

TO: Mark Brockelsby
WAIKATO REGIONAL COUNCIL

FROM: Phil Mitchell

DATE: 16 October 2015

RE: MITCHELL PARTNERSHIPS' REPORT: -

**AERIAL APPLICATION OF 1080: REVIEW OF COMPLIANCE WITH THE
REGULATORY REGIME**

Mitchell Partnerships Limited ("**MPL**") has prepared a report for the Waikato Regional Council ("**WRC**"), titled "Aerial application of 1080: Review of Compliance with the Regulatory Regime, September 2015" ("**the final MPL report**").

Prior to completing the final MPL report, a DRAFT was provided for client comment (as is standard practice) in August 2015. That DRAFT report contained the following recommendations:

Throughout this report we have made recommendations to improve the regulatory regime of 1080 discharge operations across the Waikato Region. The following is a summary of these recommendations.

1. There is considerable scope for improved inter-agency cooperation and for the standardisation of information and regulatory requirements. We anticipate that the Regional Council is well placed to play a leading role in this regard. We recommend that where there are common conditions between the regulatory agencies, that the Regional Council draft a set of conditions that can be agreed upon by the respective regulatory agencies. This will have the effect of streamlining the various consenting processes, provide greater clarity for the operators and prevent conditions being over ruled or undermined by conditions from other regulatory agencies.
2. In addition, we recommend the implementation of a common, inter-agency database for the storage of information regarding aerial 1080 operations in the region, particularly in regard to the common conditions between the regulatory agencies. We believe the Regional Council is well placed to take a leadership role in this regard.
3. Evidence presented and analysed here does not clearly outline the methodology required for post-operation water sampling. We therefore recommend that the Regional Council include resource consent condition(s) requiring operators to adhere to the Landcare Research best practice protocol with regard to water sampling and require a post-operation report to be prepared that details the water sampling undertaken and enable compliance to be assessed.
4. Regarding the buffering of flowing and standing water bodies, and drinking water sources, there is currently no explicit condition under the HSNO controls, MoH permission, DoC permission or resource consents requiring operators in the Waikato Region to enact these buffers. We therefore recommend that a resource consent condition be added to all future resource consents requiring operators to avoid the discharge of baits into standing and flowing water bodies within the operational area, including the enactment of buffers around water ways and drinking water sources identified during the pre-operation phase.

5. Regarding the lack of evidence of consultation with tāngata whenua and other stakeholders across the three operations reviewed here, we recommend that a region wide consultation practice, led by the Regional Council be developed and incorporated into all future resource consents. The consultation practice should outline the information required and identify the parties to be consulted with to gain this information. This could be completed alongside recommendations 1 and 2, but with input from the other regulatory agencies who have consultation requirements in their standard operating procedures, particularly DoC.
6. The pre and post operation monitoring of the effects of a 1080 operation on target species is not currently required in the Waikato Region. Based on EPA report statistics this places the Waikato Region operations, with the exception of the DoC operation (post-operation only), in the minority regarding this aspect. We therefore recommend that a resource consent condition should be added to all future resource consents requiring the pre and post operation survey of target species populations within the operational area.
7. Similarly post-operation monitoring of the benefits of a 1080 operation on native flora and fauna only occurs in 30% of operations and is required over a number of years after an operation. We recommend the Regional Council includes a resource consent condition in all future operations requiring the post-operation effects on native flora and fauna be assessed and reported on.
8. Overall through our review of information completed here, we have developed the opinion that the information required for confirmation of compliance with many of the conditions from all regulatory agencies would be best communicated on pre and post operation maps, instead of as lists of information. We therefore recommend that the Regional Council include an advice note on all future resource consents outlining the information required to be presented on pre and post operation maps.

Following the receipt of considerable additional information from the reviewers of our DRAFT report, the final MPL report, including its recommendations, was substantially amended. The recommendations in the final MPL report were as follows:

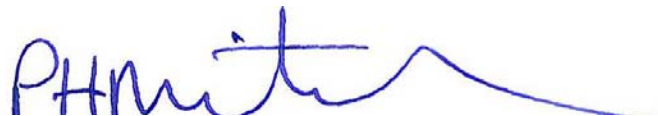
Throughout this report we have made suggestions and / or recommendations to improve the implementation of the regulatory regime for 1080 aerial discharge operations across the Waikato Region. The following is a summary of these:

1. There is considerable scope for improved inter-agency cooperation and for the standardisation of information and regulatory requirements. We anticipate that the Regional Council is well placed to play a leading role in this regard. Based on the analysis completed in Section 4 and the multiple overlapping conditions, we recommend that where there are common conditions between the regulatory agencies, that the Regional Council draft a set of conditions that can then be discussed with the respective regulatory agencies and agreed upon. This will have the benefit of streamlining the various consenting processes, provide greater clarity for the operators and prevent conditions being overruled or undermined by conditions from other regulatory agencies.
2. We also recommend the implementation of a common, inter-agency database for the storage of information regarding aerial 1080 operations in the region, particularly in regard to the common conditions between the regulatory agencies. We believe the Regional Council is well placed to take a leadership role in this regard.
3. Throughout our review of information completed here, we have developed the opinion that the information required for confirmation of compliance with many of the conditions from all regulatory agencies

would be best communicated on pre and post operation maps, as set out in Section 5.4 and Appendix B9, instead of as lists of information. We therefore recommend that the Regional Council include an advice note on all future resource consents outlining the information required to be presented on pre and post operation maps.

MPL wishes to confirm the following:

- (i) The final MPL report represents our professional opinion on this matter and the earlier DRAFT report, including its 8 recommendations, is to be disregarded in its entirety, as it has been superseded by the final MPL report.
- (ii) If the WRC decides to adopt any of the recommendations from the earlier DRAFT report, it acknowledges that those recommendations were not part of our advice to the Council.
- (iii) Notwithstanding the above, MPL does not oppose the release of the recommendations contained in the DRAFT report, provided that they are only released by providing any recipient with a copy of this memorandum.
- (iv) MPL does not agree to the release of the DRAFT report to any party.



16 October 2015

DRAFT

Aerial Application of 1080: Review of Compliance with the Regulatory Regime

**Prepared for
Waikato Regional Council**

mitchell[®]
partnerships

August 2015

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1. INTRODUCTION

This report has been prepared by Mitchell Partnerships Limited (“**MPL**”) for Waikato Regional Council (“**Regional Council**” or “**WRC**”). It reviews compliance by operators of aerial sodium fluoroacetate (“**1080**”) drops in the Waikato Region with consents / permits issued under the following:

- The Resource Management Act 1991 (“**RMA**”).
- The Hazardous Substances and New Organisms Act 1996 (“**HSNO Act**”).
- Ministry of Health (“**MOH**”) regulations (permission provided by Population Health of Waikato District Health Board (“**WDHB**”).
- Department of Conservation (“**DoC**”) permissions issued under various legislation.

The scope of this review is limited to three recent aerial operations, namely Whareorino, Mt. Pirongia and the Rangitoto Range and as requested by the Regional Council, this review addresses the following:

- Adequacy of assessment, and inclusion, of buffers to waterways.
- Water sampling protocols, and whether practice is consistent with Landcare Research’s best practice water quality sampling protocols.
- Appropriateness of assessment of “minor adverse effects”.
- Whether consultation obligations under RMA were met (with particular reference to Maori and affected landowners).
- Whether obligations with regard to notification of affected parties / neighbours etc. met.
- Whether obligations re management of “poisoned” carcasses met.
- Any other operational aspects / matters where good practice has not been observed and improvements can be made.

The Regional Council provided various material to us, including pre and post operation reports and maps, Resource Consent applications, bait sampling results, water testing results, and communications regarding the operations. This information is listed in Appendix 16, and unless stated otherwise forms the sole basis for the factual information reviewed in preparation of this report

This information was reviewed for evidence of compliance against resource consents, WDHB permissions, and HSNO controls and is presented in tabled format in the appended material. Where required, research into relevant best practice was completed.

