

# Contaminated Land Management Policy

<b>Adoption Date:</b>	04/04/1995
<b>Reaffirmed:</b>	09/05/2017
<b>Amendment Date:</b>	28/11/2022
<b>Minute Number:</b>	MIN95.710, MIN13.109, MIN17.378, MIN22.903
<b>Review Date:</b>	01/12/2024
<b>Directorate:</b>	City Development
<b>Record Number:</b>	POL22/45

## Contents

<b>1. Purpose .....</b>	<b>3</b>
<b>2. Statement .....</b>	<b>3</b>
<b>3. Provisions .....</b>	<b>7</b>
3.3 NSW Site Auditors.....	8
3.3.1 NSW Site Auditor Scheme .....	8
3.3.2 When Council Requires a Site Audit .....	8
3.4 Council Records and Community Information.....	9
3.4.1 Management of Council’s information .....	9
3.4.2 Section 10.7 Planning Certificates .....	9
3.4.3 Access to Council Information.....	10
<b>4. Implementation .....</b>	<b>10</b>
<b>5. Review .....</b>	<b>10</b>
<b>Appendices</b>	
Appendix 1 – Activities/industries and contaminants of potential concern .....	12

## 1. Purpose

The purpose of this policy is to provide guidelines and a framework to appropriately manage contaminated lands or potentially contaminated lands from historical and current land uses within the Shoalhaven Local Government Area (LGA) to:

- make sure land use changes or development will not elevate risk to human health or the environment or any environmental receptors through adequate land use planning processes,
- prioritise collaboration with NSW Environment Protection Authority (EPA) to manage and report contaminated land information,
- ensure investigations and remediation are undertaken to an appropriate standard for any contaminants for adherence to relevant land use contamination criteria,
- document the transparency of contaminated land information that is available to enable decision making and to communicate requirements to the community,
- prevent and minimise the potential for contamination,
- consider the potential for land to be contaminated when assessing and determining development applications,
- consider the potential for land to be contaminated when preparing planning proposals for rezoning.

## 2. Statement

### 2.1 Scope

Contaminated land is land on which a substance occurs at concentrations above background levels which cause, or is likely to cause, a risk of harm to human health or the environment.

Historically land uses and other activities have been carried out without adequate controls or understanding of the potential impacts of substances used in relation to those land uses. Accordingly, there exists a legacy of contamination that is just not limited to the land which activities were undertaken. Soil, ground water and air quality can also be impacted on by chemicals and substances from past land uses and these substances can move from a contaminated site to adjoining land. In recent years this legacy of contamination has been recognised through legislative controls for Government and industry. These controls serve to understand potential risks to human health and the environment and how these risks will be managed for future uses of the land.

Activities and industries considered likely to cause contamination, together with their likely contaminants of potential concern, are listed in Appendix 1. Examples include, but are not limited to:

- Agricultural/horticultural – fertilisers (calcium phosphate, calcium sulfate, nitrates, ammonium sulfate, carbonates, potassium, copper, magnesium, molybdenum, boron, cadmium, arsenic).
- Defence works - Hydrocarbons, Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS), asbestos.
- Industrial (e.g., engine works) – Hydrocarbons, metals, solvents, acids/alkalis refrigerants.
- Service stations and fuel storage facilities – Aromatic hydrocarbons, BTEX (i.e., benzene, toluene, ethylbenzene, xylenes, naphthalene).

This policy forms the basis for the management of contaminated and potentially contaminated land within Shoalhaven City Council. The policy is formulated in accordance

## Contaminated Land Management Policy

with the [NSW Contaminated Land Planning Guidelines](#) (Planning Guidelines) and *State Environmental Planning Policy (Resilience and Hazards) 2021* (RHSEPP) in order to implement a contaminated land management framework. It applies to both public and private land in the Shoalhaven Local Government Area (LGA).

