

**IN THE MATTER OF** the Resource Management Act 1991

**AND**

**IN THE MATTER OF** Application CRC091153 to the Canterbury Regional Council for resource consent to discharge sodium fluoroacetate (1080) and pindone onto land in circumstances where these contaminants may enter water.

## **Decision of the Hearing Commissioner Barry Loe**

### **Appearances**

#### **Applicant**

- Ms P Rutledge
- Dr P Fisher
- Mr N Head
- Mr N Bolton
- Mr P Stenton
- Ms Y Legarth

#### **Submitters**

- Mr P Paterson
- Mr L Eagle

#### **Reporting Officer**

Mr W Pascoe

#### **Introduction**

1. This is the decision of hearing commissioner Barry Loe appointed by Canterbury Regional Council ("CRC") to hear and decide the application for resource by the Department of Conservation to discharge pesticides; sodium fluoroacetate (1080) and 2-pivaoylindane-1,3-indandione (pindone), from aircraft onto land in circumstances where the pesticides may enter water in areas of the Mackenzie Basin, upper Waitaki Valley and Aoraki/Mount Cook National Park.
2. I heard the application and submissions thereon, in Christchurch on Monday 25<sup>th</sup> and Thursday 28<sup>th</sup> May 2009. The hearing was adjourned for the applicant to provide larger scale maps of the area of the application and a revised schedule of rabbit control areas, and for a summary of relevant compliance monitoring information from Canterbury Regional Council. The hearing was closed on 16<sup>th</sup> June 2009. I did not undertake a site visit, as I am sufficiently familiar with the area of the application to understand the nature of potential effects of the proposed discharge.

## Background to the Application

3. The Department of Conservation (the Applicant) uses a range of measures to control the population of rabbits on public conservation land including in the Mackenzie/Waitaki/Aoraki area of Canterbury. These rabbit control measures include the distribution of pindone and 1080 pesticides impregnated into cereal baits and chopped carrots. These poison baits can be distributed by ground-based methods and by aircraft. The Department of Conservation also uses shooting, fumigation, trapping and dogs to control rabbit numbers.
4. Since 1997 the rabbit population in the Mackenzie/Waitaki/Aoraki area had diminished to low levels by the introduction and spread of rabbit haemorrhagic disease (RHD, calicivirus). However the effectiveness of this disease is waning as natural immunity increases in the surviving rabbit population. Rabbit populations are again increasing in many areas of the South Island, including the public conservation lands which are the subject of this application.
5. The Canterbury Regional Pest Management Strategy prepared under the Biosecurity Act 1993 provides for Canterbury Regional Council to address pest management issues in the region. Rabbits are pests subject to containment controls to ensure the population remains at or below the threshold of Level 3 on the Modified McLean Scale, a measure of rabbit population density.
6. The Environmental Risk Management Authority (ERMA) authorises the use of hazardous substances, including 1080 and pindone, in New Zealand. In 2006 an application was made to the Authority by the Department of Conservation and the Animal Health Board for the use of 1080 to be reassessed and sought approval for the continued use of 1080 for control of pests including possums, rabbits, wallabies, stoats and rodents.
7. After an extensive inquiry that traversed the environmental and economic dilemma posed by these pests to New Zealand, but recognised the deeply held concerns of many people over risks of using 1080, the Authority's decision was to approve the continued use of 1080 for the time being, but apply more stringent conditions on the use of 1080, including a mechanism to monitor aerial application programmes.

## The Application

8. The application is to discharge 1080 and pindone in impregnated cereal baits or carrot pieces from aircraft onto land in river beds and other situations where the contaminants may incidentally enter water.
9. The application covers some 37,000 hectares of public conservation land of altitude 1000 metres or less in the Aoraki/Mt Cook National Park, Mackenzie Basin and Upper Waitaki Valley and forms part of the programme for the control the feral rabbit population in a number of different locations throughout these areas. The land area includes parts of river beds and areas of land where surface water may be present in rivers, wetlands and their margins.
10. The spreading of the poisons by aircraft will occur when other control methods, such as biological controls or ground-based methods are not suitable or fail to achieve the control target.

11. The application is for a 10 year period, with annual programmes to be developed that identify those land areas where discharge of the poisons from aircraft is to be used to control rabbit populations.

### Notification and Submissions Received

12. The application was notified in the Christchurch Press and Otago Daily Times on Saturday 24 January 2009, and in the High Country Herald on Wednesday 28 January 2009 as:

**Applicant:** Department of Conservation  
**Address:** Twizel Area Office, Private Bag, TWIZEL 7901  
 Attn: Mr Neil Bolton

**CRC091153** – to discharge sodium fluoroacetate (1080) and Pindone impregnated cereal pellet baits and/or carrots by air to [land] in circumstances where these contaminants may enter water. The discharge is for the control of feral rabbits on public conservation land below 1,000 metres in altitude in the Mackenzie Basin, upper Waitaki Valley and Aoraki/Mount Cook National Park areas, as outlined in the map below.

A consent duration of 10 years is sought.

*[the published map is not included here]*

13. Fifteen submissions were received, three in support and twelve in opposition. Five submitters originally requested to be heard, but one request was withdrawn before the Hearing. Two submitters appeared at the Hearing.
14. The parties who made submissions were:

In support:

- New Zealand Defence Force
- Dr Bruce Eyres
- Royal Forest & Bird Protection Society

In opposition:

- Mr Phil Paterson
- Mr Donald Burnett
- Mr Christopher Nichol
- Mr Lindsay Eagle
- Mr Peter Munro
- Mr Russell Dixon
- Professor Haikai Tane
- Ms Sheryll Miller
- Mr Shane Brand
- Ms Greta Te Maiharoa-Brand
- Mr Andrew Davis
- Ms Mary Wallace

Mr Paterson & Mr Eagle each presented their submission to the Hearing.

## Statutory provisions

### The Resource Management 1991

15. Section 30 of the RMA describes the functions of a regional council. These include; *(f) The control of discharges of contaminants into or onto land... or water...:*
16. Section 13 of the RMA prevents the deposition of any substance in or on the bed of a river unless it is expressly allowed by a rule in a regional plan and in a proposed regional plan or by resource consent. The bed of a river, for the purposes of this application, is defined in the RMA to be, *...the space of land which the waters of the river cover at its fullest flow without overtopping its banks...*
17. Section 15(1)(a) and (b) of the RMA control the discharge of any contaminant where it may enter water. A discharge cannot occur unless it is expressly allowed by a rule in a regional plan and in a proposed regional plan or by resource consent.
18. Section 15(2) of RMA prevents the discharge of a contaminant onto land in a manner that contravenes a rule in a regional plan or proposed regional plan unless authorised by resource consent.
19. Authority to discharge contaminants onto land, except land in the bed of a river, where the contaminants will not enter water, is not required from Canterbury Regional Council, because there is no rule which would be contravened by such a discharge.

### Regional Plans & the Activity Status of the Application

20. The Transitional Regional Plan (TRP) is the relevant operative regional plan to this application. The Proposed Natural Resources Regional Plan (PNRRP) is the relevant proposed plan.
21. The provisions of the proposed plan in respect of this application are convoluted, and difficult to unravel. Neither the s42A report from Mr Pascoe, or the evidence of Ms Legarth for the applicant was particularly certain, or I consider correct, about which are the relevant rules in the proposed plan for this application. Their uncertainty is understandable as I have not found it a simple web to negotiate.

