does not imply that all relevant environmental legislation and regulations have been complied with. Non-compliance with relevant environmental legislation and regulations may incur on-the-spot fines of up to \$1500 for minor offences, or fines up to \$1 Million and 7 years imprisonment for more serious offences.

# 5.1 Hours of Operation

All remediation work shall be carried out only between the hours of 7.00am and 6.00pm Monday to Friday inclusive, 8.00am and 5.00pm Saturdays. No work shall be carried out on Sundays and public holidays.

# 5.2 Soil and Water Management

The NSW Department of Housing Blue Book "Managing Urban Stormwater – Soil and Conservation" August 1998 outlines the general requirement for the preparation of a soil and water management plan. All remediation works shall be conducted in accordance with a soil and water management plan. A copy of the plan shall be kept on-site and made available to Council Officers on request. All erosion and sediment measures must be maintained in a functional condition throughout the remediation works.

A summary of the soil and water management measures for category 2 remediation work in relation to stockpiles, site access, excavation pump-out, landscaping/rehabilitation and bunding follows:

# 5.2.1 Stockpiles

- No stockpiles of soil or other materials shall be placed on footpaths or nature strips unless prior Council approval has been obtained.
- All stockpiles of soil or other materials shall be placed within an erosion containment boundary away from drainage lines, gutters or stormwater pits or inlets.

- If practical, all stockpiles of soil or other materials likely to generate dust or odours shall be covered.
- If practical, all stockpiles of contaminated soil shall be stored in a secure area and be covered if remaining more than 24 hours.

#### 5.2.2 Site Access

Vehicle access to the site shall be stabilised to prevent the tracking of sediment onto the roads and footpath. Soil, earth, mud or similar materials must be removed from the roadway by sweeping, shovelling, or a means other than washing, on a daily basis or as required. Soil washings from wheels shall be collected and disposed of in a manner that does not pollute waters.

# **5.2.3** Excavation Pump-out

All excavation pump-out water must be analysed for suspended solid concentrations, pH and any contaminants of concern identified during the preliminary or detailed site investigation, prior to discharge to the stormwater system. The analytical results must comply with relevant EPA and ANZECC standards for water quality.

Other options for the disposal of excavation pump-out water include disposal to sewer with prior approval from Sydney Water, or off-site disposal by a liquid waste transporter for treatment/disposal to an appropriate waste treatment/processing facility.

# 5.2.4 Landscaping/Rehabilitation

All exposed areas shall be progressively stabilised and revegetated on the completion of remediation works.

# 5.2.5 Bunding

All remediation areas shall be bunded to contain surface water runoff from the remediation areas and to prevent the leaching of contaminants into the subsurface. All surface water discharges from the bunded areas to Council's stormwater system shall not exceed the threshold concentrations specified in the NSW EPA Guidelines.

#### 5.3 Noise

Category 2 remediation work shall comply with the Environment Protection Authority's Environmental Noise Manual and the Protection of the Environment Operations Act 1997.

For construction and demolition periods of 4 weeks or less the L10 level, measured over a period of 15 minutes when the construction or demolition site is in operation, must not exceed the background level by more than 20dB(A).

For construction and demolition periods greater than 4 weeks and not exceeding 26 weeks the L10 level, measured over a period of 15 minutes

when the construction or demolition site is in operation, must not exceed the background level by more than 10 dB(A).

For construction and demolition periods exceeding 26 weeks the L10 level, measured over a period of 15 minutes when the construction or demolition site is in operation, must not exceed the background level by more than 5dB(A).

All equipment and machinery shall be operated in an efficient manner to minimise the emission of noise. Noise monitoring is to be carried out by a recognised acoustic consultant if complaints are received or as directed by Council. Noise control measures as recommended by the acoustic consultant are to be implemented throughout the remediation process.

#### 5.4 Vibration

The use of any plant and/or machinery shall not cause vibrations to be felt or capable of being measured at any premises. Vibration monitoring is to be carried out by a recognised vibration consultant if complaints are received or as directed by Council. Vibration control measures as recommended by the vibration consultant are to be implemented throughout the remediation process.

## 5.5 Air Quality

#### 5.5.1 Dust Control

Dust emissions shall be confined within the site boundary. The following dust control procedures may be employed to comply with this requirement:

- erection of dust screens around the perimeter of the site;
- securely covering all loads entering or exiting the site;
- use of water sprays across the site to suppress dust;
- covering of all stockpiles of contaminated soil remaining more than 24 hours; and
- keeping excavation surfaces moist.
- Dust monitoring and sampling is to be carried out if complaints are received or if directed by Council. Control measures as recommended by an environmental consultant are to be implemented throughout the remediation process.

