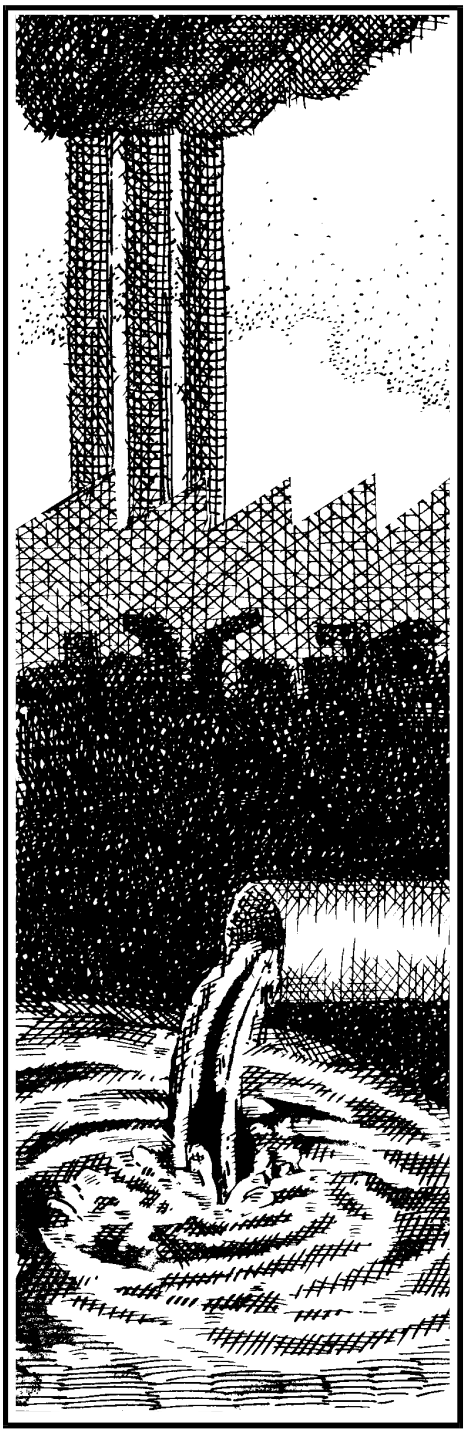
6

Hazardous Substances and Hazardous Wastes



6.1 Introduction

Hazardous substances are substances which impair human, plant or animal health, or which may adversely affect the health or safety of any person or the environment, whether or not they are contained in or form part of any other substance or thing. Hazardous waste includes hazardous substances which have not been used and require disposal, the residue of hazardous substances which have been used, and require disposal, and waste material containing hazardous substances.

Hazardous substances, while posing a potential threat to the environment can be of benefit to society. They include pesticides, batteries, cleaners, printing inks, petrol, oil and paint, and are used by local businesses in the process of manufacturing products or providing services.

Hazardous substances are more of a problem after use, either when surplus amounts are stored inappropriately, or are to be disposed of. It is at this time that there is a greater risk of adverse effects on the environment, and for that reason the Otago Regional Council considers that it is more important to focus on the storage, transportation and disposal of hazardous wastes than on hazardous substances. However, reducing the use of hazardous substances where practical alternatives exist, will assist in reducing levels of hazardous waste.

6.1.1 Roles of agencies

The management of hazardous substances and hazardous wastes is a very complex area. A large number of agencies have responsibilities at different stages of the life cycle of hazardous substances and there is little coordination between them.

Hazardous substances are presently regulated under the Explosives Act 1957, administered by the Occupational Safety and Health Service of the Department of Labour, the Dangerous Goods Act 1974, administered by territorial authorities, the Toxic Substances Act 1979, administered by the Toxic Substances Board, and the Pesticides Act 1979, administered by the Pesticides Board. Some hazardous substances are regulated under the Animal Remedies Act 1967, and administered by the Animal Remedies Board.

These statutes are to be replaced by the Hazardous Substances and New Organisms Act 1996. The aim of the proposed Act is to provide a comprehensive and consistent approach to the management of all hazardous substances and new organisms. It establishes a new statutory body, the Environment Risk Management Authority (ERMA) to assess and develop controls for the importation, manufacture, development, and release within New Zealand of hazardous substances and new organisms.

The new body was foreshadowed in Part XII of the Resource Management Act. This set up a body called the Hazardous Control Commission. The body was never formally established and Part XII of the Resource Management Act never came into force.

Under the Resource Management Act, territorial authorities and regional councils have responsibilities for controlling the use of land related to hazardous substances. Section 62(1)(ha) of the Resource Management Act requires that regional policy statements shall state for the region or any part of the region, which local authority shall have responsibility within its own area for developing objectives, policies and rules relating to the control of the use of land for the prevention or mitigation of any adverse effects of the storage, use, disposal and transportation of hazardous substances, and may state particular responsibilities for particular hazardous substances; but if no responsibilities for hazardous substances are identified in the regional policy statement the regional council shall retain responsibility for the hazardous substance.

In terms of Section 62(1)(ha) of the Resource Management Act, the Regional Policy Statement for Otago indicates that:

(a) Territorial authorities have responsibility within their own areas for the preparation of objectives, policies and rules relating to the control of the use of land for the purpose of the prevention or mitigation of any adverse effects of the storage, use, disposal or transportation, with respect to all hazardous substances.

(b) The Otago Regional Council, as appropriate, through a regional plan, will develop objectives, policies, rules and other methods relating to the use of land for the purpose of the prevention or mitigation of any adverse effects of the storage, use, disposal and transportation of hazardous substances regarding:

- The location of hazardous facilities or pipelines for the bulk conveyance of hazardous substances in relation to groundwater infiltration areas, or in close proximity to surfacewater resources, or in close proximity to the coastal marine area, or on soils particularly valued for their primary productive capability; or
- Situations where the actual or potential effects may be of regional significance.

6.1.2 Types of hazardous wastes

Typical types of hazardous waste identified in the Otago region include:

6.1.2.1 Unused agricultural / horticultural chemicals

Unused agricultural/horticultural chemicals (agrichemicals) may be stored on farms, orchards, nurseries, or in urban areas. These have the potential to cause environmental damage if containers are broken or poorly sealed. Unlabelled containers are also a problem.