#### *The Transitional Regional Plan*

22. The TRP does not have rules that would authorise the discharge of 1080 or pindone to land in circumstances where it may enter water, or the deposition of these substances onto the bed of a river.
23. The absence of rules in the TRP would, if there was no proposed plan, invoke Section 77C of the RMA, and the application would be treated as a discretionary activity. However the proposed plan contains a relevant rule for both the discharge to land where it may enter water, and the deposition onto land in the bed of a river, therefore as the activity status is determined by the rules of the proposed plan, s77C is not invoked.

#### *The Proposed Natural Resources Regional Plan*

24. The PNRRP, Chapters 1 - 3 was notified in June 2002, with Variation 1 Chapters 4 - 8 notified in July 2004. Chapter 4 'Water quality' has rules that are relevant to this application. Chapter 6 'Beds and margins of lakes and rivers' does not have a rule

authorising the deposition of the substance onto the bed of a river, but the rules of Chapter 4 encompass this. The rivers and lakes of the region have been assigned water quality classes in the PNRRP, and water quality standards in Schedule WQL1 of the proposed plan.

25. Variation 1 of the PNRRP has advanced to the stage where hearings on submissions have been completed, but no decisions have been released.
26. Rule WQL16 in Chapter 4 authorises the discharge of agrichemicals, specifically identifying pindone and 1080, onto land in a riverbed, and onto land where the contaminants may enter water, as a permitted activity if the relevant conditions of the rule are complied with.
27. This application does not comply with all the relevant conditions of Rule WQL16. Compliance is not achieved with; Condition 1(a) and 4(a) because the discharge may be into a surface water body, even if inadvertently, or the 1080 or pindone may enter water via surface run-off, albeit in small amounts. Condition 4(c) will not be complied with because the aerial application onto land in a river bed may occur within the August to November exclusion period.
28. Rule WQL16 directs that an activity that does not comply with these conditions is a discretionary activity, subject to Rule WQL56 where the discharge is onto land where it may enter water, or Rule WQL57 for discharge onto land in the bed of a river.
29. Rule WQL56, however has conditions that must be complied with for the discharge to be a discretionary activity. These include calculating a Zone of Non-Compliance in accordance with Part 2 of Schedule WQL1, and comparing the size of this 'default' zone to a specific zone for the discharge in which the water quality standards in Schedule WQL1 would not be achieved. Neither 1080 nor pindone appear in the list of toxicants in Table WQL19 of Schedule WQL1, therefore it is not possible to calculate the Zone of Non-Compliance in accordance with Part 2 of Schedule WQL1.
30. An activity which does not comply with the conditions relating to water quality standards, or the zone of non-compliance, is directed to be a non-complying activity. This application cannot comply with these conditions. If the intention of the rule is to exclude any discharge of a 'toxicant' not listed in Table WQL19 from discretionary activity status, then the proposed discharge of 1080 and pindone onto land where it could enter water will have to be considered as a non-complying activity. The proposed plan does not provide any further guidance on this matter, but I have adopted a conservative approach.
31. The rivers in the areas proposed for the discharge have, from my exploration of the proposed plan, been assigned the water quality class of NATURAL. The water quality standard for this class is that, outside the Zone of Non Compliance calculated in accordance with Part 2 of Schedule WQL1, "*the natural quality of the water and the natural quality of the bed substrate shall not be altered*". While the Zone of Non Compliance for the proposed discharge cannot be calculated using the plan criteria, the water quality class and standard gives a clear indication about the extent of effects on water quality that would be acceptable in these rivers.
32. Rule WQL57 makes the discharge of a contaminant onto land, including onto the bed of river, a discretionary activity, except if the discharge occurs within a Community Drinking Water Supply Protection Zone for a well listed in Schedule WQL2. There are no wells listed in Schedule WQL2 that are within the areas proposed for discharge. However there are several surface water intakes that community drinking water

supplies in or in close proximity to the discharge areas, and the applicant has proposed a buffer distance around these intakes in which no discharge will occur.

33. Therefore the conditions of Rule WQL57 can be complied with and the proposed discharge of 1080 and pindone onto land in the bed of river is a discretionary activity.
34. I have concluded that the proposed discharge of 1080 and pindone onto land in the bed of a river is a **discretionary activity** and the discharge onto land where 1080 and pindone may enter water is a **non complying activity**.

## Summary of Evidence

### *The Case for the Applicant*

35. The applicant's case was co-ordinated by **Ms Rutledge**, Counsel for the Department of Conservation. She started by describing that the application is for discharge of 1080 and pindone onto land by air, and what the hearing was not about. It was not about whether 1080 can be used for pest management in New Zealand. The Environmental Risk Management Authority in 2006 undertook the reassessment of the use of 1080 for pest control, and approved its continuing use, subject to conditions. Both 1080 and pindone are approved under the Hazardous Substances and New Organisms Act 1996 (HSNO) for use in New Zealand. The Hearing was not about whether rabbits are a pest to be controlled. The Regional Pest Management Strategy has determined the need for and level of control. The Hearing is not about using 1080 for possum control in forested areas, nor is it about the effects of ground-based use of 1080 or pindone on non-target species.
36. Ms Rutledge contended that consent is only required for the discharge to land where the 1080 or pindone may enter water, and therefore the actual and potential effects to be considered are restricted to effects in water. She introduced the evidence of the five expert witnesses for the applicant outlining; the direct and indirect effects rabbits have on native ecosystems and biodiversity values, the need for discharge of poisons from the air to complement ground-based methods; the actual and potential effects on water quality, human health, domestic animals, native animals, and alternatives to the use of 1080. She noted that additional approval for the pest control programme will be required from the Medical Officer of Health, but application for this approval will be made for each operation that may occur under any resource consent.
37. Ms Rutledge proposed the RMA provides for some adverse effects, and that the adverse effects of the proposed activity do not have to be minor for consent to be granted as the application is for a discretionary activity, and the 'no more than minor' threshold for a non-complying activity does not apply. She reiterated the duration of consent sought is 10 years, and the low risk posed by this operation does not support a reduction in that term. Ms Rutledge sought that the conditions of consent granted for this application be consistent with other consents already granted for pest control purposes, but recognise that the target species is rabbits and open grassland terrain of this proposal may demand different requirements.
38. **Dr Penelope Fisher** is a research scientist at Landcare Research New Zealand Ltd, and a specialist in the management of invasive pest animals, particularly in the use and toxicology of vertebrate pesticides. Dr Fisher described the characteristics and functioning of 1080 poison, and the concentrations used for rabbit control being 0.04% in pellet baits, and 0.02% in carrot bait, less than the 0.15% used in bait for possum

control. She outlined the ERMA review of the use of 1080, and the principal conclusions of the review.