#### 5.5.2 Odour Control

No odours shall be detected at any boundary of the site during remediation works by an authorised Council Officer relying solely on sense of smell. The following procedures may be employed to comply with this requirement:

 use of appropriate covering techniques such as the use of plastic sheeting to cover excavation faces or stockpiles;

- use of fine mist sprays and hydrocarbon mitigating agent on the impacted areas/materials; and
- adequate maintenance of equipment and machinery to minimise exhaust emissions.
- If odours are detected the site is to be inspected by a recognised environmental consultant and any recommended control measures are to be implemented throughout the remediation process.

Volatile or semi-volatile compounds that could generate odours include monocyclic aromatic hydrocarbons (styrene, benzene, toluene, xylene, ethyl benzene, butyl benzene), polycyclic aromatic hydrocarbons (PAHs), hydrogen sulphide, hydrogen cyanide, pesticides, PCBs, and herbicides.

Records of volatile emissions and odours shall be logged, kept on-site and made available to Council Officers on request. Discharges from soil vapour extraction systems shall be regularly monitored in order to determine the mass of hydrocarbons that are being discharged to the atmosphere. Contingency measures for the collection and treatment of hydrocarbon offgas shall be put in place prior to the commissioning of the soil vapour extraction systems. All discharge vents from soil vapour extraction systems, without treatment or collection offgas, shall be located a minimum of 50 metres from any residential property boundary, road or recreational area.

No material shall be burnt on-site.

#### 5.6 Groundwater

A licence shall be obtained from the Department of Land and Water Conservation for approval to extract groundwater under the provisions of *Part V* of the *Water Act, 1912.* 

Groundwater shall be analysed for pH and any contaminants of concern identified during the preliminary or detailed site investigation, prior to discharge to the stormwater system. The analytical results must comply with relevant EPA and ANZECC standards for water quality.

Other options for the disposal of groundwater include disposal to sewer with prior approval from Sydney Water, or off-site disposal by a liquid waste transporter for treatment/disposal to an appropriate waste treatment/processing facility.

# 5.7 Transport

All haulage routes for trucks transporting soil, materials, equipment or machinery to and from the site shall be selected to meet the following objectives:

- comply with all road traffic rules;
- minimise noise, vibration and odour to adjacent premises; and
- utilise State Roads and minimise use of local roads.

Category 2 remediation work shall ensure that all site vehicles:

- conduct deliveries of soil, materials, equipment or machinery during the hours of remediation work identified in Section 5.1;
- securely cover all loads to prevent any dust or odour emissions during transportation;
- exit the site in a forward direction; and
- do not track soil, mud or sediment onto the road.

#### 5.8 Hazardous Materials

Hazardous and/or intractable wastes arising from the remediation work shall be removed and disposed of in accordance with the requirements of the NSW EPA and WorkCover Authority, together with the relevant regulations, namely:

- (a) New South Wales Occupational Health and Safety Act 1983;
- (b) Regulation 84A-J "Construction Work Involving Asbestos Or Asbestos Cement" 1983, as amended 1984, 1986, 1990 and 1996 of the New South Wales Construction Safety Act 1912;
- (c) Occupational Health and Safety (Hazardous Substances) Regulation 1996;
- (d) Occupational Health and Safety (Asbestos Removal Work);
- (e) Contaminated Land Management Act and Regulations; and
- (f) Environmentally Hazardous Chemicals Act and Regulations.

Under the *Protection of the Environment Act 1997* the transportation of Schedule 1 Hazardous Waste is a scheduled activity and must be carried out by a transporter licensed by the NSW Environment Protection Authority.

# 5.9 Disposal of Contaminated Soil

The disposal of contaminated soil shall have regard to the provision of both the *Protection of the Environment Operations Act and Regulations* and any relevant EPA guidelines such as the NSW EPA publication *Environmental Guidelines: Assessment, Classification and Management of Non-Liquid Wastes (May 1999)*.

Any queries associated with the off-site disposal of "waste" from a contaminated site should be referred to the EPA's Hazardous Materials Advice Unit on (02) 9325 5784. If contaminated soil or other waste is transported to a site unlawfully, the owner of the waste and the transporter are both guilty of an offence.

#### 5.10 Containment/Capping of Contaminated Material

No contaminated material shall be encapsulated or capped on the site that contains concentrations of contaminants that are statistically above the soil investigation levels for urban development sites in NSW for the range of landuses permissible on the subject site. For example, a site zoned commercial/industrial shall not encapsulate or cap soil containing concentrations of contaminants statistically above the 'commercial or

industrial NEHF F health-based investigation levels'. The soil investigation levels for urban redevelopment in NSW are contained in the EPA's *Guidelines for the NSW Site Auditor Scheme*.

