

# 5

## Contaminated Sites



## 5.1 Introduction

For the purpose of this Plan, 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. This Chapter of the Plan considers the discharge of hazardous substances or wastes onto or into land or water, and issues associated with remedying or mitigating the adverse effects of those contaminant discharges. While operating landfills may contain hazardous wastes, they are considered in Chapter 7 of this Plan.

Contamination can occur as a result of industrial agricultural or commercial activities, by accident, and at sites used for the processing, storage or disposal of hazardous substances or hazardous wastes.

Sites can be contaminated some distance from the source as a result of the discharge of hazardous wastes.

Contaminated sites can include land used for timber treatment, tanning, waste disposal, agricultural chemicals, gasworks facilities, mining, paint and pharmaceutical manufacturing, hydrocarbon storage and distribution and railway yards.

Over 300 contaminated sites were identified in Otago in a survey completed in 1992 by Worley Consultants (*Potentially Contaminated Sites in New Zealand: A Broad Scale Assessment*). Of those sites, seventy-seven were existing or closed timber treatment plants.

Potentially a further 200 contaminated sites are identifiable. These include sites where hazardous substances have been stored, such as service stations and gasworks. There are undoubtedly other sites which have not yet been identified.

The environmental effects associated with contaminated sites can include loss of vegetation and habitat, and threats to local communities and ecosystems. The value of land and its potential for rural, urban or recreational uses can be markedly reduced by the adverse environmental effects of contaminated sites.

Other concerns associated with contaminated sites arise from groundwater contamination, residential development of former industrial, commercial or agricultural land, and the abandonment of industrial land or waste disposal sites. Such sites need to be assessed prior to development for other uses, especially for residential or agricultural purposes.

The Resource Management Act provides for the management of contaminated sites at five levels:

1. The discharge of contaminants to land, air and water is regulated through regional plans, discharge permits and illegal discharge offences. Unless provided for in a regional plan, discharges require consent by virtue of the provisions of Section 15 of the Resource Management Act.
2. Any deposit of a substance in, on or under land, and the carrying out of activities which disturb that land, is deemed by Section 9 of the Resource Management Act to be a use of land, which can be managed by a regional council, where it gives rise to an issue of regional significance.
3. Under the provisions of Section 314 of the Resource Management Act the Environment Court may require the owner or occupier of any land to take action, that in the opinion of the Court, is necessary to avoid, remedy, or mitigate any actual or likely adverse effect on the environment or to ensure compliance by or on behalf of that person with the Resource Management Act, any regulations, a rule in a plan or a proposed plan, a requirement for a designation or a heritage order, or a resource consent.
4. In certain cases where immediate preventative or remedial action is required to prevent a likely adverse effect on the environment, emergency works can be undertaken, and any reasonable expense incurred in doing so can be recovered from the owner of the site.
5. A general duty to avoid, remedy, or mitigate adverse effects, as provided by Section 17 of the Resource Management Act.

Central and local government agencies have statutory powers to deal with contaminated sites under other legislation, such as the Toxic Substances Act 1979 and the Health Act 1956. These provisions however are not comprehensive, and as a consequence the Otago Regional Council has assumed the principal responsibility for dealing with contaminated sites within Otago. The Otago Regional Council will, in carrying out its responsibilities, work together with other government agencies and territorial authorities and the landowner or occupier of the contaminated site.

## **5.2 Contaminated sites issues**

### **5.2.1 The number and location of many contaminated sites in Otago is unknown.**

**Explanation**

In the past, poor records have been kept indicating where substances that give rise to contamination have been stored, used or disposed of. In part this arises because in the past it was not known that future problems would arise. As a consequence, the location of contaminated sites is not documented in any reliable manner, and it is not known where all contaminated sites are, and where contaminated sites could occur in the future. Once found, there is presently no means of ensuring that future landowners are aware of the nature of contamination that has taken place, the extent of any work carried out to remedy or mitigate the contamination, and the effects on the future range of activities that can be carried out on the site.