39. Dr Fisher reported results of studies by other researchers about quantifying the amount of 1080 baits that might fall into water from aerial bait spreading operations, and the fate of 1080 baits and poison that might fall into water. The study, undertaken in 2006 by Dr Suren of NIWA, surveyed 48 streams during four aerial 1080 operations in the South Island and found wide variance in the number of baits that fell into streams, and the number of baits found in the streams related only to bait size, with more small baits than large baits found in streams.
40. Laboratory studies of the fate of baits in simulated stream conditions found that the baits disintegrated within 3 – 4 days, but the 1080 leached from the baits, with the concentration of 1080 in submerged baits reducing by 50% after 5 hours, and by 90% after 24 hours. The 1080 leaching from the baits is diluted in the water. Over the past 18 years more than 2000 water samples taken from streams, rivers and reticulated community drinking water supplies and have been tested by Landcare Research to confirm whether 1080 is present in detectable concentrations. There was no detectable 1080 in over 96% of the samples. One sample from a community water supply detected 1080 at a concentration of one-tenth of the recommended drinking water quality.
41. Laboratory and field studies for ecological effects of 1080 on aquatic animals has consistently found that, even in aquatic organisms that consumed 1080 baits, no mortality occurred or detrimental effects were detected. Some terrestrial invertebrates that find and eat 1080 baits are likely to die, and while there has been no long term study of such effects on invertebrate populations, the number of individuals that would make contact with baits, would be a very small section of the invertebrate population.
42. Birds can be susceptible to 1080 poison, and there are reports of a range of native birds being found dead after poisoning operations. Further research is needed on the effects of 1080 on birds, with this need highlighted by the deaths in 2008 of six kea from one population located near Franz Joseph from 1080 poisoning. Kea may also be susceptible to pindone poisoning if they are attracted to the baits. Research is underway to investigate ways to minimise the risk to keas, but the findings are at least two years away. Meanwhile Dr Fisher recommends monitoring for kea mortality where poison baits are laid in kea habitat.
43. Dogs, livestock and humans may also be susceptible to 1080 poisoning to different extents. Dogs are known to be highly susceptible, with deaths occurring from scavenging of poisoned carcasses.
44. Dr Fischer described the characteristics and functioning of pindone, this being a slower-acting poison than 1080. Pindone is highly toxic to mammals, and to birds, although data is limited. There are no studies published on the toxicity of pindone to invertebrates, although an early study attributed insecticidal properties to pindone. Pindone is used in Australia for rabbit control. A review of its use in Australia undertaken by the chemical registration authority in 2002, acknowledged a general lack of ecotoxicological data for pindone.
45. Pindone is used in two forms; the acid form is used in cereal baits, and the sodium salt form is used in carrot baits. Pindone sodium will leach faster from baits than pindone acid, so cereal baits remain toxic for longer, but the risk of leaching is greater from carrot baits. Pindone absorbs light and is expected to undergo photo-degradation. A study showed that pindone concentrations in baits reduced over time

but residues were not detectable in soil underlying cereal baits, suggesting that degradation of pindone is more likely to occur through abiotic mechanisms.

46. There is little data available on the potential effects of pindone on aquatic organisms. A study has shown it to be highly toxic to rainbow trout. In New Zealand there appears to have been no investigation and little monitoring of pindone in waterbodies. Dr Fisher suggests research is required on this, and post-operation water quality monitoring could provide some data for such research. In her written answer to a supplementary question about the potential effects on water quality, Dr Fischer stated the worst case scenarios for fish exposure to pindone would be in still water, as flowing water will dilute and transport residual pindone in solution. Dr Fisher did not know how the concentrations of pindone in water could change over time in still water, or how quickly degradation of pindone would occur in water.
47. The potential risks of pindone poisoning and deaths of non-target species increase to both mammals and birds that might find and eat pindone baits or contaminated carcasses over several days following a poisoning operation. However, pindone may be less persistent in animal tissue than some other anti-coagulant poisons, such as brodifacoum.
48. A range of bird species have been reported killed following pindone poisoning operations in New Zealand. These species include birds that inhabit river beds such as black-backed gulls, wrybills and other plovers, and Australian harriers. It is not known whether these deaths occurred through primary (eating baits) or secondary (eating contaminated carcasses) exposure. Dietary habits of birds will affect the risk of exposure. Monitoring of dead birds following pindone poisoning in the Mackenzie basin in 1994, found pindone residues in the livers of dead gulls and hawks, indicating secondary poisoning.
49. Overall the toxicology data for pindone is very limited in comparison to the information available for 1080. There has been very little research undertaken on pindone and its effects in the wider environment.
50. **Mr Nicholas Head** is a plant ecologist with the Department of Conservation with responsibilities for the management and restoration of threatened plant species and rare ecosystems. He was previously employed by Landcare Research as a botanist on the Rabbit and Land Management Programme. Mr Head described the ecological values of the Mackenzie Basin and surrounds, and the threatened plant species therein, many of which are on the conservation land which is the subject of this application. He then described the impacts of rabbits on threatened plant species; through both browsing of a wide range of species, and the weed species that invade areas where native species have been browsed, soil is disturbed and nutrient levels increased from rabbit excrement.
51. Mr Head identified nationally rare 'kettlehole' ecosystems within the area of the application that are threatened by rabbit activity, and provided an example of the recovery of indigenous vegetation species that is possible, when rabbits were removed from the Tekapo Scientific Reserve.
52. **Mr Neil Bolton** is the Programme Manager for Biodiversity Threats with the Department of Conservation at the Twizel Area office. He has been involved in small animal pest management for the past 30 years. He described the history of rabbits in New Zealand and their management as a pest, and their habitat. Most of the public conservation land below 1000 metres altitude in the application area is susceptible to rabbit damage. The targets for rabbit population set in the Regional Pest Management

Strategy may not be low enough to protect biodiversity values, particularly plants. Therefore the Department of Conservation aims for control to the lowest possible rabbit population at sites of ecological value. High rabbit numbers also support predator populations which threaten native fauna. Maintaining low rabbit numbers also controls the populations of these predators.

53. Mr Bolton described the Department of Conservation's decision-making framework for the various options available for rabbit control to achieve the most efficient and effective control for the land. Control operations cover both 'primary' control – widespread distribution of poison to achieve a rapid reduction in the population, and follow-on 'secondary' control used to maintain low populations, and extend the time between primary control operations. Aerial poisoning operations are not inexpensive, but can be very effective primary control.
54. The Regional Pest Management Strategy sets a minimum interval between aerial 1080 poisoning operations on the same land of three years to avoid 'toxin aversion' in rabbit populations. From Mr Bolton's experience, on much of the public conservation land in the application area, the interval between primary control operations can be as much as 15 years, but there are exceptions, due primarily to topography or vegetation.
55. Monitoring of rabbit populations is undertaken using a variety of methods, and from data collected over the past 15 to 20 years, the Department has been able to develop an index that compares rabbit population with effects on ecological values. This index shows that the rabbit population needs to be at or below 2.5 on the Modified McLean Scale to maintain positive effects for ecological values. This is lower than the Regional Pest Management Strategy target of 3. This has been achieved for 15 to 20 years at many sites in the application area using a range of secondary control methods, but there are sites where secondary control is not sufficiently effective and primary control by aerial distribution of poison baits is needed to protect ecological values.
56. In answer to questions, Mr Bolton explained that the application is for possible poisoning operations over the next ten years. Each year a programme of operations will be developed using the Department's control option decision model. He was not certain how much of the total area in the application would be likely to have one or more aerial poisoning operations during the 10 year period.
57. The aerial operations will involve pre-feeding with non-toxic baits to reduce the possibility of rabbits being bait-shy. This pre-feeding will occur twice in the 2 weeks before the poison baits are spread. Pindone poisoning requires 3 separate applications of the poison baits or carrots to achieve effective kill rates.
58. A one kilometre buffer area, in which no poisons will be applied, will be maintained around all community drinking water supply intakes, in or adjacent to an area where aerial operations occur.
59. **Mr Philip Stenton**, is a rabbit pest control contractor with over 20 years experience of pest rabbit control in Canterbury and Otago, including the past 12 years undertaking control for the Department of Conservation. Mr Stenton described the various methods and tools used for assessing rabbit numbers and rabbit control, including poisoning, shooting, dogs, fumigation, fences, and RHD. He concludes that aerial poisoning is needed where rabbit populations are dense, and where ground-based operations are not possible. While RHD has deferred the use of primary poison operations for nearly 10 years, rabbit numbers are increasing and are now at pre-RHD levels in many areas.

