

# 7

## Landfills



## 7.1 Introduction

Facilities for disposing of wastes to the ground have been variously described as landfills, tips, or dumps, without reference to the degree of environmental safeguards employed in their management, nor to the types of waste deposited into them. Characteristics of landfills can vary greatly, from small, privately owned farm offal pits and landfills to illegal dumping areas, and large scale municipal landfills. For the purpose of this Plan, the term “landfill” is used to refer to a site used for the disposal of solid wastes onto or into land.

While reducing, reusing or recycling wastes is the desired order of progression in a waste management strategy, there will always be a certain amount of waste requiring disposal to landfills. Landfills are the usual end point for wastes which have no potential for recovery.

Landfills have traditionally been classified by the types of waste they accept - domestic, commercial or industrial. This however does not recognise the dynamic nature of waste. In this Plan landfills include the following types:

- Co-disposal;
- Farm;
- Clean fill;
- Offal pit;
- Greenwaste;

and the term “landfill” generically refers to all landfills, including the above types, unless specified otherwise.

Landfills are also categorised into three different states:

- Closed;
- Operating; or
- New.

Each type and state of landfill requires a specific kind of management to prevent adverse environmental effects occurring or to mitigate these where they already exist.

A landfill should not be treated as a storage or disposal facility but as a physical, chemical and biological reactor. While past concerns have focused on the health aspects of waste collection and disposal, regard must also be given to adverse environmental effects such as water contamination, site contamination, and management of the site once the landfill has been closed.

It is likely that landfills will be an integral part of the waste stream for many years, therefore management should be directed towards improving landfill quality and reducing adverse environmental effects. It cannot necessarily be assumed that because a landfill is small, its effects on the

environment will be minor.

Long term strategies for management and development of landfills are essential to meet the purpose of the Resource Management Act to achieve the sustainable management of natural and physical resources. Within the Otago region, territorial authorities put considerable energy and resources into determining their solid waste strategies and they have been actively reducing the number of landfills as a result. This will not only ensure that those facilities that are retained are able to be better managed, but it will also enable closure of sites which may not be totally suitable for landfill purposes.

This Chapter of the Plan also considers the leachate discharges from composting and silage production, because these are potentially similar to landfill discharges.

Section 15 of the Resource Management Act requires, unless a regional plan provides otherwise, that activities such as landfills and composting and silage production operations obtain a resource consent if those activities result in a discharge of contaminants to:

- Air; or
- Water; or
- Land; or
- Land in circumstances where a contaminant is likely to enter water.

The rules of this Chapter of the Plan provide for landfills, and composting and silage making activities in the following way:

	<b>Permitted</b>	<b>Controlled</b>	<b>Discretionary</b>
<b>Cleanfill landfills</b>	Rule 7.6.3		Rule 7.6.4
<b>Offal Pits</b>	Rule 7.6.5	Rule 7.6.6	Rule 7.6.7
<b>Farm landfill</b>	Rule 7.6.8		Rule 7.6.9
<b>Greenwaste landfills</b>	Rule 7.6.10		Rule 7.6.11
<b>Composting</b>	Rule 7.6.12		Rule 7.6.13
<b>Silage production</b>	Rule 7.6.14		Rule 7.6.15

A transitional regime has been developed within Rules 7.6.1 and 7.6.2 for landfills other than those identified above, as follows:

**For a closed landfill**

1. Any landfill closed before 1 October 1991 will not require a resource consent, but may be considered a contaminated site on the Otago Regional Contaminated Sites Register and be subject to Rule 5.6.1 if it is discharging contaminants.
2. Any landfill closed between 1 October 1991 and 1 October 1994 was permitted until 1 October 1996, after which time it required:
  - (a) A resource consent under Rule 7.6.2, and
  - (b) A landfill closure plan.
3. Any landfill closed after 1 October 1994 will be assessed in accordance with Rule 7.6.1 as if it were an operating landfill.

**For an operating landfill**

1. Any landfill operating before 1 October 1991 was permitted until 1 April 1995 after which time it required the following:
  - (a) A resource consent under Rule 7.6.1; and
  - (b) A landfill development and management plan if it will be in operation past 1 October 1997; or
  - (c) A landfill closure plan if it is to close by 1 October 1997.

**For a new landfill**

1. Any new landfill established after 1 October 1991 requires the following:
  - (a) A resource consent under Rule 7.6.1; and
  - (b) A landfill development and management plan if it will be in operation past 1 October 1997; or
  - (c) A landfill closure plan if it is to close by 1 October 1997.

## 7.2 Landfill issues

### 7.2.1 Otago has a large number of landfills, widely dispersed throughout the region.

**Explanation**

All landfills may be sources of contamination, to varying degrees, irrespective of their size. Monitoring and managing landfills is a problem if numbers are high and they are scattered throughout the region. The more sites there are in Otago, the greater the potential risk of adverse environmental effects.

*Objective* 7.3.2

*Policies* 7.4.3, 7.4.7, 7.4.8

### **7.2.2 There are inappropriately sited landfills in Otago.**

#### **Explanation**

Landfills, have been located in inappropriate places, such as close to water bodies, above groundwater supplies, adjacent to incompatible activities or in areas where there is a considerable adverse effect on the amenities of the area. Discharges from landfills are potential sources of contamination. In many cases there is a lack of knowledge of what has been placed into these landfills and as a consequence there may be a need to monitor some sites.