The analysis required by the scope of this review is contained in the following sections:

2. An outline of the three case studies subject to this review.
3. The regulations that apply to aerial 1080 operation in the Waikato Region. This section provides an overview of the relevant legislation to the three operations reviewed here.
4. An analysis of the conditions and compliance for each operation. This section includes:
 - i. An analysis of notification and consultation.
 - ii. An analysis of the signage displayed in each operational area.
 - iii. An analysis and adequacy of buffers to waterways.
 - iv. An analysis of application and loading rates of baits applied to the operational areas.
 - v. An analysis of the post operation monitoring of minor adverse effects.
 - vi. An analysis of the report requirements and reports completed for each operation.
5. Identification of areas requiring improvement, including:
 - i. Buffers to waterways.
 - ii. Water supply testing procedures.
 - iii. Monitoring of effects.
 - iv. Notification and consultation with tāngata whenua.
 - v. Opportunities to improve monitoring.
 - vi. Pre and post operation maps.
6. A summary of our recommendations based on the analysis completed in this report.

2. THE THREE CASE STUDIES SUBJECT TO THIS REVIEW

2.1 Introduction

This section provides an overview of key background information for each of the three aerial applications subject to this review.

2.2 Mt. Pirongia

The Mt. Pirongia aerial application of 1080 was commissioned by DoC, and completed by an independent contractor (VCS).

The location of the discharge area is shown in Figure 1 (see p6).

The Mt. Pirongia application area is contained by the boundaries of the Pirongia Forest Park located 22 km west of Te Awamutu. The topography is dominated by a single dormant volcano; the 959 m high Mt. Pirongia. The area surrounding Mt. Pirongia consists of gently sloping hills and valleys which are covered with native plant life. The Pirongia Forest Park is made up of four separate blocks of land which are managed by DoC. These are the Mangakino Block, Te Rauamo Block, Te Maunga O Karioi Block, and Pirongia. Only the Te Maunga O Karioi Block, which is located northwest of the main forest park near the coast, was not subject to the aerial operation.

Two blocks of Māori land have been identified as potentially containing land within the discharge area. These are: Kopua A2 and Aramiro and Section 1 Survey Office Plan 61863.

There are no schools within the boundary of the operational area, there are however 4 schools within approximately 10 km of the Forest Park, these are: Te Mata School, Te Uku School, Te Pahu School and Pirongia School. The catchment for the Te Awamutu / Pirongia water supply is located on the south eastern edge of the forest park with a storage reservoir approximately 500 m from the edge of the operation area. To avoid any potential adverse effects a buffer has been placed around the water supply catchment area and reservoir. Pahautea Hut is located on the western side of Mt. Pirongia; a buffer has been placed around the hut to avoid any potential adverse effects.

As shown in the pre-operation map (Figure 1), a second block of land to the south-west of Pirongia Forest Park was included in the operation. Identified sensitive areas within or near the boundary of this area include the Te Kauri Lodge. To avoid any potential adverse effects from the operation on the lodge a buffer was placed around the lodge.

2.3 Whareorino

The Whareorino aerial application of 1080 was commissioned by the Regional Council, and completed by an independent contractor (EcoFX).

The location of the drop area is shown in Figure 2 (see p7).

The Whareorino operation area largely consists of west facing slopes alongside Gribbon Road and the Awakino River, which run along the western edge of the area. The north section of the discharge area expands out to include a relatively flat tableland gently sloping towards the east. The operation area is located on the south-east edge of the Whareorino Forest Park, but is not included in the park. The Whareorino Forest Park contains native virgin forest and a wide range of threatened species including bird, bats and frogs. The Whareorino operation can be assumed to contain similar but less significant / abundant flora and fauna based on its non-inclusion in the forest park and proximity to the forest park.

The southern tip of the operation area consists of three Māori land blocks, these are: Mahoenui No 1 B Section 1, Mahoenui 1B 2C 2 and Mahoenui 1B 2C 1. Māori land court approval was granted for the operation to include three blocks. Other sensitive areas near the operation site include the Awakino River and Gribbon Road, these are not included within the operation area but should be noted. A standing water body was also identified during the operation and avoided.

The Mahoenui School is located approximately 1 km from the southern boundary of the discharge area. There are no dwellings, tracks (walking or vehicle) or roads within the operational area. There are approximately five dwellings on the west bank of the Awakino River which were unaffected by the operation.

2.4 Rangitoto Range

The Rangitoto Range aerial application of 1080 was commissioned by TBfree, and completed by an independent contractor (EPro Ltd.).

The location of the discharge area is shown in Figure 3 (see p8).

The Rangitoto Range operation area is located approximately 16 km east of Te Kuiti in the Waikato Region and the boundary is approximate to the northern section of the Pureora Forest Park which is split in two by SH30.

The forest park preserves the last remnants of native podocarp forests and DoC manages several historic attractions related to the logging of the park. The DoC website¹ states that the park contains *tall trees, clear rivers and rare wildlife*.

The topography consists of relatively flat table lands with valleys carved out, there are no significant peaks within the operational area. The Waikato River flows near the north-east tip of the operational area and a tributary river flowing into the Waikato River, the Waipapa River, was buffered to avoid any adverse effects from the operation.

The operational area contains 14 blocks of land identified in the Māori Land Court database. There are no schools within the operational area, however, there are 2 schools within 10 km of the west and east boundary of the operation area. Wildlife Hut is within the operational area and has had a buffer enacted around it to avoid any adverse effects from the operation. Walking and vehicle tracks, and roads within the operational area have been identified and had buffers placed around them.

¹ Department of Conservation. *Pureora Forest Park*. Retrieved July 2015. <http://www.doc.govt.nz/pureora>



Figure 1: Location of the Mt. Pirongia aerial application area.

EMBARGOED UNTIL 30 OCTOBER 2015

Figure 2: Location of the Whareorino aerial application area.

EMBARGOED UNTIL 30 OCTOBER 2015

Figure 3: Location of the Rangitoto Range aerial application area.

3. THE REGULATORY REGIME APPLYING TO 1080

3.1 Introduction

This section identifies the regulations which apply to the aerial application of 1080 at Mt. Pirongia, Whareorino and Rangitoto Range.

It contains two sub-sections as follows:

Section 3.2 Identifies the legislation which controls how the aerial application of 1080 in these areas can occur, and specifies the various permissions that need to be obtained to undertake the activity.

Section 3.3 Identifies the specific controls imposed on the aerial application of 1080 to Mt. Pirongia, Whareorino and Rangitoto Range and the various permissions and consents granted for each operation.

3.2 Relevant Legislation

3.2.1 Overview

The aerial application of 1080 in the Waikato Region, and in turn by the operators of the three aerial operations subject to this review, is controlled by regulations and conditions on permits imposed under a number of Acts of Parliament, including:

- The Resource Management Act 1991 ("**RMA**").
- The Hazardous Substances and New Organisms Act 1996 ("**HSNO Act**").
- Conservation Act 1987 ("**Conservation Act**").
- Reserves Act 1977 ("**Reserves Act**").
- Wild Animal Control Act 1977 ("**Wild Animal Control Act**").
- The Agricultural Compounds and Veterinary Medicines Act 1997 ("**ACVM Act**").
- The Health Act 1956 ("**Health Act**").
- Worksafe New Zealand Act 2013 ("**Worksafe Act**").
- Health and Safety in Employment Act 1992 ("**HSE Act**").
- Civil Aviation Act 1990 ("**Civil Aviation Act**").

A summary of the role each piece of legislation plays in regulating the aerial application of 1080 is set out below.

Because of:

- the multiple agencies involved;
- the broad reach of the RMA when dealing with environmental effects; and
- the desirability for inter-agency consistency and integration

we have spent some time explaining the situation under these various statutes, before coming back to recommend a number of initiatives where we consider the Regional Council could take a leadership role in driving improvement.

3.2.2 Resource Management Act 1991

Section 30 of the RMA sets out the functions of the Waikato Regional Council for the purpose of giving effect to the RMA in the Waikato Region. Of particular relevance are the following functions which relate to the management of the aerial application of 1080 in the region:

- s30(1)(a) - The establishment, implementation, and review of objectives, policies, and methods to achieve integrated management of the natural and physical resources of the region.
- s30(1)(f) - The control of discharges of contaminants (including 1080) into or onto land, air, or water and discharges of water into water.
- s30(1)(ga) - the establishment, implementation, and review of objectives, policies, and methods for maintaining indigenous biological diversity.