It should be noted that where the proposed remediation involves on-site containment of contaminated material, the need for a continuing monitoring program should be assessed by both the proponent's consultant and Council. To ensure that future owners of the site are aware of the contaminated material and any ongoing monitoring and/or maintenance, Council may impose a consent condition on any subsequent development application for the subject site requiring a covenant to be registered on the title of the land giving notice of the existence of the on-site containment of contaminated material. The covenant may also bind the owners and future owners to the responsibility for ongoing monitoring and any future rehabilitation works required.

# 5.11 Importation of Fill

All fill imported on to the site shall be validated to ensure the imported fill is suitable for the proposed land use from a contamination perspective. Fill imported on to the site shall also be compatible with the existing soil characteristic for site drainage purposes.

Council may require details of appropriate validation of imported fill material to be submitted with any application for future development of the site. Hence all fill imported onto the site should be validated by either one or both of the following methods during remediation works:

- Imported fill should be accompanied by documentation from the supplier which certifies that the material is not contaminated based upon analyses of the material or the known past history of the site where the material is obtained; and/or
- Sampling and analysis of the fill material should be conducted in accordance with the relevant EPA Guidelines. The EPA Guidelines for Assessing Service Station Sites recommends a minimum soil sampling protocol of one sample per 100m<sup>3</sup> for imported fill.

# **5.12 Site Signage and Contact Numbers**

A sign displaying the 24 hour contact details of the remediation contractor (and site facilitator if different to remediation contractor) shall be displayed on the site adjacent to the site access. This sign shall be displayed throughout the duration of the remediation works.

# **5.13 Community Consultation**

Owners and/or occupants of premises adjoining, and across the road, from the site shall be notified at least two days prior to the commencement of category 2 remediation works.

# 5.14 Site Security

The site shall be secured to ensure against unauthorised access by means of an appropriate fence.

# 5.15 Occupational Health & Safety

It is the employer's responsibility to ensure that all site remediation works shall comply with all Occupational Health and Safety and Construction Safety Regulations of the NSW WorkCover Authority. Safety monitoring for hydrocarbon emissions should be undertaken in accordance with *Worksafe Time Weighted Averages Guidelines*, 1991.

# 5.16 Removal of Underground Storage Tanks

The removal of underground storage tanks shall be undertaken in accordance with NSW WorkCover requirements which includes writing to the Chief Inspector of Dangerous Goods and complying with any conditions imposed. The tank removal shall be conducted in accordance with the Australian Institute of Petroleum's Code of Practice "The Removal and Disposal of Underground Petroleum Storage Tanks (AIP CP22-1994). In the event of conflict between the Code of Practice and NSW WorkCover requirements, the latter shall prevail.

#### 5.17 Acid Sulfate Soils

Remediation work involving the excavation of soil should consult the Department of Urban Affairs Acid Sulfate Soil Planning Map to assess whether a preliminary assessment of the potential for acid sulfate soil is required.

In addition to these site management provisions, persons carrying out Category 2 remediation should refer to the notice requirements of SEPP No.55 and conditions of development consent if any.

For Category 2 works, Council may elect to have the proposed works and notice of completion (validation report) to be independently audited.

# PART 6 – MANAGEMENT OF LEAD CONTAMINATION

In addition to contamination issues arising from a change in use, as described in previous chapters, the issue of lead contamination in the Leichhardt LGA also requires consideration. This is particularly important as the average age of building stock predates 1970 and past industrial uses and concentrated vehicle use increases the risk of lead contamination.

It is also important to note that works that do not need development consent could expose humans or the environment to lead contamination. Consequently, those people carrying out work should also consider the following clauses when Council consent is not required.

# 6.1 Assessing the Risk of Lead Contamination

The table below outlines circumstances where there is a greater chance for lead contamination occurring.

# **LEAD RISK TABLE**

Has there been industrial development near the land?

Is the development/activity near a major road or intersection?

Is it likely that nearby older structures (bridges, water tanks, and towers) have been renovated unsafely in the past?

Was any building that is subject to the development/activity built and/or painted before 1970?

Is there evidence that demolition or renovations have been carried out on the site which may have resulted in lead contamination (eg demolition or renovations to pre 1970 buildings)?

Has fill which may have been sourced from lead contaminated land been used on the site?

Has the land been used for orchards, market gardens or other agricultural purpose in which lead arsenate could have been used?