60. **Ms Yvonne Legarth** is a senior resource management planner with the Department of Conservation. Ms Legarth described the RMA planning framework for this application, the Regional Policy Statement and Regional Plans, along with other documents that support or require pest rabbit control. Ms Legarth concluded that the application is for a discretionary activity, as the proposal does not comply with Conditions 3 and 4 of Rule WQL17, because contaminants may enter water, and the aerial operations are likely occur in August, during the period excluded by Condition 4. As the discharge is predominately onto land she considered that Rule WQL57 applies to the proposal.
61. Ms Legarth then outlined the positive and adverse effects of the proposal, and how the permitted baseline could be applied in this case, and encouraging me to apply this by comparing the effects of the proposed discharge to the effects of the discharge of the herbicide diquat, which Rule WQL17 authorises as a permitted activity.
62. When considering the duration of any consent granted, Ms Legarth said that duration should relate to the timeframes over which the activity is proposed and the potential for adverse effects. She reiterated that the application is for a number of discrete events over the 10 year period, with the primary purpose to bring about positive effects on the environment, with only minor adverse effects.
63. Ms Legarth concluded that the proposed activity is consistent with the objectives and policies of the range of planning documents both under and peripheral to the RMA, which are relevant to the proposed activity.

### ***The Submitters***

64. Two submitters, Mr Philip Paterson and Mr Lindsay Eagle, made submissions at the Hearing.
65. **Mr Philip Paterson** is opposed to the application, and read an affidavit prepared in respect of an enforcement order he is seeking from the Environment Court relating to resource consents issued to the Animal Health Board by the West Coast Regional Council for the discharge of 1080. Mr Paterson is longstanding in his opposition to the use of 1080, and his opposition extends to this application by the Department of Conservation. He expressed his concerns about impacts on human health, including his own health, and on native birds, and other non-target species from aerial 1080 operations.
66. **Mr Lindsay Eagle** is opposed to the application. He is a retired civil engineer who has a long association with the Mackenzie district and Waitaki Valley for both employment and recreation purposes. Mr Eagle raised concerns he has with a number of aspects of this application including; the need for aerial distribution of poisons, and potential effects on wild food supplies and non-target species, particularly kea and New Zealand falcon. He questioned the actions of the Department of Conservation and the cost-effectiveness of aerial poisoning, particularly over small isolated sites of public conservation land or land that is accessible by vehicles. He considers that secondary control should be able to maintain the rabbit population at acceptable levels by targeting sites that have a high density of rabbits. Mr Eagle acknowledged that the Department of Conservation is charged with protecting native flora and fauna but the tools available can themselves cause deaths of non-target native species.

67. Mr Eagle was concerned that the 10 year duration sought would allow up to 4 aerial poisoning operations on the same land, and if this was required it would mean that the programme was a failure. The Department should have been using and could use other methods of rabbit control to achieve the outcomes required. If the application is granted it should be for 3 years only.
68. Two submitters, Professor H Tane and Mr A Davis had requested a Hearing, but did not attend. Eleven submitters had not requested to be heard. These submissions must also be considered.

#### Submissions in support

69. The New Zealand Defence Force (NZDF) supports the application, as they have land adjoining Department of Conservation administered land, and would be a direct beneficiary of the Department of Conservation's poisoning operations. NZDF also has an interest in managing rabbits to conserve vegetation, and they have confidence in the Department's systems and ability to manage the risks associated with the use of toxins, hence they seek that the application is granted.
70. Dr Bruce Evers, a general medical practitioner in Twizel, supports the application because he considers there is no practical alternative. Dr Evers requests that the application be granted as applied for.
71. The Royal Forest & Bird Protection Society – Ashburton Branch supports the application on the grounds that 1080 and pindone are an effective means of pest control. They seek that the consent is granted for 10 years.

#### Submissions in opposition

72. Mr Donald Burnett of Lake Tekapo opposes the application in part, and particularly has concerns about the effects of pindone on harrier hawks around Niggerhead Reserve where they breed. He requests that pindone is not used on land bordering Mt Cook Station. Mr Burnett supports the use of 1080, which he states has always been very effective in the area in the past.
73. Mr Christopher Nichol of Oamaru opposes the application and expresses concerns about long-term safety arising from traces of 1080 in water, and the fact that aerial application is an indiscriminate method that puts non-target species at risk. Mr Nichol seeks that the application is declined.
74. Mr Peter Munro of Lake Tekapo opposes the application because of the effects of aerial application of poisons on non-target species such as native birds, lizards and deer, and contamination of waterways. Mr Munro wants a reduced term of consent, as a better poison with less by-kill will hopefully be developed in the near future.
75. Mr Russell Dixon of Oamaru opposes the application because the aerial distribution of 1080 is indiscriminate and inaccurate, which threatens water supplies for people, stock and irrigation. He is also concerned that the use of 1080 and pindone threatens black stilts, and there should be no poison discharge into water ways. The 10 year duration indicates no intention of improving the poor performance in this area to date.
76. Professor Haikai Tane of Twizel states that the application should be rejected in accordance with New Zealand's obligations and responsibilities under the Universal Declaration of Human Rights and international law for sustainable development and environmental protection. Professor Tane advises that it is culturally offensive and unacceptable to discharge poisons to inhabited areas providing water and fresh food to the community.

77. Ms Sheryl Miller of Twizel opposes the application, because she considers it is unacceptable and inappropriate to use any poisons near water, over such a widespread area, and for such a prolonged period.
78. Mr Shane Brand of Waimate opposes the application because he believes that the aerial application of 1080 is wrong, as it does not target specific species. Mr Brand also notes that 1080 will enter waterways through the indiscriminate method of aerial application, and the corpses of dead animals and birds. Mr Brand seeks that 1080 is banned and an alternative found.
79. Ms Greta Te Maiharoa-Brand opposes the application, because there is no antidote for 1080, and that she has read of dogs that have been killed by it. Ms Te Maiharoa-Brand seeks that the use of 1080 is banned.
80. Mr Andrew Davis of Twizel opposes the application because he is concerned that; water will be contaminated with 1080, and that thar will probably also be killed. Mr Davis questions the need for the programme as he has never seen rabbits on the hills above the flats, and that rabbits can be controlled by hunting.
81. Ms Mary Wallace of Timaru opposes the application, and requests that there be no air drop of pindone baits around huts or caravans as some baits may land on the roofs and contaminate drinking water supplies. She also seeks that there be no dispersal of pindone baits over summer holiday periods when there would be a greater likelihood of small children being around who may ingest them.

### ***The Officer's report***

82. **Mr Warwick Pascoe**, a consultant to Environment Canterbury, addressed his section 42A report, which was taken as read. He commented on the evidence presented to date and answered questions relating to his report and proposed conditions of consent that had been developed with the applicant.
83. Mr Pascoe recommended that application could be granted but the duration of consent should be reduced to 5 years, based on the nature and sensitivity of the affected environment, particularly the risk of unforeseen adverse effects arising from the activity. However he did counter-balance this recommendation, by suggesting that support for the 10 year duration applied for would come from the level of compliance and environmental monitoring and reporting proposed, and the costs and benefits to the community of the proposed poisoning operations.