Shoalhaven City Council must consider the potential for land to be contaminated when proposing land use changes (including changes to permitted land uses or planning proposals through rezoning) and when assessing development applications. Furthermore, contaminated land management also need to be considered for Council activities as a key component of environmental due diligence processes. Council's contaminated land management functions are summarised in Table 1.

Table 1- Council planning functions and decisions to be made in relation to contaminated land management

Planning function	Decisions to be made
Preparing a planning proposal for zoning/rezoning, or preparing a state environmental planning policy that will affect a rezoning or otherwise permit a change in land use	Is the land suitable or can it be made suitable for the uses permitted in the new zone?
Preparing a development control plan (DCP)	Are provisions required to identify the need to consider contamination (current and historical)?
Assessing and determining a development application under Part 4, or application under Part 5.1, of the Environmental Planning and Assessment Act 1979 (NSW) (EP&A Act).	Is the land suitable, or can and will it be made suitable, for the proposed development (through the incorporation of appropriate mitigation measures and conditions of consent)?
Modifying a development consent or other approval	Will the proposed modification affect the suitability of the land for existing and future proposed use/s?

In accordance with the requirements of the Planning Guidelines and RHSEPP, this policy provides the framework for the integration of contaminated land management into the planning and development process, and aims to achieve this by:

- Maintaining a database of contaminated and potentially contaminated land and recording any relevant information on site investigations, remediation or site audits undertaken in the Shoalhaven LGA; and
- Ensuring information provided by the EPA for [Notified Sites](#), the [Contaminated Land Record](#) and the [record of notices](#) information are held in Shoalhaven City Council's Potentially Contaminated Land database (PCL Database) and are noted on any relevant section 10.7 (2) and 10.7(5) Planning Certificate (under the EP&A Act) including advice that further information is available from Council; and
- Ensuring appropriate consideration of contamination issues is made during rezoning and development assessment processes, including:
  - i. identification of the presence of, or potential for, contamination on the land.
  - ii. consideration of the outcomes of any site investigation or contamination study.
  - iii. consideration of any remediation or abatement that has occurred on the land; and
  - iv. provide information to support decision making and inform the community through appropriate education material and a formal communications strategy (if required) to translate the policy.

## 2.2 Legislative Framework

The NSW Government has established a detailed framework for contaminated land management (Table 2).

Table 2- Legislation and policy relevant to contaminated land management

Legislation and Policy	Purpose
<i>Contaminated Land Management Act 1997 (CLM Act)</i>	Establishes a process for the investigation and remediation of sites that pose a significant risk to human health or the environment. It also assesses the operation of the NSW Site Auditor Scheme and aligns penalty amounts for offences under the <a href="#">CLM Act</a> . The NSW Environment Protection Authority (EPA) is responsible for the regulation of sites declared under the CLM Act.
EP&A Act	10.7 Planning Certificate - is a certificate under Section 10.7 of the EP&A Act.  Planning Certificates give information on the development potential of a parcel of land including contaminated land status and associated restrictions.
<i>State Environmental Planning Policy (Resilience and Hazards) 2021 (RHSEPP) - consolidates and repeals the provisions of SEPP 55 – Remediation of Land (SEPP 55)</i>	The RHSEPP is an Environmental Planning Instrument (EPI) that sets out matters that must be considered by Councils and other planning agencies when considering development applications and rezoning decisions. This may include, but not be limited to, Chapter 4 - Remediation of land.
<a href="#">NSW EPA Consultants reporting on contaminated land – Contaminated Land Guidelines</a>	Where circumstances indicate contamination may be present which may require remediation to make the land suitable for a particular use, the following may be required: <ul style="list-style-type: none"> <li>• Preliminary Site Investigation (PSI) – including a conceptual site model</li> <li>• Detailed Site Investigation (DSI)</li> <li>• Remedial Action Plan (RAP)</li> <li>• Site Validation Report (SVR)</li> <li>• Site Audit Statement (SAS)</li> <li>• Environmental Management Plan (EMP)</li> </ul>