It is difficult to accurately assess the amount and types of unwanted agrichemicals within Otago. Most chemicals are freely available and quantities dispersed throughout the region are rarely verifiable. Also, some of the chemicals being stored long term may actually be used at some time in the future.

6.1.2.2 Waste ~~lubricating~~ oil

Waste ~~lubricating~~ oil accounts for possibly the largest quantity of low toxicity waste generated. All motor vehicle users generate waste oil and it is also produced wherever machinery is used. Oil has adverse environmental effects on any receiving waters or land. The toxicity of oil derives from heavy metal additives or combustion products.

The Waste Lubricating Oil Survey of Otago (Otago Regional Council 1991) estimated that 700,000 litres of waste ~~lubricating~~ oil are generated in Otago annually. Of this, 250,000 litres are re-refined for fuel, and a further 200,000 litres are re-refined for lube use. Due to the availability of cheaper overseas oil the volume re-refined for lube use in Otago has significantly decreased over recent years. There are also problems in the refining process, as disposal of acid tar is required.

Over 200,000 litres of waste ~~lubricating~~ oil per year is disposed of by inappropriate or unknown methods, or is being stored prior to treatment or disposal. Waste ~~lubricating~~ oil has been disposed of into the ground, burnt, or spread over roads as a dust suppressant.

Re-refining waste ~~lubricating~~ oil for use as a fuel for industrial use can potentially use much of the waste ~~lubricating~~ oil produced in the South Island.

6.1.2.3 Medical wastes

The composition of medical waste has changed in recent years owing to changes in surgical and clinical procedures as well as an increase in the use of disposable items with sterile packaging. The increase in the use of disposable items can be attributed to concerns about infection and the fact that disposable items are generally cheaper to purchase than reusable items.

Medical wastes are defined by the Health Care Waste Management Standard NZS 4304:1990 into the following categories:

(a) General medical wastes - These are non-problematic, being similar to domestic wastes. They are divided into ordinary and kitchen wastes;

(b) Special medical wastes - These are hazardous, or aesthetically obnoxious, and require special attention to ensure safe disposal. They include:

  (i) anatomical waste including any associated swabs and dressings;

  (ii) soiled dressings and contaminated wastes;

  (iii) materials other than those to be recycled;

  (iv) disposal items such as syringes, hypodermic, and plastic articles such as probes, tubes, urine containers, bed pans, gloves, masks, syringe bottles, broken glass, etc;

  (v) sharps such as needles, scalpels, razor blades etc;

  (vi) specific wastes needing special disposal methods;

  (vii) wastes from laboratories and post-mortems waste other than that classified in the first three items above;

  (viii) pharmaceutical and chemical wastes; and

  (ix) wastes other than the above that are defined in Appendix A of NZS 4304:1990.

(c) Cytotoxic wastes (affects cell division processes); and

(d) Radioactive wastes.

These wastes are produced by a range of facilities including hospitals, doctors' surgeries, dental surgeries, blood transfusion centres, medical research establishments, nursing homes, private homes where patients are being treated, pharmacies, veterinary clinics and boarding kennels. The major generators of this waste in Otago are hospitals. Most waste from hospitals and dental surgeries and some waste from doctors' surgeries is collected and disposed of by high temperature incineration. Medical wastes not collected are disposed of into general refuse.

Since the late 1980s, high temperature incineration has been the favoured treatment for special wastes in Otago. At the time of its introduction it was the only adequate treatment technology available. Recently however, other technologies have been developed. These include treatment autoclaving, which involves steam sterilisation prior to managed disposal to a co-disposal landfill.

The management of medical wastes must comply with the Health Care Waste Management Standard NZS 4304:1990. This standard has been prepared to rationalise and recommend methods for the management of health care wastes within New Zealand. The Standard has three objectives:

(a) To identify and define health care wastes;

(b) To offer guidance to designers and operators of establishments responsible for generating such wastes to enable them to be safely and economically disposed of; and

(c) To indicate preferred methods for the disposal of health care wastes.

In relation to treatment prior to disposal of health care wastes, Paragraph 14.2.3 of NZS 4304:1990 considers autoclaving of special medical waste as a possibility. Within Otago autoclave treatment is only considered appropriate for a portion of special medical wastes and its success is very much dependent on the waste segregation within the medical facility. Inadequate waste segregation may pose potential adverse environmental effects, in that sharps, cytotoxics or body parts may accidentally undergo autoclave treatment and then disposal to a landfill. To avoid, remedy or mitigate any adverse effects associated

with special medical waste being disposed of at landfills, incineration of special medical waste is the only acceptable form of treatment.

6.1.2.4 Radioactive wastes

No radioactive waste should be disposed of without first consulting the National Radiation Laboratory.

The quantity of radioactive wastes produced in New Zealand is small on an international scale. In Otago the majority of radioactive waste originates from laboratories and hospitals where it is used primarily for diagnostic tests and treatment.

The disposal of radioactive waste in New Zealand is restricted by the Radioactive Protection Regulations 1982.

6.1.2.5 Other significant sources of hazardous wastes

Other significant sources of hazardous wastes are generally confined to the industrial sector, and result from, for example, building construction, dielectric fluids in electrical equipment, timber treatment plants, tanneries and mining processes.

Particular problem wastes include batteries, Polychlorinated biphenyl (PCB) containing materials, (Chlorofluorcarbons) CFCs and HCFCs and asbestos. It is noted that the Ministry of Health and Department of Labour should be contacted prior to any work involving asbestos being carried out.

6.1.3 The Management of Hazardous Waste

The process for the management of potentially hazardous wastes includes:

- collection;
- storage;
- treatment; and
- disposal.

Figure 3 shows a methodology for evaluating the waste production process and the management of potentially hazardous waste. The importance of cleaner production and waste minimisation is

recognised in Chapter 4 of this Plan. A significant matter of concern that is identified in Figure 3 is the degree of pre-treatment which should be provided prior to disposal of hazardous waste. This Plan adopts the philosophy that pre-treatment should be provided to a level which will prevent or minimise the adverse effects on the environment.

The main means of disposing of hazardous wastes are incineration, co-disposal, exportation of hazardous waste unsuitable for disposal in New Zealand, and the unacceptable disposal to the sewer or stormwater systems.