*Objectives 7.3.1, 7.3.2*

*Policies 7.4.3, 7.4.7, 7.4.11, 7.4.11A*

### **7.2.3 Some landfills in Otago are not managed to appropriate standards.**

#### **Explanation**

Management of Otago's landfills must ensure the avoidance, remedy and mitigation of adverse environmental effects that could occur from unwise management. These include discharges to land, water and air. While this Plan seeks to manage all discharges arising from landfills, the complex nature of discharges to air, and the need for a consistent approach across activities, means that detailed standards relating to such discharges will be subject to the provisions of the Regional Plan: Air for Otago.

In part some of the inappropriate management practices undertaken at existing landfills arise because there is insufficient awareness and implementation of landfill management guidelines. Improved landfill management procedures have been developed, for example by the Ministry for the Environment, to minimise the adverse environmental effects of landfills. If the adverse environmental effects are to be avoided, remedied or mitigated then the adoption and use of appropriate management practices as set out in guidelines will be required. Particular attention needs to focus on hazardous wastes, such as medical wastes, and methods used to pre-treat them, and either store them or dispose of them. In some instances, however, landfill managers are not familiar with appropriate methods of landfill management.

*Objectives 7.3.1, 7.3.2*

*Policies 7.4.3, 7.4.4, 7.4.6, 7.4.7, 7.4.11, 7.4.11A*

### **7.2.4 Uncontrolled, unmanaged or illegal landfills give rise to adverse environmental effects.**

**Explanation**

Discharges to water, land and air are more likely to arise in the case of landfills which are uncontrolled, unmanaged or illegal. At such landfills, hazardous wastes are not subject to appropriate management practices and are potentially more of a danger to the environment. In addition such landfills are unsightly. Where they do arise it is the public who frequently bear the cost of clean-up.

*Objective 7.3.2*

*Policies 7.4.1 - 7.4.4, 7.4.8*

**7.2.5 Few of Otago’s landfills have been planned within a long term strategy or management plan, including post-closure management.**

**Explanation**

Past landfill management has been directed towards maintaining the landfill’s ability to accept waste. Only recently have resources been directed towards the control of leachate during the life of the landfill and after. Closed landfills may release leachate after they have stopped operating. They also continue to produce methane gas which could pose a hazard if it is unable to dissipate away from the landfill. For this reason it will be necessary to require post-closure management plans for landfills, excluding farm, cleanfill, and greenwaste landfills and offal pits.

*Objectives 7.3.1, 7.3.2*

*Policies 7.4.6, 7.4.10*

**7.2.6 There is little information on the types and quantities of hazardous wastes disposed into co-disposal landfills.**

**Explanation**

Management of co-disposal landfills has not always included monitoring the types and quantities of hazardous wastes deposited during the life of the co-disposal landfill. Co-disposal landfills in smaller, rural areas have rarely been monitored to check what has been deposited into them.

*Objectives 7.3.1, 7.3.2*

*Policy 7.6.5*

### **7.2.7 Disposal of offal can give rise to adverse environmental effects.**

#### **Explanation**

The very nature of offal means that adverse effects such as contamination of groundwater and increase in odour resulting from its disposal can occur.

*Objective 7.3.1*

*Policies 7.4.3, 7.4.4, 7.4.6, 7.4.10*

### **7.2.8 Discharges from composting of organic material and silage production can give rise to adverse effects.**

#### **Explanation**

While composting of organic material is an alternative to disposal, and a form of recycling, it can, together with silage production result in discharges to land, water and air. Of concern is leachate discharge, particularly from silage production. Odour can also be a problem, but the complex nature of discharges to air means that detailed standards relating to such discharges will be the subject to the provisions of the Regional Plan: Air for Otago.

*Objective 7.3.3*

*Policies 7.4.3, 7.4.4*

## **7.3 Landfill objectives**

### **7.3.1 To avoid, remedy or mitigate the adverse environmental effects arising from the discharge of contaminants at and from landfills.**

#### **Explanation**

Adverse environmental effects may occur through toxic leachate or gases which originate from landfills. Such leachate can move into surface or groundwater supplies as well as onto adjacent land or into the air, rendering these resources unsuitable for other uses, or unsafe. The adverse environmental effects of landfills can be avoided by adopting methods for disposal other than landfills. The adverse effects can be remedied or mitigated by siting landfills appropriately, and implementing sound management practices. Some material such as offal is inappropriate to dispose of into landfills other than offal pits, and alternative means are required to deal with this issue.

*Policies 7.4.1 - 7.4.11A*

*Methods 7.5.1 - 7.5.16*

*Rules 7.6.1 - 7.6.11*

**7.3.2 To eliminate illegal, uncontrolled, unmanaged, poorly managed and poorly located landfill sites.**

**Explanation**

The illegal dumping of waste is an offence against the Resource Management Act. As with uncontrolled and unmanaged landfills, illegal dumping can give rise to adverse effects, such as discharges and visual unsightliness. Sites that are poorly located or poorly managed can also give rise to adverse effects. Where action cannot be taken to improve the operation of such landfills in the future, it is appropriate to seek their closure and the construction of more environmentally acceptable facilities.