Under s15 of the RMA no discharge of any contaminant (including 1080) to the environment can occur unless it is expressly allowed by a rule in a national environmental standard (“**NES**”), other regulations under the RMA, or a rule in a regional plan or by a resource consent.

There is no NES, or other RMA regulation allowing the discharge of 1080. As such, for the discharge of 1080 in the Waikato Region to be undertaken, it needs either to be allowed by a rule in the Regional Plan, or by a resource consent.

The aerial application of 1080 is a discretionary activity in the Waikato Regional Plan, and in turn any aerial application require resource consent.

Section 142 of the HSNO Act does not allow the Regional Council to bypass the HSNO controls on 1080 application through its resource consent process in a manner which “relaxes” those restrictions. However, s142 of the HSNO Act expressly provides for the imposition of more stringent requirements on the aerial application of 1080 on a resource consent where the Regional Council considers more stringent requirements are necessary for achieving the purpose of the RMA. Section 3.2.2 contains a full overview of the HSNO Act in relation to aerial 1080 operations.

All three aerial operations subject to this review are subject to resource consents granted by the Regional Council to discharge 1080 within their respective application areas, and each resource consent contains conditions which impose restrictions on the activity in addition to those contained in the HSNO controls.

The resource consents for the three aerial operations subject to this review are:

- Mt. Pirongia – WRC RC AUTH132288.01.01.
- Whareorino – WRC RC 122645.
- Rangitoto – WRC RC 122295.

An analysis of compliance with the conditions contained on these consents is set out in Appendix 2, 4 and 6 and a summary of key matters is set out in Section 4 below.

3.2.3 HSNO Act

The purpose of the HSNO Act, as set out in Section 4 of the Act is to:

...“protect the environment, and the health and safety of people and communities, by preventing or managing the adverse effects of hazardous substances and new organisms”

The HSNO Act does so by regulating the importation, manufacture, use and disposal of hazardous substances in New Zealand. The HSNO Act is administered by the Environmental Protection Agency (“EPA”).

1080 meets the definition of hazardous substance contained in s2² of the HSNO Act, and in turn, its aerial application is subject to the HSNO Act.

The controls attached to 1080 (and formulated substances containing 1080) are prescribed by various regulations made under the HSNO Act. They include:

- Hazardous Substances (Classes 6, 8 and 9 Controls) Regulations 2001.
- Hazardous Substances (Identification) Regulations 2001.
- Hazardous Substances (Packaging) Regulations 2001.
- Hazardous Substances (Disposal) Regulations 2001.
- Hazardous Substances (Emergency Management) Regulations 2001.
- Hazardous Substances (Personnel Qualification) Regulations 2001.
- Hazardous Substances (Tracking) Regulations 2001.
- Hazardous Substances (Tank Wagons and Transportable Containers) Regulations 2004.

²

hazardous substance means, unless expressly provided otherwise by regulations, any substance—

- (a) with 1 or more of the following intrinsic properties:
 - (i) explosiveness:
 - (ii) flammability:
 - (iii) a capacity to oxidise:
 - (iv) corrosiveness:
 - (v) toxicity (including chronic toxicity):
 - (vi) ecotoxicity, with or without bioaccumulation; or
- (b) which on contact with air or water (other than air or water where the temperature or pressure has been artificially increased or decreased) generates a substance with any 1 or more of the properties specified in paragraph (a)

- Additional Controls under s77A of the HSNO Act.

These controls cover the full breadth of the 1080 lifecycle, from its importation or manufacture, through to its handling, application, and disposal.

The controls specified in the above regulations were established as a result of a joint application by the Animal Health Board (“**AHB**”) and the Department of Conservation (“**DoC**”) to import, manufacture and use 1080 and formulated substances containing 1080 in New Zealand. Prior to that 1080 was already regulated under the HSNO Act, but under a different set of conditions. AHB and DoC made the applications to gain increased certainty over their future ability to use 1080 for aerial and ground operations, and to respond to widespread public concern about the safety of 1080.

The HSNO controls which apply to the three aerial operations subject to this review under the various regulations set out above are included in full in Appendix 8 of this report. A summary of compliance with the key matters contained in those controls is set out in Section 4 below.

Two of the additional controls imposed on use of substances containing 1080 under s77A of the HSNO Act are that:

- No person may apply or otherwise use 1080 on land administered or managed by the Department of Conservation unless the person first obtains a permission under s95A of the HSNO Act from DoC (under delegated power from the EPA).
- No person may apply or otherwise use this substance in a catchment area from which water is drawn for human consumption or in any other area where a risk to public health may be created if the substance is applied or used unless the person first obtains a permission under s95A of the Act from the Ministry of Health (under delegated power from the EPA).

In addition to complying with the specified regulations and permissions under s95A of the HSNO Act permissions were required from both DoC and MoH for each of the three aerial applications.

Those s95A permissions issued by DoC and MoH are subject to a number of conditions, the conditions are set out in Appendix 2, 4, 6 and 9 of this report. The permission document references for each operation are as follows:

- Mt. Pirongia – Register Number: VTA/2014/319.
- Whareorino – Register Number: VTA/2014/312.
- Rangitoto – Register Number: VTA/2014/318.

Compliance with the conditions / controls contained in these s95A permissions issued by DoC and MoH is addressed in Section 4 of this report.

We note the DoC s95A permissions for each aerial application were processed by DoC alongside the permissions required from them for that aerial application under the Conservation Act, the Reserves Act, and the Wild Animal Control Act, and a joint set of conditions, controls and standard operating procedure (“**SOP**”) covering all four permissions issued.

3.2.4 Conservation Act 1987

Under s38(4)(c) of the Conservation Act, no person may knowingly “capture, kill, poison, tranquillise, trap, or immobilise by any means” any animal in a conservation area without a permit to do so issued by DoC. This includes poisoning vertebrates using 1080.

The Rangitoto Range aerial applications required, and obtained permits from DoC under s38(4)(c) for this purpose because the operation area is located within the Pureora Forest Park, managed by the Department of Conservation. The relevant permit number is as follows:

- Rangitoto Range – WRC EWDOC_n3057218. DoC Ref: NHT-02-16-128.

A copy of the conditions on this permit is attached to this report as Appendix 9.

As outlined above, this permit was processed by DoC alongside the s95 permission required from them under the HSNO Act, and permissions required from them under the Reserves Act, and the Wild Animal Control Act. DoC issued a single permit (and associated set of conditions) for the Rangitoto Range aerial operation which covers the each of these regulations.

The Whareorino operation did not require consent under the Conservation Act because the operation area is not within a conservation area.

The Pirongia operation was carried out in a conservation area but the permission provided by DoC in the resource consent application (document 3039165) does not contain reference to any legislation under which permission was granted.

Compliance with those conditions / controls is assessed in Section 4.

3.2.5 Reserves Act 1977

Under s50(1) of the Reserves Act DoC may issue permits to “take and kill any specified kind of fauna” within a reserve.

Both the Whareorino and Rangitoto Range aerial applications required, and obtained permits from DoC under s50(1) for this purpose. The relevant permit numbers are:

- Whareorino – WRC EWDOC_n3022239. DoC Ref: NHT-02-16-115.
- Rangitoto Range – WRC EWDOC_n3057218. DoC Ref: NHT-02-16-128.

Copies of the conditions issued under this act by DoC are attached as Appendix 9 to this report. They are the same as those issued by DoC for each aerial operation under the HSNO Act, the Conservation Act and the Wild Animal Control Act.

As stated above the Pirongia operation DoC permission does not contain reference to any legislation under which the permission has been granted.

3.2.6 Wild Animal Control Act 1977

Under s17 of the Wild Animal Control Act, DoC may issue permits to hunt or kill any wild animal by day or night on land administered by the Department of Conservation.

The Whareorino aerial application required, and obtained a permit from DoC under s17 for this purpose. The permit number is as follows:

- Whareorino – WRC EWDOC_n3022239. DoC Ref: NHT-02-16-115.