In the majority of situations co-disposal landfills are recognised as the preferred method of hazardous waste disposal in New Zealand. Co-disposal involves the disposal of appropriate hazardous wastes by mixing them, in an informed and pre-determined manner, with municipal refuse, to use the attenuation and bio-chemical processes operating within the landfill to reduce the environmental impact from the mixed waste to an insignificant level. Many hazardous wastes can be co-disposed without treatment. However, the suitability of wastes for disposal at a co-disposal landfill must be considered on a case by case basis.

Incineration on the other hand is the best available method for the total destruction of some types of hazardous waste. As yet though there is only one facility in New Zealand (Auckland) for the incineration of hazardous waste.

At some stage in their life cycle most hazardous substances require transport, during which people and the environment may be at risk from accidental release of a hazardous waste. Transport may be by air, sea, rail, or road, and may involve anything from small quantities to the haulage of bulk material such as tanker loads of petrol or LPG. Practices for the safe transport of waste hazardous substances are outlined in NZS 5433:1988 “Code of Practice for the Transport of Hazardous Substances on Land.” The Transport Act 1962 and the Health and Safety in Employment Act 1992 are also relevant. All of these provisions are, however, currently under review.

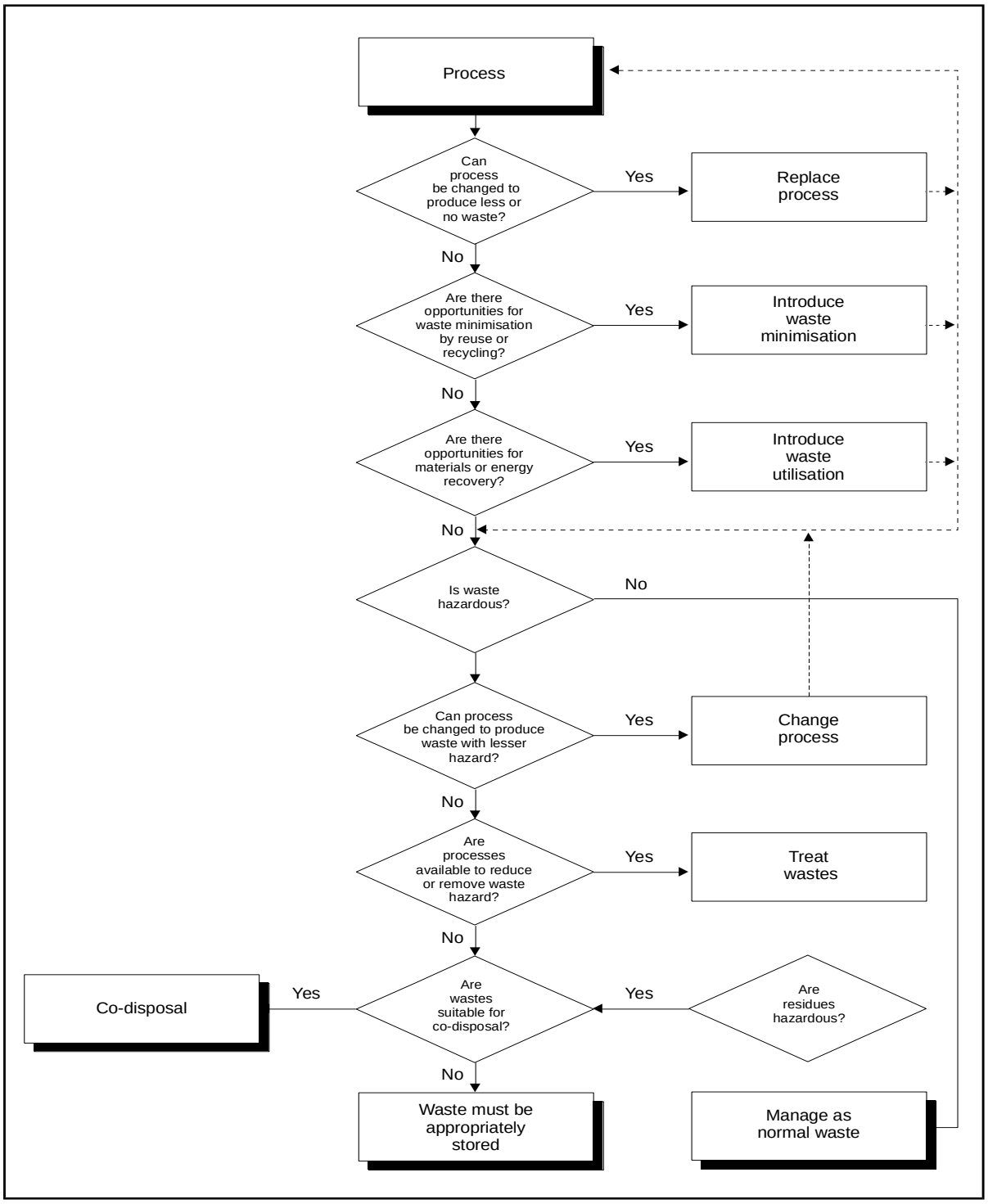


Figure 3: Evaluation of a waste producing process and the management of potentially hazardous waste.
(Adapted from Ministry for the Environment (1993) New Zealand Waste Hazardous Substances Handbook, Figure 3.1 & 3.2).

6.2 Hazardous substances and hazardous waste issues

6.2.1 There is insufficient information on hazardous substances and hazardous waste within Otago.

Explanation
In the past, the quantities and types of hazardous substances used or produced have rarely been inventoried, and their location, including the site of disposal, has rarely been recorded. Currently there is no system in place for tracking hazardous substances produced in the region or for monitoring their associated storage or disposal. For example, there may be significant amounts of unused agricultural chemicals stored in Otago. Some of this may be at risk in rusting or leaking containers, in areas prone to flooding, or in water supply areas. In addition, quantities of unused or partially used hazardous substances have been disposed of into landfills in containers liable to leak into the surrounding soil and groundwater. All of these actions are likely to give rise to adverse environmental effects.
Objectives 6.3.1, 5.3.2
Policies 6.4.2, 6.4.3

6.2.2 There is a lack of awareness or implementation of appropriate management practices for the transportation, storage and use of hazardous substances, and the collection, storage, treatment and disposal of hazardous waste.

