

## 9. HAZARDOUS SUBSTANCES AND CONTAMINATED LAND

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## 9.1 PURPOSE OF THE HAZARDOUS SUBSTANCES PROVISIONS

The *Council* has a duty under section 31 of the *RMA* to "control any actual or potential effects of the use, development or protection of land including ... (ii) the prevention or mitigation of any adverse effects of the storage, use, disposal or transportation of hazardous substances".

In addition to the provisions of *the Plan* dealing with *hazardous substances* the following must also be adhered to:

- a) The relevant rules and provisions of Bay of Plenty Regional Council Regional Planning documents;
- b) Regulations for *hazardous substances* under the Hazardous Substances and New Organisms Act 1996 (HSNO Act), administered primarily by the Environmental Risk Management Authority and the Department of Labour.

Where necessary, more stringent measures than those required under the provisions of the HSNO Act may be imposed to manage the risk to more sensitive *environments*.

## 9.2 Objectives and Policies: Hazardous Substances

### 9.2.1 General Objectives and Policies for Hazardous Substances

#### 9.2.1.1 Objective - Prevention or Mitigation of Adverse Environmental Effects and Minimisation of Risk

Adverse environmental effects and/or risks to human health, property and/or the receiving *environment* associated with facilities and activities involving the manufacture, storage, use, transportation and/or disposal of *hazardous substances* are prevented or mitigated.

##### 9.2.1.1.1 Policy - Location of Hazardous Facilities

By ensuring that facilities involving the manufacture, storage, use, disposal and transportation of *hazardous substances* are located so the risk to the wider *environment* is prevented or mitigated. In particular, facilities should avoid locating adjacent to water bodies, residential areas or other sensitive receiving *environments* unless the potential adverse effects of any failure of the facility, storage device or systems can be avoided.

##### 9.2.1.1.2 Policy - Design and Management of Hazardous Facilities

By ensuring that facilities involving the manufacture, storage, use, disposal or transportation of *hazardous substances* are designed, constructed and managed to prevent or mitigate adverse environmental effects and minimise risks to the *environment*.

##### 9.2.1.1.3 Policy – Risk Management

By ensuring that all *hazardous substances facilities* have emergency contingency plans or strategies capable of avoiding, remedying or mitigating adverse environmental effects upon failure of the facility, primary storage device or accidental spill or release during handling or transfer.

#### **9.2.1.1.4 Policy - Storage and Use of Hazardous Substances**

By ensuring that the storage or use of *hazardous substances* does not result in cumulative adverse effects, particularly through increased risk to the natural or physical *environment*, or to the safety, health or well-being of people and communities.

#### **9.2.1.1.5 Policy - Management of Hazardous Substances within Height Area 1 at the Port of Tauranga**

By ensuring that transitional storage of *hazardous substances* within the Port of Tauranga operational area is managed to prevent or mitigate adverse environmental effects and/or risks to human health, property and/or the receiving *environment*, while recognising the complexity of port operations.

## 9.3 Activity Status Rules: Hazardous Substances

### 9.3.1 Assessment Procedures

All new or significantly modified *hazardous substance facilities* (except those exempt under *Table 9.3B*, and *Rule 9.4.2*) shall be assessed in accordance with *Appendix 9A: Hazardous Facility Screening Procedure (HFSP)* of the Plan.

*Note: Significantly modified hazardous substance facilities are those which are outside the 'existing use rights' provisions of section 10 of the RMA. Any proposed modification of a lawfully established hazardous substance facility (in quantity, type, or use) must be considered against section 10 of the RMA to determine whether a full HFSP assessment is required.*

**Table 9.3A: Consent Status Matrix for the City (Effects Ratio) Based on HFSP Results**

Zone	Permitted	Restricted Discretionary	Discretionary
Commercial	< 0.3	0.3 - 0.5	> 0.5
Industry, Tauriko Industry	< 1.0	1.0 - 1.5	> 1.5
Port Industry	< 1.0	1.0 - 2.0	> 2.0
Residential	≤ 0.05		> 0.05
Rural-Residential	≤ 0.05		> 0.05
Greenbelt	≤ 0.2		> 0.2
Rural	≤ 0.2		> 0.2
Open Space, Conservation	≤ 0.05		> 0.05
Rural and Urban Marae Community	≤ 0.05		> 0.05
Education Centre	≤ 0.05		> 0.05

**Table 9.3B: Activities Exempt in all Plan Zones from Undertaking an HFSP Assessment to Determine Consent Status**

Symbols used in *Table 9.3B* have the meaning described in *Table 1B: Activity Status*.

Use/Activity	Relevant Rule	Activity Status
Domestic-scale use of <i>hazardous substances</i> associated with a permitted <i>residential activity</i> .	9.4.2.1	P
Facilities and <i>structures</i> for the transmission and distribution of natural gas.	9.4.2.1	P
Sealed or self-contained electrical equipment.	9.4.2.1	P
Sealing of vehicle parking, loading, maneuvering, access areas, road carriageways and footpaths.	9.4.2.1	P

Use/Activity	Relevant Rule	Activity Status
The <i>retail</i> sale and storage of petrol, diesel, and LPG.	9.4.2.1	P
The storage, use, disposal and transportation of <i>agricchemicals</i> on land used for <i>primary production</i> .	9.4.2.1	P
The storage, use, transportation or disposal of <i>hazardous substances</i> in the Port Operational Area of the Port Industry Zone.	9.4.2.2	P

## 9.4 Permitted Activity Rules: Hazardous Substances

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*Note: Any activity that does not comply with a Permitted Activity Rule shall be considered a Restricted Discretionary Activity, unless stated otherwise.*

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### 9.4.1 Activities Required to Complete an HFSP Assessment

Any individual activity which involves the storage, use, transportation or disposal of *hazardous substances* in accordance with *Appendix: HSNO Classification for Assistance in Rating of Hazardous Substances in the HFSP* that has an effects ratio below that for Commercial, Industry, Tauriko Industry and Port Industry zones; or equal or below that for other zones as specified for the particular zone in which it proposes to locate (*Table 9.3A: Consent Status Matrix for the City (Effects Ratio) Based on HFSP Results*) is a Permitted Activity.

### 9.4.2 Activities Exempt from Completing an HFSP Assessment

#### 9.4.2.1 Storage, Use, Transportation or Disposal of Hazardous Substances

Any individual activity which involves the storage, use, transportation or disposal of *hazardous substances* in accordance with *Appendix 9.B: HSNO Classification for Assistance in Rating of Hazardous Substances in the HFSP* that complies with any one of the following is a Permitted Activity:

- a) Involves the *retail* sale and storage of:
  - i) Petrol (up to 100,000 litres of storage in underground tanks);
  - ii) Diesel (up to 50,000 litres of storage in underground tanks)so long as it complies with the *Code of Practice for Design, Installation and Operation of Underground Petroleum Storage Systems: 1992, and Supplement 1 – 1995*.
- b) Involves the *retail* sale and storage of LPG (up to 6 tonnes single-vessel storage) that complies with:
  - i) *AS/NZS 1596: 2008 LP Gas Storage and Handling*;
  - ii) The Hazardous Substances and New Organisms Act 1996 (HSNO Act).
- c) Involves the storage, use, disposal and transportation of *agricultural chemicals* on land used for *primary production* that complies with:
  - i) *NZS8409:2004 Management of Agricultural Chemicals*;
  - ii) The HSNO Act.
- d) Can be classed as domestic-scale use associated with a permitted *residential activity* and:
  - i) Is for a *hazardous substance* listed in *Appendix: Domestic Scale Quantity Based Hazardous Substances Table*;
  - ii) The quantity does not exceed the specified Domestic-Scale Trigger Level in *Appendix 9.C: Domestic Scale Quantity Based Hazardous Substances*.
- e) Involves facilities and *structures* for the transmission and distribution of natural gas.

- f) Involves the sealing of vehicle parking, loading, manoeuvring and access areas, and road carriageways and footpaths using penetration-grade bitumen cut back with kerosene and the application of coverstone.
- g) Involves sealed or self-contained electrical equipment containing less than 1,000 litres of oil.

### 9.4.2.2 Port Operational Area of the Port Industry Zone

Any individual activity in the Port Operational Area of the Port Industry Zone, being the area delineated as Height Area 1 in *Appendices 18.A and 18.B: Port Industry Zone Height Areas* which involves the storage, use, transportation or disposal of *hazardous substances* in accordance with *Appendix 9.B: HSNO Classification for Assistance in Rating of Hazardous Substances in the HFSP* that complies with any one of the following is a Permitted Activity:

- a) The *transit storage of hazardous substances* provided they comply with the Hazardous Substances Site Management Plan. The Hazardous Substances Site Management Plan is to meet the following requirements and applies to all transit *hazardous substance* activities:
  - i) Coverage of all *hazardous substances* that are in transit only (including containerised, bulk, or break bulk) within the Port Operational Area delineated as Height Area 1 in *Appendix 18B: Port Industry Zone Height Areas*;
  - ii) Storage and handling of radioactive substances must be approved under the Radiation Protection Act 1965 and associated regulations;
  - iii) Compliance with the HSNO Act and associated regulations;
  - iv) Coverage of all operators within the Port Operational Area, including any contractors and lessees;
  - v) Best industry practice determined in consultation with relevant stakeholders; and inclusion of any additional matters as the Port of Tauranga and the *Council* agree should be included in the Hazardous Substances Site Management Plan;
  - vi) Reviewed regularly, at least 3-yearly, to address changes in operational port practices or industry standards/codes of practice, and to report on any accidents and incidents related to the transit of *hazardous substances* through the Port Operational Area. The review is to identify proposed amendments to the Hazardous Substances Site Management Plan for future management and mitigation measures associated with transit of *hazardous substance* activities. The results of the review are to be submitted to *Council* for written approval by 1 April in the year of the triennial review.
- b) The use and storage of petrol or diesel where storage is up to 50,000 litres in above-ground tanks, provided the installations comply with the HSNO Act and associated regulations and codes of practice.