A copy of the conditions issued under this Act by DoC is attached to this report in Appendix 9. They are the same as those issued by DoC under the HSNO Act, the Conservation Act and the Reserves Act.

The DoC permission for the Rangitoto Range was not issued under the Wild Animal Control Act, and the Pirongia operation DoC permission does not contain reference to any legislation.

3.2.7 The Agricultural Compounds and Veterinary Medicines Act 1997

Under the ACVM Act, administered by the New Zealand Food Safety Authority ("NZFSA"), 1080 is a registered substance subject to controls. Under the ACVM Act the formulation used in the Pirongia, Whareorino and Rangitoto Range operations is known as "0.15% 1080 Pellets" and is covered by ACVM registration number V002848 which is subject to 13 standard conditions. Those conditions are set out in full in Appendix 11 of this report. The 13 conditions broadly cover the following:

- Manufacture.
- Sale and importation.
- Use.
- Supply of annual reports and information on new findings.
- Public notification of aerial applications.
- Labelling.

Compliance with key ACVM conditions is addressed in Section 4 of this report.

3.2.8 The Health Act 1956

The Health Act enables restrictions to be placed on the use of poisons, such as 1080, to protect public health.

We are not aware of any specific restrictions that were imposed on the three aerial applications subject to this review under the provisions of the Health Act. However the Health Act does impose requirements to protect public water supplies etc, and we note that the MoH permission referred to in Section 3.2.3 above imposes restrictions on each operation for this purpose.

3.2.9 Worksafe New Zealand Act 2013 & Health and Safety in Employment Act 1992

The purpose of the Worksafe Act and the HSE Act is to address health and safety in the workplace.

In regards to 1080 and other chemicals, hazard management steps are set out in the *Approved Code of Practice for the Management of Substances Hazardous to Health*. Under this code of practice employers are required to reduce employee's exposure to the hazardous substance to the lowest practical level.

Under HSE the Occupational Safety and Health Service ("OSH") and the Department of Labour produced *Guidelines for the Safe Use of Sodium Fluoroacetate (1080)*. The guidelines cover the following:

- Pre-employment Assessments.
- Education and Training.
- Transport and Storage.
- Labelling.
- Safety Data Sheets.
- Safe Work Practices and Personal Protective Equipment.
- Environmental Monitoring.
- Health Surveillance.
- First Aid Measures.

3.2.10 Civil Aviation Act 1990

Due to the aerial nature of operations, operators are subject to the Civil Aviation Rules³ under the Civil Aviation Act 1990 ("CAA"). CAA requirements are only tangentially related to environmental controls and are not discussed further.

3.3 Synopsis of the Specific Controls Applying to Each Operation

As outlined in Section 3.2, the aerial application of 1080 is regulated by a number of Acts of Parliament, and the aerial application of 1080 at Mt. Pirongia, Whareorino and Rangitoto Range is subject to a number of controls contained in regulations, permissions and consents issued under those Acts.

By way of summary, they include:

- Controls contained in HSNO Regulations which are administered by the EPA.
- Controls contained in the specific DoC permission issued for each operation under s95 of the HSNO Act, and under the Conservation Act, the Reserves Act and the Wild Animal Control Act.

³

Civil Aviation Authority of New Zealand. *Civil Aviation Rules*. Retrieved July 2015. <https://www.caa.govt.nz/rules/rules.htm>

- Controls contained in the specific MoH permission issued for each operation under s95A of the HSNO Act.
- Conditions imposed in the RMA resource consent issued for each operation by the Regional Council.
- Conditions imposed in the Agricultural Compounds and Veterinary Medicines Act administered by the NZFSA.

These controls and conditions are provided in full in Appendices 2 – 11 of this report.

It is apparent from our review of these controls and conditions that there is a significant degree of communality amongst them and that they generally address one of the following key matters:

- Health and safety matters relating to the manufacture, storage and transit and handling of 1080.
- Notification of affected parties.
- Consultation with stakeholders.
- Signage within the operational area.
- Exclusion and buffer areas.
- Application and loading rate of the substance.
- Post drop management of excess bait and poisoned carcasses.
- Monitoring of effects, including on freshwater and water supplies, and flora and fauna.
- Reporting requirements.

Section 4 of this Report contains an analysis of these conditions and controls, and based on the information we have been able to obtain on the Mt. Pirongia, Whareorino and Rangitoto Range aerial applications, an assessment of each operation's compliance with them.

4. ANALYSIS OF THE CONDITIONS FOR EACH AERIAL OPERATION AND COMPLIANCE WITH THEM

4.1 Introduction

This section contains an analysis of the conditions which applied to the Mt. Pirongia, Whareorino and Rangitoto Range aerial operations, and of the compliance of each operation with those conditions.

In this section we have addressed matters under topic headings rather than by “regulatory agency” in order to identify areas of incompatibility or duplication.

This analysis is contained in the following sections:

Section 4.2 Addresses the notification conditions that applied to each operation.

Section 4.3 Addresses the consultation requirements for each operation.

Section 4.4 Addresses the signage requirements for each operation.

Section 4.5 Addresses exclusion and buffer areas imposed on the conditions. This includes areas where the flight path of the aircraft delivering the 1080 could not cross and areas within the application area where 1080 bait was not permitted to be dropped.

Section 4.6 Addresses conditions restricting the application and loading rate of the 1080.

Section 4.7 Addresses requirements for post drop management of excess bait and poisoned carcasses within the application area.

Section 4.8 Identifies the requirements for monitoring the effects of each operation, including on freshwater and water supplies, and on fauna and flora.

Section 4.9 Addresses reporting requirements.

We have not addressed in any detail the extensive health and safety related requirements associated with the pre drop manufacture, storage, transit and handling of 1080. We are not in possession of any substantive material documenting compliance (or otherwise) of the operations with these requirements, noting also that those requirements are not central to the key issues we have been asked to address in this review.

4.2 Notification of Stakeholders

4.2.1 Analysis of Conditions

Requirements to advise particular parties are included in the HSNO controls, the DoC permits, the MoH permits, ACVM regulations, and the Regional Council consents for the three aerial operations.

Those conditions are set out in Table 1 below. As shown in Table 1, each permit / consent contains a slightly different notification requirement.

Under the four permissions, controls, and consents regarding the aerial discharge of 1080, there are notification requirements for the purpose of informing of an impending operation in respect of:

- The general public via newspapers or other media.
- Landowners and occupiers of land subject to 1080 application, and adjacent landowners and occupiers.
- Schools and early childhood centres.
- Health Services.

Under the DoC SOP, which are set out as compulsory for all operations, consultation regarding the cultural effects on Māori with tāngata whenua is compulsory for aerial 1080 operations and recommended for other techniques. We address this matter in detail in Section 4.3 below.

Table 1: Notification requirements for the Pirongia, Whareorino and Rangitoto aerial applications.