Explanation
Industrial, commercial, and private users of hazardous substances are generally poorly informed about the appropriate means of handling, using and disposing of hazardous substances. Disposal into sewerage and stormwater systems or into landfills, excluding approved co-disposal landfills, is not appropriate for many types of substances. While transport operators have requirements to comply with, to ensure safe movement of hazardous substances throughout the region, controls do not apply to the same degree to other aspects of hazardous substance use and storage. Little information or guidance is given to the public either. Where accidental spills do occur special procedures need to be implemented in order that environmental contamination does not occur.

There is also a need for improved practices of spray application of hazardous substances to prevent the incidence of spray drift occurring from areas of application. Careful use of hazardous substances will also reduce wastage and losses to the environment. By obtaining and using only the required amounts of a substance, there will be less wastage and less storage of hazardous substances

throughout the region. Waste minimisation and cleaner production also have a role prior to any treatment or disposal.
Objectives 6.3.1, 6.3.2
Policies 6.4.1, 6.4.7, 6.4.8

6.2.3 There is insufficient use of alternatives to hazardous substances.

Explanation
Alternatives to hazardous substances that will achieve the same purposes without adverse environmental and health risks may be available. Their further development and use could be promoted and encouraged.
Objective 6.3.1
Policy 6.4.6

6.2.4 Facilities for the disposal of hazardous wastes in Otago are inadequate.

Explanation
Correct disposal of hazardous wastes requires an integrated regional programme to ensure that the community has access to appropriate facilities. For some hazardous wastes there is no safe disposal option presently available in New Zealand, and as a consequence it will be necessary to provide safe storage facilities until disposal can be arranged, or new technology can be developed. Further investigation is required in order to determine whether such facilities should be provided for in Otago or shared with other regions.
Objectives 6.3.1, 6.3.2
Policies 6.4.1, 6.4.7, 6.4.11

6.2.5 Hazardous substances and hazardous wastes have an adverse effect on the environment.

Explanation
Adverse environmental effects, such as the contamination of water or soils, can result from spills, unsuitable storage, inappropriate usage and disposal. This includes agricultural chemicals and the spreading of waste oil on roads.
Objectives 6.3.1, 6.3.2
Policies 6.4.1 - 6.4.12

6.2.6 Hazardous substances and hazardous wastes can adversely effect waahi taoka, waahi tapu and mahika kai thus affecting the customary relationship Manawhenua hold with their resources.

Explanation
Contamination of resources by hazardous substances and hazardous wastes is offensive to Manawhenua , physically making sites unsuitable for food gathering, or ecologically resulting in flora and fauna being unfit for human consumption, and culturally and spiritually affecting the values and mauri of an area.
Objective 6.3.2
Policy 6.4.12

6.3 Hazardous substances and hazardous waste objectives

6.3.1 To avoid, remedy and mitigate the risk to the environment and human health from hazardous substances and hazardous wastes.

Explanation
Otago's environment, including its communities, must be protected from the adverse effects of hazardous substances and hazardous wastes, associated with legitimate activities, or which arise by way of accidents.
Policies 6.4.1 - 6.4.12
Methods 6.5.1 - 6.5.25
Rules 6.6.1 - 6.6.~~3~~4

6.3.2 To avoid, remedy and mitigate the harmful effects of hazardous substances and hazardous wastes on traditional water, land and mahika kai values of importance to Kai Tahu.

Explanation
Kai Tahu have an inherent interest in maintaining the environment's ability to sustain life. Traditional values rely on uncontaminated natural resources for their utilisation and enjoyment.
Policy 6.4.12
Method 6.5.24

Principal reasons for adopting hazardous substances and hazardous wastes objectives

Adverse effects on natural and physical resources, such as the contamination of water or soils, and impacts on social and cultural values can result from spills, inappropriate storage of hazardous substances and the disposal of hazardous wastes, and the uncontrolled use of hazardous substances. The Resource Management Act requires that such adverse effects be avoided, remedied or mitigated, and this Plan seeks to do that.

6.4 Hazardous substances and hazardous waste policies

6.4.1 To promote the safe transportation, and the use, treatment, storage and disposal of hazardous substances and hazardous wastes in such a manner that avoids adverse environmental effects.

Explanation

Promotion can take a number of forms. Codes of practice accepted and adopted by industrial producers, users, and transporters of hazardous substances will encourage wise and safe management of the large quantities of hazardous substances handled by these groups. There are also various codes of practice already in existence, in addition to guidelines and New Zealand Standards, such as the NRL C1 Code of Safe Practice for the Use of Unsealed Radioactive Materials and the NRL C2 Code of Safe Practice for the Use of Sealed Radioactive Materials in Industry and the Health Care Waste Management Standard NZS 4304:1990.

Improved awareness and understanding of hazardous substance and hazardous waste issues can also result in more responsible use and handling of hazardous substances.

Methods 6.5.5, 6.5.6, 6.5.8 - 6.5.12, 6.5.17 - 6.5.25

6.4.2 To encourage the implementation of a standard system for collecting data on hazardous substances held, used and transported within Otago.

Explanation

In order to be able to better understand the amount of hazardous waste produced and to minimise any adverse effects on the environment, data on the sources, types and fate of hazardous substances is required. That data will be of most value if it is regionally and nationally consistent.

At the national level the Ministry for the Environment has developed the Waste Analysis Protocol as a tool for gathering

information on the waste stream in general, and as a consequence on hazardous substances also. The Protocol is nationally accepted and will be promoted by the Otago Regional Council as a basis for collecting information in the region.
Method 6.5.1

6.4.3 To promote a manifest and tracking system for highly hazardous substances and hazardous wastes.

Explanation
Tracking the movement of hazardous substances and hazardous wastes is one means of obtaining information on the location and quantities of the more toxic hazardous substances and hazardous wastes. Under the Health Act 1956, the Ministry of Health presently tracks the movement of PCB's and radioactive materials. Current legislation does not provide for other material to be tracked, although the proposed Hazardous Substances and New Organisms legislation could alter that. In the meantime the Otago Regional Council will promote the introduction of a tracking system for highly hazardous substances and hazardous wastes, and will work with all sectors to determine the appropriate means of tracking and the substances and wastes that should be tracked. The Otago Regional Council will offer its facilities for the storage of information. This may identify opportunities for reuse and recycling, and highlight particular resource management issues that need to be considered.
Method 6.5.2