*Policies 7.4.2, 7.4.3, 7.4.6 - 7.4.9, 7.4.11, 7.4.11A*

*Methods 7.5.1 - 7.5.3, 7.5.10, 7.5.11, 7.5.14, 7.5.16*

*Rules 7.6.1 - 7.6.11*

**7.3.3 To avoid, remedy or mitigate the adverse effects of discharges from composting and silage production.**

**Explanation**

Composting and silage production discharges can give rise to adverse effects. Of particular concern is the contamination of groundwater. Management of these activities is therefore required.

*Policies 7.4.3, 7.4.4*

*Methods 7.5.5, 7.5.6, 7.5.10, 7.5.14, 7.5.15*

*Rules 7.6.2 - 7.6.15*

**Principal reasons for adopting landfill objectives**

Landfill discharges are potentially damaging to the environment and may be a significant source of contamination. The localised nature of landfill operations enables control of discharges close to or at the source of contamination. It is likely that landfills will remain a component of the waste stream in the future so the primary objective of landfill management must be to ensure that adverse environmental effects are minimised.

**7.4 Landfill policies**

**7.4.1 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 wastes in a manner that takes into account Kai Tahu cultural values; and**
- (b) **Supporting 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 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 landfill management.**

#### **Explanation**

Traditional manawhenua values are especially sensitive to the quality of our environment. 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 to be achieved.

*Method 7.5.1*

#### **7.4.2 Take action against illegal landfills and waste dumping.**

##### **Explanation**

Illegal landfills and waste dumping are an offence against the provisions of the Resource Management Act, and the community has an expectation that statutory authorities will take action to stop such practices and, in appropriate cases, prosecute offenders.

*Method 7.5.14*

#### **7.4.3 To ensure that landfills and discharges from silage production and composting operations are sited at locations and managed in a manner whereby adverse effects on the environment are avoided, remedied, or mitigated.**

##### **Explanation**

The effects of landfills and discharges from silage production and composting operations on the environment, as well as on iwi, cultural, conservation, historic and amenity values will vary depending on their size and location. Such issues must be considered when deciding on landfill locations and when assessing any resource consents for continuation of landfill operations.

Landfills, and composting and silage production discharges must be sited away from resources at risk of contamination such as surface and groundwater supplies. Territorial authorities will consider, to the degree that they consider appropriate, other locational aspects of landfills and discharges from silage production and composting in their district plans.

*Methods 7.5.1 - 7.5.16*

*Rules 7.6.1 - 7.6.15*

**7.4.4 To monitor discharges to land, water, and air from new, operating and closed landfills, and from silage production and composting.**

**Explanation**

On-going monitoring of discharges from new, operating and closed landfills, and from silage and composting sites will provide a means of ensuring that environmental degradation of natural and physical resources is not occurring, as well as ensuring that management techniques are appropriate for the site.

Cleanfill landfills, farm landfills, offal pits, greenwaste landfills, silage production and composting operated in conformity with the rules for permitted activities in this Plan are unlikely to give rise to any significant adverse environmental effects, and as a consequence it is unnecessary to require their operators to monitor them. The Otago Regional Council nevertheless considers that in order to monitor the effectiveness of the rules, an accurate location for any farm landfill or any offal pit on a factory farm must be supplied before the activity is permitted.

*Methods 7.5.7, 7.5.8, 7.5.9, 7.5.10, 7.5.11, 7.5.16*

*Rules 7.6.1, 7.6.2, 7.6.4 - 7.6.9, 7.6.11, 7.6.13, 7.6.15*

**7.4.5 To identify and quantify waste inputs into operating, and new landfills.**

**Explanation**

Improved awareness of the components and quantities of waste, especially hazardous waste, entering landfills will ensure that management is appropriate for the types of waste received. Suitable management will avoid the release of contaminants to the environment and minimise adverse environmental effects.

*Method 7.5.9*

*Rule 7.6.1*

**7.4.6 To require that all new, operating, and closed landfills are managed in compliance with approved management and post-closure procedures.**

**Explanation**

Leachate discharges from landfills to soil and water resources are a major cause of contamination and must, where practical, be prevented to ensure that the environment is not adversely affected. These discharges may not be detected for many years and the effects may continue past the life of the landfill. Such concerns arise from large as well as smaller landfills.

*Methods 7.5.7, 7.5.8*

*Rules 7.6.1, 7.6.2, 7.6.6, 7.6.7*

**7.4.7 To upgrade where possible or close those existing landfill sites causing adverse effects.**

**Explanation**

Where contamination has been linked to particular landfills, these should be managed in order that such contamination is remedied and avoided in the future. If this cannot be done it may be appropriate to close the landfill concerned.

Ongoing monitoring may be necessary to ensure that any adverse effects are effectively mitigated.

*Methods 7.5.2, 7.5.7, 7.5.8, 7.5.11, 7.5.16*

*Rules 7.6.1, 7.6.2, 7.6.4, 7.6.7, 7.6.9, 7.6.11, 7.6.13, 7.6.1*

**7.4.8 To promote alternatives to landfills as a means of waste disposal.**

**Explanation**

Landfills occupy space, require management to avoid adverse effects, and are expensive to operate. Landfills should be considered only where other alternatives such as waste minimisation, cleaner production, recycling, or other methods of waste disposal have failed or are impracticable to implement.