Legislation and Policy	Purpose
<p><i>National Environment Protection (Assessment of Site Contamination) Measure 1999 as amended 2013 (ASC NEPM).</i></p>	<p><a href="#">National framework</a> endorsed by NSW EPA for assessing site contamination.</p> <p>Schedule B7 – Guidelines on derivation of health-based investigation levels - sets the relevant Health Investigation Levels (HILs) for potential contaminants of concern specific for the land use (Refer Appendix 1 – Activities/industries and contaminants of potential concern).</p> <p>Provides remediation hierarchy adopted by NSW EPA:</p> <ul style="list-style-type: none"> <li>• On-site and off-site treatment</li> </ul> <p>If treatment is not practicable, then:</p> <ul style="list-style-type: none"> <li>• On-site containment, and</li> <li>• Off-site disposal</li> </ul> <p>Management strategy must be devised where remediation would result in no net environmental benefit.</p> <p>Land use scenarios:</p> <ol style="list-style-type: none"> <li>A. Residential with garden/accessible soil, includes childcare, preschools, primary school</li> <li>B. Residential with minimal soil access</li> <li>C. Public open space (parks, playgrounds, playing fields, includes secondary schools and footpaths</li> <li>D. Commercial/industrial, includes shops, offices, factories, industrial sites</li> </ol>

## 2.3 EPA responsibilities

The EPA regulates sites that are significantly contaminated under the CLM Act and maintains a record of sites, notified to the EPA as potentially contaminated and a record of notices issued for contaminated land.

### 2.3.1 Notified Sites

The list of notified sites contain land that has been notified to the EPA as being potentially contaminated. The list states whether the land is regulated under the CLM Act.

If land is declared as 'significantly contaminated', it is regulated under the CLM Act and will receive notices relating to the management of this contamination. These notices are published on the record of notices for public view.

### 2.3.2 Record of Notices

The EPA triggers assessment and remediation of significantly contaminated land by sending written notices to those responsible for cleaning up the contamination. The EPA makes these notices, which includes preliminary investigation orders, available to the public through the record of notices. If land is declared as 'significantly contaminated', it is regulated under the CLM Act and will receive notices relating to the management of this contamination.

## **2.4 Council - Potentially Contaminated Land register (PCL)**

Sites that are contaminated or potentially contaminated but not declared as significantly contaminated are managed by Council under the provisions of the EP&A Act, in accordance with the RHSEPP and the Planning Guidelines.

The landowner is responsible for ensuring that their land is managed in accordance with the *Protection of the Environment Operations Act 1997* (POEO Act), CLM Act and relevant workplace health and safety legislation. If contamination is encountered at a site, section 60 of the CLM Act outlines the requirements for reporting contamination – duty to report.

## **3. Provisions**

### **3.1 Council's decision-making processes**

In determining all rezoning, subdivision and development applications, Council must consider the possibility of land contamination and the implications it has for any proposed or permissible future uses of the land. A precautionary approach will be adopted to ensure that any land contamination issues are identified and dealt with early in the planning process.

#### **3.1.1 Initial Evaluation**

Council will conduct an initial evaluation as part of the development assessment process to determine whether contamination is or has been an issue, and whether sufficient information is available for Council to carry out its planning functions with due diligence. The initial evaluation will be based on information available to Council such as Council's PCL database, previous investigations about contamination on the land, previous zoning and uses of the subject land, and restrictions relating to possible contamination such as notices listed in the Contaminated Land Record of Notices. Council may also conduct a site inspection of the subject land.

#### **3.1.2 Zoning, Rezoning and Development Applications**

In assessing zoning, rezoning and development applications, Council is required under the RHSEPP to consider contamination issues (including when Council is the proponent of the rezoning). Section 4.15 of the EP&A Act requires Council to consider "the suitability of the site for the development" when assessing development applications. The risk from contamination to health and the environment is included in this assessment.