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*Note: Activities that may be exempted under Rule 9.4.2 - Activities Exempt from Completing an HFSP Assessment are also subject to the Permitted Activity Rules of each zone of the Plan.*

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### 9.4.3 General Site Design

- a) Any part of a *site* where *hazardous substances* are used, stored, manufactured, mixed, packaged, loaded, unloaded or otherwise handled shall be designed, constructed and managed to prevent any adverse effects of the intended use from occurring outside the area where the particular activity is to be carried out;
- b) All stormwater grates on the *site* shall be clearly labelled "STORMWATER ONLY".

### 9.4.4 Spill Containment System

- a) Any part of the site, including vehicle accessways, where *hazardous substances* are used, stored, manufactured, mixed, packaged, loaded, unloaded, or otherwise handled shall be served by a spill containment system:
  - i) Constructed from impervious materials resistant to the *hazardous substances*;
  - ii) Able to contain the maximum volume of the largest tank used, or where drums or other containers are used, able to contain half the maximum volume of substances stored;
  - iii) Able to prevent any spill or other unintentional release of *hazardous substances* (including waste), and any stormwater and/or firefighting water that has become contaminated from discharging into or on to land and/or water (including stormwater, groundwater and potable water supplies), unless the discharge is permitted by a rule in a Regional Plan or Proposed Regional Plan or by a resource consent;
  - iv) Provided with a release mechanism for the drainage of the bunded areas that is secured to prevent unintentional release of contaminants into stormwater;
  - v) Maintained to ensure it remains effective in the event of a spill.
- b) The collection of *hazardous substances* for disposal or subsequent use shall be in suitable containers that seal and contain the substances in a safe location as defined in *Rule 9.4.4 a) – Spill Containment System*.

### 9.4.5 Washdown Areas

Any part of a *site* where washing of vehicles, equipment or containers which have or may have been contaminated shall be designed, constructed and managed to prevent the effluent from the washdown area from:

- a) Entering or discharging into the stormwater or sewerage network, unless pursuant to a trade wastes consent;
- b) Discharging on to land and/or into water (including groundwater and potable water supplies) unless the discharge is permitted by a rule in a Regional Plan or Proposed Regional Plan or by resource consent.

### 9.4.6 Underground Storage Tanks

Underground tanks for the storage of petroleum products shall be designed, constructed and managed in accordance with:

- a) The *Code of Practice for Design, Installation and Operation of Underground Petroleum Systems, Department of Labour - Occupational Safety and Health (1995)*;

- b) Any requirements of the HSNO Act.

### 9.4.7 Warning Signs

Any *hazardous substance facility* shall be adequately signed to indicate the nature of substances stored, used or otherwise handled on the *site* in accordance with:

- a) The Environmental Risk Management Authority (ERMA) approved *Code of Practice for Signage for Premises Storing Hazardous Substances and Dangerous Goods HSNO COP 2-1 09-04*;
- b) Any requirements of the HSNO Act.

### 9.4.8 Waste Management of Hazardous Substances

- a) The storage or processing of any contaminated waste containing a *hazardous substance* shall comply with any relevant requirement in the HSNO Act and Regulations.
- b) Any process waste or waste containing *hazardous substances* shall be managed to prevent the waste:
  - i) Entering or discharging into a stormwater or sewerage network, unless pursuant to a trade wastes consent;
  - ii) Discharging on to land and/or into water (including groundwater and potable water supplies), unless the discharge is permitted by a rule in a Regional Plan or Proposed Regional Plan or by a resource consent.
- c) The storage of any contaminated waste containing a *hazardous substance(s)* shall prevent:
  - i) Exposure to ignition sources;
  - ii) Corrosion or other alteration of the containers used for the storage of the waste;
  - iii) Unintentional release of the waste into the surrounding natural *environment*.
- d) Any facility generating waste containing *hazardous substances* shall dispose of these wastes to an authorised disposal facility or a facility permitted by a resource consent.

### 9.4.9 Separation from Water Resources

All storage facilities containing *hazardous substances* shall be bunded and set back a minimum of 30 metres from coastal water or a water body, except as otherwise provided for in *the Plan* where a greater separation distance is required. A water body means freshwater or geothermal water in a river or modified watercourse, lake, stream, pond, *wetland*, or aquifer, or any part thereof, that is not located within the *coastal marine area*. In the case of separation from an aquifer, the 30 metres is to be measured from the well head or point of access to known aquifers.

### 9.4.10 Rules in Other Sections of the Plan

Activities within any Zone shall also comply with the following Permitted Activity Rules found within other Chapters of *the Plan*:

- a) The provisions of *Chapter 4 – General Rules*;
- b) The provisions of *Chapter 7 - Heritage*;

- c) The provision of *Chapter 8 - Natural Hazards*;
- d) The provisions of *Chapter 11 – Financial Contributions*
- e) The provisions of *Chapter 12 - Subdivision, Infrastructure and Services, Section 12.16 - Infrastructure and Services*;
- f) The provisions of any Plan Area.

## 9.5 Restricted Discretionary Activity Rules

The following are Restricted Discretionary Activities:

- a) Any hazardous facility with an effects ratio that is greater than the effects ratio for Permitted Activities, but less than that specified for Discretionary Activities in the zone in which the facility proposes to locate;
- b) Any activity that involves the use, storage, transportation or disposal of *hazardous substances* in accordance with Appendix 9B HSNO Classification for Assistance in Rating of Hazardous Substances in the HFSP and which does not exceed the effects ratio specified for the zone in which it seeks to locate, or is exempt from the effects ratio calculation, but does not comply with any one or more of the Permitted Activity Rules.

### 9.5.1 Restricted Discretionary Activity – Standards and Terms

Restricted Discretionary Activities shall comply with the following Standards and Terms:

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*Note: Any activity described as a Restricted Discretionary Activity that does not comply with a Restricted Discretionary Standard and Term shall be considered a Discretionary Activity.*

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#### 9.5.1.1 Specific Information Requirements on Hazardous Facilities

- a) Where the Hazardous Facility Screening Procedure (HFSP) has determined the *hazardous substance facility* is a Restricted Discretionary Activity, the consent application shall be accompanied by an Assessment of Environmental Effects (AEE). This shall be provided in such detail as corresponds with the scale and significance of the actual or potential effects and risks of the proposed activity.
- b) In addition to any information required by other Sections of *the Plan*, every application in respect of a Restricted Discretionary or Discretionary Activity under this Section shall include full information on:
  - i) Name of owner of the facility and 24-hour phone number(s);
  - ii) Legal description;
  - iii) Address;
  - iv) Information about the nature and quantity of the hazardous and environmentally damaging substances used, stored and transported, including United Nations classifications of those substances and material safety data sheets;
  - v) Other *site* occupiers and their type of business;
  - vi) Details of cumulative effects and risks with other hazardous facilities on the *site* or nearby;
  - vii) The function of the installation, including a process description and design;

- viii) The mode of delivery of *hazardous substances* to and from the facility;
- ix) *Site* plans to scale showing tank layout, compounded/bunded areas, and the location of transfer/load-out areas;
- x) Details of tank construction;
- xi) Isolation distances between tanks and public places/storage areas/load-out and container filling areas;
- xii) The capacity of compounded/bunded areas;
- xiii) The height and thickness of the bund wall and the materials used;
- xiv) Drainage system details, including *site* drainage and off-site infrastructure, e.g., stormwater drainage system, sewer type and capacity, and plans to alleviate the risk of contamination of these systems;
- xv) The location of the facility in relation to the nearest aquifer, waterway, coast, or sensitive *environment*;
- xvi) The nature of the subsoil and *site* geology;
- xvii) Spill contingency and emergency planning, monitoring and maintenance schedules and associated equipment on-site;
- xviii) Identification of potential hazards, failure modes and exposure pathways;
- xix) Adherence to health and safety and/or environmental management systems; and relevant legislation including the provisions of the HSNO Act;
- xx) The method of disposal/recovery of dangerous goods and water from compounded areas;
- xxi) Proposed signs;
- xxii) Transport access and proposed frequency of movements and routes;
- xxiii) Assessment of the probability and potential consequences of an accident leading to a release of a *hazardous substance* or loss of control;
- xxiv) Information on waste management strategies and the nature and quantities of the expected waste stream;
- xxv) Built plans of the facility;
- xxvi) The extent to which the proposal complies with the standards and terms of *Rule 9.5.1 – Restricted Discretionary Activity – Standards and Terms*;
- xxvii) Written confirmation from the New Zealand Fire Service stating it has received the same information and commented on it, and a copy of its comments.

### 9.5.1.2 Traffic Safety

It should be demonstrated that the proposal will generate no significant adverse effects on the safety of the adjoining road network and that vehicles transporting *hazardous substances* will not use as a regular route local roads in residential areas. Conditions may be imposed that require access along specified routes, in particular the *arterial road network*.

### 9.5.1.3 On-Site Risk Mitigation and Management

Consideration will be given to the adoption of specific spill contingency plans, emergency procedures, stormwater management and treatment, treatment and disposal procedures for wastes containing *hazardous substances*, fire safety, monitoring and maintenance procedures, and site management systems. This may include a requirement to provide:

- a) Written confirmation from the New Zealand Fire Service stating it has received the same information and commented on it, and a copy of its comments;
- b) Evidence that persons and facilities are licensed according to the requirements of the HSNO Act;
- c) Written confirmation from the Occupational Safety and Health section of the Department of Labour that on-site manufacturing processes are in accordance with good practice;
- d) A description of any possible alternative locations or methods of production where it is likely an activity will result in any significant adverse effects on a receiving *environment*.