The Otago Regional Council will also promote the use of options other than landfills for waste disposal, where it can be shown that adverse effects will not arise.

*Method 7.5.12*

*Rule 7.6.1*

**7.4.9 To have regard to the environmental effects of offal pits in determining their location and management.**

**Explanation**

Inappropriate location and management of offal pits can give rise to adverse effects, particularly on water quality. The larger the pit, the greater the potential for adverse effects to arise.

To avoid adverse effects on water quality, offal pits will need to be sited above water tables. In some cases, where water tables are particularly high, this will mean that the construction of the traditional offal pit five metres or so into the ground is inappropriate. In such situations, and for emergencies such as stock smotherers, the digging of a shallow trench and mounding of dirt above ground may be the most appropriate method of disposal.

*Methods 7.5.6, 7.5.8*

*Rules 7.6.5 - 7.6.7*

**7.4.10 To extend the time by which resource consents are required to 1 October 1996 for landfills operating at 1 October 1991, which were closed by 1 October 1994.**

**Explanation**

Recognising the efforts being made by territorial authorities to obtain approvals for those landfills currently operating, and the burden that obtaining approvals for closed landfills as well would place on operators and Otago Regional Council staff, it is appropriate to extend the period for obtaining consents for closed landfills. Attention and effort is required to focus on those sites which are more likely to be having continuing adverse effects.

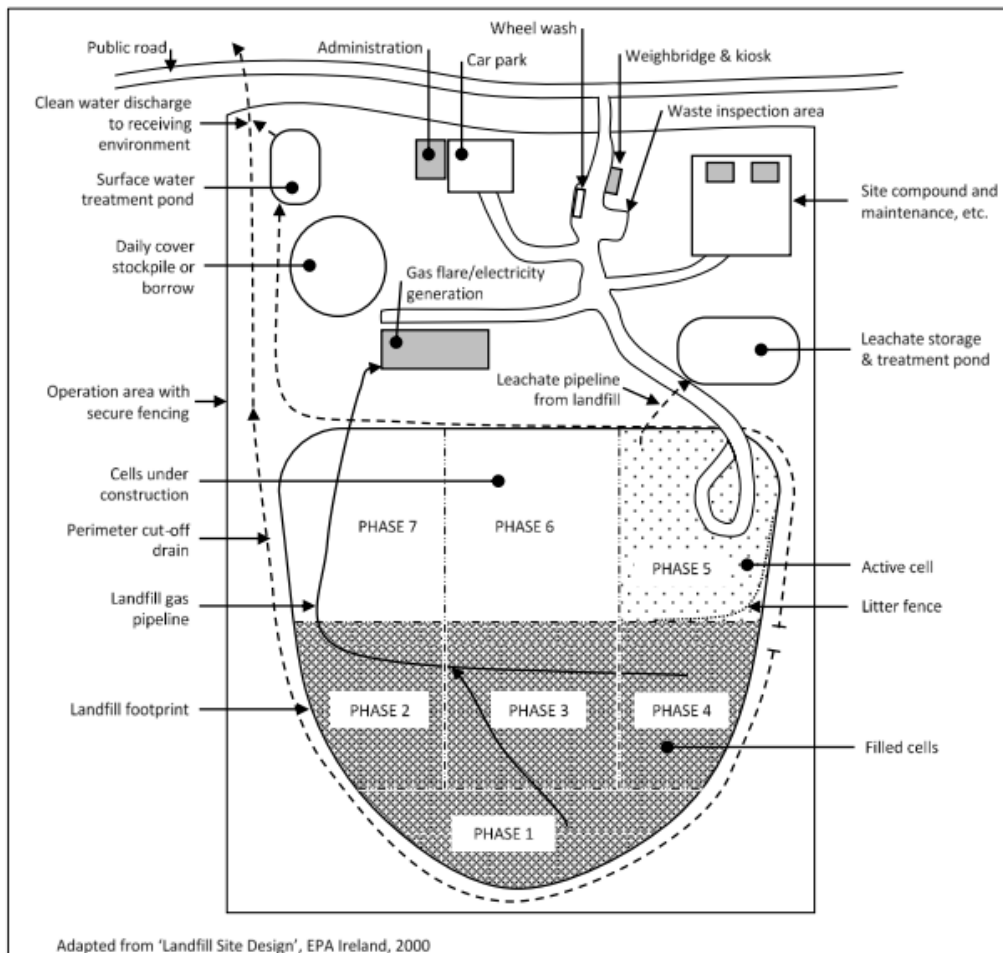
*Rule 7.6.2*

**7.4.11 To avoid significant adverse effects of discharges and otherwise minimise the adverse effects of discharges from new and operating landfills on the environment outside a landfill footprint (as indicated in Figure 5-1 of the Waste Management Institute New Zealand's *Technical Guidelines for Disposal to Land* August 2018), by requiring that:**

- (a) the siting, design, construction, operation and management of new landfills, and operating and closed landfills to the extent that the Guidelines are applicable, is in accordance with the Waste Management Institute New Zealand's *Technical Guidelines for Disposal to Land* (August 2018); and
- (b) a site-specific management plan is prepared and implemented in accordance with the Waste Management

Institute New Zealand's *Technical Guidelines for Disposal to Land* (August 2018) that includes (but is not limited to):

- (i) methods for leachate management, collection, treatment and disposal;
- (ii) methods for stormwater capture and control from both off-site and on-site sources; and
- (iii) methods to minimise contamination of the receiving environment; and
- (iv) controls to manage hazardous waste and avoid any discharge of hazardous wastes or the leaching of contaminants from hazardous wastes.