Section 4.6 of the RHSEPP outlines that Council will not consent to the carrying out of any development on land unless certain factors are taken into consideration and outlines when Council will require a preliminary investigation to be submitted with subdivision or development applications in accordance with the Planning Guidelines. Council will also require a detailed investigation if Council has reasonable grounds to believe the land or land adjacent to the proposed site may be contaminated because of the land's history, condition, or other information known to Council and prior to determining zoning, rezoning or development applications.

#### **3.1.3 Reporting requirements for contaminated land**

Investigations should be prepared in accordance with the RHSEPP the associated Planning Guidelines, this Policy, any other relevant Council Policies, and any relevant guidelines made under or endorsed by the EPA under the CLM Act. The NSW EPA has prepared a specific guideline, [NSW EPA Consultants reporting on contaminated land – Contaminated Land Guidelines](#) to assist consultants in preparing reports to investigate whether land is

contaminated and the clearly defined stages of reporting on land that may be contaminated. This provides a robust basis for decisions or actions relating to the land concerned.

For land that has been the subject of an EPA management order, or an approved voluntary management proposal, and in accordance with Section 29 of the CLM Act 1997, the EPA may, under section 88E of the *Conveyancing Act 1919* impose restrictions on the use of, or impose public positive covenants on, any land to which this section applies for the purpose of the ongoing management of the land and may release or vary any such restriction or Covenant.

### **3.2 Council's Requirements for Remediation**

The RHSEPP specifies when consent is required, and when it is not required, for remediation work.

#### **3.2.1 Category 1 & Category 2 Remediation Work**

Category 1 and Category 2 remediation work is defined in Chapter 4 - Remediation of land of the RHSEPP. Category 1 is remediation work needing consent and Category 2 is remediation not needing consent.

The RHSEPP outlines the requirements for notification and submission of reports required to Council. The Planning Guidelines outline in detail the decision-making process for determining Category 1 or Category 2 remediation works and provides guidance for reporting and investigations.

### **3.3 NSW Site Auditors**

#### **3.3.1 NSW Site Auditor Scheme**

Site Auditors are experts who can provide an independent review of the work of a primary consultant for all types of contaminated sites. Part 4 of the CLM Act allows the EPA to accredit suitably qualified and experienced individuals as site auditors.

All Council requests for an independent review or site audit must be performed by an EPA accredited auditor for contaminated land. An up-to-date list of EPA accredited auditors can be obtained on the EPA's web page [Site Auditors](#) or by phoning the EPA's "Pollution Line" on 131 555. The EPA have also prepared [Guidelines for the NSW Site Auditor Scheme](#).

#### **3.3.2 When Council Requires a Site Audit**

Council may request a site audit to be undertaken at any or all stages in the site investigation process. In accordance with the Planning Guidelines, Council will require a site audit prepared by an NSW EPA accredited site auditor for contaminated or potentially contaminated land if Council:

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

The role of an EPA accredited site auditor is very important in decision making by Council. For example, if land with a known or suspected history of potentially contaminating activities is planned to be redeveloped for a more 'sensitive' use, such as residential. Site auditors can



provide increased certainty to Council of the nature and extent of contamination and the suitability of a site for a specific use.

The proponent will be informed by Council if a site audit is required after Council has conducted a review of the contamination reports and associated documents (e.g., development application) submitted to Council. The proponent is responsible for engaging an EPA accredited site auditor for contaminated land to perform a site audit. In addition, the proponent is responsible for all costs borne in engaging an EPA accredited site auditor for contaminated land.

### **3.4 Council Records and Community Information**

Council has a statutory responsibility under section 59 of the CLM Act to include information provided to Council by either the EPA or accredited auditors on planning certificates issued for the purposes of section 10.7 of the EP&A Act. Council's PCL Database is updated when information concerning land use history, land contamination and remediation via development and subdivision applications or when information is provided to Council via other sources.