### ***The Applicant's Right of Reply***

84. **Ms Rutledge** made a verbal right of reply at the Hearing. She reiterated the context of this application; that the review by ERMA of the use and effects of 1080 has resulted in continued approval for its use, subject to conditions that the Department of Conservation will comply with. Research into alternative poisons and methods of animal pest control have been initiated but the results and implementation may be some years away. Meanwhile rabbit pest control measures must continue to protect ecological values of the area.
85. This application is for rabbit control, and has different characteristics to possum control operations, which ameliorates some of the generally expressed concerns about 1080 use. The baits contain lower concentrations of poison, the area of poisoning is predominately flat, open grassland terrain which is not kea habitat. While there are some small areas within this application that are adjacent to kea habitat, there has been no known by-kill of kea from rabbit control operations, and there is no

evidence to suggest that the operations undertaken under this application will be likely to affect kea.

86. In respect of duration of any consent granted, the proposal is for a series of discharge events during the period of consent, not for a continuous discharge, and any adverse effects that arise will only occur only as a result of each event. Environment Canterbury has granted applications for similar activities for 10 year terms. If ERMA were to make any amendments to the conditions of use of either 1080 or pindone during the consent period the Department of Conservation would have to comply with those conditions, no matter the conditions of any resource consent.
87. The submission from Mr Eagle presented views on pest rabbit management that are different to those held by the Department of Conservation and Environment Canterbury. These organisations consider that 1080 and pindone are necessary tools that will be needed to control rabbit populations in the area of the application for the foreseeable future, and therefore the application should be granted for the duration sought.

## Principal issues in contention

88. The principal issues in contention were;
- whether aerial discharge of 1080 was necessary to achieve control of pest rabbit populations;
  - whether 1080 should be used for aerial rabbit control operations because of the risks to non-target species and human drinking water;
  - the duration of any consent granted.

## Main Findings of Fact & Decision-making Assessment

### *Scope of the Application*

89. The jurisdiction of Canterbury Regional Council in this matter is limited to controlling the discharge where it may enter water, or where it is onto land in a river bed.
90. This application seeks authorisation to discharge 1080 and pindone by air, onto land in river beds, and onto other land where the poisons may enter water in a river, pond or wetland either by; direct drop, by falling onto land and then rolling or falling into water, being entrained in rising water levels in a river, or by rainfall washing poison leached from baits into water. There is a high probability that some poison baits will enter surface water. There is no evidence that 1080 or pindone are likely to enter groundwater.
91. The proposed regional plan authorises, as a permitted activity, the discharge of 1080 or pindone onto land in a river bed using ground-based methods or by aerial discharge, subject to conditions. However this proposal does not comply with some of the conditions pertaining to aerial discharge. No discharge permit is required where the poisons are applied by air or ground-based methods to land outside of a riverbed, where the poisons will not enter water, because this does not contravene a regional rule.
92. The application area includes 'marginal strips' alongside and within river beds, and land within braided river beds, as well as areas of land outside river beds where there may, or may not, be waterbodies that the poisons are likely to enter. A discharge permit for aerial discharge of 1080 and pindone would probably not be required for all

of the application area. However the application does not differentiate between areas where a discharge permit is required and where one is not required so this decision assumes that in all areas of the proposed discharge it is possible that 1080 or pindone may enter surface water.

93. The application is for an 'over-arching' resource consent to undertake the aerial poisoning activity. While the range of locations is identified in the application it is not yet certain when, if ever, there will be an aerial drop of 1080 or pindone on any specific area. The aerial operations will occur on an 'as required' basis, determined from the Department of Conservation's internal decision-making processes.
94. The Regional Pest Management Strategy limits the frequency of repeated applications of 1080 to a minimum interval of 3 years, to prevent 'toxin aversion' developing in rabbits. Pindone is not similarly controlled, but the Department of Conservation is aware of this effect with this poison also. With a 3 year interval it would, in theory, be possible to have 4 aerial operations of 1080 on the same land within a 10 year period, and 4 aerial operations using pindone. However, the Department does not expect such intensity of aerial operations to be necessary.
95. The aerial discharge of formulated substances containing 1080 or pindone is also subject to regulations under the Hazardous Substances and New Organisms Act. An approval for use of baits containing 1080 or pindone is subject to conditions. In respect of pindone these conditions cover; maximum concentration of pindone in carrot baits; requiring signs on entry points to areas where pindone is applied to remain in place for 8 months after the poison applied; the specified colour and size of baits, permissions required from ERMA (or a delegated authority) to apply pindone baits onto Department of Conservation land or in human drinking water catchment areas or where a risk to public health may be created; prohibited flying zones, and reporting of spills or misapplied poison baits.
96. The approval given by ERMA under HSNO in 2007 for 1080 contains similar conditions as for pindone and has additional conditions of 1080 use, particularly for aerial operations. The conditions of approval for 1080 include; meeting requirements for a tolerable exposure limit for drinking water, specific details for signage on entry points to areas where 1080 is applied and signs to remain for 6 months, maximum application rates, specified colour and size of baits, controls on outdoor temporary storage, permissions required from the Department of Conservation to apply 1080 baits onto Department of Conservation land or from the Ministry of Health to apply 1080 in human drinking water catchment areas or where a risk to public health may be created, requirements for public notification and notification of adjoining landowners of intended 1080 aerial poison drops, prohibited flying zones, reporting of spills or misapplied poison baits, and reporting to ERMA after an operation.

## **Section 104**

### ***The effects on the environment***

97. The actual and potential effects on the environment of allowing the activity to have regard to are:
  - Positive effects on indigenous ecosystems and biodiversity;
  - Adverse effects from the poisons entering water including effects on water quality, aquatic ecosystems and human health and well-being;

- Adverse effects from the poisons on land in river beds including effects on soil and terrestrial ecosystems; human health and well-being, and non-target species, including domestic animals.

### **Positive effects**

98. The control of rabbit pests is a matter of regional significance, and protecting indigenous ecosystems is a matter of national importance. The discharge of 1080 or pindone impregnated baits via aircraft to poison rabbits in these areas of public conservation land with high rabbit populations is an effective primary means of rapidly reducing the population. Aerial application complements ground-based poisoning and other rabbit pest control methods to protect and restore indigenous ecological and biodiversity values on public conservation land in an iconic area of New Zealand. There are significant positive effects that result from pest rabbit control, and the aerial application of poisons is one of the tools needed to achieve effective control.

### **Adverse effects on water quality and aquatic ecosystems**

99. Some poison baits will fall into water, and it is possible that the poisons may enter water via leaching and run-off or higher water levels. The evidence of Dr Fisher in respect of effects on water quality and aquatic ecosystems is accepted, as there was no evidence to the contrary.
100. There has been considerable research and monitoring of the effects of 1080 baits and leached concentrations in waterways. The principal factors that limit the extent of adverse effects are; the relatively small amount of poison that gets into waterways from aerial discharge operations, and the dilution provided by the waterway, that rapidly reduces concentrations to very low levels. Extensive monitoring of water quality following 1080 aerial discharge operations in catchments throughout New Zealand has consistently shown that 1080 is, in most instances, not detected in rivers or water supplies, and where it has been detected it has, almost without exception, been at very low concentrations. A significant number of water samples have been taken from community water supplies sourced from catchments in which aerial discharge operations have occurred. Only one sample contained detectable 1080 at a concentration of 10% of the Ministry of Health's recommended safe concentration for human drinking water.
101. Research of the effects of 1080 on aquatic organisms in New Zealand, including invertebrates, eels and koura has not detected any significant effects on the mortality or behaviour of the aquatic organisms studied.
102. There has been little research or monitoring in New Zealand or overseas on the effects of pindone on water quality and aquatic ecosystems. Pindone has been shown to be highly toxic to rainbow trout at relatively low concentrations, but with exposure over a relatively prolonged period. The salt form of pindone used in carrot baits is more likely to leach from the baits into water, but this will be diluted in the waterway. Dr Fisher considered the greatest risk of exposure to pindone for fish would be in 'standing', i.e. not flowing, water, but she was not sure whether the concentration of pindone from baits falling into standing waterbodies would persist long enough to create a toxicity effect.
103. Dr Fischer recommended monitoring of both 1080 and pindone when used where baits or the poisons may enter water. The findings of a study referenced by Dr Fischer (Suren 2006) suggested that due to the rapid leaching of 1080 from cereal baits, concentrations of 1080 may be detectable in waterways for only a short time, less

than 12 hours, following aerial discharge operations, and water quality monitoring programmes should consider this.