Where a lack of knowledge exists, it is suggested that the precautionary principle be applied where there is a reasonable chance that the conditions referred to in the table may apply.

If the answer to any of these questions is <u>yes</u>, then the risk of lead contamination should be further investigated.

When development consent is required from Council, Council officers will ask for further information or will condition a consent depending on the type of works proposed.

A condition of consent may require the submission of a work / management plan addressing appropriate Australian Standards and the following guidelines.

If the works do not require consent then they should be carried out in accordance with the requirements as specified below.

The following sections relate to specified activities (renovation / refurbishment, demolition and landscaping / landfilling), and are designed to give guidance to both applicants and Council officers and also to those people carrying out works where approval is not required.

### 6.2 RENOVATION AND REFURBISHMENT

Intact lead paint in good condition poses no hazard. Lead paint becomes dangerous when it peels, chalks or begins to flake or is disturbed. When disturbed by renovation, workers, children and pets are exposed. Fine paint and dust can be breathed in or can contaminate the house, its contents and the surrounding area. Many of the hazards of renovation can be minimised by taking the right precautions and using the right equipment.

Lead dust becomes dangerous when disturbed and is better left untouched. The dust in the roof void does not pose a danger if ceilings, cornices and ceiling roses are in good repair. Black trails of dust near cracks or cornices are trouble signs. Decorative ceiling roses with air vents can also let dust in.

Some home and building maintenance or renovation activities may disturb paint or dust and increase the risk of contamination of living areas. These include-

- demolishing ceilings or walls
- adding a second storey extension
- putting in an attic ladder or skylight
- renovating or refurbishing of painted areas.

Hazards from paint and dust can be minimised if renovation is only undertaken when it is absolutely necessary- and then by doing it safely. There are simple measures that can be taken during renovations to protect workers and residents. These measures include-

- paint only if a surface is not in good condition (peeling, flaking or chalking) and do not remove old paint unless it is necessary (paint over if it is in good condition)
- move out during renovations (particularly children and pregnant women)
- remove or cover all soft furnishings and carpets to prevent contamination
- wash hands and face before meals
- shower, and change clothes when work is finished
- wash work clothes separately from all other clothes, and rinse the washing machine afterwards
- do not smoke or carry cigarettes in the work area (you may breathe in the lead dust that settles on them).

# 6.2.1 Painting or Removing Lead Paint

Any paint containing lead on residential and commercial buildings must be managed in accordance with the Australian Standard AS 4361.2, Guideline to Lead Paint Management Part 2: Residential and Commercial Buildings without causing any contamination to the environment.

It may also be useful to follow these guidelines when removing lead paint in other situations, for example play ground equipment. It is recommended that a professional experienced in lead-safe work be employed to remove lead-based paints and dust clearance testing be required, particularly in public and commercial buildings that remain open during renovation activities.

Removal of lead paint and protective coatings, using methods such as abrasive blasting, from larger buildings and industrial infrastructure where higher lead protective coatings continued to be used should be done in accordance with AS 4361.1 Guide for Lead Paint Management in Industrial Applications 1995.

# (a) Preparing the work area

- Plan the renovation to separate and reduce waste, recycle building materials and reduce any disposal costs.
- Outside- lay plastic sheeting under and around the work area to contain debris; close windows and doors.
- Inside- seal the work area off from the rest of the house and outside by covering floors, doors and windows with plastic and tape; remove soft furnishings, curtains, carpets and other household items or cover them with plastic.

### (b) Equipment and practises

- Power sanders, heat guns, blow torches, sand blasting, water guns or any other methods that distribute paint dust or flakes into the surrounding environment must not be used for the removal of leaded paint unless adequate protection and containment measures are taken. Wet-sanding and wetscraping are the safest methods of preparing the surface.
- All paint debris including dust and flakes must be collected and safely disposed of in a sealed container. No paint dust or flakes should be allowed to pollute the interior or exterior environment.
- Domestic vacuum cleaners must not be used as they distribute leaded paint dust in the form of fine particles and are not appropriate for this task. Use a high- efficiency particulate air (HEPA) vacuum cleaner.
- All workers must wear an approved (AS1716) respirator fitted with P1 (dust) or P2 (dust & fumes) filters, and coveralls to prevent exposure to lead dust and fumes. Paper filters offer no protection from fine dust.
- Wear protective clothing (long sleeves and pants) that does not catch dust or flakes in pockets or cuffs (or disposable overalls and plastic boots).
- The manufacturer's instructions are to be strictly adhered to if solvent or caustic chemical strippers are being used.