### 9.5.2 Restricted Discretionary Activities - Matters of Discretion and Conditions

- a) Whether the proposal would be consistent with the objectives and policies for the zone in which the facility proposes to locate, and the objectives and policies for management of *hazardous substances*;
- b) Actual or potential off-site effects of the non-compliance with the specified standard on the surrounding *environment* or the pattern of *subdivision*, land use, roading, or *services* infrastructure in the locality;
- c) The classification of the activity under *Table 9.3A: Consent Status Matrix for the City (Effects Ratio)* based on HFSP Results;
- d) Imposition of conditions that would avoid, remedy or mitigate any adverse off-site environmental effects arising from the activity's non-compliance with the specified standard or arising from the activity's classification under the consent status matrix. Where necessary, more stringent measures than those required under the provisions of the HSNO Act may be imposed to manage the risk to more sensitive *environments*. A review clause (pursuant to section 128 RMA) may be included in the conditions, where deemed necessary, to address any future changes in the *environment*, codes of practice, technology or legislation;
- e) Specific information that accompanies the consent application in accordance with *Rule 9.5.1.1 – Specific Information Requirements on Hazardous Facilities*.

#### 9.5.2.1 Non-Notification

Any application for a resource consent made under *Rule 9.5 - Restricted Discretionary Activity Rules* does not need to be notified, or served on affected persons, except where:

- a) The proposed hazardous facility is to be constructed and operated on a *site* directly adjoining (for example sharing a common *boundary*) any *Residential Zone* (under *Chapter 14 – Rural Zones*) or any Rural Residential Zone (under *Chapter 15 – Rural Residential Zones*) of the Plan;

- b) The proposed hazardous facility is to be constructed and operated on a *site* directly adjoining (i.e., sharing a common *boundary*) a *site* containing an environmentally sensitive land-use activity - such as a *wetland*, *school*, *tertiary education premises*, *hospital*, or *residential activity* (unless the *residential activity* has already been established on a *site* directly adjoining the Port of Tauranga having taken the presence of hazardous facilities within the Port into account).

## 9.6 Discretionary Activity Rules

The following are Discretionary Activities:

- a) Any *hazardous substance facility* with an effects ratio greater than the effects ratio specified for Discretionary Activities in the zone in which the facility proposes to locate;
- b) Any activity which is not a Permitted or Restricted Discretionary Activity.

### 9.6.1 Assessment of Discretionary Activities

In considering a Discretionary Activity the *Council's* discretion is unrestricted. The *Council* will have particular regard to the objectives and policies of *the Plan*. In addition, *Council* will have particular regard to the following matters:

- a) General

Whether the proposal would be consistent with:

- i) The objectives and policies for the relevant zone in which the *site* is located;
- ii) Relevant matters of the HSNO Act.

Where necessary, more stringent measures than those required under the provisions of the HSNO Act may be imposed to manage the risk to more sensitive *environments*. A review clause (pursuant to section 128 RMA) may be included in the conditions, where deemed necessary, to address any future changes in the *environment*, codes of practice, technology or legislation.

- b) Specific Information Requirements:

- i) Where the Hazardous Facility Screening Process has determined the *hazardous substance facility* is a Discretionary Activity, the consent application shall be accompanied by an Assessment of Environmental Effects. This shall be provided in such detail as corresponds with the scale and significance of the actual or potential effects and risks of the proposed activity;
- ii) In addition to any information required by other Sections of *the Plan*, every application in respect of a Discretionary Activity shall include full information on those requirements specified in *Rule 9.5.1.1 – Specific Information Requirements on Hazardous Facilities*.

- c) Traffic Safety

To reduce the risk of accidents involving the transportation of *hazardous substances*, conditions may be imposed that require access for trucks along specified routes, in particular the *arterial road network* (refer *Rule 9.5.1.2 – Traffic Safety*).

d) On-Site Risk Mitigation and Management

Site management systems can greatly reduce the risk of accidents and injury resulting from the use of *hazardous substances*. *Rule 9.4 – Permitted Activity Rules: Hazardous Substances* outlines a number of systems *Council* may consider as conditions of resource consent. The provisions of *Rule 9.5.1.3 – On-site Risk Mitigation and Management* shall also apply.

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*Note: In addition to rules in the Plan applicable to hazardous substances, the provisions of the following legislation may also be applicable:*

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- a) Hazardous Substances and New Organisms Act 1996 (the HSNO Act);
- b) Medicines Act 1981;
- c) Pesticides Act 1979 (replaced by the HSNO Act, with minor exceptions);
- d) Health and Safety in Employment Act 1992;
- e) Building Act 2004;
- f) Health Act, 1956.

## 9.7 PURPOSE OF THE CONTAMINATED LAND PROVISIONS

The *Council* has a duty under section 31 of the *RMA* to "control; any actual or potential effects of the use, development or protection of land including ... (ia) the prevention or mitigation of any adverse effects of the development, *subdivision*, or use of contaminated land". The purpose of this Section of *the Plan* is to ensure that the *subdivision* and development of *potentially contaminated land* (particularly as a result of its previous land-use activity) is investigated and appropriate remedial action is undertaken as required before its further use. This Section of *the Plan* also addresses the management of *subdivision*, use and development of known contaminated land.

In addition to the provisions of this Plan dealing with potentially and known contaminated land, the relevant rules and provisions of the Regional Water and Land Plan, administered by the Bay of Plenty Regional Council, are relevant, particularly for remediation and disturbance of contaminated land.

## 9.8 Objectives and Policies: Contaminated Land

### 9.8.1 General Objectives and Policies for Contaminated Land

#### 9.8.1.1 Objective – Managing Risks of Potentially Contaminated Land

Significant risks to human health and the *environment* posed by *potentially contaminated land* are identified and addressed as part of the *subdivision* or development process.

##### 9.8.1.1.1 Policy – Investigation of Potentially Contaminated Land

By requiring *subdivision* and/or development sites that have a history of land use that could have resulted in contamination of the soil to undertake soil testing to confirm whether that land is fit for increased exposure to humans and the *environment*.

#### 9.8.1.2 Objective - Managing Risks for Contaminated Land

Significant risks to human health and the *environment* posed by remediation, *subdivision*, use and redevelopment of contaminated land are prevented or mitigated.

##### 9.8.1.2.1 Policy – Prevention or Mitigation of Adverse Effects for Contaminated Land

By ensuring that all remediation, *subdivision*, use and redevelopment of land affected by soil contamination prevents or mitigates adverse effects and significant risk on human health and the *environment*.

##### 9.8.1.2.2 Policy – Management Measures for Contaminated Land

By requiring management measures for contaminated land that provide for remediation, or containment, or disposal of contaminated soil, so the level of contamination is appropriate for any likely future use of the land.

### 9.8.1.2.3 Policy – Risk Management for Use of Contaminated Land

By ensuring that exposure from the on-going use of land affected by soil contaminants is managed in a way that prevents or mitigates any adverse effects on human health and the *environment*.

## 9.9 General Provisions for Subdivision and All Land-Use Consents

### 9.9.1 Applicability to Subdivision and Land Use

The following rules shall apply to all *subdivision* (excluding *subdivision* provided for under *Rule 12.3.2 - Permitted Activity Rules* and *Rule 12.3.3 - Controlled Activity Rules*) and land-use consents. This is in addition to the applicable zone rules set out in other sections of *the Plan*.

### 9.9.2 Specific Requirements for Subdivision and Use of Potentially Contaminated Land

- a) In addition to the requirements of any rule that requires information on a *subdivision* consent or land-use consent the following shall be included or addressed in a report accompanying an application for a *subdivision* consent or land-use consent:
  - i) The known historical use of the site, including any history of land use or any other use that could have resulted in contamination of the soil and in particular any known *hotspots*;
  - ii) The results of a comparison of the known historical use of the *site* with the Ministry for the Environment's Hazardous Activities and Industries List (HAIL) in accordance with *Appendix 9.D: The Hail (Hazardous Industries and Activities List)*.
- b) If *Council* is satisfied the land has no history of activities involving the above uses, soil testing shall not be necessary.
- c) Should the *site* have any history of land use or any other use that could have resulted in contamination of the soil and, in particular, any known *hotspots*, *Council* will require, before granting *subdivision* or land-use consent, or as a condition of any such consent granted, that soil testing be undertaken to confirm the land is fit for increased exposure to humans and the *environment*. Ministry for the Environment Contaminated Land Management Guidelines shall be used to establish this. A site investigation report prepared by a suitably qualified scientist is to be provided to the *Council* in accordance with *Guideline No.1 – Reporting on Contaminated Sites in New Zealand, Ministry for the Environment*. The Bay of Plenty Regional Council is to be informed of the results of the HAIL comparison to land-use history and the findings of the site investigation report.
- d) If the contaminated land is separated from the proposed new allotments or land-use activity by a safe separation distance in relation to the particular type of *hazardous substance* causing soil contamination (i.e., it is not affected by the activity proposed and there is unlikely to be significant adverse effects on the *environment*), then soil testing may not be necessary. A site investigation report prepared by a suitably qualified scientist is to be provided to the *Council* in accordance with *Guideline No.1 – Reporting on Contaminated Sites in New Zealand, Ministry for the Environment*. The Bay of Plenty Regional Council is to be informed of the results of the HAIL comparison to land-use history and the findings of the site investigation report regarding the safe separation

distance.

- e) If the soil testing confirms that the soil is contaminated, the area of contaminated land may require remediation to make the location appropriate for its future use. The proposed use, development or *subdivision* of the contaminated land is a Restricted Discretionary Activity under *Rule 9.9.3 – Restricted Discretionary Activity*. Remediation and certification of remediation from the Bay of Plenty Regional Council is required:
  - i) For a Land-use consent - either as specified in any condition included in a resource consent or before issuing of a building consent, as may be applicable;
  - ii) For a *Subdivision* consent – before issuing a section 224 certificate.

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*Note: Remediation of land affected by contaminated soils requires resource consent under the Bay of Plenty Regional Council's Regional Land and Water Plan.*

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### 9.9.3 Restricted Discretionary Activity Rules

The use, development or *subdivision* of contaminated land is a Restricted Discretionary Activity.