6.4.4 To encourage and facilitate the reuse, recycling and recovery of hazardous substances.

Explanation
Reducing the disposal of wastes can be brought about through increasing the amount of reuse, recycling and recovery of hazardous substances. Waste is also minimised by ensuring that the right quantities of hazardous substances are purchased for the purpose intended. This is recognised in Chapter 4 of this Plan.
Methods 6.5.4, 6.5.5, 6.5.6, 6.5.11, 6.5.14, 6.5.20

6.4.5 To promote a reduction in the quantities of hazardous substances held and used in the community.

Explanation
Reductions in the volumes of hazardous substances within the region could reduce the adverse effects that arise from the storage and disposal of surplus hazardous substances. The Otago Regional Council will advocate to central government to reduce the use of hazardous substances while at the same time encouraging users to only purchase the amounts that they require. In some instances suitable alternative options may not exist, and in those instances the ability to reduce the quantities of hazardous substances held and in use may be limited.
Methods 6.5.3, 6.5.7

6.4.6 To promote the development and use of environmentally safe alternatives to hazardous substances.

Explanation
Safer alternatives to some hazardous substances, such as biological pest control and more environmentally friendly industrial processes are currently available or are being developed. The development and use of these alternatives should be encouraged where they are available and practical providing it is shown that environmental degradation will not occur.
Methods 6.5.3, 6.5.7, 6.5.16, 6.5.22

6.4.7 To promote regionally coordinated collection, storage, treatment and disposal of hazardous waste.

Explanation
Only through a regionally coordinated programme can the Otago community respond to initiatives to remove unused or unwanted hazardous substances from the environment. Safe collection, storage, treatment and disposal alternatives significantly reduce the risk of unwanted hazardous wastes being dumped or spilt into water or onto land.

The Otago Regional Council will develop a regional strategy for the collection, storage, treatment and disposal of hazardous waste. This will require investigating the needs of the region and determining the most appropriate means of providing for those needs. The outcome may be the identification of the need for a regional storage or disposal facility within Otago, or the sharing of facilities, within or outside Otago, with other regions. If an Otago facility is required, consideration will be necessary to determine if local government or some private operator should develop and maintain the facility. Resolution of that issue is outside the scope of this Plan.
Methods 6.5.5, 6.5.10, 6.5.14, 6.5.17, 6.5.20

6.4.8 To promote the treatment of hazardous wastes prior to disposal.

Explanation
There are a range of established treatment and disposal options that can be appropriately used in the management of hazardous wastes. By undertaking such treatment, the likelihood of long-term adverse effects will be reduced, and risks to public health can be minimised.
Methods 6.5.15, 6.5.23

6.4.9 To develop a coordinated response strategy for hazardous spills.

Explanation
The potential for major incidents involving hazardous substances and hazardous wastes, and the effects of such incidents can be minimised by good management, anticipation and proper planning. This will require response plans to be prepared at territorial, regional and national levels, and for their coordination to ensure all eventualities are provided for.
Methods 6.5.13, 6.5.21

6.4.10 To ~~discourage~~ prevent waste oil being used as a dust suppressant and provide for the use of safer alternatives.

Explanation
In parts of ~~Central~~ Otago, waste oil ~~is~~ has historically been used as a dust suppressant on roads. This practice can give rise to environmental contamination as a consequence of heavy metals and other noxious elements within the oil entering the ground in the areas treated, and water bodies where runoff occurs. Wind or traffic derived dust can spread the contamination and, depending on the nature of the substances, these can be a hazard to public health. Present technologies identify lead concentrations to be of greatest concern. With safer alternatives now more readily available, waste oil ~~should no longer~~ must not be applied as a dust suppressant.

~~In the absence of other practical alternatives, continuation of this practice is expected. As the activity does involve a discharge to land, and in some cases results in contamination of water, it is a practice that should be undertaken with care.~~
Methods 6.5.3, 6.5.22, 6.5.25

6.4.11 To require:

(a) Special medical waste to be disposed of by high temperature incineration; and

(b) General medical waste to be treated, and disposed of in a manner which minimises risk to people and the environment.

Explanation
In order to avoid, remedy or mitigate the adverse effects resulting from medical wastes within Otago there is a need to ensure that adequate treatment and disposal is employed to effectively deal with medical wastes. In respect of special medical wastes it is considered that autoclaving treatment prior to disposal does not render such wastes completely innocuous.
Methods 6.5.15, 6.5.18

6.4.12 To recognise and provide for the relationship Kai Tahu have with Otago's natural and physical resources through:

(a) Providing for the management and disposal of Otago's hazardous substances and hazardous wastes in a manner which takes into account Kai Tahu cultural values; and
(b) Supporting hazardous waste disposal methods which avoid, remedy or mitigate adverse effects on the environment and the mauri of its natural and physical resources; and
(c) Protecting waahi tapu and waahi taoka from hazardous waste management practices; and
(d) Ensuring that Kai Tahu access to waahi tapu and waahi taoka is not compromised by waste management practices; and
(e) Acknowledging that future generations will inherit the results of good and bad waste management practices; and
(f) Maintaining consultation with Kai Tahu on issues relating to hazardous substances and hazardous waste management.

Explanation
Traditional Manawhenua values are especially sensitive to the quality of our environment. Hazardous substances and hazardous wastes have the potential to adversely affect Manawhenua use of natural and physical resources if these resources become contaminated or destroyed. Monitoring and evaluating the effects on traditional Manawhenua values will enable a holistic view of the adverse effects on the environment.
Method 6.5.24

Principal reasons for adopting hazardous substances and hazardous wastes policies

The management of hazardous substances and hazardous waste needs to be considered in a coordinated way, focusing on all stages from production to disposal. As a consequence, a range of policies is required to respond to the resource management issues that have been identified.

The legislative framework for the management of hazardous substances and hazardous wastes is not complete at this time, and as a consequence the Regional Policy Statement for Otago is the key document within the Region for the management of hazardous substances and hazardous wastes in a coordinated manner. This Plan seeks to implement the objectives and policies of the Regional Policy Statement for Otago, and to provide for relevant issues to be dealt with, to the extent possible, under existing legislation. For that reason, on some issues advocacy will be the main means of implementation.