**Figure 4: Operational Plan for a Landfill Site**

(Adapted from the Waste Management Institute New Zealand's *Technical Guidelines for Disposal to Land* August 2018, Figure 5-1)

**7.4.11A The discharges at and from new and operating landfills within 13km of airports defined as Nationally Significant Infrastructure are to be assessed with regard to:**

- (a) siting;
- (b) classes of landfills;
- (c) preparation and implementation of management plans;

**in order to prevent the landfill increasing the existing risk of bird strike.**

Advice note: For the purpose of Policy 7.4.11A, the reference to “airports defined as Nationally Significant Infrastructure” includes any airport (but not its ancillary commercial activities) used for regular air transport services by aeroplanes capable of carrying more than 30 passengers.

### **Principal reasons for adopting landfill policies**

Landfills provide a necessary function for the disposal of wastes, and silage production and composting provide for the reuse of materials. However, they all have adverse effects on the environment and the potential to impact on cultural, amenity, and heritage values. As a consequence, a range of actions will be appropriate and the policies above provide the basis for a coordinated approach to management.

Monitoring discharges will provide an ongoing audit of how well management systems are performing and where changes are required to ensure that adverse environmental effects are minimised or avoided. Monitoring of inputs to landfills will also enable management programmes to adjust depending on the types and quantities of waste being deposited into the landfill.

## **7.5 Landfill methods**

In meeting the objectives and in carrying out the policies relating to landfills, silage production and composting the Otago Regional Council will:

- 7.5.1 Consult with the manawhenua on the approach towards, and effects on sites of significance to them, of landfill management in Otago;
- 7.5.2 Advocate that territorial authorities rationalise the number of operating landfills within their districts;

- 7.5.3 Advocate that territorial authorities make provision for refuse disposal facilities within their districts so as to avoid the need for illegal dumping;
- 7.5.4 Advocate that territorial authorities include in their district plans objectives, policies and methods on those parts of landfill operations that are the responsibility of those authorities under Section 31 of the Resource Management Act;
- 7.5.5 Provide for the holding of joint hearings where resource consents are required from more than one agency on matters relating to landfills, discharges from silage production and composting;
- 7.5.6 Provide standards for landfills, composting and silage operations to meet, in order to avoid discharges to water;
- 7.5.7 Require management plans for all landfills (excluding cleanfill landfills, offal pits on production land, farm landfills and greenwaste landfills) and for offal pits on industrial or trade premises, excluding factory farms, describing the methods to be taken to avoid, remedy or mitigate any adverse environmental effects;
- 7.5.8 Require landfill closure plans for all landfills (excluding cleanfill landfills, offal pits on production land, farm landfills and greenwaste landfills) and for offal pits on industrial and trade premises, excluding factory farms, closed by 1 October 1997, describing the methods to be taken to avoid, remedy or mitigate, and monitor for, any long-term adverse environmental effects;
- 7.5.9 Require operators of operating and new landfills to monitor waste being disposed of at the landfill, having regard to the Waste Analysis Protocol in order to assess the type of material being deposited and to ensure that appropriate disposal techniques are being adopted;
- 7.5.10 Carry out audit monitoring of landfills, and discharges from silage production and composting, to assess the extent of their adverse effects on the environment;
- 7.5.11 Require operators of operating and new landfills to monitor discharges from the site;
- 7.5.12 Investigate, evaluate and, where appropriate, promote alternatives to the disposal of waste at landfills;

- 7.5.13 Provide an ongoing role in promoting and coordinating appropriate landfill management within the region;
- 7.5.14 Use enforcement procedures to:
- (a) Require owners/operators of landfills, and composting and silage operations, to remedy any adverse environmental effects of those operations; and
  - (b) Close landfills, silage production and composting operations where owners/operators are unable to meet acceptable environmental standards of operation; and
  - (c) Require the closing and remediation of sites used for illegal landfill operations;
- 7.5.15 Include Objectives, Policies and Methods in the Regional Plan: Air for Otago dealing with discharges to air from landfills, and composting and silage operations; and
- 7.5.16 Work with territorial authorities to identify the location of past community landfills to establish whether any adverse environmental effects require avoiding, remedying or mitigating.

### **Principal reasons for landfill methods**

The Otago Regional Council, in fulfilling its responsibilities under the Resource Management Act, must consider and use appropriate methods to minimise or avoid adverse environmental effects. The scale of impact of effects from landfills may be assessed in part by the size or type of landfill. The above methods make provision for the scale of adverse effects anticipated on a site by site basis.

The above methods also provide a range of opportunities for the Otago Regional Council and territorial authorities to use when considering aspects of landfill management on a district or regional scale. The methods in this Plan provide for varying degrees of managing environmental effects depending on particular circumstances.

## **7.6 Landfill rules**

Discharges of waste onto or into land except as permitted by or under this Plan, a resource consent, or regulation, are non-complying activities.