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*Note: Details of confirmed contaminated sites are held by the Bay of Plenty Regional Council in the Selected Land-Use Register, which is updated on a regular basis. Soil investigations may also provide details of confirmed contaminated sites. This information will be available on the Council GIS database, property files and Land Information Memoranda.*

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#### 9.9.3.1 Restricted Discretionary Activities - Matters of Discretion and Conditions

The *Council* restricts the exercise of its discretion to the methods adopted for remediation or management, containment or removal of contaminated soils. Details to include:

- a) The nature and extent of contamination;
- b) The risk posed by contaminants to public health and safety;
- c) The effects of contamination on built *structures*, ecological and amenity values, soil quality, surface and groundwater quality and the wider *environment*;
- d) The approach to the remediation and mitigation measures proposed to avoid adverse effects on public health, safety and the *environment*.

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*Note: If the contaminated land falls within Category 4 (contamination managed) under the Bay of Plenty Regional Council Selected Land-Use Register for sites already managed, a written statement from the Bay of Plenty Regional Council may be required to confirm the contaminated land status in relation to the proposed subdivision, use and development.*

*Where the contaminated land falls within Category 5 (contamination acceptable/remediated) or Category 6 (no identified contamination), a written statement from the Bay of Plenty Regional Council will be required to confirm the contaminated land status in relation to the proposed subdivision, use and development. This will determine if the proposed subdivision or land-use activity does not require any further assessment for land contamination, i.e., the land thought to be potentially contaminated is subsequently determined as acceptable for the intended use.*

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## **9.9.4 Discretionary Activity Rules**

Any activity which is not a Permitted, or Restricted Discretionary Activity is a Discretionary Activity.

### **9.9.4.1 Assessment of Discretionary Activities**

In considering a Discretionary Activity the *Council's* discretion is unrestricted. The *Council* shall pay particular regard to the relevant objectives and policies of *the Plan*.

## APPENDIX 9A: HAZARDOUS FACILITY SCREENING PROCEDURE (HFSP)

The purpose of the Hazardous Facility Screening Procedure (HFSP) and, in particular, the consent status matrix is to assess whether a proposed hazardous substance facility or activity using hazardous substances requires a resource consent or can be carried out as a Permitted Activity.

### 9A.1 Calculation of the Effects Ratio

The calculation of the effects ratio for a facility shall be carried out as outlined in *Land-Use Planning Guide for Hazardous Facilities*, Hazardous Facility Screening Procedure Review Group in conjunction with the Ministry for the Environment (February 2002). The step-by-step guide is included as HFSP guidelines. All tables included in Appendix 9A and Appendix 9B are included in the Land-Use Planning Guide. Appendix 9B has additional HSNO classes and categories to those of the Land-Use Planning Guide.

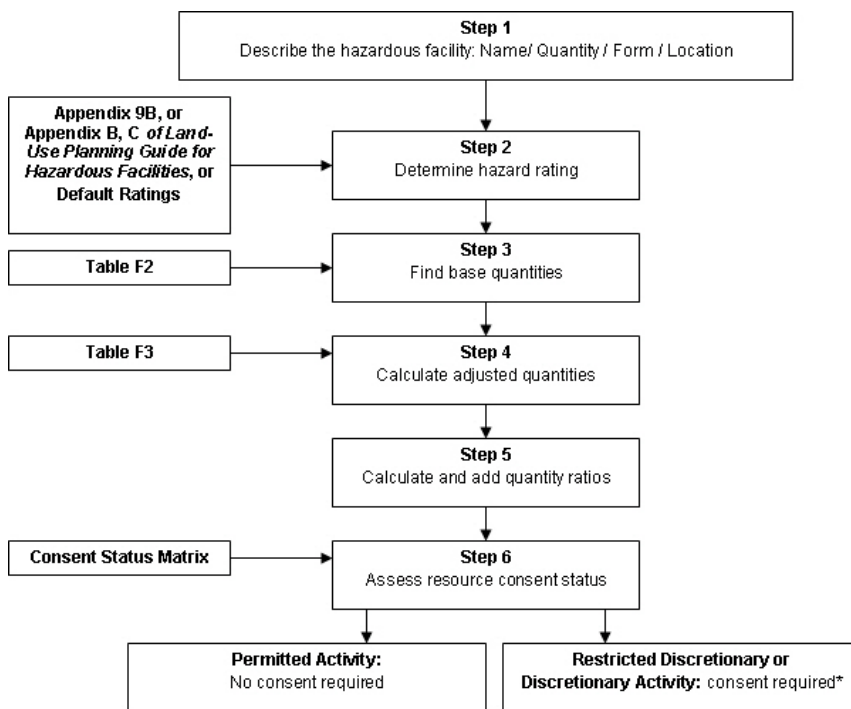
The calculation of the effects ratio for a facility may require the assistance of *Council* staff.

For further information related to hazardous substance classes consult the Hazardous Substances (Classification) Regulations 2001.

### 9A.2 Step-by-Step Guide to the HFSP

This section works through a step-by-step guide on how to use the Hazardous Facility Screening Procedure, following the steps shown in Figure 9A.1 and Table 9A.2.

Figure 9A.1: Overview of the step-by-step guide to the HFSP



\* Note: Compliance with minimum performance standards is always required.

**Table 9A.2: HFSP Step-by-Step Guide**

Steps	HSFP		Calculations		Explanation
<p><b>1 Describe the hazardous facility</b></p> <p>Before using the HFSP, it is necessary to compile a full description of the hazardous facility in question. This includes the creation of an inventory of hazardous substances held on the site, including:</p> <ul style="list-style-type: none"> <li>▪ Names of the hazardous substances</li> <li>▪ Quantities of the hazardous substances</li> <li>▪ Physical form of the substances at 20°C and 101.3 kPa</li> <li>▪ Location of use or storage on the site, including separation distances from the site boundary and neighbouring hazardous facilities (on-site and off-site).</li> </ul> <p>The description should also include site-specific details, including neighbouring land uses and the surrounding environment, with a focus on sensitive land uses and receptors (e.g., retirement accommodation, aquifers or wetlands).</p>	<p><b>Substance Name</b></p> <p>Substance 1</p> <p>Substance 2</p> <p>...</p> <p>Substance 10</p>	<p><b>Substance Form</b></p> <p>(liquid, solid, gas)</p>	<p><b>Location of Substances on Site</b></p>	<p><b>Proposed Quantity (P)</b></p> <p>(tonnes or m<sup>3</sup>)</p>	<p>The HFSP uses standard units of tonnes (t, for solids, liquids and liquefied gases) and cubic metres (m<sup>3</sup>, for compressed gases). In some cases, it may be necessary to convert substance quantities to these units. In the case of liquids, specific gravity (or density) must be taken into consideration when converting litres or m<sup>3</sup> to tonnes (i.e.,</p> <p style="text-align: center;"><u>Volume of liquid (litres) x specific gravity</u></p> <p style="text-align: center;">1000 = tonnes).</p> <p>Adjustments to quantities are also necessary where a substance is diluted with water or mixed with another substance. In this instance, only the percentage quantity of the hazardous substance or product in the dilution or mixture is assessed for the purposes of HFSP calculations (unless a mixture is more hazardous than its components, in which case data on the mixture need to be used). An exception to this are products or brands that already constitute dilutions or mixtures of hazardous substances and which have been classified in terms of their hazardous properties as the 'whole' dilution or mixture for life cycle management purposes (e.g., corrosives, oxidising substances and pesticides, which are often sold commercially as standard solutions or strengths). In these cases, quantity adjustments are applied only when these commercially supplied concentrations are further diluted or mixed.</p>
	<p><b>Petrol</b></p>	<p><b>Liquid</b></p>	<p><b>&lt; 30 metres</b></p>	<p><b>50 +</b></p>	

Steps	HSFP		Calculations		Explanation	
<p><b>2 Determine hazard rating</b></p> <p>For the purposes of the HFSP, the effects of substances are categorised into three Effect Types:</p> <ul style="list-style-type: none"> <li>▪ Fire/Explosion Effect Type - addressing damage to the built environment and safety of people</li> <li>▪ Human Health Effect Type - addressing adverse effects on the well-being, health and safety of people</li> <li>▪ Environmental Effect Type - addressing adverse effects on ecosystems and natural resources.</li> </ul> <p>Each Effect Type is divided into three Hazard Rating Levels:</p> <p>▶ High ▶ Medium ▶ Low</p> <p>The rating levels are based predominantly on the HSNO classification system.</p>	<b>Substance Name</b>		<b>Hazard Rating</b>		<p>The HFSP rates hazardous substances in terms of each of the three Effect Types as having a high, medium or low hazard. The Hazard Rating of a substance is derived from:</p> <ol style="list-style-type: none"> <li>1. The list of HFSP-rated hazardous substances in Appendix B of the 'Land-use Planning Guide'.</li> <li>2. The HSNO classification (refer Appendix 9B). Once a substance has been classified under HSNO, Hazard Ratings can be assigned for each Effect Type as shown in Appendix 9B.</li> <li>3. Where a substance is neither found in Appendix B of the Land-use Planning Guide nor the HSNO database on the ERMA website, the following default ratings should be used: <ul style="list-style-type: none"> <li>▪ Fire/Explosion Effect Type: Medium</li> <li>▪ Human Health Effect Type: Medium</li> <li>▪ Environment Effect Type: High. The substance may be rated using Appendix C as a guide.</li> </ul> </li> </ol>	
	Substance 1	Fire/ Explosion	Human Health	Environment		
	Substance 2	High (H)	High (H)	High (H)		
...	or	or	or			
Substance 10	Medium (M) or Low (L)	Medium (M) or Low (L)	Medium (M) or Low (L)			
<b>Example</b>						
Petrol	High	Low	Medium			