#### **3.4.1 Management of Council's information**

The PCL Database will record details of any site remediation or abatement that has been undertaken, validation records, and audits of remediation work as required by the Planning Guidelines. Information regarding individual properties will be recorded in the PCL Database. Any enquiries associated with a property should be checked against information contained within the PCL Database.

Council will only delete a file or remove a reference to a potentially contaminating land use from its property information system in the following circumstances:

- New and independent information is provided that confirms the potentially contaminating activity did not occur on the property; and/or
- New information is provided that confirms that the activity carried out on the property was not a potentially contaminating activity; and/or
- Where the site has been potentially contaminated by an activity on a neighbouring property, new investigations confirm that the land was not impacted by the neighbouring land use.

If a property has been remediated, it will remain on the PCL Database to provide adequate information of the site history, and also due to the fact that only partial remediation may have occurred, or an encapsulation methodology may have been adopted under the guidance of an EPA accredited site auditor.

#### **3.4.2 Section 10.7 Planning Certificates**

Under section 10.7 of the EP&A Act, a person may request from Council a planning certificate containing advice on matters about land which are prescribed in the *Environmental Planning and Assessment Regulation 2021*. One such prescribed matter is the existence of a Council policy to restrict the use of land. Section 10.7 planning certificates issued by Council will not contain specific details of site contamination or potential site contamination for individual parcels of land unless the land, or part of the land is significantly contaminated.

Section 59(2) of the CLM Act provides that specific notation relating to contaminated land issues must be included on section 10.7 certificates. As well as containing information on

prescribed matters, all section 10.7 certificates issued by Council will contain a notation informing of the existence of this policy to restrict the use of land.

### 3.4.3 Access to Council Information

Council's policy on contaminated land allows enquirers to access information on individual parcels of land in relation to the following – refer to Table 3:

Table 3 – Dissemination methods of contaminated land information

Type of Information	How to Obtain Information
Current and past development, building, subdivision and rezoning requests.	Written request to the Council in accordance with the access provisions of the <i>Government Information (Public Access) Act 2009</i> . Fees and charges apply
Information on reports held by Council in relation to site contamination issues.	Written request to the Council in accordance with the access provisions of the <i>Government Information (Public Access) Act 2009</i> . Fees and charges apply in accordance with Councils Schedule of Fees & Charges.
Information on any restrictions placed on the land	Section 10.7 Planning certificates
Information on whether any declarations or orders made, or voluntary proposals agreed to under CLM Act have been provided to Council by the EPA or whether Council has received any Site Audit Statements	Section 10.7 Planning certificate
Copies of any Site Audit Statements	Written request to the Council in accordance with the access provisions of the <i>Government Information (Public Access) Act 2009</i> . Fees and charges apply
Any other information held by Council (other than stated above) in relation to site contamination issues	Written request to the Council in accordance with the access provisions of the <i>Government Information (Public Access) Act 2009</i> . Fees and charges apply

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, copyright restrictions or where there is an overriding public interest against disclosure of information. Further enquiries regarding access to records held by Council should be directed to Councils Information Officer.

## 4. Implementation

The City Development Directorate (Environmental Services) will administer this policy.

## 5. Review

The Environmental Services Department will review this policy within one year of the election of a new Council.

**APPENDIX 1: ACTIVITIES/INDUSTRIES AND CONTAMINANTS OF POTENTIAL CONCERN**

Adapted from [NSW Contaminated Land Planning Guidelines](#)