## (c) Cleaning up

- Do not sweep, wet wash the entire area with a detergent, such as liquid soap and rinse with clean water.
- Where children will reoccupy the premises, consideration should be given to having a clearance test to ensure lead paint and dust has been thoroughly removed.

### (d) Waste Disposal

- Properly bagged waste containing lead from domestic premises, educational and child care institutions is allowed to be disposed of in a solid waste landfill (EPA Environmental Guidelines Assessment, Classification and Management of Non- Liquid Wastes 1996).
- Construction and demolition waste, particularly timber, bricks and tiles, concrete and other materials need not be disposed of- they can be recycled and resold if segregated properly from hazardous waste contamination. Hazardous and industrial waste containing lead under the Waste Minimisation and Management Regulation 1996 must be licensed. Licensing requirements are based on the generator's assessment of the level of lead present in the waste. The Regulation provides licensing exemptions (clause 4(2)) for certain types of activities and for certain quantities of waste. Waste transporters who transport hazardous or industrial waste in loads of more than 200kg will also need to be licensed.

### Note:

Under Clause 16 and 17 of the Waste Minimisation and Management Regulation, councils have been authorised to enforce generic environment protection requirements over non-licensed lead waste generating premises (that produce less than 10 tonnes per year), non-licensed transporters of hazardous waste (that carry less than 200 kilograms) and transporters of non hazardous waste. These requirements relate to matters such as the keeping of records, mixing of wastes and covering of loads.

# 6.2.2 Removing lead dust

Do-it-yourself removal of lead dust particularly from ceiling cavities, it is not recommended as it is dangerous and requires the use of special equipment such as HEPA vacuum cleaners. It is recommended that a professional experienced in lead-safe work be employed to remove lead dust.

# (a) Preparing the work area

- Develop a simple work plan to help do the job safely, reduce waste and save in time and money.
- Ensure that dust does not enter living areas through the access hole into the ceiling, by laying plastic sheeting under the access hole and covering or moving soft furnishings, curtains, carpets and other household items or covering them with plastic.

## (b) Equipment and practises

#### All workers must:

- Wear an approved (AS1716) respirator fitted with P1 (dust) or P2 (dust & fumes) filters, and coveralls to prevent exposure to lead dust and fumes. Paper filters offer no protection from fine dust.
- Use a high-efficiency particulate air (HEPA) vacuum cleaner.
- Wear protective clothing (long sleeves and pants) that does not catch dust or flakes in pockets or cuffs (or disposable overalls and plastic boots).

### (c) Cleaning up

- Do not sweep- wet wash the entire area with a detergent, such as liquid soap and rinse with clean water.
- Where children will reoccupy the premises, consideration should be given to having a clearance test to ensure lead paint and dust has been thoroughly removed.

### (d) Waste Disposal

- Properly bagged waste containing lead from domestic premises, educational and child care institutions is allowed to be disposed of in a solid waste landfill (EPA Environmental Guidelines Assessment, Classification and Management of Non- Liquid Wastes 1996).
- Hazardous and industrial waste containing lead under the Waste Minimisation and Management Regulation 1996 must be licensed. Licensing requirements are based on the generator's assessment of the level of lead present in the waste. The Regulation provides licensing exemptions (clause 4(2)) for certain types of activities and for certain quantities of waste. Waste transporters who transport hazardous or industrial waste in loads of more than 200kg will also need to be licensed.

## Note:

Under Clause 16 and 17 of the Waste Minimisation and Management Regulation, councils have been authorised to enforce generic environment protection requirements over non-licensed lead waste generating premises (that produce less than 10 tonnes per year), non-licensed transporters of hazardous waste (that carry less than 200 kilograms) and transporters of non hazardous waste. These requirements relate to matters such as the keeping of records, mixing of wastes and covering of loads.

### 6.3 **DEMOLITION**

#### **Lead Paint and Dust**

Demolition of buildings and building components can disturb lead paint and dust and release it into living areas and the outside environment. WorkCover has regulations regarding demolitions- these should be checked by those undertaking demolition.

### (a) Preparing the work area

- Prepare a Work Plan in accordance with the requirements of AS 2601 1991
   The Demolition of Structures and submit it to Council or accredited certifier for consideration.
- Fine mesh dust proof screens containing work areas, wet lead-safe work practises or other appropriate measures of containment are to be employed to prevent hazardous dusts from escaping the site or contaminating the immediate environment.