Steps	HSFP		Calculations		Explanation	
<p><b>3 Find Base Quantities</b></p> <p>The Base Quantity (B) is precalibrated. It is the amount of a substance that has been assessed as generating no significant off-site effects in a heavy industrial area before site and substance-specific considerations have been taken into account (refer Step 4). Base Quantities for different hazardous properties and hazard ratings in each Effect Type are listed in Table F2.</p>	<p><b>Substance name</b></p> <p>Substance 1</p> <p>Substance 2</p> <p>...</p> <p>Substance 10</p>	<b>Base Quantities (B)</b>			<p>For example, in the Fire/Explosion Effect Type (sub-category Flammables), non-significant off-site effects in a heavy industrial area are represented by a Base Quantity of:</p> <ul style="list-style-type: none"> <li>100 tonnes of a HSNO Category D flammable liquid which has a low hazard level for the Fire/Explosion Effect Type.</li> <li>30 tonnes of a HSNO Category C flammable liquid which has a medium hazard level for the Fire/Explosion Effect Type.</li> </ul>	
		Fire/ Explosion	Human Health	Environment		
		B <sup>1</sup>	B <sup>1</sup>	B <sup>1</sup>		
	B <sup>2</sup>	B <sup>2</sup>	B <sup>2</sup>	B <sup>2</sup>		
	...	...	...	...		
	B <sup>10</sup>	B <sup>10</sup>	B <sup>10</sup>	B <sup>10</sup>		
	<b>Example</b>					
	Petrol	10 t	30 t	30 t		

Steps	HSFP		Calculations		Explanation
<p><b>4 Calculate Adjusted Quantity (A)</b></p> <p>The precalibrated Adjustment Factors (FF, HF, EF) are multiplied with the Base Quantities (B) to account for substance properties and site-specific environmental circumstances. This multiplication yields the Adjusted Quantity (A). Adjustment Factors differ for each of the Effect Types, and take into account:</p> <ul style="list-style-type: none"> <li>▪ The physical state of the substance</li> <li>▪ The type of storage</li> <li>▪ The type of activity or use separation distances to the site boundary</li> <li>▪ The environmental sensitivity of the site location.</li> </ul> <p>The Adjustment Factors are listed in Table F3.</p>	<b>Example</b>				
	Petrol	10 t	30 t	30 t	<p>Different Adjustment Factors are applied for each Effect Type. For example, for the Fire/Explosion Effect Type, the temperature is relevant, while for the Human Health Effect Type, proximity to a potable water resource is important. In some instances, more than one Adjustment Factor within each Effect Type must be applied, which then need to be multiplied with each other to yield the total Adjustment Factor for the Effect Type. When the Adjustment Factors for each Effect Type have been calculated, they in turn are multiplied with the Base Quantity to yield the Adjusted Quantity. In the example given, the following parameters have been assumed:</p> <ul style="list-style-type: none"> <li>▪ &lt;30m to site boundary</li> <li>▪ Not adjacent to water body</li> <li>▪ Underground storage.</li> </ul>
	<b>Substance name</b>	Fire/Explosion	Human Health	Environment	
	<b>Adjusted quantities (A)</b>	A <sup>1</sup>	A <sup>1</sup>	A <sup>1</sup>	
	Substance 1	...	...	...	
	Substance 2	A <sup>10</sup>	A <sup>10</sup>	A <sup>10</sup>	
...					
Substance 10					
	<b>Example</b>				
Petrol	100 t	300 t	90 t		
	(10 tonnes x 10)	(30 tonnes x 30)	(30 tonnes x 3)		

Steps	HSFP		Calculations		Explanation	
<p><b>5 Calculate and add Quantity Ratios (FQ, HQ, EQ)</b></p> <p>This step requires the calculation of the Quantity Ratio for each hazardous substance in question. The Quantity Ratio is a dimensionless number. It is obtained by dividing the quantity of a substance that is proposed to be used or stored on a site, i.e., the Proposed Quantity (P), by the Adjusted Quantity (A).</p> <p>If several hazardous substances are used or stored on a site, the Quantity Ratios calculated for each of these substances are added up for each Effect Type.</p> <p>Note that FQ/HQ/EQ<sub>Total</sub> stands for the total sum of Quantity Ratio values from all assessed hazardous substances, within each Effect Type.</p>	<p><b>Substance name</b></p> <p>Substance 1</p> <p>Substance 2</p> <p>...</p> <p>Substance 10</p>	<p><b>Quantity ratios (FQ, HQ, EQ)</b></p>			<p>By using the dimensionless ratio of the Proposed Quantity of a hazardous substance over the Adjusted Quantity, it is possible to aggregate the effects presented by multiple substances held on the same site. Hence, it becomes possible to assess the cumulative potential effects which may be created by several substances present on the same site.</p>	
	<p>Fire/ Explosion</p> <p>FQ<sup>1</sup></p> <p>FQ<sup>2</sup></p> <p>...</p> <p>FQ<sup>10</sup></p> <p>FQ<sup>Total</sup></p>	<p>Human Health</p> <p>FQ<sup>1</sup></p> <p>FQ<sup>2</sup></p> <p>...</p> <p>FQ<sup>10</sup></p> <p>HQ<sup>Total</sup></p>	<p>Environment</p> <p>FQ<sup>1</sup></p> <p>FQ<sup>2</sup></p> <p>...</p> <p>FQ<sup>10</sup></p> <p>EQ<sup>Tpta</sup></p>			
	<p><b>Example</b></p>			<p>Petrol</p>		<p>0.50 (50 tonnes/100 tonnes)</p>

Steps	HSFP		Calculations		Explanation
<p><b>6 Assess resource consent status of hazardous facility</b></p> <p>When assessing the resource consent status of a particular hazardous facility, the added Quantity Ratios for each Effect Type are compared with relevant Consent Status Indices in the Resource Consent Matrix in the Plan. If they are exceeded, a resource consent is required.</p>	<b>Substance name</b>	<b>Does Quantity Ratio exceed Consent Status Index?</b>			<p>When examining total Quantity Ratios against applicable Consent Status Indices, one or several substances may trigger a resource consent. This highlights the fact that when assessing hazardous facilities, it is often sufficient to assess just a few hazardous substances to start with, mainly those that are either highly hazardous or are used/stored in high quantities.</p>
	Substance 1	Fire/ Explosion	Human Health	Environment	
	Substance 2	<b>Yes / No</b>	<b>Yes / No</b>	<b>Yes / No</b>	
	...				
Substance 10					
<b>Example</b> In a typical industrial zone:					
Petrol	No	No	No		

**Table F2: Base Quantities for all Effect Types and Hazard Levels**

EXPLOSIVE SUBSTANCES						
HSNO category	UN class equivalent	Hazard level	Unit tonnes or cubic metres	Fire/ explosion	Base quantity (B) Human health	Environment
1.1	1.1	High	tonnes	0.1	-	-
1.2	1.2	Medium	tonnes	1	-	-
1.3	1.3	Low	tonnes	3	-	-
1.5	1.5	Low	tonnes	3	-	-

FLAMMABLE GASES						
HSNO category	UN class equivalent	Hazard level	Unit tonnes or cubic metres	Fire/ explosion	Base quantity (B) Human health	Environment
2.1.1A	2.1	High	m <sup>3</sup>	10,000*	-	-
2.1.2A	2.1	High	tonnes	10	-	-
	LPG	Medium	m <sup>3</sup>	10,000*	-	-
			tonnes	10		
			tonnes	30		

FLAMMABLE LIQUIDS						
HSNO category	UN class equivalent	Hazard level	Unit tonnes or cubic metres	Fire/ explosion	Base quantity (B) Human health	Environment
3.1 A	3PGI	High	tonnes	10	-	-
3.1 B	3PGII	High	tonnes	10	-	-
3.1 C	3PGIII	Medium	tonnes	30	-	-
3.1 D	Combustible liquids	Low	tonnes	100	-	-

LIQUID DESENSITISED EXPLOSIVES						
HSNO category	UN class equivalent	Hazard level	Unit tonnes or cubic metres	Fire/ explosion	Base quantity (B)Human health	Environment
3.2 A	3 PGI	High	tonnes	1		
3.2 B	3 PGII					
3.2 C	3 PGIII					

FLAMMABLE SOLIDS						
HSNO category	UN class equivalent	Hazard level	Unit tonnes or cubic metres	Fire/ explosion	Base quantity (B)Human health	Environment
4.1.1.A	4.1 (a) PGII	Medium	tonnes	10	-	
4.1.1 B	4.1 (a) PGIII	Low	tonnes	30	-	
4.1.2 A	4.1 (b) PGII	High	tonnes	1	-	-
4.1.2 B	4.1 (b) PGII	Medium	tonnes	10	-	-
4.1.2 C	4.1 (b) PGII	Low	tonnes	30	-	-
4.1.2 D	4.1 (c) PGI	High	tonnes	1	-	-
4.1.2 E	4.1 (c) PGII	High	tonnes	1	-	-
4.1.2 F	4.1 (c) PGIII	High	tonnes	1	-	-
4.1.2 G	4.2 PGI	High	tonnes	1	-	-
4.1.3 A	4.2 PGII	High	tonnes	1	-	-
4.1.3 B	4.2 PGIII	Medium	tonnes	10	-	-
4.1.3 C	4.3 PGI	High	tonnes	1	-	-
4.2 A	4.3 PGII	High	tonnes	1	-	-
4.2 B	4.3 PGIII	Medium	tonnes	10	-	-
4.2 C						-
4.3 A						-
4.3 B						
4.3 C						