*Objectives 5.3.1, 5.3.2*

*Policy 5.4.2, 5.4.5*

**5.2.2 Contaminated sites can be both an immediate and long term threat to the environment.**

**Explanation**

Contamination of sites in Otago has occurred over many years and is due to many causes. The presence of some contaminants can pose both immediate or long term threats to human health, plants and animals, and to the amenity of the land and water. Certain contaminants may also have a detrimental impact on the integrity of building and service structures. The adverse effects that arise will differ in every case, and from site to site in terms of their nature, scale, hazard and importance. Given the number and distribution of contaminated sites within the region, it is apparent that the identification and investigation of those sites, and the carrying out of remedial and mitigating works, where required, is a matter of regional significance.

*Objectives 5.3.1, 5.3.2*

*Policies 5.4.1 - 5.4.5*

**5.2.3 The storage and use of hazardous substances, and the storage and disposal of hazardous wastes may have both on-site and off-site environmental effects.**

**Explanation**

While most effort to date has focused on locating and treating sites previously contaminated, it is also necessary to ensure that future contamination of sites is avoided or, where it does occur, the effects are remedied if possible, or mitigated.

*Objectives 5.3.1, 5.3.2*

*Policies 5.4.1 - 5.4.5*

## 5.3 Contaminated sites objectives

### 5.3.1 To avoid, remedy or mitigate any adverse effects of contaminated sites.

#### **Explanation**

Contamination can reduce the ability of resources to support life. The life-supporting capacity of Otago's resources must be protected and enhanced to ensure future generations may enjoy the potential of these resources. Effective treatment of these sites requires a knowledge of past practices, types of chemicals used, and the location of the activities which may have resulted in the contamination. Where contaminated sites are identified, they should be contained and managed in such a way that any adverse effects on the surrounding land, water or air resources are avoided, remedied or mitigated.

*Policies 5.4.1 - 5.4.5*

*Methods 5.5.1 - 5.5.7*

*Rule 5.6.1*

### 5.3.2 To avoid further site contamination.

#### **Explanation**

Improved handling and disposal of hazardous substances and hazardous wastes, and better management of on-going industrial, agricultural or commercial activities will decrease the likelihood of site contamination. Management practices must prioritise the prevention or minimisation of site contamination.

*Policies 5.4.1 - 5.4.5, 6.4.1*

*Methods 5.5.1 - 5.5.7*

## **Principal reasons for adopting contaminated sites objectives**

Contaminated sites can be classed into two types; those which exist and have already been identified, or have yet to be found, and those which could occur in the future. It is sound resource management planning to have separate objectives for each. The first, to respond to an existing problem, and the second to seek to avoid the creation of problems in the future.

## 5.4 Contaminated sites policies

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

- (a) Carrying out investigations of, and works to remedy and mitigate, contaminated sites in a manner which takes into account Kai Tahu cultural values;
- (b) Protecting waahi tapu and waahi taoka, and access to them by Kai Tahu, from the effects of contamination;
- (c) Acknowledging that future generations will inherit the results of work carried out to remedy or mitigate contaminated sites; and
- (d) Maintaining consultation with Kai Tahu on issues relating to site contamination.

#### Explanation

A holistic approach to the management of contaminated sites, and to discharges that can result in contamination, requires consideration of Kai Tahu values. By doing so, the mauri of natural and physical resources, and sites of significance to Kai Tahu, will be protected and enhanced. By continuing consultation with Kai Tahu about contaminated sites, and by having regard to Iwi resource management plans, the Manawhenua will be able to give effect to customary kaitiakitanga.

*Method 5.5.7*

### 5.4.2 To locate and investigate contaminated sites in Otago.

#### Explanation

Contaminated and potentially contaminated sites have been detected throughout the region. Locating these sites and other sites, identifying the source of contamination, and investigating their past history will require coordination of expertise and effort on a regional basis. In some instances, it will be landowners, occupiers or the public who will identify potentially contaminated sites. Due to the number of contaminated sites in the Otago region it will be necessary to prioritise the order of contaminated site investigations.

*Methods 5.5.1 - 5.5.3*

### 5.4.3 To contain contaminated sites and rehabilitate them to the extent that is practicable having regard to the use to which the land is to be put.

**Explanation**

When a contaminated site is identified, it will be necessary to determine:

- (a) the degree to which contaminants are contained within that site; and
- (b) risks posed by the contaminated site.