- 7.6.1 New or operating landfills [excluding cleanfill landfills, offal pits, farm landfills and greenwaste landfills] (discretionary activities)**



- 1 The discharge of any contaminant into or onto land; or
- 2 The discharge of any contaminant or water into water; or
- 3 The discharge of any contaminant into air,

**as a result of the operation of any landfill (except for a cleanfill landfill, offal pit, farm landfill, or greenwaste landfill covered by Rules 7.6.3 to 7.6.11) are discretionary activities, provided that no burning of waste is undertaken.**

#### **7.6.1.1 Information requirements**

In addition to the information required by Section 88 of the Resource Management Act, the following information is required to be submitted with an application for resource consent under this rule:

- (a) If the landfill is to close by 1 October 1997 a landfill closure plan in the form prescribed by Appendix 3; or
- (b) Otherwise a site-specific management plan prepared in accordance with the Waste Management Institute New Zealand's *Technical Guidelines for Disposal to Land* (August 2018).

#### **7.6.1.2 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) Odour control;
- (b) Potential contamination of soil or water;
- (c) Means to monitor the above;
- (d) The extent to which the landfill proposal reflects the industry standard for landfills, as represented in the Waste Management Institute New Zealand's *Technical Guidelines for Disposal to Land* (August 2018);
- (e) The location of the landfill relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;
- (f) The characteristics, composition and volume of substances being discharged and of any likely by-products occurring from the degradation of these substances;

- (g) The characteristics of the receiving environment including the current and likely future uses of that environment including residential activities;
- (h) The mitigation measures, safeguards, and contingency plans to be undertaken to prevent or reduce the actual and potential adverse environmental effects including on residential activities;
- (i) Provisions for the handling of any noxious waste, including medical waste, and the degree of pre treatment that will be required prior to accepting such wastes; and
- (j) The landfill management plan or landfill closure plan prepared for the site.

**7.6.2 Landfills that closed between 1 October 1991 and 1 October 1994 [excluding cleanfill landfills, offal pits, farm landfills and greenwaste landfills] (discretionary activity)**

- 1 The discharge of any contaminant into or onto land;**
- 2 The discharge of any contaminant or water into water; or**
- 3 The discharge of any contaminant to air,**

when occurring as the result of a landfill that closed between 1 October 1991 and 1 October 1994 (except for a cleanfill landfill, offal pit, farm landfill, or greenwaste landfill covered by Rules 7.6.3 to 7.6.11) are a permitted activity until 1 October 1996, from which time they became a discretionary activity.

Where a resource consent application for a landfill covered by this rule was submitted before 1 October 1996, discharges will be a permitted activity until the application for resource consent has been finally determined.

A landfill (except for a cleanfill landfill, offal pit, farm landfill, or greenwaste landfill covered by Rules 7.6.3 to 7.6.11) that closes after 1 October 1994 is subject to Rule 7.6.1.

**7.6.2.1 Information requirements**

In addition to the information required by Section 88 of the Resource Management Act, a landfill closure plan in the form prescribed by Appendix 3 is required to be submitted with an application for resource consent under this rule.

### **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 adverse effects on land, water and air arising from any discharges;
- (b) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges;
- (c) The monitoring programme to be implemented;
- (d) The means to advise prospective purchasers of the property of the landfill operation; and
- (e) The location of the landfill relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance.

#### **7.6.3 Cleanfill landfills (permitted activity)**

**The discharge of any contaminants into or onto land when occurring as the result of cleanfill landfills is a permitted activity, provided that no sediments enter into any water body.**

#### **7.6.4 Cleanfill landfills (discretionary activity)**

**The discharge of any contaminant into or onto land when occurring as the result of a cleanfill landfill which does not comply with Rule 7.6.3, is a discretionary activity.**

##### **7.6.4.1 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 cleanfill landfill relative to any water body, and areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;
- (b) The adverse effects on land, water and air arising from any discharges;
- (c) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges; and
- (d) The monitoring programme to be implemented.

**7.6.5 Offal pits on production land or factory farm (permitted activity)**

- 1 The discharge of any contaminant into or onto land;**
- 2 The discharge of any contaminant or water into water; or**
- 3 The discharge of any contaminant to air,**

**when occurring as the result of an offal pit on production land or factory farm is a permitted activity provided that:**

- (a) The accurate location of any offal pit on a factory farm is provided to the Otago Regional Council;**
- (b) It is dug in a manner so as to avoid groundwater seepage into the pit;**
- (c) It is not constructed within 100 metres, horizontally, of a well used to provide water for domestic purposes or drinking water for livestock;**
- (d) Leachate from the offal pit does not enter any water body;**
- (e) It is not constructed within 50 metres, horizontally, of any river, lake, stream, pond, wetland or mean high water springs;**
- (f) Only dead animal matter and perishable household wastes are disposed of into the pit;**
- (g) No dead animal material originating from an industrial or trade premise (excluding a factory farm) is to be disposed of into the pit;**
- (h) It is not dug within 50 metres, horizontally, of a property boundary; or**
- (i) The offal pit does not cause a nuisance and is not noxious, dangerous, offensive, or objectionable beyond the boundaries of the property.**

**7.6.6 Offal pits on industrial or trade premises, excluding factory farms (controlled activity)**

- 1 The discharge of any contaminant into or onto land;**
- 2 The discharge of any contaminant or water into water; or**
- 3 The discharge of any contaminant to air,**