Activities/industries	Contaminants of potential concern
Agricultural/horticultural	Refer Fertiliser, Insecticides, Fungicides and Herbicides under 'Chemicals manufacture and use'
Airports	Hydrocarbons (aviation fuels, Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) Metals (aluminium, magnesium, chromium)
Asbestos production and disposal	Asbestos containing materials (ACM)
Battery manufacture and disposal	Metals (lead, manganese, zinc, cadmium, nickel, cobalt, mercury, silver) Acids (sulfuric acid)
Breweries/distilleries	Alcohol (ethanol, methanol, esters)
Chemicals	Acid/alkali manufacture and use (Mercury, chlorine (chloralkali process), sulfuric, hydrochloric and nitric acids, sodium and calcium hydroxides)
	Adhesives/resins (Polyvinyl acetate, phenols, formaldehyde, acrylates, phthalates)
	Dyes (Chromium, titanium, cobalt, sulfur and nitrogen organic compounds, sulfates, solvents)
	Explosives (Acetone, nitric acid, ammonium nitrate, pentachlorophenol, ammonia, sulfuric acid, nitroglycerine, calcium cyanamide, lead, ethylene glycol, methanol, copper, aluminium, bis(2-ethylhexyl) adipate, dibutyl phthalate, sodium hydroxide, mercury, silver)
	Fertiliser (Calcium phosphate, calcium sulfate, nitrates, ammonium sulfate, carbonates, potassium, copper, magnesium, molybdenum, boron, cadmium, arsenic)
	Flocculants (Aluminium)
	Foam production (Urethane, formaldehyde, styrene)
	Paints Heavy metals (Arsenic, barium, cadmium, chromium, cobalt, lead, manganese, mercury, selenium, zinc, titanium)

## Contaminated Land Management Policy

Activities/industries	Contaminants of potential concern
Chemicals (continued)	Solvents (Toluene oils either natural (e.g., pine oil) or synthetic, hydrocarbons)
	Pesticides Active ingredients (Arsenic, lead, organochlorines, organophosphates, sodium tetraborate, carbamates, sulfur, synthetic pyrethroids) Solvents (Xylenes, kerosene, methyl isobutyl ketone, amyl acetate, wide range of chlorinated solvents)
	Pharmaceutical Solvents (Acetone, cyclohexane, methylene chloride, ethyl acetate, butyl acetate, methanol, ethanol, sopropanol, butanol, pyridine methyl ethyl ketone, methyl isobutyl ketone, tetrahydrofuran)
	Photography (Hydroquinone, sodium carbonate, sodium sulfite, potassium bromide, monomethyl para-aminophenol sulfate, ferricyanide, chromium, silver, thiocyanate, ammonium compounds, sulfur compounds, phosphate, phenylene diamine, ethyl alcohol, thiosulfates, formaldehyde)
	Plastics (Sulfates, carbonates, cadmium, solvents, acrylates, phthalates, styrene)
	Rubber (Carbon black)
	Soap/detergent General (Potassium compounds, phosphates, ammonia, alcohols, esters, sodium hydroxide, surfactants (sodium lauryl sulfate), silicate compounds) Acids (Sulfuric acid and stearic acid) Oils (Palm, coconut, pine, tea tree)
	Solvents General (Ammonia) Hydrocarbons (e.g., BTEX (benzene, toluene, ethylbenzene, xylenes)) chlorinated organics (e.g., tetrachloroethene (perchloroethylene) trichloroethene, trichloroethane, dichloroethane, carbon tetrachloride, methylene chloride)
Infrastructure Depots (e.g., Council, Railways, Electricity)	Hydrocarbons, Polycyclic aromatic hydrocarbons (PAH), ACM, heavy metals, pesticides, herbicides, PFAS