HSNO	MoH	DoC	Resource Consent	ACVM Regulations
Public Notification of the Impending Operation				
<p>Additional Control under 77A A restriction has been placed on aerial application of the substance.</p> <p>(1) No person may apply, or engage another person to apply, this substance by aerial application unless—</p> <p>...</p> <p>(d) the person has given public notice in a newspaper available in the areas in which the substance will be applied of the proposed aerial application in accordance with subclause (2); and the substance is applied no more than 2 months after the date of the public notice referred to in paragraph (d); and</p> <p>(f) if the person is not the owner or occupier of the area over which the substance will be applied, the person has given notice of the proposed aerial application to the officer in charge of the police station that is nearest to the application area.</p> <p>(2) The public notice referred to in subclause (1)(d) must</p> <p>(a) be given with sufficient prior notification, but no more than 2 months, before the proposed aerial application; and</p> <p>(b) specify the following:</p> <p>(i) the approximate date on which the substance will be applied;</p> <p>(ii) the name and nature of the substance;</p> <p>(iii) a description of the area over which the substance will be applied, including—</p> <p>(A) the boundaries of the area; and</p> <p>(B) districts, roads, and other commonly known features that may identify the place;</p> <p>(iv) the location or locations where members of the public may view maps of the area over which the substance will be applied, and the times when such maps may be viewed; and</p> <p>(v) the name and address of the person responsible for the application of the substance.</p>	<p>9. Public Notification The applicant shall give public notice in the following media (eg, newspapers, community newsletters) of the proposed application of the VTA(s):</p> <p>The notice must be given sufficiently prior to but within 2 months of the proposed application of VTA(s). The notice shall specify:</p> <p>i) The approximate date the VTA(s) will be applied</p> <p>ii) The name and nature of the VTA(s)</p> <p>iii) A description of the area over which the VTA(s) will be applied</p> <p>iv) The location(s) where the public may view maps of the area over which the VTA(s) will be applied and the times when such maps can be viewed.</p> <p>v) The name and address of the persons responsible for applying the VTA(s).</p> <p>The applicant must provide a copy of the public notice, and the date(s) and media in which it was published to Population Health of Waikato District Health Board before commencing the operation.</p>	<p>DoC SOP Consultation and Notification of Pest Operations - DOCDM 22832</p> <p>Section 1.4 – Notification</p> <p>The compulsory standards for methods in pre-operational notification are:</p> <p>6 Public notice is used for all aerial applications of 1080 or pindone.</p> <p>The compulsory standards for timing of pre-operational notification are:</p> <p>8 For any operation involving 1080 or PAPP, the pre-operational notification is 'given with sufficient prior notification but no more than 2 months before' the pesticide is laid.</p> <p>...</p> <p>10 Any public notice is published in a time period that complies with all consent conditions for the operation. If consents do not specify a timeframe, the notice is 'given with sufficient prior notification but no more than 2 months before' the pesticide is laid.</p> <p>...</p> <p>15 Public notice: The public notice appears in a newspaper available in the areas in which the substances will be applied. A record of the dates and publications where notices appeared is kept in the communication record. The public notice includes the following:</p> <ul style="list-style-type: none"> • The name of the pesticide, bait type and method of applying the bait. • The date of intended pesticide application. • A basic map showing treatment boundaries and any commonly known features (e.g., districts, roads) that may identify the place. If a map would not have sufficient features to identify the location of the control area, a written description of the treatment area may be used. The written description includes the boundaries of the treatment area, districts, roads, and other commonly known features that may identify the place. • The location or locations where the public may view maps of the treatment areas and the times when such maps may be viewed (i.e., http://www.doc.govt.nz/conservation/threats-and-impacts/animal-pests/pesticide-summaries/). • The name, address and phone number of the person and organisation responsible for the operation (e.g., DOC, contractor). 	<p>No requirement for public notification.</p>	<p>If the product is to be aerially applied, then the public must be given sufficient notice prior to application informing them of:</p> <p>a) what is being used;</p> <p>b) when it is to be used;</p> <p>c) where it is going to be used;</p> <p>d) the responsible person; and</p> <p>e) appropriate warnings in regard potential harm (dogs should be kept out of the area).</p> <p>The application must not be earlier than the date of application stated in the public notification and, if the product has not been applied within 2 months, the notification is invalid</p>

HSNO	MoH	DoC	Resource Consent	ACVM Regulations
		<ul style="list-style-type: none"> The most relevant information from the Key Facts Pack for your operation. 		
Owner / Occupier of Land within and Adjacent to the Operation Area				
	<p>6. Landowner Notification Before commencing the operation, the applicant shall notify occupiers and, as far as practicable, owners of the land, dwellings or buildings immediately abutting the operational area.</p> <p>The notice must be given sufficiently prior to, but within two months of, the proposed application of the VTA(s). If requested by the person notified, notification shall be repeated at a mutually agreed time before the proposed application.</p> <p>The notice shall specify:</p> <ol style="list-style-type: none"> The approximate date the VTA(s) will be applied The name and nature of the VTA(s) A description of the area over which the VTA(s) will be applied The name and address of the persons responsible for applying the VTA(s). Information on safety and precautions with respect to the VTA(s) being used. 	<p>Section 1.4 – Notification</p> <ol style="list-style-type: none"> For operations involving vertebrate toxic agents, adjacent land occupiers and (as far as practicable) owners are included in the pre-operational notification. All target audiences are given a Notification Key Facts Pack, or have all its key messages communicated to them in other ways. For any operation involving 1080 or PAPP, the pre-operational notification is 'given with sufficient prior notification but no more than 2 months before' the pesticide is laid. Any mailout, fax or email is completed a minimum of 2 weeks before the intended date of operation and prior to any public notice, media release, or information displays/talks. When notifying clubs or other organisations, a longer period before the operation will be needed to allow for the information to be passed on to members. Mailout fax or email: The mailout, fax or email includes the Notification Key Facts Pack. A record is kept of all mailouts, faxes or emails sent in the communication record. Email may only be used where the tracking option for the email is set to 'request a read receipt for this message.' 	<p>18. The consent holder shall at least two weeks prior to each exercise of this consent provide all landowners and/or occupiers of the land which is the subject of the aerial application, and all immediate adjacent landowner and occupiers with a written notice detailing the following information;</p> <ol style="list-style-type: none"> A map identifying the land area proposed to receive bait and all operational boundaries, and any sensitive exclusion zones; Districts, roads and commonly known features to identify the operational area; The name and nature of the substance; The approximate date on which the substance is to be applied; State that it is toxic to human beings and ecotoxic to other vertebrates; Consent holder and/or Operational Controller contact details for any enquiries and/or complaints; Warning of potential harms to dogs and advising of the need for adequate protection of stock and domestic animals within and adjacent to the operational area. 	
OTHER				
	<p>7. School Notification Before commencing the operation, the applicant shall notify schools, kohanga reo, kindergartens and early childhood centres that are known to use the operational area. The notice must be given sufficiently prior to, but within two months of, the proposed application of the VTA(s). If requested by the institution notified, notification shall be repeated at a mutually agreed time before the proposed application. The notice shall specify:</p> <ol style="list-style-type: none"> The approximate date the VTA(s) will be applied The name and nature of the VTA(s) A description of the area over which the VTA(s) will be applied The name and address of the persons responsible for applying the VTA(s). Information on safety and precautions with respect to the VTA(s) being used. 	<p>Local Police</p> <p>3. The officer in charge of the local police station is included in pre-operational notification for micro-encapsulated zinc phosphide paste, encapsulated sodium nitrite or aerial 1080 operations.</p> <p>Medical Officer of Health</p> <p>4. The Medical Officer of Health (MOH) and any veterinarians operating in the area are included in pre-operational notification for micro-encapsulated zinc phosphide paste or encapsulated sodium nitrite.</p> <p>5. Any other target audience identified for notification in consent conditions is included.</p> <p><i>Note – timing and content requirements are as per those for owners / occupiers</i></p>	<p>Resource Use Group of the Waikato Regional Council & Registered Water Supply Operators</p> <p>20. The consent holder shall notify the Resource Use Group of the Waikato Regional Council of any accidental discharges within or outside the application area (including the bait processing site) on the day any such discharges are identified. Within 48 hours, after any such discharge is identified, the consent holder shall provide a written report to the Resource Use Group of the Waikato Regional Council identifying the receiving environment and detailing any actual and potential adverse environmental effects and any measures undertaken to minimise</p>	

HSNO	MoH	DoC	Resource Consent	ACVM Regulations
	<p>8. Health Services Notification</p> <p>The applicant shall notify the nearest/local health services of the proposed application of the VTA(s). Nearest/local health services include GPs and other primary health services, ambulance services and hospitals. The notice shall specify:</p> <ul style="list-style-type: none"> i) The approximate date the VTA(s) will be applied ii) The name and nature of the VTA(s) iii) A description of the area over which the VTA(s) will be applied iv) The name and address of the persons responsible for applying the VTA(s). v) Information on safety and precautions with respect to the VTA(s) being used. 		<p>those adverse effects.</p> <p><i>Note: This is condition (13) in the Pirongia operation consent.</i></p> <p>23. The consent holder shall as soon as reasonably practicable, notify all downstream Registered Drinking Water Supply operators, and the Resource Use Group of the Waikato Regional Council of any event that may in itself, or as a consequence of the event, have a significant adverse effect on the quality of the water at the abstraction point of any downstream or down gradient drinking water supply.</p> <p><i>Note: This is condition (16) in the Pirongia operation consent.</i></p> <p>26. For each operation, at least 24 hours prior to any discharge, the consent holder shall notify the Resource Use Group of the Waikato Regional Council of the exact date or dates on which each application(s) is/are to occur.</p> <p><i>Note: This is condition (19) in the Pirongia operation consent.</i></p> <p>27. If during, or within the 24 hours immediately following, any aerial application the consent holder becomes aware of any potential discharge of bait outside the operational area specified in the Pre-Operation Plan (Condition 24), then the consent holder shall immediately notify the Resource Use Group of the Waikato Regional Council.</p> <p><i>Note: This is condition (20) in the Pirongia operation consent.</i></p>	

4.2.2 Analysis of Compliance

Public Notification of the Impending Operation

The HSNO controls, MoH permission, DoC permission, and ACVM regulations all require public notification of an aerial 1080 operation for the purpose of informing the public of an impending operation. This is to occur within the 2 months prior to an operation commencing.