### (b) Equipment and Practises

- All contractors and employees directly involved in the removal of hazardous dusts and substances must wear protective equipment conforming to AS1716.
- All contractors and employees directly involved in the removal of hazardous dusts and substances must adopt work practises in accordance with WorkSafe requirements (in particular, the WorkSafe Standard for the Control of Inorganic Lead at Work (NOHSC:1012, 1994) and AS2641, 1998).
- Any existing accumulations of dust (in ceiling voids and wall cavities) must be removed by use of an industrial vacuum fitted with a high efficiency particulate air (HEPA) filter and disposed of appropriately.
- All dust on surfaces, in building cavities and dust created by work is to be suppressed by a fine water spray or misting. Water used as a suppressant spray is not to be allowed to enter the street gutter or stormwater drainage.
- Demolition work should not be undertaken during high winds that might cause dust to spread beyond the site boundaries without adequate containment.

### (c) Waste Disposal

- Properly bagged waste containing lead from domestic premises, educational and child care institutions is allowed to be disposed in a solid waste landfill (EPA Environmental Guidelines Assessment, Classification and management of Non-Liquid Wastes 1996).
- Construction and demolition waste, particularly timber, bricks and tiles, concrete and other materials need not be disposed of- they can be recycled and resold if segregated properly from hazardous waste contamination.
- Disposal of lead from hazardous and industrial sites under the Waste Minimisation and Management Regulation 1996 must be licensed. Licensing requirements are based on the generator's assessment of the level of lead present in the waste. The Regulation provides licensing exemptions (clause 4(2)) for certain types of activities and for certain quantities of waste. Waste

transporters who transport hazardous or industrial waste in loads of more than 200kg will also need to be licensed.

### Note:

Under Clause 16 and 17 of the Waste Minimisation and Management Regulation, councils have been authorised to enforce generic environment protection requirements over non-licensed lead waste generating premises (that produce less than 10 tonnes per year), non-licensed transporters of hazardous waste (that carry less than 200 kilograms) and transporters of non hazardous waste. These requirements relate to matters such as the keeping of records, mixing of wastes and covering of loads.

### 6.4 LANDSCAPING AND FILLING

Land can be contaminated from a number of sources, and may result from activities that took place on, or adjacent to, a site. Lead deposited in soil remains there, so even if the activity generating the lead has ended, the lead in the soil may remain unless removed and could be a source of exposure unless covered.

At certain soil levels, depending on a number of factors including whether levels constitute a 'significant risk of harm', it may be possible to leave the soil in place and manage it. A number of management strategies are listed below.

# (a) Preventative or Hazard Reduction Strategies

- Keep soil levels low by preventing contamination through renovation or other activities.
- Establish an effective ground cover and reduce the hazard of windblown contaminated soil.
- Reduce the hazard of contaminated soil by adding 'soil amendments'- organic material and certain fertilisers that can bind lead and reduce its uptake by plants or exposed children or pets.
- Reduce exposure to contaminated soil by introducing a solid barrier such as gravel and paving stones.
- Remove and dispose of contaminated soil and replace the top layer (8 to 15cm) of soil with new (uncontaminated) top soil, clean fill and organic material such as leaf litter.
- Pave or concrete the area to isolate contaminated soil from human contact. Noting information on property files regarding the existence of lead contamination beneath semi-permanent structures such as paving, concrete or buildings should be discussed with Council.
- Reduce the hazard of contaminated soil by roto-tilling (mixing the top layer of soil with the deeper soil which should be less contaminated with lead). However roto-tilling should only be considered when lead levels are only slightly in excess of what is considered acceptable for the particular land use being considered, must only be surface, and should be considered as an alternative solution once. See Contaminated Sites: Guidelines for the Vertical mixing of Soil on Former Broad-Acre Agricultural land (1995).

### (b) Hazardous Reduction Work Practices

- Reduce spreading dust and lead by wetting the soil and equipment before working.
- Ensure that residents, especially children, are away from the area.
- Eat away from the area where work is being done.
- Change outer clothing and shoes before entering the house.

### 6.5 OTHER SOURCES OF INFORMATION

The above section gives guidance on dealing with lead contamination in particular circumstances. The following list provides additional sources of information that should be consulted before carrying out works:

### **Demolition (obtain copies from Standards Australia)**

Australian Standard AS 2601 1991 The Demolition of Structures

### Lead Reference Centre materials (obtain copies from EPA Pollution Line 131555)

- Lead Safe A guide for health care professionals 1997 (booklet)
- Lead safe Fact sheet Lead, your health and the environment 1997 (an accompanying fact sheet in Korean, Vietnamese, Arabic, Chinese, Turkish, Macedonian, Spanish)
- Lead Safe A guide to keeping your family safe from lead 1997 (booklet)
- Lead Safe A renovator's guide to the dangers of lead 1998 (booklet)
- 5 Lead Safe Fact sheets on Old lead paint; Lead in ceiling dust: Lead safe housekeeping; Lead and home renovations.
- Information can also be accesses through the Lead Reference Centre's website http://www.epa.nsw.gov.au/leadsafe

### Occupational Health and Safety (contact NSW WorkCover Authority)

- National Model Regulations for the Control of Workplace Hazardous Substances
- National Code of Practice for the Control of Workplace Hazardous Substances NOHSC:2007 (1994).