6.5 Hazardous substances and hazardous waste methods

In meeting the objectives and in carrying out the policies relating to hazardous substances and hazardous wastes the Otago Regional Council will:

6.5.1 Promote the use of the Waste Analysis Protocol as a basis for tracking hazardous materials in Otago;

6.5.2 Promote a nationally consistent manifest system for tracking highly hazardous substances and hazardous wastes;

6.5.3 Promote the replacement of hazardous substances with non-hazardous substances and encourage the use of safer alternatives where appropriate and practicable;

6.5.4 Promote and facilitate reuse, recycling and recovery of hazardous substances, including unused chemicals and lubricating oil;

6.5.5 Promote the development and implementation of voluntary take-back schemes for:

- lubricating oils;
- timber treatment chemicals;
- pesticides;
- animal remedies;
- chlorinated solvents; and
- batteries;

6.5.6 Advocate to central government to promote the recycling and reuse of waste ~~engine~~ oil by the removal of positive disincentives (duty and tax) and the adoption of policies to promote reuse, on the basis of environmental damage resulting from dumping of this hazardous waste;

6.5.7 Encourage the use of waste audit procedures to identify and implement waste elimination opportunities;

6.5.8 Encourage the formation of industry groups to share information and develop industry guidelines on the safe use and storage of hazardous substances, and storage and disposal of hazardous wastes;

6.5.9 Encourage territorial authorities to adopt the New Zealand Standard Waste Water Bylaw (1995) to ensure that hazardous wastes that are discharged to the sewerage system are adequately controlled and minimised;

6.5.10 Encourage territorial authorities to ensure the safe storage of hazardous substances through by-laws, guidelines, or other provisions under other legislation as appropriate;

6.5.11 Encourage the oil industry to promote recycling and reuse of waste engine oil, to establish collection points at every service station in the region and to improve and upgrade waste oil re-refining capacity as necessary;

6.5.12 Provide public information on the safe use, handling and storage of household hazardous substances and safe disposal of household hazardous wastes;

6.5.13 Prepare, in conjunction with the territorial authorities, the Health Authorities and Emergency Services, a register of industries using and storing significant quantities of hazardous substances;

6.5.14 Undertake the collection of unwanted hazardous substances, such as agrichemicals;

6.5.15 Require pre-treatment of hazardous wastes, where practical and appropriate, prior to disposal;

6.5.16 Provide for the holding of joint hearings where resource consents are required from more than one agency on matters relating to hazardous substances and hazardous wastes;

6.5.17 The Otago Regional Council will:

(a) Provide a forum for the exchange of information, the identification of regional issues in hazardous substance management, and the development of regional solutions to those problems where appropriate;

(b) Develop appropriate contingency plans for dealing with hazardous substance spills; and

(c) Provide technical assistance to emergency services dealing with hazardous spills, including leaking of underground storage tanks;

6.5.18 Require as part of a resource consent application for facilities disposing of hazardous wastes, the preparation of hazardous waste facility management plans to address issues relating to the control of emissions and their effects;

6.5.19 Include complementary provisions on the discharge of hazardous substances and hazardous wastes to air and water in the Proposed Regional Plan: Air and for Otago the Proposed Regional Plan: Water for Otago respectively;

6.5.20 In consultation with territorial authorities, government agencies, industry and the public, prepare and promote a regional strategy for the collection, storage, treatment and disposal of hazardous wastes;

6.5.21 Invoke where necessary and appropriate the enforcement and emergency works procedures of the Resource Management Act to require the clean-up and restoration of the environment following any unauthorised discharge or spill, and for any associated costs to be met by the person or agency responsible for the discharge or spill;

6.5.22 Promote and encourage research into alternatives to the use of waste oil for suppressing dust;

6.5.23 Include a rule in this Plan which controls the discharge of ~~oil as a~~ dust suppressant~~s to formed roads~~;

6.5.24 Consult with Manawhenua on the appropriate approach towards, and effects on sites of significance to them, of hazardous substance and hazardous waste management in the Region;

6.5.25 Require, as part of any consent process, that the operators of hazardous waste disposal facilities record the source of material being disposed of.

Principal reasons for adopting hazardous substances and hazardous wastes methods

In order to achieve the objectives and policies set out above, it will be necessary for a number of methods to be adopted, ranging from the supply of information to regulation.

Promoting, encouraging and providing advice to bring about improved practices are considered to be important methods for reducing the adverse effects of such hazardous substances and wastes on Otago's environment. The maintenance of registers of industries using and storing hazardous substances and the collection of hazardous wastes such as agrichemicals will assist in understanding and further reducing the spread and impact of those wastes. Establishing and maintaining a capability to respond to accidental spills, and taking enforcement action regarding such spills where necessary, will assist in the minimisation of any adverse effects.

Rules are required in some situations where the discharge of hazardous substances or waste may result in adverse effects occurring. In such cases it may be necessary to include conditions on consents to avoid, remedy or mitigate any adverse effects. New Zealand standards will be used where appropriate.

6.6 Hazardous substances and hazardous waste rules

6.6.1 Operation of facilities for the treatment or disposal of hazardous wastes (discretionary activity)

1. The discharge of any contaminant into or on to land; or

2. The discharge of any contaminant into water;

3. The discharge of any contaminant into air; or

4. The discharge of water into water,

in the course of, or as a result of, the treatment or disposal of hazardous wastes is a discretionary activity.

Information Requirements
In addition to the information required by Section 88 of the Resource Management Act, a hazardous waste facility management plan in the form prescribed by Appendix 1 is required to be submitted with an application for resource consent under this rule.

6.6.2 Discharge of dust suppressants ~~oil or substances containing oil~~ (permitted activity)

The discharge of ~~oil or substances containing oil as~~ a dust suppressant onto or into land ~~on formed roads~~ is a permitted activity, provided that:

(a) The dust suppressant is not a hazardous substance; or ~~has a lead concentration of less than 100 mg/L; and~~

(b) The dust suppressant is approved under the Hazardous Substances and New Organisms Act 1996 and the use and discharge of dust suppressant is undertaken in accordance with all conditions of the approval ~~to be applied to the road at a rate and manner whereby there is no run-off from or ponding on the surface of the road.~~; and

(c) The discharge does not produce an objectionable odour, or a conspicuous oil or grease film, scum or foam in any:

(i) Lake, river or natural wetland ~~Regionally Significant Wetland~~; or

(ii) Drain or water race that flows to a lake, river, natural wetland ~~Regionally Significant Wetland~~ or coastal marine area; or

(iii) Bore or soak hole; and

(d) The discharge is not undertaken in a manner that results in ponding or overland flow that enters any:

(i) Lake, river, natural wetland ~~Regionally Significant Wetland~~ or coastal marine area; or

(ii) Drain or water race that goes to any lake, river, natural wetland ~~Regionally Significant Wetland~~ or coastal marine area.