**when occurring as the result of an offal pit on industrial or trade premises (excluding factory farms) is a controlled activity, provided that:**

- (a) It is dug in a manner so as to avoid groundwater seepage into the pit;
- (b) It is not constructed within 100 metres, horizontally, of a well used to provide water for domestic purposes or drinking water for livestock;
- (c) Leachate from the offal pit does not enter any water body;
- (d) It is not constructed within 50 metres, horizontally, of any river, lake, stream, pond, wetland or mean high water springs;
- (e) The offal pit shall not be used for the disposal of hazardous wastes or any other toxic matter, sewage, or animal effluent;
- (f) Only offal generated on the property is to be disposed of into the pit;
- (g) It is not dug within 50 metres, horizontally, of a property boundary; or
- (h) The offal pit does not cause a nuisance and is not noxious, dangerous, offensive, or objectionable beyond the boundaries of the property.

#### **7.6.6.1 Information requirements**

In addition to the information required by Section 88 of the Resource Management Act, the following information is required to be submitted with an application for resource consent under this rule:

- (a) If the offal pit is to close by 1 October 1997 a landfill closure plan in the form prescribed by Appendix 3;
- (b) Otherwise a management plan in the form prescribed in Appendix 2.

#### **7.6.6.2 Assessment Matters**

In considering an application under this rule the Otago Regional Council will exercise its control over the following matters:

- (a) The adverse effects on land, water and air arising from any discharges;
- (b) The location of the offal pit relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;
- (c) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges;
- (d) The monitoring programme to be implemented; and
- (e) The means to advise prospective purchasers of the property about the landfill operation.

**7.6.7 Control of offal pits not in accordance with Rules 7.6.5 or 7.6.6 (discretionary activity)**

- 1 The discharge of any contaminant into or onto land;**
- 2 The discharge of any contaminant or water into water; or**
- 3 The discharge of any contaminant to air,**

**when occurring as the result of an offal pit operated other than in accordance with Rule 7.6.5 or Rule 7.6.6 is a discretionary activity.**

**7.6.7.1 Information requirements**

For industrial and trade premises, excluding factory farms, in addition to the information required by section 88 of the Resource Management Act, the following information is required to be submitted with an application for a resource consent under this rule:

- (a) If the offal pit is to close by 1 October 1997 a landfill closure plan in the form prescribed by Appendix 3;
- (b) Otherwise a management plan in the form prescribed in Appendix 2.

**7.6.7.2 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 adverse effects on land, water and air arising from any discharges;
- (b) The location of the offal pit relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;
- (c) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges; and
- (d) The monitoring programme to be implemented.

**7.6.8 Farm landfills (permitted activity)**

- 1 The discharge of any contaminant into or onto land;**
- 2 The discharge of any contaminant or water into water; or**
- 3 The discharge of any contaminant to air,**

when occurring as the result of a farm landfill is a permitted activity provided that:

- (a) Its accurate location is provided to the Otago Regional Council;
- (b) It is dug in a manner so as to avoid groundwater seepage into the pit;
- (c) It is not dug within 100 metres, horizontally, of a well used to provide water for domestic purposes or drinking water for livestock;
- (d) Leachate from the landfill does not enter any water body;
- (e) It is not constructed within 50 metres, horizontally, of any river, lake, stream, pond, wetland or mean high water springs;
- (f) The farm landfill shall not be used for the disposal of hazardous waste or any other toxic matter, sewage, offal, or animal effluent;
- (g) Only waste generated on the property is disposed of into the farm landfill;
- (h) It is not constructed within 50 metres, horizontally, of a property boundary;
- (i) The farm landfill does not cause a nuisance and is not noxious, dangerous, offensive, or objectionable beyond the boundaries of the property; and
- (j) No burning of waste is undertaken.

#### 7.6.9 Farm landfills (discretionary activity)

- 1 The discharge of any contaminant into or onto land;
- 2 The discharge of any contaminant or water into water; or
- 3 The discharge of any contaminant to air,

when occurring as the result of a farm landfill which does not comply with Rule 7.6.8 is a discretionary activity.

##### 7.6.9.1 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 farm landfill relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;

- (b) The adverse effects on land, water and air arising from any discharges;
- (c) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges; and
- (d) The monitoring programme to be implemented.

**7.6.10 Greenwaste landfills (permitted activity)**

- 1 The discharge of any contaminant into or onto land;**
- 2 The discharge of any contaminant or water into water; or**
- 3 The discharge of any contaminant to air,**

**when occurring as a result of any greenwaste landfill is a permitted activity, provided that:**

- (a) Only greenwaste is disposed of at the greenwaste landfill;**
- (b) Any excavation is dug in a manner so as to avoid groundwater seepage into the pit;**
- (c) It is not dug within 100 metres, horizontally, of a well used to provide water for domestic purposes or drinking water for livestock;**
- (d) Any leachate produced from the greenwaste landfill does not enter any water body;**
- (e) The greenwaste landfill is not positioned within 50 metres, horizontally, of any river, lake, stream, pond, wetland or mean high water springs;**
- (f) The greenwaste landfill does not cause a nuisance and is not noxious, dangerous, offensive, or objectionable beyond the boundaries of the property.**

**7.6.11 Greenwaste landfills (discretionary activity)**

- 1 The discharge of any contaminant into or onto land;**
- 2 The discharge of any contaminant or water into water; or**
- 3 The discharge of any contaminant to air,**

**when occurring as a result of a greenwaste landfill operated other than in accordance with Rule 7.6.10 is a discretionary activity.**



#### **7.6.11.1 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 greenwaste landfill relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;
- (b) The adverse effects on land, water and air arising from any discharges;
- (c) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges; and
- (d) The monitoring programme to be implemented.