OXIDISING SUBSTANCES						
HSNO category	UN class equivalent	Hazard level	Unit tonnes or cubic metres	Fire/ explosion	Base quantity (B)Human health	Environment
5.1.1 A	5.1 PGI 1	High	tonnes	1		
5.1.1 B	5.1 PGII	High	tonnes	1		
5.1.1 C	5.1 PGIII	Medium	tonnes	10		
5.1.2 A	2.2	High	m <sup>3</sup>	10,000		
5.2 A	5.2	High	tonnes	10		
5.2 B	Types A and B	Medium	tonnes	1		
5.2 C	5.2	Low	tonnes	10		
5.2 D	5.2		tonnes	30		
5.2 E	Types C and D					
5.2 F	5.2					
5.2 G	Types E, F and G					

TOXIC SUBSTANCES						
HSNO category	UN class equivalent	Hazard level	Unit tonnes or cubic metres	Fire/ explosion	Base quantity (B)Human health	Environment
6.1 A	6.1 PGI	High	tonnes	-	1	
6.1 B	2.3	High	m <sup>3</sup>	-	50	
6.1 C	6.1 PGII	Medium	tonnes	-	1	-
6.1 D	2.3	Low	m <sup>3</sup>	-	50	-
	6.1 PGIII		tonnes		10	-
	2.3		m <sup>3</sup>		150	-
	Standard poison		tonnes		30	
			m <sup>3</sup>		500	

CORROSIVE SUBSTANCES						
HSNO category	UN class equivalent	Hazard level	Unit tonnes or cubic metres	Fire/ explosion	Base quantity (B)Human health	Environment
8.2 A	8 PG I	High	tonnes	-	1	-
8.2 B	8 PGII	Medium	tonnes	-	10	-
8.2 C	8 PGII	Low	tonnes	-	30	-

ECOTOXIC SUBSTANCES						
HSNO category	UN class equivalent	Hazard level	Unit tonnes or cubic metres	Fire/ explosion	Base quantity (B)Human health	Environment
9.1 A	GHS	High	tonnes	-	-	3
9.1 B	GHS	Medium	tonnes	-	-	30
9.1 C	GHS	Low	tonnes	-	-	100
9.1 D	GHS	Low	tonnes	-	-	100

\* Base threshold in m<sup>3</sup> at 101.3kPA and 20°C for permanent or compressed gases.

**Table F3: Adjustment Factors**

Fire/explosion	Human health	Environment
FF1: Substance form Solid = 1 Liquid, powder = 1 Gas (101.3 kPa, 20°C) = 0.1	FH1: Substance form Solid = 3 Liquid, powder = 1 Gas (101.3 kPa and 20°C) = 0.1	FE1: Substance form Solid = 3 Liquid, powder = 1 Gas (101.3 kPa and 20°C) = 0.1
FF2: Separation distance from site boundary (sub-facility) < 30 m = 1 > 30 m (>60 m) <sup>2</sup> = 3	FH2: Separation distance from site boundary (sub-facility) (gases only) < 30 m = 1 > 30 m (>60 m) <sup>2</sup> = 3	FE2: Environmental Sensitivity Normal = 1 Adjacent to water resource <sub>1</sub> = 0.3
FF3: Type of activity Use = 0.3 Above ground storage = 1 [Underground storage <sub>2</sub> = 10]	FH3: Type of activity Use = 0.3 Above ground storage = 1 [Underground storage <sub>2</sub> = 10]	FE3: Type of activity Use = 0.3 Above ground storage = 1 [Underground storage <sub>2</sub> = 3]
Final fire/explosion adjustment factor FF = FF1 x FF2 x FF3	Final human health adjustment factor FH = FH1 x FH2 x FH3	Final environment adjustment factor FE = FE1 x FE2 x FE3

<sup>1</sup> Water resources include aquifers and water supplies, streams, springs, rivers, modified watercourses, open drains greater than 1 metre in width or depth, lakes, wetlands, estuaries and the sea, but do not include entry points to the stormwater drainage network. For the purposes of Table F3, for water resources "adjacent to" means "within 30 metres of". In the case of separation from an aquifer, the 30 metres is to be measured from the well head or point of access to known aquifers.

<sup>2</sup> Applicable to UN Class 3 substances (flammable liquids) only.

**APPENDIX 9B: HSNO CLASSIFICATION FOR ASSISTANCE IN RATING OF HAZARDOUS SUBSTANCES IN THE HFSP**

The full description of HSNO classes, sub-classes and categories, as well as explanations of terms used, is contained in the HSNO Regulations. Further details on their use may also be found in the ERMA *Users Guide to the HSNO Thresholds and Classifications of Hazardous Substances*. Appendix 9B has additional HSNO Classes and Categories to those included in the "Land Use Planning Guide for Hazardous Facilities"

It is important to note that:

- a) HSNO classes and categories do not always correspond perfectly with the United Nations (UN) Classification;
- b) Hazardous substances will normally have a number of classes and categories, but there will always be a primary classification related to risk;
- c) A number of HSNO classes or sub-classes do not have an HFSP hazard rating in the land-use planning context as the potential for off-site effect of these substances is low.

Hazard	HSNO Class & Category	Description	Effect Type	Hazard Rating
Explosive substances	1.1	Substances and articles that have a mass explosion hazard.	Fire/ Explosion	High
	1.2	Substances and articles that have a projection hazard but not a mass explosion hazard.		Medium
	1.3	Substances and articles that have a fire hazard and either a minor blast hazard or a minor projection hazard, or both.		Low
	1.5	Very insensitive substances that have a mass explosion hazard.		Low
Flammable gases	2.1.1 A	i) Ignitable when in a mixture of 13% or less by volume with air; ii) Has a flammable range with air of at least 12%, regardless of the lower flammability limit.	Fire/ Explosion	High
	2.1.1 B	Ignitable when in a mixture of a proportion within a flammable range at 20°C at a pressure of 101.3 kilopascals.		Medium

Hazard	HSNO Class & Category	Description	Effect Type	Hazard Rating
Flammable gases	2.1.2 A Flammable aerosols	An aerosol comprising 45% or more by mass of flammable ingredients.	Fire/ Explosion	High
Flammable liquids	3.1 A Very high hazard	A flash point of less than 23°C and an initial boiling point of less than or equal to 35°C.	Fire/ Explosion	High
	3.1 B High hazard	A flash point of less than 23°C and an initial boiling point of greater than or equal to 35°C.		High
	3.1 C Medium hazard	A flash point of greater than or equal to 23°C but less than or equal to 60°C.		Medium
	3.1 D Low hazard	A flash point of greater than 60°C but less than or equal to 93°C.		Low
Liquid desensitised explosives	3.2 A High hazard 3.2 B Medium hazard 3.2 C Low hazard	a) A substance that: i) Is listed as a liquid desensitised explosive and is assigned Packing Group 1, 11 or III in the UN Model Regulations; or b) A liquid desensitised explosive that: ii) Is not listed in the UN Model Regulations and is not assigned a Packing Group Manager.	Fire/ Explosion	High
Flammable solids – readily combustible solids and solids that may cause fire through friction	4.1.1 A Medium hazard	A substance that burns rapidly or the reaction spreads rapidly or may cause fire through low friction in the relevant tests of the <i>UN Manual of Tests and Criteria</i> .	Fire/ Explosion	Medium
	4.1.1 B Low hazard	A substance that has lower ratings than 4.1.1A in the relevant tests of the <i>UN Manual of Tests and Criteria</i> .		Low

Hazard	HSNO Class & Category	Description	Effect Type	Hazard Rating
Self- reactive substances	4.1.2 A	<p>A thermally unstable substance that propagates a detonation or rapid deflagration or violent effect or thermal explosion in the relevant tests of the <i>UN Manual of Tests and Criteria</i>.</p> <p>A substance with lower ratings than the above two categories in the relevant tests.</p> <p>A substance with even lower ratings than the above two categories in the relevant tests.</p>	Fire/ Explosion	High
	4.1.2 B			Medium
	4.1.2 C			Low
	4.1.2 D			
	4.1.2 E			
	4.1.2 F			
	4.1.2 G			
Solid desensitised explosives	4.1.3 A High hazard	<p>a) A substance with one of the specified UN serial numbers listed in the <i>UN Model Regulations</i>; or</p> <p>b) A solid desensitised explosive that is formed from an explosive of Class 1 by adding a desensitising agent to form a solid substance that no longer meets the threshold for Class 1.</p>	Fire/ Explosion	High
	4.1.3 B Medium hazard			
	4.1.3 C Low hazard			

Hazard	HSNO Class & Category	Description	Effect Type	Hazard Rating
Spontaneously combustible substances	4.2 A Spontaneously combustible and pyrophoric substances High hazard	a) A solid substance that does not meet the criteria for subclass 4.1.2, but ignites within 5 minutes on contact with air under the relevant test conditions in the <i>UN Manual of Tests and Criteria</i> ; or  b) A substance that does not meet the criteria for subclass 4.1.2, but is a liquid which ignites or chars the filter paper under the relevant test conditions.	Fire/ Explosion	High
	4.2 B Spontaneously combustible and self-heating substances Medium hazard	A substance that does not meet the criteria for subclass 4.1.2 but meets specified criteria under the relevant test conditions.		High
	4.2 C Spontaneously combustible and self-heating substances Low hazard	A substance that does not meet the criteria for subclass 4.1.2 which, depending on quantity, meets specified criteria under the relevant test conditions.		Medium

Hazard	HSNO Class & Category	Description	Effect Type	Hazard Rating
Solids that emit flammable gas when in contact with water	4.3 A High hazard	a) A substance that emits a gas that ignites when a small quantity of the substance is brought into contact with water; or	Fire/ Explosion	High
	4.3 B Medium hazard	b) A substance that reacts readily with water at ambient temperatures such that the rate of evolution of flammable gas is greater than 10 litres/kg over any 1 minute.  A substance that reacts readily with water at ambient temperatures such that the maximum rate of evolution is greater than 20 litres/kg per hour.		High
	4.3 C Low hazard	A substance that reacts slowly with water at ambient temperatures so that the maximum rate of evolution of flammable gas is greater than 1 litre/kg per hour.		Medium
Oxidising substances – liquids or solids	5.1.1 A High hazard	a) A substance listed as 5.1 in the <i>UN Model Regulations</i> and assigned Packing Group 1; or  b) A solid that when mixed with dry cellulose either spontaneously ignites or exhibits a mean burning time less than that of a specified reference material; or  c) A liquid that when mixed with dry cellulose forms a mixture that either spontaneously ignites or exhibits a mean pressure rise time less than that of a specified reference material.	Fire/ Explosion	High