Employers and employees should read the Worksafe Standard Control of Inorganic Lead at Work [(NOHSC 1012 (1994))] for requirements and to contact the NSW WorkCover.

### Paint removal Standards (obtain copies from Standards Australia)

- AS4361.1 1995 Guide to Lead Paint management Part 1: Industrial Applications
- AS4361.2 1998 Guide to Lead paint management part 2: Residential and Commercial Buildings
- AS4361.1- 1995 Abrasive blasting

### Personal Protective Equipment (obtain copies from Standards Australia)

- Respirator- Equipment complies with AS1716 and selection, use and maintenance of PPE with AS 1715.
  - Minimum P1 rating for dust and P2 rating for dust and fumes hazards
- Eye protection- Comply with AS 1337 and used with devices as with 1336
- Clothing- Complies with AS 3765
- Head and foot protection- Complies with AS 1801 and 1800, and with AS 2210

### Waste (obtain copies from EPA Pollution Line 131555)

- EPA Environmental Guidelines Assessment, Classification and Management of Non-Liquid Wastes 1996
- A Guide to the Waste Minimisation and Management Regulation 1996 (1996)
- EPA Construction and Demolition Waste Action Plan 1998

### 6.6 COUNCIL POWERS

Councils have significant powers to issue prevention or clean up notices under the Protection of the Environment Operations Act 1997. Council authorised officers can use clean-up or prevention notices to control activities that do not require development consent and are causing lead hazards. Clean-up notices may direct an occupier of premises at or from which the EPA or Council reasonably suspects that a pollution incident has occurred, or a person reasonably suspected of causing or having caused pollution, to take clean up action specified in the notice. Prevention notices can be issued if the EPA or Council reasonably suspects that any activity has been or is being carried on in any environmentally unsatisfactory manner at any premises or by any person. Prevention notices require that action specified in the notice be taken.

# PART 7 - INFORMATION

Council has an important role in supplying the community with information regarding land use history, land contamination and remediation. Council also has a statutory responsibility under s. 59 of the *Contaminated Land Management Act 1997* to include information provided to Council by either the EPA or accredited auditors on certificates issued for the purposes of s. 149 of the Environmental Planning and Assessment Act 1979.

The process of information collection about land contamination is ongoing. Information concerning contaminated land will be added to Council's property information system when rezoning proposals and development applications are processed or when information is provided to Council via other sources.

# 7.1 How is Council's Information managed?

Council's records regarding contamination issues are dynamic and will change over time as land is investigated, remediated and validated. Registers falsely imply comprehensive knowledge of site contamination issues which is unfortunately not possible to have. Standards for remediation may also change over time to accommodate changing community values. For these reasons Council does not hold a register of contaminated sites.

Council's records in relation to site contamination issues are to be kept on individual property files for each parcel of land. To assist Council in the management of land contamination issues the following information is recorded for individual parcels of land:

- Site contamination reports submitted to Council (i.e Preliminary Investigation, Detailed Investigation, Remedial Action Plans, Validation and Monitoring Reports).
- Site Audit Statements received by Council.
- EPA declarations and orders issued under the CLM Act (including voluntary investigation & remediation proposals agreed by the EPA).
- prior notification of category 2 remediation works.
- notification of completion of category 1 and category 2 remediation work.

To further assist Council in managing the above information the electronic property information system will also be updated to ensure efficient identification of affected properties.

To ensure that all information gained through the investigation process is recorded appropriately and the property information system is updated, all land investigation records are to be forwarded to Strategic Environmental Planning Administration. This should be done even if contamination issues do not arise. This information should also be recorded in the assessment report.

# 7.2 Planning Certificates

Under s.149 of the Environmental Planning & Assessment Act 1979, a person may request from Council a planning certificate containing advice on matters about land that are prescribed in the Regulation. One such prescribed matter is the existence of a council policy to restrict the use of land.

## 7.2.1 Section 149(2) Certificates

Section 149(2) certificates issued by Council will contain information on the prescribed matters as listed, where applicable.