The post-operation reports provide details of the public notification issued in respect of each aerial application. In each case a public notice was issued within the required timeframes⁴.

Each regulation also specifies in detail the required contents of that public notification. We have not sighted copies of each public notification so have not been able to confirm compliance with these requirements.

Notification of Landowners, Occupiers and Adjacent Landowners and Occupiers

Conditions

The MoH permission, DoC permission and WRC resource consent conditions all specify notification requirements in respect of the owners and occupiers of land within and adjacent to aerial application areas. Each requirement is slightly different (see Table 2).

In addition to these notification requirements, the WRC resource consent conditions for the Rangitoto and Whareorino operations also require the operator to secure the written approval of all landowners of land which is within an operational area⁵. Written approvals were not required by the resource consent conditions on the Mt. Pirongia operation, however the resource consent application (document 3039165) contains consultation / landowner approval forms.

Table 2: Landowner / occupier notification requirements in the different permissions.

Permission	Owner	Occupier	Adjacent Owner	Adjacent Occupier	Timeframe
MoH			As far as practicable	Required	Within 2 months of operation
DoC			As far as practicable	Required	Within 2 months of operation
WRC	Required	Required	Required	Required	At least 2 weeks prior to the operation

⁴Pirongia - A public notice was placed on 09/07/2014 in the Waikato Times. The aerial application occurred on 22 and 23/08/2014.

Whareorino - A public notification advertisement was placed in the Waitomo News 3 April 2014. The aerial application occurred on 07/05/2014.

Rangitoto Range - Public notifications were published in the Waitomo News, South Waikato News and Taupo Weekender on the 27, 28 and 29 May respectively, notifying the general public about this operation. A second round of public notifications were published in the same newspapers on 29, 30 and 31 July 2014. The aerial application occurred on 23/06/2014 and 17/08/2014.

⁵ Condition 5 on WRC RC 122295 (Rangitoto); Condition 5 on WRC RC 122645 (Whareorino).

The WRC resource consents contain the most onerous notification requirements in respect of owners and occupiers of land within and adjacent to the application area. The WRC compliance audit report for each of the three aerial operations confirms full compliance with those notification requirements.

The WRC compliance report also confirms all necessary written approvals were obtained prior to the aerial application. It is apparent from the information supplied to us that the process of obtaining these written approvals required the consent holder to undertake a reasonable degree of consultation with each landowner (in addition to simply notifying the landowners of the impending drop). This is addressed in more detail in Section 4.3 below.

As each operation complied with the WRC resource consent notification requirements we assume the DoC and MoH requirements were also met. We note those controls require the notification to occur within 2 months of each application (rather than at least 2 weeks prior as specified in the WRC resource consents), and based on the information provided to us we understand that occurred in each case.

Notification of Other Persons

The MoH, DoC and WRC permits also require notification of a number of additional persons. They include:

- MoH
 - Schools, kohanga reo, kindergartens and early childhood centres that are known to use the operational area.
 - Nearest / local health services including GPs and other primary health services, ambulance services and hospitals.
- DoC
 - The officer in charge of the local police stations.
 - The Medical Officer of Health (MOH) and any veterinarians operating in the area.
- WRC
 - Resource Use Group of the Waikato Regional Council
 - Downstream Registered Drinking Water Supply operators.

The written notice register for the Pirongia operation confirms a number of nearby schools, health centres, police stations and veterinarians were notified of that operation, in accordance with the requirements to do so on the MoH and DoC permits for that operation⁶.

We have not sighted any information which confirms similar notification occurred for the Whareorino or Rangitoto Range operations.

⁶ The written notice register (document 3175019) lists 8 health, medical centres, hospitals, police stations and vets, and 10 schools that were notified of the Pirongia operation on 8/7/14. The operation occurred on 22/8/15 and 23/8/15.

The WRC compliance audit for each operation confirms that the WRC Resource Use Group of the Regional Council and operators of registered drinking water supplies were notified in accordance with WRC resource consent conditions⁷.

4.2.3 Summary and Recommendations

Based on the information provided for review we consider that the appropriate land owner notification has occurred for all three operations.

In regards to the notification of other persons, such as schools, health centres, local police, Medical Officer of Health, Resource Use Group of the Waikato Regional Council and Drinking Water Supply operators, details of the notification of these parties is minimal across the three operations. Only the Pirongia operation contains evidence (document 3175019) of notification to schools, health centres, local police and vets.

We recommend that the Regional Council could take a strong leadership role and provide operators with a list of those parties requiring notification of an aerial operation.

4.3 Consultation

4.3.1 Analysis of Conditions

HSNO Regulations

The HSNO regulations do not specify consultation requirements for individual aerial operations. However, in its decision report⁸, the Environmental Risk Management Authority ("ERMA") Committee made a number of best practice recommendations on the matter. Those recommendations are as follows:

11.7.21 Recommendation that central and local government agencies with pest and conservation management responsibilities should review their policies and procedures regarding the early engagement of:

- iwi/Māori at a strategic decision making level; and
- other relevant interested groups about the preferred methods of pest control.

This may include establishing preferred methods of control for particular areas which might be used as part of the tendering process.

11.7.22 Recommendation that DoC reviews the implementation of its consultation policies and procedures to ensure a consistently high standard of approach across all of its conservancies in respect of 1080 operations, particularly as regards consultation with iwi/Māori (noting the significant and unique nature and relationship between iwi/Māori and DoC-administered lands).

⁷

WRC document 3087129 (Whareorino); WRC document 3420013 (Rangitoto); WRC document 3175011 (Pirongia)

⁸

Environmental Risk Management Authority. *Reassessment of sodium fluoroacetate (1080) and substances containing 1080*. HRE05002. <http://www.epa.govt.nz/search-databases/Pages/applications-details.aspx?appID=HRE05002>

- 11.7.23 Recommendation that AHB, DoC and Regional Councils consult with the New Zealand Deerstalkers' Association on a national or a regional basis, as appropriate prior to undertaking aerial drops in areas where deer are present and hunting occurs. This consultation should include explicit consideration of whether or not use of deer repellent is appropriate on a 'case by case' basis.
- 11.7.24 Recommendation that all agencies or operators undertaking aerial application of 1080 should adopt similar (best) practices and procedures to those outlined in DoC's SOPs on communication, consultation and signage and collectively develop a Code of Practice (which could be an approved code of practice under the HSNO Act) or SOP in relation to consultation and notification on 1080 operations.

We have not identified any information that suggests the recommendations of the Committee have been implemented, and in turn have influenced consultation on the three aerial operations subject to this review. In particular we note:

- If consultation under Recommendation 11.7.21 occurred, it would have been prior to a decision being made to use aerial application of 1080 as the chosen method of pest control in the three application areas. However, we are not aware whether or not this occurred.
- The DoC Standard Operating Procedures for Consultation and Notification of Pest Operations ("**DoC Consultation SOP**") referred to in Recommendation 11.7.22 and 11.7.24 are required to be followed by the operators under the DoC permissions for those operations. This is discussed further below. However, we are not aware of whether a review of the implementation of those SOP by DoC has occurred (Recommendation 11.7.22), or of any collective code of practice for all agencies involved in regulating 1080 based on those SOP (Recommendation 11.7.24).
- We are not aware of any specific consultation was undertaken with the New Zealand Deer Stalkers Association in respect to the Pirongia, Whareorino or Rangitoto operations (as directed by Recommendation 11.7.23).