6.6.3 Discharge of dust suppressants ~~oil or substances containing oil~~ (discretionary activity)

The discharge of ~~oil or substances containing oil as~~ a dust suppressant onto or into land ~~on formed roads not in accordance with Rule 6.6.2~~ is a discretionary activity~~.~~ where:

(a) The discharge is not permitted by Rule 6.6.2; and

(b) The dust suppressant is not waste oil.

6.6.3.1 Assessment matters

In considering any application under this rule, in addition to the matters listed in Section 104 of the Resource

Management Act, the Otago Regional Council will have regard to, but not be restricted by, the following matters:

(a) The location of the activity relative to any water body and areas prone to erosion, inundation or subsidence;

(b) The location of the activity relative to areas of cultural or historic significance;

(c) The characteristics, composition and volume of substances being discharged and of any likely by-products occurring from the degradation of these substances;

(d) The mitigation measures and safeguards to be undertaken to prevent or reduce the actual and potential adverse environmental effects; and

(e) Means by which the above matters will be monitored, including land adjoining areas being sprayed, any water body, ~~oil in the immediate locality,~~ including the frequency and locations of monitoring.

6.6.4 Discharge of waste oil

Except as provided for by Rules 6.6.1, 7.6.1 or 7.6.2, the discharge of waste oil onto or into land or into water is a prohibited activity.

Principal reasons for adopting hazardous substances and hazardous wastes rules

The discharge of hazardous wastes into or onto land, and into water and air, can have a significant adverse effect on Otago's natural and physical resources. Because of the potential for significant adverse effects to occur, the discharge of such hazardous wastes requires control.

~~The discharge of oil onto roads, because of the potential for heavy metals and other noxious elements within the oil to enter into ground and surface water resources, can also have adverse effects which requires control in order to ensure that the adverse effects are avoided, remedied or mitigated.~~

6.7 Anticipated environmental results

6.7.1 Production and use of hazardous substances and disposal of hazardous wastes is reduced in Otago.

6.7.2 The toxicity of hazardous wastes in Otago is reduced.

6.7.3 The adverse effects of discharges from the use of hazardous substances are controlled.

6.7.4 The adverse effects of the disposal of hazardous wastes are controlled.

6.7.5 The adverse effects of accidental discharges of hazardous substances are controlled.

6.7.6 The use of waste oil as a dust suppressant is avoided, and the adverse effects of the use of other ~~waste lubricating oil as a~~ dust suppressants are avoided, remedied or mitigated.

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Glossary

Terms marked with a ϕ are terms defined in the Resource Management Act 1991

The Act	Unless expressly stated otherwise, means the Resource Management Act 1991 (including any amendments thereto).
Amenity valuesϕ	Means those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes.
ANZECC	Australia and New Zealand Environment and Conservation Council, comprising ministers for the environment of Australian states, New Zealand and Papua New Guinea.
BOD	Biochemical Oxygen Demand. Used as a measure of organic pollution. The measured amount of oxygen required by acclimatised micro-organisms to biologically degrade the organic matter in wastewater.
Cleanfill	Generally a natural material such as clay, soil, and rock, and such other materials as concrete, brick or demolition products that are free of combustible or organic materials and are therefore not subject to biological or chemical breakdown.
Cleanfill landfill	A landfill used solely for the disposal of cleanfill.
Cleaner production	The conceptual and procedural approach to production that demands that all phases of the lifecycle of a product or of a process should be addressed with the objective of prevention or minimisation of short and long-term risks to humans and to the environment.
Closed landfill	A landfill which is no longer receiving waste.
COD	Chemical Oxygen Demand.
Co-disposal	The disposal of appropriate hazardous wastes by mixing them, in an informed and pre-determined manner, with municipal refuse, so as to use the attenuation and biochemical processes operating within the landfill to reduce the environmental impact from the mixed waste to an insignificant level.

Co-disposal landfill — A landfill used for the disposal of special hazardous wastes in combination with community wastes. Leachate and gaseous omissions from a co-disposal landfill should not be materially different from those generated from an operating landfill managed by a territorial authority.

Composting — The biological reduction of organic waste to a relatively stable product.

Contaminant[ϕ] — Includes any substance (including gases, liquids, solids and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy or heat:

(a) When discharged into water, changes or is likely to change the physical, chemical, or biological condition of water; or

(b) When discharged onto or into land or into air, changes or is likely to change the physical, chemical, or biological condition of the land or air onto or into which it is discharged.

Contaminated site — A contaminated site is a site at which hazardous substances occur at concentrations above background levels and where assessment indicates it poses, or is likely to pose an immediate or long term hazard to human health or the environment.

Controlled activity[ϕ] — An activity which -

(a) Is provided for, as a controlled activity, by a rule in a plan or proposed plan; and

(b) Complies with standards and terms specified in a plan or proposed plan for such activities; and

(c) Is assessed according to matters the consent authority has reserved control over in the plan or proposed plan; and

(d) Is allowed only if a resource consent is obtained in respect of that activity.

Discharge[ϕ] — Includes emit, deposit and allow to escape.

Discharge permit — A consent to do something (other than in the coastal marine area) that otherwise would contravene Section 15 [of the Resource Management Act 1991].

Discretionary activity[ϕ] Any activity -

(a) Which is provided for, as a discretionary activity, by a rule in a plan or proposed plan; and

(b) Which is allowed only if a resource consent is obtained in respect of that activity; and

(c) Which may have standards and terms specified in a plan or proposed plan; and

(d) In respect of which the consent authority may restrict the exercise of its discretion to those matters specified in the plan or proposed plan for that activity.

Ecosystem A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

Effect[ϕ] Unless the context otherwise requires, the term "effect" includes:

(a) Any positive or adverse effect; and

(b) Any temporary or permanent effect; and

(c) Any past, present, or future effect; and

(d) Any cumulative effect which arises over time or in combination with other effects -

regardless of the scale, intensity, duration, or frequency of the effect, and also includes -

(e) Any potential effect of high probability; and

(f) Any potential effect of low probability which has a high potential impact.