Section 59(2) of the *Contaminated Land Management Act, 1997* provides that specific notations relating to contaminated land issues must be included on s. 149 certificates where:

- "(a) the land to which the certificate relates is within an investigation area or remediation site if it is within such an area or site at the date when the certificate is issued,
- (b) the land to which the certificate relates is subject to an investigation or remediation order if it is subject to such an order at that date,
- (c) the land to which the certificate relates is the subject of a voluntary investigation proposal (or voluntary remediation proposal) that is the subject of the EPA's agreement under section 19 (or 26) if it the subject of such a proposal, and the proposal has not been fully carried out, at the date when the certificate is issued,
- (d) the land to which the certificate relates is the subject of a site audit statement if a copy of such a statement has been provided at any time to the local authority issuing the certificate."

As well as containing information on prescribed matters, all s. 149(2) certificates issued by Council will contain the following wording about the existence of a council policy to restrict the use of land:

Leichhardt Municipal Council has adopted by resolution a policy on contaminated land. This policy will restrict development of land:

- (a) which is affected by contamination;
- (b) which has been used for certain purposes;
- (c) in respect of which there is not sufficient information about contamination:
- (d) which is proposed to be used for certain purposes;
- (e) in other circumstances contained in the policy."

### 7.2.2 Section 149(5) Certificates

Information may be provided under s.149(5) even if no restriction is placed on the land. This means that if land has been remediated or investigated and found to be uncontaminated, this information is to be included on Planning Certificates under s.149(5) as factual information about the land.

Accordingly Council will annotate the s.149(5) certificate when it receives information regarding contamination such as

- · the results of any Site Investigations,
- notifications of remediation,
- Site Audit Statements, and
- orders by the EPA under the Contaminated Land Management Act (including any resulting action if the direction has been carried out).

When factual information is known to Council regarding contamination the Section 149(5) Certificate will contain the following comment:

Council or the Environment Protection Authority may have information on the subject site relating to land contamination. Any person relying on this certificate should satisfy themselves that the land is suitable for their intended purposes.

### 7.3 Access to Council Information

There are several parties that may be interested in accessing Council records in relation to land contamination issues including current occupiers of sites, potential purchasers of land, contaminated land consultants and the community.

Council's policy on contaminated land allows enquirers to access information on individual parcels of land in relation to the following:

Type of Information	How to Obtain Information
current and past development, building, subdivision and rezoning proposals.	written request to the Manager Assessments (standard fee applies)
information on reports held by Council in relation to site contamination issues.	written request to Manager, Strategic Environmental Planning (standard fee applies). The written request shall specify what information is requested, who is requesting the information and what is the intended use of the information.
information on whether Council has received any Site Audit Statements	Planning certificate s.149(2) (standard fee applies).
information on whether any declarations or orders have been made, or voluntary proposals agreed to, under <i>CLM Act</i> which have been provided to Council by the EPA	Planning certificate s.149(2) (standard fee applies).
copies of any Site Audit Statements	written request to Manager, Strategic Environmental Planning (standard fee applies)
any other information held by Council (other than stated above) in relation to site contamination issues	written request to Manager, Strategic Environmental Planning (standard fee applies). The written request shall specify what information is requested, who is requesting the information and what is the intended use of the information.

In some circumstances Council may not be able to provide full access to its records held on land contamination issues. These circumstances may include when the information held by Council is subject to legal privilege and when the information requested is intended to be published without prior permission of Council, the current site owner and author of the contamination reports.

# **APPENDIX**

### **TABLE 1: HIGH RISK USES**

acid/alkali plant formulation agricultural/horticultural activities airports asbestos production and disposal chemicals manufacture and formulation defence works drum reconditioning works dry cleaning establishments electrical manufacturing (transformers) electroplating and heat treatment premises engine works explosives industry gas works iron and steel works landfill sites metal treatment mining and extractive industries oil production and storage paint formulation and manufacture pesticide manufacture and formulation power stations railway yards scrap vards service stations sheep and cattle dips smelting and refining tanning and associated trades waste storage and treatment wood preservation

This Table is a guide only – A sites contamination status can only be determined after a review of the site history, and if necessary sampling and analysis.

Source: Managing Land Contamination Planning Guidelines, SEPP 55 – Remediation of Land, 1998., Department of Urban Affairs and Planning & NSW EPA.

# **TABLE 2: SENSITIVE USES**

single dwellings residential flat buildings boarding houses motels backpackers hostel housing for aged and disabled hostels hospitals
institutions
medical clinics
childcare centres
educational establishments
universities
playground, parks, reserves
water parks