104. The application includes a one kilometre buffer zone in which no poisons are discharged by air around the surface water intakes of the three community water supplies located within or adjacent to the discharge areas. Such a buffer zone has been consistently applied in approvals for 1080 aerial operations, including from Medical Officer's of Health throughout New Zealand.
105. The use of navigational guidance systems in aircraft, by pilots with qualifications for agricultural operations provides for greater accuracy of bait distribution, reducing the amount of poison bait that falls into waterbodies. Rabbits inhabit open, dry-land areas so the application area does not include significant areas of wetlands or standing waterbodies, or land where there are numerous small streams.
106. The actual and potential adverse effects on water quality, aquatic ecosystems and human drinking water of the proposed activity, undertaken in accordance with the suite of suggested conditions, will be minor.

### ***Adverse effects in river beds - terrestrial ecosystems and non-target species***

#### ***Adverse effects on terrestrial ecosystems***

107. Both pindone and 1080 are highly toxic to a range of species of animals and birds. The evidence of Dr Fisher is accepted in respect of these adverse effects as it was not contested, and supports some of the concerns raised by submitters about the effects on non-target species.
108. Invertebrates have been observed feeding on 1080 baits and carcasses of poisoned animals. It is reasonable to assume this would also occur for pindone baits and poisoned carcasses. The scattering of baits from an aerial operation will expose only a small proportion of the invertebrate population to the baits. While there may be mortality to individuals, New Zealand field studies have not detected negative impacts on vertebrate populations from 1080 poisoning operations.
109. 1080 and pindone are highly toxic to many bird species, and a range of species have been reported dead following 1080 and pindone operations. Of particular concern raised in respect of this application are the potential effects on kea, New Zealand falcon and harrier hawks. Kea deaths from 1080 aerial operations have occurred recently on the West Coast, and pindone residues were detected in hawks and gulls that died following poisoning operations in the Mackenzie Basin in 1994. A range of birds, including some that utilise river-bed habitat such as wrybills, plovers and black-backed gulls have been reported killed following pindone poisoning operations in New Zealand.
110. Most of the areas of this application are not generally kea habitat, although areas of river bed in or adjacent to Aoraki National Park may be. Dr Fisher reports that research into minimising impacts on kea is underway; but any recommendations for practice are at least two years away. Meanwhile Dr Fisher suggests monitoring for kea mortality and testing of carcasses for poison residues when operations are undertaken in kea habitat. As other bird species may also be at risk of poisoning in their riverbed habitats monitoring would also be appropriate.
111. While there could be risks of secondary poisoning of dogs that consume poisoned carcasses, the poisoning operations will all occur on land controlled by the

Department of Conservation. Entry of dogs onto this land requires permission from the Department, and signage at points of entry will be adequate to advise dog owners, and thereby minimise the risk of dogs having access to poisoned carcasses.

112. Humans are also susceptible to these poisons, but protection zones around water supply intakes, public notices and signage will provide adequate safeguards to protect the general public from exposure to the poisons.
113. The actual and potential effects from the aerial discharge of 1080 and pindone in riverbeds in the application area are not expected to be significant. While there is some uncertainty about the potential effects on birds in riverbed habitats, the effects on these birds can be monitored and poisoning operations adapted in response, if needed, over the duration of any consent.

### ***Permitted Baseline***

114. Section 104(2) provides the discretion to disregard an effect of the activity on the environment if the plan permits such an effect. In terms of the discharge to land where 1080 or pindone may enter water, the operative regional plan is silent. The proposed regional plan only allows as a permitted activity the discharge of agrichemicals glyphosate or diquat. These are both used for the control of vegetation. I have no evidence on the comparability of effects on water quality or aquatic ecosystems between these agrichemicals, so I have not considered disregarding any adverse effects of the proposed discharge to water.
115. In terms of the discharge to land in a riverbed, the operative regional plan is again silent. The proposed regional plan allows as a permitted activity the aerial discharge of pindone and 1080 onto land in a river bed except between August to November. The application is to undertake aerial poisoning operations during August to maximise 'winter hunger' of the rabbits, but not in September to November, to avoid the bird-breeding season. Therefore the adverse effects of the discharge to a river bed could be disregarded except for those effects that may occur in the month of August. There is no evidence that effects in August would be different to those that may occur in other months, therefore I have not considered disregarding any adverse effect of the proposed discharge to land in a river bed.

## **Objectives and Policies**

### ***Objectives and Policies of the CRC Statutory Instruments***

#### ***The Canterbury Regional Policy Statement***

116. I have had regard to the objectives and policies of the Canterbury Regional Policy Statement (CRPS) as relevant to the applications, particularly those related to the use of hazardous substances, soil conservation, management of pests and protection of indigenous flora and fauna. I note that the Canterbury Regional Council, through the CRPS, has identified responsibility to control the use of land for the prevention or mitigation of any adverse effects on water quality from the use of specified hazardous substances, including pesticides, and to control the discharge of hazardous substances into or onto land and water (Chapter 17). Discharges of hazardous substances should only be authorised where adverse effects are prevented or mitigated (Policy 4).

117. I find that the proposed activity is in accordance with the objectives and policies of the Regional Policy Statement.

### **The Proposed Natural Resources Regional Plan**

118. I have had regard to the following chapters, objectives and policies of the Proposed Natural Resources Regional Plan (NRRP) as relevant to the applications.
119. Chapter 4: Water Quality of the NRRP is relevant. Objective WQL1 provides for the water quality outcomes for surface waters. The rivers in the area of the application are classified as natural state, and the objective is to ensure the water quality in the rivers remains in this state. The proposed discharge will not alter the quality of the water in these rivers to any significant extent or for any significant period.
120. Policy WQL2 aims to prevent the discharge of certain contaminants into surface water, including hazardous substances. An exception is provided where the discharge is necessary to control plant or animal pests, provided the substance is of low toxicity to non-target aquatic species, is not persistent in the environment, and is used in accordance with conditions of use set by the manufacturer, ERMA and any resource consent, and is used by an approved handler. The proposed activity meets these criteria and is consistent with Policy WQL2.
121. Overall, the proposed activity is consistent with the Proposed Natural Resources Regional Plan.