DoC Permits

The DoC permits for the three aerial operations required they be undertaken in accordance with the DoC Consultation SOP. We note ERMA decision Committee considered that the process outlined in the DoC SOP provides a sound basis for best practice communication and consultation for animal pest control operations⁹.

The relevant provisions within that SOP state:

Section 1.1

- 1 The Conservation Services Manager (or non-DOC equivalent) decides what level of consultation (i.e., no consultation, consultation on effects only, or consultation on possible control methods) will take place and records this decision in the communication plan.
- 2 Consultation on effects with iwi and/or hapū is compulsory for aerial 1080 operations and recommended for other techniques.

⁹

ERMA Decision on Application Number: HRE05002, Paragraph 11.7.13.

- 3 It is compulsory to consult on effects with all occupiers of land included in and adjacent to the proposed treatment area.
- 4 It is compulsory to consult on effects with all grazing licence holders.
- 5 Consultation on effects includes ensuring that treatment blocks and sensitive boundaries and exclusion zones are appropriate and correct

Section 1.3 – Consultation

- 1 Visits or phone calls are used where landowner/occupier consent is being sought.
- 2 All target audiences are given a Consultation Key Facts Pack, or have all its key messages communicated to them in other ways.
- 3 Visit or phone: A record is kept of all phone calls and visits in the communication record, including those for any parties with whom direct contact could not be made.
- 4 Consultation Key Facts Pack: The Consultation Key Facts Pack is prepared using the template in Appendix 3.6(docdm-22872). External organisations can use their own format provided it meets the content requirements shown in Appendix 3.5.
- 5 Working group, public meeting, information display or talk: People with community relations and/or media skills are involved in at least the planning stages. A record of the dates and venues used is kept in the communication record.
- 6 Media release: People with community relations skills are involved in planning and drafting media releases. A record of the dates and publications where releases appeared is kept in the communication record.

Waikato Regional Council Resource Consents

There are two matters to be considered when addressing consultation in respect of the three aerial operations for RMA purposes:

- The extent of consultation the consent holder has undertaken prior to being granted the resource consents for the operations.
- The extent of consultation required of the consent holder as a condition of their granted consents.

With respect to the former, s36A of the RMA specifically states there is no duty to consult any person about resource consent applications and notices of requirement. This applies both to applicants and local authorities. Nevertheless, for many resource consent applications and notices of requirement, consultation with potentially affected parties, including with tāngata whenua, will play a significant role in assessing the effects of the activity on the environment.

With respect to tāngata whenua the importance of consultation in this context is particularly notable, as it is only tāngata whenua themselves who can credibly provide an assessment of the effects of the activity on cultural values.

The importance of requirements under the RMA are particularly:

Section 6 – Matters of national importance

- (e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga

Section 8 – Treaty of Waitangi

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

In addition to the duties under Part 2 of the RMA, the Local Government Act 2002 also places obligations on the Regional Council, in particular:

- Section 4 (Treaty of Waitangi) and 14(1)(d) (Principles relating to local authorities), which require the Crown and local authorities to maintain and improve opportunities for Maori to contribute to local government decision making processes;
- Section 81 (Contributions to decision-making processes by Maori), which in sub-section 1 states:

Contributions to decision-making processes by Māori

(1) A local authority must—

- (a) establish and maintain processes to provide opportunities for Māori to contribute to the decision-making processes of the local authority; and
 - (b) consider ways in which it may foster the development of Māori capacity to contribute to the decision-making processes of the local authority; and
 - (c) provide relevant information to Māori for the purposes of paragraphs (a) and (b).
- Section 82 (Consultation) which requires the local authority to have in place provisions for consulting with Maori in relation to its decision making processes.

While the WRC resource consent conditions require notification of parties of impending aerial 1080 applications, no condition of itself explicitly specifies consultation requirements.

However, condition 1 of each consent requires that the discharges be undertaken in general accordance with the application documentation. In each case, the application documentation identifies consultation will be undertaken, specifically:

- For Rangitoto - All landowners, adjacent occupiers and recreational users are consulted prior to the activity.
- For Pirongia – Consultation for this operation involved personal visits by a VCS staff member to internal and adjoining landowners. The consultation section of the AEE outlines those permissions obtained from the regional council, DoC and MoH as well as consultation with tāngata whenua completed by DoC.
- For Whareorino - Effects on other users of the area (such as neighbours, recreational users etc.) and cultural, heritage and archaeological values / sites will be minimised and mitigated through pre-operational consultation.

- Furthermore Form B of the resource consent application states that:

Consultation with other parties who may be interested in or affected by your activity is encouraged. This involves discussing your activity with others who may have some concerns, listening to what others have to say, considering their responses and deciding what will be done.

As outlined in Section 4.2 above, while no consultation requirements are specified in the WRC resource consents, they do require written approval be provided from all landowners within the aerial operation area. Whether by design or not, we note obtaining these written approvals necessitates a degree of consultation between the consent holder and those land owners.

The following section contains a summary of the notification that occurred for each operation and an analysis of whether it complied with the conditions outlined above.

4.3.2 Analysis of Compliance

Pirongia

The resource consent application (document 3039165) contains an iwi consultation form. This states that consultation for the operation consisted of three face-to-face meetings and one phone conversation. Information packs were sent to 18 iwi groups around the Waikato Region, the contents of this information pack has not been provided for review. Results of the consultation undertaken have not been provided, however, we are satisfied that the operators gave tāngata whenua sufficient consideration and opportunity to consult regarding the operation.

Whareorino

The pre-operation and associated information report (document 3020193) contains transcripts of a Māori Land Court hearing where Regional Council Biosecurity representatives sought permission for the aerial operation. During this hearing the court heard from landowners within the operation area, and they exchanged contact details with Regional Council representatives so they could remain informed throughout the operation.

Based on the information contained in the transcripts, we do not consider that there is clear evidence of consultation with tāngata whenua regarding the cultural effects of the operation has been evidenced. Instead the Māori Land Court acted as an avenue for the Regional Council to gain land owner approval regarding two Mahoenui blocks in the southern area of the operational area.

Rangitoto

Based on the information provided for review we have not seen any evidence that consultation with tāngata whenua has occurred regarding the Rangitoto operation.

4.3.3 Summary and Recommendations

Based on the review of material provided considerable improvement is required in respect of consultation before an aerial 1080 operation is carried out. Consultation across the three operations reviewed here largely focuses on the affected landowner with little consideration given to iwi or other stakeholders. While it is the operator's job

to perform this consultation, it is the responsibility of the various regulatory agencies to ensure that adequate consultation is performed and documented before permission or consent is granted.

Importantly there is scope for a region wide coordinated consultation practice to be developed in accordance with the ERMA committee recommendations and the other regulatory agency conditions outlined in Section 4.3.1. In this respect it is recommended that a Regional Council programme of consultation is enacted which outlines the parties of which consultation is required before resource consent for an aerial 1080 operation is granted.

4.4 Signage

4.4.1 Analysis of Conditions

Signage conditions are included in the HSNO regulations, the DoC permits, the MoH permits, ACVM regulations, and the Regional Council consents for the three aerial operations.


Those conditions are set out in Table 3 below.

The signage requirements generally relate to one of the following:

- Contents of the sign.
- Maintenance of the sign.
- Location of the site.
- Duration for which the sign must be in place.

Table 3: Signage requirements for Pirongia, Whareorino and Rangitoto operations.