Hazard	HSNO Class & Category	Description	Effect Type	Hazard Rating
Organic peroxides	5.2 A	A substance that propagates a detonation or rapid deflagration or violent effect or thermal explosion in the relevant tests of the <i>UN Manual of Tests and Criteria</i> .	Fire/ Explosion	High
	5.2 B			
	5.2 C	A substance with lower ratings than 5.2 A or B in the relevant tests.		Medium
	5.2 D			
	5.2 E	A substance with even lower ratings than 5.2 A or B in the relevant tests.		Low
	5.2 F			
	5.2 G			
Acutely toxic substances	6.1 A	Oral toxicity: LD <sub>50</sub> of less than or equal to 5mg/kg. Dermal toxicity LD <sub>50</sub> of less than or equal to 50mg/kg. Inhalation toxicity (vapour): LC <sub>50</sub> of less than or equal to 0.5 mg/1. Inhalation toxicity (dust/mist): LC <sub>50</sub> of less than or equal to 0.05 mg/1.	Human Health	High
Acutely toxic substances	6.1 B	Oral toxicity: LD <sub>50</sub> of greater than 5mg/kg but less than or equal to 50 mg/kg. Dermal toxicity: LD <sub>50</sub> of greater than 50 mg/kg but less than or equal to 200 mg/kg. Inhalation toxicity (gas): LD <sub>50</sub> of greater than 100ppm but less than or equal to 500 ppm. Inhalation toxicity (vapour): LD <sub>50</sub> of greater than 0.5 mg/1 but less than or equal to 2.0 mg/1. Inhalation toxicity (dust/mist): LD <sub>50</sub> of greater than 0.05 mg/1 but less than or equal to 0.5 mg/1.	Human Health	High

Hazard	HSNO Class & Category	Description	Effect Type	Hazard Rating
Acutely toxic substances	6.1 C	<p>Oral toxicity: LD<sub>50</sub> of greater than 50mg/kg but less than or equal to 300 mg/kg.</p> <p>Dermal toxicity: LD<sub>50</sub> of greater than 200 mg/kg but less than or equal to 1000 mg/kg.</p> <p>Inhalation toxicity (gas): LD<sub>50</sub> of greater than 500 ppm but less than or equal to 2500 ppm.</p> <p>Inhalation toxicity (vapour): LD<sub>50</sub> of greater than 2.0 mg/1 but less than or equal to 10.0 mg/1.</p> <p>Inhalation toxicity (dust/mist): LD<sub>50</sub> of greater than 0.5 mg/1 but less than or equal to 1.0 mg/1.</p>	Human Health	Medium
Acutely toxic substances	6.1 D	<p>Oral toxicity: LD<sub>50</sub> of greater than 300 mg/kg but less than or equal to 2000 mg/kg.</p> <p>Dermal toxicity: LD<sub>50</sub> of greater than 1000 mg/kg but less than or equal to 2000 mg/kg.</p> <p>Inhalation toxicity (gas): LD<sub>50</sub> of greater than 2500 ppm but less than or equal to 5000 ppm.</p> <p>Inhalation toxicity (vapour): LD<sub>50</sub> of greater than 10 mg/1 but less than or equal to 20 mg/1.</p> <p>Inhalation toxicity (dust/mist): LD<sub>50</sub> of greater than 1.0 mg/1 but less than or equal to 5.0 mg/1.</p>	Human Health	Low

Hazard	HSNO Class & Category	Description	Effect Type	Hazard Rating
Acutely toxic substances	6.1 E	<p>Oral or Dermal toxicity:</p> <p>a) LD<sub>50</sub> greater than 2000 mg/kg, but less than or equal to 5000 mg/kg; or</p> <p>b) A substance for which assignment to a more hazardous category is not warranted and if –</p> <p>i) data for the substance indicate to an expert evidence in humans of significant acute toxic effects as a result of acute exposure to the substance; or</p> <p>ii) data indicate any mortality, when tested up to category D values by the oral, dermal, or inhalation routes as a result of acute exposure to the substance; or</p> <p>iii) clinical signs, other than diarrhoea, piloerection, or an ungroomed appearance, indicate to an expert a significant adverse biological effect when tested up to category D values by the oral, dermal, or inhalation routes as a result of acute exposure to the substance; or</p> <p>iv) reliable information, including reliable information from animal studies other than those from which LD<sub>50</sub> data was obtained to classify the substance in hazard classification 6.1 E, indicates to an expert the potential for significant acute toxic effects in humans as a result of acute exposure to the substance.</p>	Human Health	Low
Acutely toxic substances	6.1 E			Low
Toxic substances	6.3 A	Substances that are irritating to the skin.	Human Health	Low
Toxic substances	6.3 B	Substances that are mildly irritating to the skin.	Human Health	Low
Toxic substances	6.4 A	Substances that are irritating to the eye.	Human Health	Low

Hazard	HSNO Class & Category	Description	Effect Type	Hazard Rating
Toxic substances	6.5 A	Substances that are respiratory sensitisers.	Human Health	Low
Toxic substances	6.5 B	Substances that are contact sensitisers.	Human Health	Low
Toxic substances	6.6 A	Substances that are known or presumed human mutagens.	Human Health	Low
Toxic substances	6.6 B	Substances that are suspected human mutagens.	Human Health	Low
Toxic substances	6.7 A	Substances that are known or presumed human carcinogens.	Human Health	Low
Toxic substances	6.7 B	Substances that are suspected human carcinogens.	Human Health	Low
Toxic substances	6.8A	Substances that are known or presumed human reproductive or developmental toxicants.	Human Health	Low
Toxic substances	6.8B	Substances that are suspected human reproductive or developmental toxicants.	Human Health	Low
Toxic substances	6.8 C	Substances that produce toxic human reproductive or developmental effects on or via lactation.	Human Health	Low
Toxic substances	6.9 A	Substances that are toxic to human target organs or systems.	Human Health	Low

Hazard	HSNO Class & Category	Description	Effect Type	Hazard Rating
Toxic substances	6.9 B	Substances that are harmful to human target organs or systems.	Human Health	Low
Corrosive substances	8.1 A	Substances that are corrosive to metals.	Environment	High
Corrosive substances	8.2 A	Substances that are corrosive to dermal tissue if exposed briefly.	Human Health	High
Corrosive substances	8.2 B	Substances that are corrosive to dermal tissue if exposed for greater than 3 mins.	Human Health	Medium
Corrosive substances	8.2 C	Substances that are corrosive to dermal tissue if exposed for greater than 1 hour.	Human Health	Low
Corrosive substances	8.3 A	Substances that are corrosive to ocular tissue,	Human Health	Low

Hazard	HSNO Class & Category	Description	Effect Type	Hazard Rating
Ecotoxic substances	9.1 A Substances that are very ecotoxic in the aquatic environment	Acute aquatic toxicity value: a) fish LC <sub>50</sub> data after a 96-hour exposure period; or b) crustacean EC <sub>50</sub> data after a 48-hour exposure period; or c) algal, or other aquatic plant EC <sub>50</sub> data after a 72-hour exposure period of less than or equal to 1 mg/1.	Environment	High
Ecotoxic substances	9.1 B Substances that are ecotoxic in the aquatic environment	Chronic aquatic toxicity (means the lowest value expressed in units of milligrams of a substances per litre of water from chronic fish, crustacean, algal, or other aquatic plant no observed effect concentration NOEC data) of less than or equal to 1 mg/1; and d) acute aquatic toxicity value of greater than 1 mg/1 but less than 10 mg/1; and e) not rapidly degradable or is bioaccumulative, or is not rapidly degradable and is bioaccumulative.		Medium
	9.1 C Substances that are harmful in the aquatic environment	Chronic aquatic toxicity of less than or equal to 1mg/1; and: f) acute aquatic toxicity value of greater than 10 mg/1 but less than 100mg/1; and g) not rapidly degradable or is bioaccumulative or, is not rapidly degradable and is bioaccumulative.		Low

Hazard	HSNO Class & Category	Description	Effect Type	Hazard Rating
Ecotoxic substances	9.1 D Substances that are slightly harmful in the aquatic environment or are otherwise designed for biocidal action	a) Acute aquatic toxicity value of greater than 1 mg/1 but less than 100 mg/1, but does not meet classification criteria for 9.1 A, 9.1 B or 9.1 C or; b) Chronic aquatic toxicity value is less than or equal to 1mg/1 but does not meet classification criteria for 9.1 B or 9.1 C or; c) Not rapidly degradable and is bioaccumulative but does not meet classification criteria for 9.1 A, 9.1 B or 9.1 C.	Environment	Low
Ecotoxic substances	9.2 A	Substances that are very ecotoxic in the soil environment.	Environment	Low
Ecotoxic substances	9.2 B	Substances that are ecotoxic in the soil environment.	Environment	Low
	9.2 C	Substances that are harmful in the soil environment.		Low
	9.2 D	Substances that are slightly harmful in the soil environment.		Low
Ecotoxic substances	9.3 A	Substances that are very ecotoxic to terrestrial vertebrates.	Environment	Low
	9.3.B	Substances that are ecotoxic to terrestrial invertebrates.		Low
	9.3 C	Substances that are harmful to terrestrial vertebrates.		Low
Ecotoxic substances	9.4 A	Substances that are very ecotoxic to terrestrial invertebrates.	Environment	Low
	9.4 B	Substances that are ecotoxic to terrestrial invertebrates.		Low
	9.4.C	Substances that are harmful to terrestrial invertebrates.		Low