As a first priority it will be necessary to ensure that contaminants are contained within the site, and are not adversely affecting water or air. As a second priority consideration will be needed to identify rehabilitation that can take place, having regard to the risks posed by the contaminant, the use to which the land is to be put, and the practicalities of rehabilitation.

The Otago Regional Council will seek to work with landowners and occupiers to encourage action which may be appropriate to be carried out. If the local authority or a consent authority is not satisfied with the degree of action taken, they can, if they wish, apply to the Environment Court for an enforcement order under Section 314 of the Resource Management Act, requiring the landowner or occupier to carry out work which the Court considers necessary to avoid, remedy or mitigate any actual or likely adverse effects on the environment.

A long term monitoring programme may be required with regard to some contaminated sites to determine whether any adverse environmental effects arise in the future.

*Methods 5.5.2 - 5.5.4, 5.5.6*

**5.4.4 To apply the Australia and New Zealand Conservation Council (ANZECC) “Guidelines for the Assessment and Management of Contaminated Sites” (January 1992) as a guide to determine the most appropriate course of action for a particular contaminated site.**

**Explanation**

Whether clean-up is required, and to what extent, depends on the nature and scale of contamination, the existing land use, potential land uses, and on the actual or potential impact on the surrounding environment. The Guidelines draw a distinction between contamination which may require clean-up activity to remedy the polluting effects and those sites where no work is required.

*Method 5.5.2*

**5.4.5 To prepare and maintain a register outlining details of sites which are contaminated.**

**Explanation**

As the Otago Regional Council obtains information on contaminated sites this information can be included on a register, and made available for use by territorial authorities and the public.

*Methods 5.5.2, 5.5.3*

**Principal reasons for adopting contaminated sites policies**

In order to meet the purposes of the Resource Management Act, the Otago Regional Council considers that action is required to respond to the resource management issues that arise within contaminated sites. For the reason that contaminated sites can adversely affect the environment, and its ability to sustain life, it is considered inappropriate and irresponsible to do nothing. Existing contaminated sites must be found. When they are located an assessment will need to be carried out in an appropriate manner to determine what action, if any, should then be taken. Until such an assessment is undertaken no decision can be made regarding site safety, and any action that may be required. The purpose and intent of policies 5.4.1 and 5.4.2 is to achieve these ends. The Otago Regional Council will seek to have work carried out to ensure that contaminants are contained on affected sites, and sites are rehabilitated to the extent practical to provide for their future use, and that is the basis of Policy 5.4.3.

Policy 5.4.5 seeks to ensure that any information held by the Otago Regional Council with regard to sites which are found to be contaminated is available to territorial authorities and the public. In determining whether any action should be taken, once a contaminated site is located, regard will need to be given to the actual and potential effects on the environment. An independently prepared and acknowledged technical guideline should be used to avoid debate between landowners, the Otago Regional Council and any other persons who may have an interest. To date, the only internationally acceptable guideline is that prepared in 1992 by ANZECC and for that reason it will be used by the Otago Regional Council as a basis for assessment, and this is the rationale of Policy 5.4.4.

Where similar processes are duplicated by sector groups, it is desirable to adopt standards which are suitable for that particular sector group. These can take the form of guidelines or codes of practice. Codes of practice adopted by industry are a more effective means, as the industry concerned undertakes to ensure that members and operators implement the agreed standards. Codes of practice result in better protection for the environment and are preferred by the Otago Regional Council.

**5.5 Contaminated Sites Methods**

In meeting the objectives and carrying out the policies relating to contaminated sites the Otago Regional Council will:



5.5.1 Conduct investigations, and respond to information supplied by the public, to identify contaminated sites in Otago.

5.5.2 When sites which may be contaminated are located:

- (a) Consult with the landowner and occupier;
- (b) Request a preliminary investigation into the nature and extent of contamination, including its source;
- (c) Encourage, and in cases where resource consents are submitted, require use of the ANZECC “Guidelines for the Assessment and Management of Contaminated Sites”, (January 1992) to determine appropriate action. In carrying out such an assessment regard should be had to the “National Rapid Hazard Assessment for Contaminated Sites”;
- (d) Encourage the landowner or occupier to carry out any works that may be required to remedy or mitigate any adverse environmental effects, and to monitor the site. In cases where no action is taken, and where actual or potential adverse effects may arise, consideration may be given to seeking an enforcement order pursuant to Section 314 of the Resource Management Act;
- (e) Require resource consents where:
  - (i) Contaminants are continuing to be discharged;
  - (ii) Contaminants are emanating from the site, or entering water; or
  - (iii) Works are to be undertaken disturbing the site, which could result in adverse effects arising.
- (f) Where appropriate, include it on the Otago Regional Contaminated Sites Register; and
- (g) Remove sites from the Otago Regional Contaminated Sites Register which cease to have any actual or likely adverse effects on the environment.