### ***Conclusion on effects on the environment***

122. The amount of information available about the effects of 1080 on the environment considerably far exceeds the information about the effects of pindone. This has developed as a result of the predominant use of 1080 for aerial poisoning of possums, and the public concern raised about the use of 1080. However the potential for effects such as impacts on non-target species appear to be as great from pindone as from 1080. In the absence of information about pindone, and the apparent similarities in effects on the environment, I have considered the effects on the environment of 1080 and pindone to be equivalent, and therefore my conclusions apply to both poisons.
123. Significant benefits to indigenous flora and associated fauna will result from maintaining low rabbit populations in this area. While there may be some adverse effects, those on water quality will be minor, with potentially some increased adverse effects on birds in riverbed habitats. The extent of these effects can be minimised by the timing of operations and the monitoring of these effects, and adoption of adaptive management by the Department of Conservation.

### ***Section 104D of the Act- Non-complying activities***

124. I have concluded that the discharge of 1080 or pindone poison baits onto land where contaminants may enter water is a non-complying activity. Therefore I must be satisfied that either the adverse effects of the activity on the environment will be minor, or the activity will not be contrary to the objectives and policies of both the relevant plan and relevant proposed plan.

125. I have concluded that the adverse effects on the environment to the discharge to water will be minor so Section 104D is satisfied. For the record, the activity is not contrary to objectives and policies of the relevant plan (as there are none), and is in specific accord with the objectives and policies of the proposed plan.

### **Section 105 of the Act**

126. As the application is for a discharge to the environment regard must be had to the criteria in Section 105(1) of the Act, which are:
- a) *“the nature of the discharge and the sensitivity of the receiving environment to adverse effects;*
  - b) *the applicant’s reasons for the proposed choice; and*
  - c) *any possible alternative methods of discharge, including discharge into any other receiving environment”.*
127. Case law requires the consent authority to find whether, in proposing a discharge of contaminants, the applicant has given adequate consideration to alternatives that would avoid, remedy or mitigate the effects of the discharge of contaminants, and then made a reasoned choice.
128. I am satisfied that this is the case for the discharge of 1080 and pindone poison baits to land where they may enter water, and onto land in a riverbed.

### **Section 107 of the Act**

129. I must also have regard to the standards in Section 107 of the Act, which apply to all discharges to water or to land where a contaminant may enter water.
130. In respect of this proposal, the discharge of 1080 or pindone is not likely to result in any of the effects listed in Section 107, therefore there is no impediment to granting the discharge permit exerted by this section.

## **Part 2 of the Act**

### **Section 5**

131. In the Act, sustainable management is defined as “managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –
- “(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonable foreseeable needs of future generations; and*
  - (b) Safeguarding the life supporting capacity of air, water, soil and ecosystems; and*
  - (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment”*

### **Section 6 and Section 7**

132. Section 6 of the Act lists matters of national importance that I must recognise and provide for in this decision. This includes Section 6(a) that requires the protection of areas of significant indigenous vegetation...Section 7 of the Act lists matters to which I must have particular regard. Three are relevant in this case; Section 7(c) the

maintenance and enhancement of amenity values; Section 7(d) intrinsic values of ecosystems and Section 7(f) the maintenance and enhancement of the quality of the environment.

133. The proposed activity has, as its purpose, implementing these elements on the public conservation land in the area of this application.

### **Section 8**

134. The information available to me indicates that the application is consistent with the Principles of the Treaty of Waitangi.
135. I note that the decision of ERMA on the controls for 1080, identified a particular matter to be addressed was, *to provide for better engagement with iwi/Māori to achieve improved outcomes in terms of the management of taonga species and resources and will be looking for this to be ensured as far as possible when permissions are granted for the aerial use of 1080*. The application states that consultation with runaka will be on-going throughout the period of consent.
136. This application is for an activity that can be undertaken in a way that will meet the provisions of Part 2 of the RMA.

### **Duration of Consent**

137. The application is for consent duration of 10 years. The activity will occur periodically, at least three years apart, for aerial operations of 1080 on the same area of land, but the Department of Conservation does not expect to use aerial operations this frequently. Under the conditions of resource consent and approvals from other authorities for this activity, the potential adverse effects of the proposed activity are acceptable and do not warrant a reduction in the duration applied for

### **Decision**

138. Having considered all of the relevant matters under Section 104 and Part II, as discussed above, it is my decision that the application can be granted for a duration of 10 years, subject to conditions.
139. The reasons for this decision are:
- The adverse effects on the environment of the activity will be minor, and
  - The activity is in accord with the objectives and policies of the Regional Policy Statement and the proposed Natural Resources Regional Plan.

### **Conditions**

140. While the jurisdiction of Canterbury Regional Council in this matter is limited to riverbeds and where contaminants may enter water, the application does not distinguish between areas where authorisation from Canterbury Regional Council is required and those areas where it is not. Therefore I have assumed that there is a risk of 1080 or pindone poison baits entering water in all locations, and the conditions of consent apply to all areas of land specified in the application, unless a condition limits the area to which it applies.

141. A set of conditions that were developed between the Department of Conservation and the Canterbury Regional Council Reporting Officer were circulated at the Hearing. While these form a useful basis for conditions for this permit, there are several additional matters that will be included in the conditions including; a programme of proposed aerial operations each year, and monitoring for bird mortality
142. As discussed, the use of 1080 and pindone is also subject to conditions in HSNO regulations. The conditions of the HSNO regulations are not the same for both 1080 and pindone, as the 2007 decision by ERMA on the review of the use of 1080, amended and extended the conditions of use for 1080, particularly for aerial applications. The conditions of this consent recognise those conditions imposed under HSNO that are relevant to the resource consent, but does not include conditions which do not relate to aspects of the poisoning operation that are not within the jurisdiction of Canterbury Regional Council. Where the conditions relate to the same area of control as HSNO regulation, I have, as far as possible and as appropriate, made the conditions of this consent consistent with HSNO regulations.

## Resource Consent

*To:*

Discharge contaminants onto land in riverbeds, and onto land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water.

*Location:*

Public Conservation Land in the Mackenzie Basin, the Waitaki Valley and Aoraki/Mt Cook National Park.

*Duration:*

10 years

### Limits

1. The discharge of formulated substances containing sodium fluoroacetate (1080) or pindone from aircraft shall only occur in the discharge areas marked as "Proposed treatment area (below 1000m)" on attached map series CRC091153 Maps 1 to 8 which forms part of this consent.
2. The discharge shall be only the following formulated substances:
  - (a) Cereal pellets containing not more than 0.4 grams per kilogram of sodium fluoroacetate (1080), spread at a maximum rate of 15 kilograms per hectare in a discharge event; or
  - (b) Cereal pellets containing not more than 0.25 grams per kilogram of pindone, spread at a maximum rate of 15 kilograms per hectare in a discharge event; or
  - (c) Carrot pieces with a maximum concentration of 0.2 grams per kilogram of sodium fluoroacetate (1080), spread at a maximum rate of 30 kilograms per hectare in a discharge event; or
  - (d) Carrot pieces with a maximum concentration of 0.17 grams per kilogram of pindone, spread at a maximum rate of 30 kilograms per hectare in a discharge event.

A 'discharge event' means the treatment of an area with a formulated substance spread by aircraft, and a discharge event may comprise up to three spreading applications onto a treatment area of a formulated substance containing pindone.

3. Carrot pieces shall comply with the following:
  - (a) When the pieces contain pindone, no individual carrot piece shall have any dimension less than 12 millimetres; and
  - (b) When the pieces contain sodium fluoroacetate (1080), the mean weight of the carrot pieces in a representative sample shall be six grams or more, and carrot pieces weighing less than 0.5 grams shall comprise no more than 1.5 percent of the total weight of carrot pieces used for a discharge event.
4. There shall be no discharge onto land in the bed of a river during the period 1<sup>st</sup> September to 30<sup>th</sup> November each year.