#### **7.6.12 Composting (permitted activity)**

- 1 The discharge of any contaminant into or onto land;**
- 2 The discharge of any contaminant or water into water; or**
- 3 The discharge of any contaminant to air,**

**when occurring as the result of composting of organic material is a permitted activity provided that:**

- (a) Any excavation is dug in a manner so as to avoid groundwater seepage into the pit;
- (b) The activity is not undertaken within 100 metres, horizontally, of a well used to provide water for domestic purposes or drinking water for livestock;
- (c) Any leachate produced from compost does not enter any water body;
- (d) The composting is not undertaken within 50 metres horizontally, of any river, lake, stream, pond, wetland or mean high water springs;
- (e) The composting is undertaken on the property from which the majority of the material is sourced;
- (f) The composting does not cause a nuisance and is not noxious, dangerous, offensive, or objectionable beyond the boundaries of the property.

#### **7.6.13 Composting (discretionary activity)**

- 1 The discharge of any contaminant into or onto land;**

- 2 The discharge of any contaminant or water into water; or**
- 3 The discharge of any contaminant to air,**

**when occurring as the result of the composting of organic material other than in accordance with Rule 7.6.12 is a discretionary activity.**

#### **7.6.13.1 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 composting relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;
- (b) The adverse effects on land, water and air arising from any discharges;
- (c) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges; and
- (d) The monitoring programme to be implemented.

#### **7.6.14 Discharges from silage production (permitted activity)**

- 1 The discharge of any contaminant into or onto land;**
- 2 The discharge of any contaminant or water into water; or**
- 3 The discharge of any contaminant to air,**

**when occurring as a result of silage production is a permitted activity provided that:**

- (a) **Any excavation is dug in a manner so as to avoid groundwater seepage into the pit;**
- (b) **The silage stack or pit is not within 100 metres horizontally, of a well used to provide water for domestic purposes or drinking water for livestock;**
- (c) **Leachate from the silage stack or pit does not enter into any water body;**
- (d) **Any silage stack or pit established after 2 February 1996 is not within 50 metres horizontally, of any river, lake, stream, pond, wetland or mean high water springs;**
- (e) **Silage production is undertaken on production land;**

- (f) **The silage stack or pit is not located within 50 metres, horizontally, of a property boundary excluding road boundaries; or**
- (g) **The silage stack or pit does not cause a nuisance and is not noxious, dangerous, offensive or objectionable beyond the boundaries of the property.**

#### **7.6.15 Discharges from silage production (discretionary activity)**

- 1 The discharge of any contaminant into or onto land;**
- 2 The discharge of any contaminant or water into water; or**
- 3 The discharge of any contaminant to air, when occurring as a result of silage production other than in accordance with Rule 7.6.14 is a discretionary activity.**

##### **7.6.15.1 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 silage production relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;
- (b) The adverse effects on land, water and air arising from any discharges;
- (c) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges; and
- (d) The monitoring programme to be implemented.

### **Principal reasons for adopting landfill rules**

Section 15 of the Resource Management Act requires a resource consent for the discharge of contaminants in a number of situations. Where the Otago Regional Council has considered that the adverse effects of such discharges will be minor, as a result of compliance with any condition, then such a discharge has been permitted under this Plan.

Transitional provisions have been provided for landfills (excluding cleanfill landfills, offal pits, farm landfills and greenwaste landfills) that closed between 1 October 1991 and 1 October 1994 in order that operators can concentrate on gaining resource consents for those landfills that will continue to operate.

The Otago Regional Council is satisfied that any of the adverse effects on

the environment described in Section 70(c) to (g) of the Resource Management Act, as a result of discharges of contaminants, will be avoided by the relevant provisions of the permitted activity rules above for cleanfill landfills, offal pits, farm landfills, greenwaste landfills, silage production and the composting of organic material.

While silage production and composting are not landfill operations, adverse effects may arise from their discharges of a similar nature to discharges from landfills. For this reason these activities are included within this Chapter.

Any landfill that was closed prior to 1 October 1991 may be considered a contaminated site in terms of Rule 5.6.1.

## **7.7 Anticipated environmental results**

7.7.1 There is a reduction in the adverse effects resulting from landfill sites, composting operations and silage stacks or pits.

7.7.2 Discharges are prevented from entering any water body from landfills, including cleanfill landfills, offal pits, farm landfills and greenwaste landfills, and from silage pits and stacks and composting operations.

7.7.3 There is an elimination of illegal, uncontrolled, unmanaged and poorly located landfills, silage stacks or pits and composting operations.

7.7.4 There is a reduction in the amount of waste disposed of to landfills through increased use of alternatives to reduce, recycle or reuse materials.