5.5.3 Compile and maintain an Otago Regional Contaminated Sites Register (as confirmed by Method 5.5.2) containing the following information:

- (a) The location and legal description of the site;
- (b) The nature and extent of contamination;
- (c) Any work carried out, or to be carried out, to remedy or mitigate any adverse environmental effects;
- (d) Any conditions imposed on resource consents relating to work being carried out on the site;
- (e) Details of monitoring to be undertaken;
- (f) Any restrictions applying to the use of the land; and
- (g) Any other information the Otago Regional Council considers relevant.

Copies of the Register will be supplied to territorial authorities for the express purpose of enabling incorporation of details onto Land, Property and Project Information Memoranda; and ensuring that in the administration of district plans regard is had to any site contamination.

- 5.5.4 Encourage territorial authorities to develop appropriate resource management techniques (eg district rules) in order to enable activities to be carried out without land use consents where practicable to remedy and mitigate the adverse environmental effects of contaminated sites, and to avoid future contamination of sites.
- 5.5.5 Adopt appropriate resource management techniques in any regional plans that are prepared, in order to avoid, remedy and mitigate the adverse effects of the discharge of contaminants.
- 5.5.6 Initiate, or support, the preparation and adoption of codes of practice, and education programmes that will prevent the occurrence of contaminated sites.
- 5.5.7 Maintain a consultation protocol with Manawhenua on the approach and practices being adopted by the Otago Regional Council in dealing with contaminated sites. This will include providing information on potentially contaminated and contaminated sites.

### **Principal reasons for adopting contaminated sites 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 supplying information to regulation. By itself no single method will achieve the objectives stated above, but together there is an opportunity for that to be done.

## **5.6 Contaminated site rules**

### **5.6.1 Hazardous wastes at contaminated sites (discretionary activity)**

1. **The disturbance of land; or**
2. **The discharge of hazardous waste into water; or**
3. **The discharge of hazardous waste onto or into land in circumstances that may result in that hazardous waste (or**

**any other hazardous waste emanating as a result of natural processes from that hazardous waste) entering water; or**

- 4. The deposit of any hazardous waste, in, on or under land; or**
- 5. The discharge of hazardous waste into air at or from a contaminated site;**

**is a discretionary activity.**

#### **5.6.1.1 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 a resource consent under this rule:

- (a) An assessment in terms of the ANZECC “Guidelines for the Assessment and Management of Contaminated Sites” (January 1992) providing reasons why no remedial or other action should be taken; and
- (b) An environmental monitoring programme to assess the environmental effects of contaminants on the site.

**A separate resource consent may also be required from the relevant territorial authority.**

### **Principal reasons for adopting contaminated sites rules**

Under the provisions of Sections 9(3) and 15 of the Resource Management Act no person may undertake any activity on contaminated land, or discharge any hazardous waste in, on or under the land in a manner which contravenes a rule in a regional plan or proposed regional plan unless the activity is expressly allowed by a resource consent, or is an existing use allowed by Section 10 or 10A of the Resource Management Act.

Hazardous wastes are the wastes most likely to restrict the use of land or adversely effect the environment, and as a consequence it is desirable that consideration be given to:

- (a) Whether any remedial work should be carried out;

- (b) Monitoring for adverse effects; and
- (c) The means by which future owners of the site can be made aware of the deposit on the land, and the effects of that deposit. In addition to inclusion on the Otago Regional Contaminated Sites Register may be appropriate to record relevant information on the title of the property.

## **5.7 Anticipated environmental results**

- 5.7.1 Contaminated sites of risk to the environment are located and assessed.
- 5.7.2 Immediate and long-term protection of the environment from contaminated sites is achieved.
- 5.7.3 New contaminated sites are not created.