### **Annual Programme**

5. The consent holder shall prepare an Annual Programme of discharge events proposed for the 12 month period from 1<sup>st</sup> of July each year. A copy of the Annual Programme shall be forwarded, by the 1<sup>st</sup> of May each year, to; Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, the relevant territorial local authority, Te Runaka o Arowhenua, Te Runaka o Waihao, Te Runaka o Moeraki, and occupiers, and as far as practicable, owners of land with a boundary adjoining a treatment area identified in the Annual Programme. These persons shall be advised of any subsequent amendment to the Annual Programme as soon as practicable, after an amendment is made.

### **Notices and Signs**

6. (a) Public notice of a discharge event shall be made in the public notices section of the High Country Herald, the Christchurch Press, and The Otago Daily Times at least ten working days, but not more than two months, prior to the proposed discharge event. A copy of the public notice shall be provided to the Canterbury Regional Council Attention RMA Compliance Monitoring and Enforcement Manager, within five working days of its publication.
  - (b) The Consent Holder shall notify all occupiers, and as far as practicable owners, of land, dwellings or buildings immediately abutting a treatment area at least ten working days, but not more than two months, prior to the proposed discharge event.
7. The Consent Holder shall notify: Te Runaka o Waihao, Te Runaka o Arowhenua and Te Runaka o Moeraki at least ten working days before any discharge event commences.
8. The Consent Holder shall, as far as practicable, notify all apiarists with production hives located within three kilometres of a treatment area at least ten days before any discharge event commences.
9. Any notice or notification required by Conditions (6), (7) or (8) shall include:
  - (i) the approximate date on which the discharge event is expected to commence, and the expected duration of the event; and
  - (ii) the name and nature of the substance;

- (iii) a description of the area over which the substance will be applied, including
    - a. the boundaries of the area; and
    - b. districts, roads, and other commonly known features that may identify the place;
  - (iv) the location or locations where members of the public may view maps of the areas over which the substance will be applied, and the times when such maps may be viewed;
  - (v) the name and address of the person responsible for the application of the substance.
10. Signs shall be erected at every normal point of entry to a treatment area prior to a discharge event. The signs shall comply with Regulation 28 of the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001, as applicable to formulated substances containing pindone or sodium fluoroacetate (1080). The consent holder shall provide, upon request by the Canterbury Regional Council, a certificate from a suitably qualified person that confirms the signs comply with Regulation 28 of the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001.
11. If the formulated substance contains sodium fluoroacetate (1080), a sign required by Condition (10) must remain in place for;
- (a) at least six months after the last application of the substance; or
  - (b) until the substance or any carcass is no longer toxic; or
  - (c) any longer time period required by a legal obligation.
12. If the formulated substance contains pindone, a sign required by Condition (10) must remain in place for;
- (a) eight months after the last application of the substance, or
  - (b) until the substance or any carcass is no longer toxic; or
  - (c) any longer time period required by a legal obligation.

**Applying formulated substances:**

13. All mixing and loading of formulated substances shall occur in a location where contaminants are not likely to enter groundwater, any surface waterbody or any artificial watercourse.
14. Formulated substances shall not be discharged onto land within:
- (a) 1000 metres of a community drinking water supply intake from surface water;
  - (b) 500 metres of any domestic or stock water supply intake from surface water;
  - (c) 20 metres of any flowing or standing waterbody greater than three metres wide and 100 millimetres deep.;
  - (d) 20 metres of any water tank, bore or well for the supply of domestic water;
15. An aircraft that is carrying out a discharge event shall not, when flying to or from the treatment area, fly over a;
- (a) community drinking water supply intake from surface water;
  - (b) river that is less than 100 metres upstream of an abstraction point for a water supply for human consumption;
  - (c) residence, farm building or recreational hut.
16. The pilot of any aircraft used in a discharge event shall:

- (a) hold an agricultural rating issued in accordance with Part 61 of the Civil Aviation Authority Rules, and evidence of that rating shall be produced upon request by a Canterbury Regional Council enforcement officer; and
  - (b) be provided with a copy of this resource consent before the discharge event commences.
- 17. The aircraft used in a discharge event shall be guided by a differential global positioning system and the boundaries of the discharge area(s), including exclusion zones and separation distances, shall be indicated to the pilot by the Consent Holder.
- 18. The flight paths of aircraft used in a discharge event shall be
  - (a) recorded by the differential global positioning system and this record shall be maintained for at least 12 months following the completion of the discharge event and made available to Canterbury Regional Council upon request; and
  - (b) checked for any possibilities of baits falling outside the treatment area.
- 19. The equipment from which formulated substances are discharged shall:
  - (a) be of an appropriate capacity to match the aircraft and loading equipment;
  - (b) be designed for distributing the formulated substances being discharged;
  - (c) have a proven reliable system for the pilot to start and stop the discharge; and
  - (d) be operated in a manner which ensures there is no discharge of bait outside of the discharge area(s).
- 20. If a formulated substance containing sodium fluoroacetate (1080) or pindone is discharged other than in the discharge area(s) for the discharge event, or is lost or split, the Canterbury Regional Council Pollution Hotline shall be notified as soon as possible, but within 4 hours, with details of the nature and quantity of the substance and the location, date, and time of the spill.
- 21. The Consent Holder shall ensure that all persons undertaking activities authorised by this consent are aware of the consent conditions prior to the discharge event commencing.

### **Monitoring**

- 22. Representative samples of surface water shall be taken from a representative site or range of sites on one or more waterbodies located where formulated substances may enter water in a discharge event. The sites shall be identified in consultation with Canterbury Regional Council Director Investigations and Monitoring before a discharge event commences. Samples shall be taken at each site within:
  - (a) 24 hours prior to the discharge event occurring;
  - (b) 4 to 8 hours after the discharge event has ceased; and
  - (c) 12 to 18 hours after the discharge event has ceased.
- 23. Water samples shall be analysed for the substance discharged, either sodium fluoroacetate (1080) or pindone, using the most appropriate scientifically recognised and current method by a laboratory accredited for the method of analysis by International Accreditation New Zealand, or an equivalent authority.
- 24. A report that provides an analysis of the results of the water sampling undertaken in accordance with Condition (23) shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager within one month of the

analyses being received by the Consent Holder. Where either sodium fluoroacetate (1080) or pindone is detected in the water samples the report shall explore the reasons for the presence of the substances in the water, and describe the steps the Consent Holder will take to reduce the risk of formulated substances entering water in future discharge events.

25. The Consent Holder shall prepare and undertake a programme to monitor mortality of birds in a riverbed following a discharge event undertaken entirely or partly within the bed of that river. A report analysing the results of the bird mortality monitoring programme shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager within two months following a discharge event. The report shall explore the reasons for any bird mortality resulting from the discharge event, and describe the steps the Consent Holder will take to reduce the risk of bird mortality from future discharge events.
26. The Consent Holder shall keep records of the following information for each discharge event:
- (a) the location and area of the discharge area(s); and
  - (b) the type and quantity of formulated substance that was discharged.

These records shall be forwarded to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within one month of the completion of a discharge event.

### **Review**

27. The Canterbury Regional Council may, once per year, on any of the last five working days of February or August, serve notice of its intention to review the conditions of this consent for the purposes of:
- (a) dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage; or
  - (b) requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.



**Hearing Commissioner**

2<sup>nd</sup> day of July 2009

Attach: map series CRC091153 Maps 1 to 8