### APPENDIX 9C: DOMESTIC SCALE QUANTITY BASED HAZARDOUS SUBSTANCES TABLE

Common Name	HSNO Classification	Domestic Scale Trigger Level
Diesel Fuel	3.1D, 6.1E, 6.3B, 6.7B, 9.1B	1000 litres
Sodium Hypochlorite	8.2C, 8.3A, 9.1B	200 litres
Petrol	3.1A, 6.1E, 6.3B, 6.7B, 9.1B	150 litres
Methylated Spirits Thinners Solvents	3.1B, 6.4A, 9.1D	150 litres
Turpentine Kerosene Oil-Based Paints	3.1C, 6.1E, 6.3B, 9.1B	150 litres
Sodium Hydroxide (Caustic Soda)	6.1D, 8.1A, 8.2B, 8.3A, 9.1D, 9.3C	150 litres
Flammable Aerosols	2.1.2A	100 litres
Hydrogen Peroxide	5.1.1B, 6.1D, 6.9B, 8.2B, 8.3A, 9.1D, 9.3D	100 litres
Percyloethylene (dry cleaning fluid)	6.1E, 6.3A, 6.4A, 6.7A, 6.9B, 9.1A, 9.2A, 9.3B	40 litres
Hydrochloric Acid (spirits of salts)	6.1 B, 6.9A, 8.1A, 8.2B, 8.3A, 9.3C	40 litres
Round Up, Glyphosate Herbicides	6.1E, 6.4A, 9.1B	40 litres
Battery Acid (Sulphuric Acid)	6.1D, 6.7A, 6.9A, 8.1A, 8.2B, 8.3A, 9.1D	40 litres
L.PG	2.1.1A	300 kg
Calcium Hypochlorite	5.1.1B, 6.1D, 8.3A, 9.1A	100 kg
Methyl Ethyl Ketone Peroxide (MEKP)	3.1D, 5.2 E, 6.1D, 8.2B, 8.3A	10 kg
Oxygen Gas	5.1.2A	50 M <sup>3</sup>
Acetylene	2.1.1A	30 M <sup>3</sup>

Common Name	HSNO Classification	Domestic Scale Trigger Level
Flammable Gases Medium Hazard	2.1.1B	30 M <sup>3</sup>

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*Note: Where a hazardous substance is not listed in Appendix 9C: Domestic Scale Quantity Based Hazardous Substances Table or any of the quantity thresholds in the 'Domestic Scale Trigger Level' column in Appendix 9C are to be exceeded for a domestic-scale activity associated with a permitted residential activity, a full HFSP assessment will be required to determine consent status.*

*Note: Segregation of incompatible substances as per the HSNO Act regulations still apply. Information on safe storage and or use of combinations of hazardous substances is available from Council.*

*Note: This list is not exhaustive and is for hazardous substances commonly found in residential areas.*

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## APPENDIX 9D: THE HAIL (HAZARDOUS ACTIVITIES AND INDUSTRIES LIST)

### Introduction

The Hazardous Activities and Industries List (HAIL) is a compilation of activities and industries that are considered likely to cause land contamination as a result of the use, storage or disposal of hazardous substances. The HAIL is a revision of the list of industrial activities first published in the *Australia New Zealand Guidelines for the Assessment and Management of Contaminated Sites 1992*.

The HAIL is intended to identify most situations in New Zealand where hazardous substances could cause, and in many cases have caused, land contamination. In some cases a generic activity involving hazardous substances is listed, irrespective of the industry, for example, petroleum storage. In other cases, an industry is listed on the basis that certain activities typical of that industry involve storage, use, or disposal of hazardous substances, and therefore all sites within that industry should be considered (e.g., the timber treatment industry). In other cases, particular activities are a small part of a particular industry, with the activity generally localised within larger sites. For example, animal dip sites are listed, but farming practice is not because dip sites are only a small part of a farm and farming, and in general, do not have a high potential to contaminate the complete farm.

The HAIL should be used for consistently reporting on-site history (see *Contaminated Land Management Guidelines No.1: Reporting on Contaminated Sites in New Zealand*, Ministry for the Environment 2003). In accordance with MfE guidelines, the Council uses the HAIL for identifying potentially contaminated sites.

### The HAIL

The HAIL (as listed below) defines industries and activities which typically use or store hazardous substances that could cause contamination if these substances escaped from safe storage, were disposed of on the site, or were lost to the environment through their use. The fact that an activity or industry appears on the list does not mean that hazardous substances were used or stored on all sites occupied by that activity or industry, nor that a site of this sort will have hazardous substances present in the land. The list merely indicates that such activities and industries are more likely to use or store hazardous substances and therefore there is a greater probability of site contamination occurring than for other uses or activities. Conversely, where an activity or industry does not appear on the list, this does not guarantee such a site will not be contaminated. Each case must be considered on its merits, considering the information at hand. In applying the list, it must be remembered that the activity may only have occupied a small part of the site, and so the possibility of contamination may also be likely to apply only to a small part of the site.

1. Abrasive blasting - carrying out abrasive blast cleaning (other than cleaning carried out in fully enclosed booths) or disposing of abrasive blasting material.
2. Acid/alkali plant, formulation and bulk storage.
3. Agrichemical spray contractor's premises used for filling and washing out tanks for commercial agrichemical application.
4. Airports - fuel storage, workshops, washdown areas, stormwater runoff from hardstandg.
5. Analysts - commercial analytical laboratory sites.
6. Asbestos - manufacture of products, use, and disposal. Also sites with buildings

- containing asbestos products known to be in a deteriorated condition.
7. Asphalt or bitumen manufacture or bulk storage - manufacturing asphalt or bitumen, or bulk storage of these products, other than at a single-use site used by a mobile asphalt plant.
  8. Battery manufacture or recycling - assembling, disassembling, manufacturing or recycling batteries (other than storing batteries for retail sale).
  9. Brake lining manufacturers, repairers and recyclers.
  10. Cement or lime manufacturing - manufacturing cement or lime from limestone material using a kiln and storing wastes from the manufacturing process.
  11. Cemeteries.
  12. Chemical manufacture and formulation and bulk storage such that land-use consent is required.
  13. Coal and coke yards.
  14. Concrete manufacture and bulk cement storage.
  15. Defence works and defence establishments, including ordinance storage and training areas where live firing is carried out.
  16. Drum and tank reconditioning or recycling.
  17. Dry-cleaning plants - restricted to premises where dry cleaning is carried out and solvents are stored.
  18. Electrical transformers - manufacturing, repairing or disposing of electrical transformers or other heavy electrical equipment.
  19. Electronics - manufacturing and reconditioning.
  20. Engine reconditioning - use of solvents and degreasers.
  21. Explosive production or bulk storage.
  22. Fertiliser manufacture - manufacturing or bulk storage of agriculture fertiliser.
  23. Foundry operations - commercial production of metal products by injecting or pouring molten metal into moulds and associated activities.
  24. Gasworks - manufacture of town gas from coal or oil feedstock.
  25. Gun, pistol or rifle ranges or areas with lead shot deposition.
  26. Iron and steel works.
  27. Landfill sites.
  28. Livestock dip or spray race operations.
  29. Market gardens, orchards, glass houses or other areas where the use of persistent agricultural chemicals occurred.
  30. Metal treatment or coating - including polishing, anodising, galvanising, pickling, electroplating, heat treatment using cyanide compounds and finishing, curing works or commercially finishing leather.
  31. Mining and extractive industries and mineral processing - including chemically or physically extracting metalliferous ores, exposure of faces or release of groundwater containing hazardous contaminants and storing hazardous wastes, including waste dumps and tailings dams, but not gravel extraction (NB, these areas can be included because of fuel storage).
  32. Motor vehicle workshops.
  33. Paint manufacture and formulation.
  34. Pest control - commercially operating premises (or former pest destruction board, now regional council sites) where storage and preparation of pesticide occurs, including preparation of poisoned baits and filling or washing of tanks.
  35. Pesticide manufacture (including animal poisons, insecticides, fungicides and herbicides) - commercially manufacturing, blending, mixing or formulating pesticides.
  36. Petroleum or petrochemical industries or storage, including oil production and operating a petroleum depot, terminal, blending plant or refinery, retail or commercial refuelling facility, facilities for recovery, reprocessing or recycling petroleum-based materials and bulk storage above and below ground.

37. Pharmaceutical manufacture - commercially manufacturing, blending, mixing or formulating pharmaceuticals, including animal remedies and illicit drug manufacturing.
38. Port activities - including dry docks and ship and boat maintenance facilities.
39. Power stations and switchyards.
40. Printing - commercial printing, using metal type, inks and dyes, or solvents.
41. Railway yards - operating a railway yard including goods-handling yards, workshops, refuelling facilities and maintenance areas.
42. Sawmills - use of anti-sap stain chemicals during milling.
43. Scrap yards - operating a scrap yard including automotive dismantling or wrecking yard or scrap metal yard.
44. Service stations.
45. Smelting or refining - fusing or melting metalliferous ores or refining the metal.
46. Tannery, fellmongery or hide curing - operating a tannery or fellmongery or hide curing works or commercially finishing leather.
47. Transport depots.
48. Storage tanks and drum storage for fuel, chemicals and liquid waste.
49. Waste storage, treatment and/or disposal including land disposal of wastes, but not the use of biosolids as soil conditioners.
50. Wood treatment and preservation and bulk storage of treated timber.
51. Wool, hide and skin merchants (e.g., drying, scouring).
52. Any site that has been, or could be, subject to the migration of hazardous substances from hazardous substances present in soil or water on adjacent sites.
53. Any other facility or activity that stores, uses or disposes of hazardous substances, in sufficient quantity that intentional or accidental discharge of the substance could be a risk to human health or the environment.

<sup>1</sup> Published by Australian and New Zealand Environment and Conservation Council (ANZECC) and the National Health and Medical Research Council.