Environment[ϕ] Includes:

(a) Ecosystems and their constituent parts, including people and communities; and

(b) All natural and physical resources; and

(c) Amenity values, and

(d) The social, economic, aesthetic and cultural conditions which affect the matters stated in paragraphs (a) to (c) of this definition or which are affected by those matters.

Eutrophication Process by which water (usually freshwater) becomes rich in nutrients, causing excessive plant growth which kills animal life by deprivation of oxygen.

Farm landfill A landfill situated on production land in which the disposal of waste generated from that land takes place, not including any dead animal material or any waste generated from any industrial or trade process on that production land.

Greenwaste Vegetative material. The material may include soil that is attached to plant roots and shall be free of hazardous substances and wastes.

Groundwater Water that occupies or moves through pores, cavities, cracks, and other spaces in crustal rocks.

Hazardous substance Any substance:

(a) With one or more of the following intrinsic properties:

(i) Explosiveness;

(ii) Flammability;

(iii) A capacity to oxidise;

(iv) Corrosiveness;

(v) Toxicity, (both acute and chronic);

(vi) Ecotoxicity, with or without bioaccumulation; or

(b) Which on contact with air or water (other than air or water where the temperature or pressure has been artificially increased or decreased) generates a substance with any one or more of the properties specified in paragraph (a) of this definition.

Hazardous waste Includes:

(a) A hazardous substance which has not been used and requires disposal; or

(b) The residue of a hazardous substance which has been used and requires disposal; or

(c) Waste material containing a hazardous substance.

Highly hazardous substance or waste

Any substance or waste belonging to any of the categories described in Appendix 4 of this Plan, unless such wastes or substances do not possess any of the hazardous characteristics listed in Appendix 5 of this Plan.

Industrial or trade premises$^{\phi}$

Means:

(a) Any premises used for any industrial or trade purposes; or

(b) Any premises used for the storage, transfer, treatment, or disposal of waste materials or for other waste management purposes, or used for composting organic materials; or

(c) Any other premises from which a contaminant is discharged in connection with any industrial or trade process -

and includes any factory farm; but does not include any production land.

Intractable waste

Any hazardous waste that does not degrade naturally into non-hazardous residues over time when released into the environment, and for which there is no present environmentally acceptable method of treatment or disposal currently available in New Zealand. It should be noted that not all hazardous wastes are intractable wastes.

Kai Tahu

Descendants of Tahu, the tribe.

Kaitiakitanga$^{\phi}$

The exercise of guardianship and, in relation to a resource, includes the ethic of stewardship based on the nature of the resource itself.

Landfill

A site used for the deposit of solid wastes onto or into land.

Leachate

A liquid contaminant resulting from the liquid being exuded from or percolated through some more-or-less solid matter.

Local authority

A regional council or territorial authority.

Manawhenua

Those with rangatiritanga for a particular area of land or district.

Method

The practical action by which a policy is implemented.

Mitigate To make or become less severe or harsh. To moderate.

New landfill A site to be used as a landfill.

Non-complying activity An activity (not being a prohibited activity) which:

(a) Contravenes a rule in a plan or proposed plan; and

(b) Is allowed only if a resource consent is obtained in respect of that activity.

Non-point source discharge Runoff or leachate from land, onto or into land, air, a water body or the sea.

Objective The desired result, end state, situation or condition that is aimed for.

Offal Waste comprised of dead animal matter.

Offal pit A disposal hole excavated for the purpose of disposing of offal.

Operating landfill Any landfill that is currently accepting solid waste for disposal.

PCB Polychlorinated biphenyl.

PCP Pentachlorophenol.

Permitted activity$^{\phi}$ Any activity that is allowed by a plan without a resource consent if it complies in all respects with any conditions (including any conditions in relation to any matter described in Section 108 or Section 220 [of the Resource Management Act]) specified in the plan.

Point source discharge A discharge from a specific and identifiable source, onto or into land, air, a water body or the sea.

Policy The course of action to achieve the objective.

Production land$^{\phi}$

(a) Means any land and auxiliary buildings used for the production (but not processing) of primary products (including agricultural, pastoral, horticultural, and forestry products)

(b) Does not include land or auxiliary buildings used or associated with prospecting, exploration, or mining for minerals or used for factory farming, - and "Production" has a corresponding meaning.

Recycling The return of discarded waste materials to the production system for utilisation in the manufacture of goods, with a view to the conservation as far as practicable of non-renewable and scarce resources.

Resource consent[ϕ] Means:

(a) A consent to do something that otherwise would contravene Section 9 or Section 13 (in [the Resource Management] Act called a "land use consent");

(b) A consent to do something that otherwise would contravene Section 11 (in [the Resource Management] Act called a "subdivision consent");

(c) A consent to do something in a coastal marine area that otherwise would contravene any of Sections 12, 14 and 15 (in the [Resource Management] Act called a "coastal permit");

(d) A consent to do something (other than in a coastal marine area) that otherwise would contravene Section 14 (in the [Resource Management] Act called a "water permit");

(e) A consent to do something (other than in a coastal marine area) that otherwise would contravene section 15 (in the [Resource Management] Act called a "discharge permit");

And includes all conditions to which the consent is subject.

Solid waste The combination of domestic, industrial and commercial waste including non-hazardous special wastes, also known as community waste.

Takaroa Guardian of the waterways.

Territorial authority A city or district council.

Waste Any contaminant, whether liquid, solid, gaseous, or radioactive, which is: discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an adverse effect on the environment and which includes all unwanted and economically unusable by-products at any given place and time, and any other matter which may be discharged, accidentally or otherwise, to the environment.

Waste analysis protocol	A system developed by the Ministry for the Environment to provide a database/knowledge on New Zealand's waste stream.
Waste oil	Any oil that has been refined from crude oil, or any synthetic hydrocarbon oil, that has been used, and as a result of such use, has become unsuitable for its original purpose due to the presence of impurities or contaminants or the loss of original properties.
Waste management	The transportation, resource recovery, recycling, storage, treatment and disposal of wastes, including management systems to ensure that environmental effects are avoided, remedied or mitigated. Waste management also encompasses measures to avoid waste generation.
Waste minimisation	The modification of existing processes or behaviour to reduce waste production to a minimum.
Water body$^{\phi}$	Means fresh water or geothermal water in a river, lake, stream, pond, wetland, or aquifer, or any part thereof, that is not located within the coastal marine area.