## Contaminated Land Management Policy

Activities/industries	Contaminants of potential concern
Defence works	Hydrocarbons, PFAS, asbestos, see Explosives under 'Chemicals manufacture and use'; also 'Foundries', 'Engine works' and 'Service stations
Drum reconditioning	Refer 'Chemicals manufacture and use'
Dry cleaning	Tetrachloroethene (perchloroethylene), Trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, white spirit (mixed hydrocarbons)
Electrical (substations, overhead conductors and underground cables)	Polychlorinated Biphenyls (PCBs) (transformers and capacitors), chromium, arsenic, solvents, tin, lead, mercury, PFAS, termiticides (e.g., pigment emulsified creosote).
Engine works	Hydrocarbons Metals, Solvents, Acids/Alkalis Refrigerants (Chlorofluorocarbons, hydro chlorofluorocarbons, hydrofluorocarbons) Antifreeze (Particularly aluminium, manganese, iron, copper, nickel, chromium zinc, cadmium and lead and oxides, chlorides, fluorides and sulfates of these metals)
Foundries	Metals (Particularly aluminium, manganese, iron, copper, nickel, chromium zinc, cadmium and lead and oxides, chlorides, fluorides and sulfates of these metals)
Gas works	Inorganics (ACM, ammonia, cyanide, nitrate, sulfide, thiocyanate, aluminium, antimony, arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, vanadium, zinc) Organics (BTEX, phenolics, PAHs and coke)
Hospitals	Waste (Asbestos, Various) Radioactive Materials (Diagnostic and therapeutic isotopes)
Iron and steel works	BTEX, phenolics, PAHs, metals and oxides of iron, nickel, copper, chromium, magnesium, manganese and graphite
Landfill sites	Methane, carbon dioxide, ammonia, sulfides, heavy metals, organic acids, hydrocarbons, asbestos, Organophosphorus and Organochlorine Pesticides
Marinas	See 'Engine works 'and Electroplating metals under 'Metal treatments' Antifouling paints (Copper, tributyltin (TBT))

## Contaminated Land Management Policy

Activities/industries	Contaminants of potential concern
Metal treatments	Electroplating Metals (Nickel, chromium, zinc, aluminium, copper, lead, cadmium, tin) Acids (Sulfuric, hydrochloric, nitric, phosphoric) General (Sodium hydroxide, 1,1,1-trichloroethane, tetrachloroethylene, toluene, ethylene glycol, cyanide compounds) Liquid carburizing baths (Sodium, cyanide, barium, chloride, potassium chloride, sodium chloride, sodium carbonate, sodium cyanate)
Mining and extractive industries	Arsenic, mercury and cyanides and also explosives under 'Chemicals manufacture and use' Aluminium, arsenic, copper, chromium, cobalt, lead, manganese, nickel, selenium, zinc and radioradionuclides The list of heavy metals should be decided according to the composition of the deposit and known impurities
Power stations	Asbestos, PCBs, fly ash metals, water treatment chemicals
Printing shops	Acids, alkalis, solvents, chromium, trichloroethene, methyl ethyl ketone Refer also Photography under 'Chemicals manufacture and use'
Research Institutions	Various depending on nature of work being carried out. A case specific evaluation is required.
Railway yards	Hydrocarbons, asbestos, arsenic, phenolics (creosote), heavy metals, nitrates, ammonia
Scrap yards	Hydrocarbons, metals, solvents, asbestos
Service stations and fuel storage facilities	Aromatic hydrocarbons BTEX (i.e., benzene, toluene, ethylbenzene, xylenes, naphthalene) PAHs Phenols Lead
Sheep and cattle dips	Arsenic, organochlorines, organophosphates, carbamates, synthetic pyrethroids
Smelting and refining	Metals, fluorides, chlorides and oxides of copper, tin, silver, selenium, lead and aluminium
Tanning and associated trades	Metals (Chromium, manganese, aluminium) General (Ammonium sulfate, ammonia, ammonium nitrate, arsenic phenolics, formaldehyde, sulfide, tannic acid)

## Contaminated Land Management Policy

Activities/industries	Contaminants of potential concern
Water and sewage treatment plants	Aluminium, arsenic, cadmium, chromium, cobalt, lead, nickel, fluoride, lime, zinc
Wood preservation	Chromium, copper, arsenic, naphthalene, ammonia, pentachlorophenol, dibenzofuran, anthracene, biphenyl, ammonium sulfate, quinoline, boron, creosote, organochlorine pesticides