HSNO	MoH	DoC	Resource Consent
Required Locations			
<p>Controls for vertebrate poisons</p> <p>Regulation 28 of the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001</p> <p>For formulated substances containing 1080, subclauses (2), (3)(b) and (d), (4) and (5) of regulation 28 are varied under section 77A as follows:</p> <p>(2) A person in charge of the substance must ensure that signs are erected at every normal point of entry to the place where the substance is to be applied or laid before the substance is applied or laid.</p>	<p>10. Exclusion from Public Areas</p> <p>No Vertebrate Toxic Agent (VTA) shall be Aerial applied within the distances listed below, and not where it is within sight of, the following huts, access points, camping and public areas:</p> <p>Whareorino All huts, access points, camping and public areas within and adjacent to the operational area – 80 metres.</p> <p>Pirongia 80 metres of Pahautea hut, and any other tramping huts, bivvies, shelters, camping site, access points in the area.</p> <p>Rangitoto Range 50 m Wildlife Hut 50 m Pureora Lodge clearing 50 m of any other huts, access points, camping a public areas.</p> <p>Warning signs shall be placed at each of the listed hut(s), access points, camping and public amenity area(s) prior to the laying of before the Vertebrate Toxic Agent VTA(s) is/are laid in adjoining areas.</p>	<p>Department of Conservation SOPs</p> <p>Consultation and Notification of Pest Operations DOCDM 22832</p> <p>Warning sign procedure</p> <p>The compulsory standards for sign installation are:</p> <p>1 Signs located at normal points of entry (as shown on Permissions map) are to be at least A3 in size. Warning signs in other places can be A4 size.</p> <p>2 Install signs as close as possible before the start of bait application (i.e., on the day before where possible).</p>	<p>19. The consent holder shall prior to each exercise of this consent, erect signage at all main points of entry to the operational area advising the following:</p> <p>...</p> <p><i>Note this is condition 12 for the Pirongia operation.</i></p>
Duration			
<p>(4) The signs must remain in place for a minimum of six months after the last date of application, or until the earlier of—</p> <p>(a) the date when the substance (and any carcass) is no longer toxic; or</p> <p>(b) the date of retrieval of the substance (and any carcass) from the place concerned.</p> <p>(5) Signs must be removed at the later of—</p> <p>(a) the date when they are no longer required to remain under subclause (4); or</p> <p>(b) in the case of signs that include information to which a legal obligation applies that requires the signs to remain in place for a longer period of time, the expiry of that longer period of time.</p>	<p>3. Warning Sign Removal</p> <p>The applicant shall advise Population Health of Waikato District Health Board in writing of their intention to remove warning signs from the operational area.</p>	<p>Warning sign procedure</p> <p>The compulsory standards for sign installation are:</p> <p>2 Install signs as close as possible before the start of bait application (i.e., on the day before where possible).</p> <p>The compulsory standards for sign removal are:</p> <p>1 Signs are removed when the estimated caution period expires, and the approving manager notified in writing.</p> <p>2 Baits and/or carcasses have reached the defined endpoints, where these were monitored.</p>	<p>19. ...</p> <p>These notices shall remain in place for a minimum of six months following the last aerial discharge to land or the date when the consent holder has demonstrated to the satisfaction of the Waikato Regional Council that the substance (or carcass) is no longer toxic.</p>
Contents			
<p>(3) The signs must—...</p> <p>(b) identify the substance and state that it is toxic to human beings and ecotoxic to other vertebrates and state that it might be present in carcasses; and...</p> <p>(d) comply with regulations 34 and 35 of the Hazardous Substances (Identification) Regulations 2001, except that regulation 35 applies as follows:</p> <p>(i) in relation to the information required to be included on the signs by virtue of subclauses (3)(a) and (c) of this regulation 28, as if the distances referred to in regulation 35(3)(c) of the Hazardous Substances (Identification) Regulations 2001 were a distance of not less than 2 metres; and</p>	<p>19. Sign Contents</p> <p>All warning signs must include an international symbol for toxic substances (eg, skull and crossbones) and a statement advising that children and pets should not be allowed to wander (eg, "WATCH CHILDREN at all times").</p>	<p>The compulsory standards for warning sign procedure are:</p> <p>1 Warning signs of any design other than the one specified below must not be used.</p>	<p>19. The consent holder shall prior to each exercise of this consent, erect signage at all main points of entry to the operational area advising the following:</p> <p>i) Details identifying the operational area including Districts, roads and commonly known features;</p> <p>ii) The date on which the substance is to be applied;</p> <p>iii) Identify the substance being applied and state that it is toxic to human beings and ecotoxic to other vertebrates;</p> <p>iv) State that the substance may be present in carcasses;</p> <p>v) Consent holder and/or Operational Controller contact details for any enquiries and/or complaints; and</p> <p>vi) Warning of potential harms to dogs within the operational area.</p>

HSNO	MoH	DoC	Resource Consent
(ii) in relation to the information required to be included on the signs by virtue of subclause (3)(b) of this regulation 28, as if the distances referred to in regulation 35(3)(c) of the Hazardous Substances (Identification) Regulations 2001 were a distance of not less than 10 metres.		 <p>2 Only the operational fields listed above may be changed. No other content or formatting may be altered.</p> <p>3 Display the following contact details for the person in control of the field work (usually the supervisor):</p> <ul style="list-style-type: none"> • Name or position title as specifically as possible (e.g., Ranger, Biodiversity) • Business phone number where someone can be contacted during normal business hours 	
	<p>20. Sign Maintenance During the period in which the bait remains toxic, warning signs at the locations listed below shall be inspected immediately before the commencement of school holidays, public holidays or public holiday weekends: Any signs that are damaged, vandalised or otherwise become illegible shall be replaced within 24 hours of discovery of the damage.</p> <p>21. Sign Vandalism During the period in which the bait remains toxic, warning signs shall be inspected weekly in the following locations: Any signs that are damaged, vandalised or otherwise become illegible shall be replaced within 24 hours of discovery.</p>	<p>Maintenance</p> <p>The compulsory standards for sign maintenance are:</p> <p>1 Warning signs at normal points of entry are visible and legible at all times throughout the operation.</p> <p>2 Warning signs are to be checked frequently enough to comply with all relevant consent conditions.</p>	
		<p>Sign Register</p> <p>The compulsory standards for a sign register are:</p> <p>1 Every operation has a sign register that is maintained until signs are removed.</p> <p>2 Signs located at normal points of entry (as shown on permissions map) are to be at least A3 in size. Warning signs in other places can be A4 in size.</p> <p>3 All signs are to be included in the register, with the following details:</p> <ul style="list-style-type: none"> • Location (e.g., on a map or by listing GPS reference) • Type (e.g., warning, information) • Size (e.g., A2, A3, A4) • Date installed • Date removed • Dates checked for maintenance, if signage checks are required as a consent condition (e.g., public health permission). Otherwise, this detail is optional. <p>Dates are to be completed for installations, checks and removals, to create a record of legal compliance.</p>	The consent holder shall keep a register of all signs installed detailing the location and information contained on each sign. Upon written request of the Resource Use Group of the Waikato Regional Council the consent holder shall provide a copy of the sign register.

4.4.2 Analysis of Compliance

Pirongia

MoH permission conditions specified a sign be located at Pahautea Hut, review of the sign coordinates did not reveal a sign at this location.

The coordinates of 105 signs for the Pirongia operation were provided for review. These were not checked for their location in regards to the regulations for sign locations. It can be assumed that with 105 signs in place for the operation, that, aside from a sign not being located at Pahautea Hut the operator was in full compliance with HSNO control, MoH permission, DoC permission and resource consent conditions regarding sign location.

In future, operators should consider supplying a map detailing sign locations.

Whareorino

The pre-operation map in document 3020193 shows the location of 5 signs around the operational area. A review of these signs' locations reveals them to be at or near entry points to the operational area as required by HSNO control, MoH permission, DoC permission and resource consent conditions. There are no other significant locations within the operational area requiring signs. This operation is therefore in full compliance with conditions regarding sign location.

Rangitoto Range

The pre-operation map in document 3054115 shows the location of 40 signs around the operational area. A review of these signs' locations reveals them to be in full compliance with HSNO control, MoH permission, DoC permission and resource consent conditions regarding sign location.

We are not in possession of any details on sign maintenance, content or the duration for which each sign was erected for the three operations. However, we note the WRC compliance audit report for each operation assessed full compliance for signage requirements under resource consent conditions.

4.4.3 Summary and Recommendations

The signage requirements for each operation seem to us to be comprehensive and based on the information we have available to us, we understand each operation was compliant with those requirements, with the exception of one occurrence at Pirongia.

4.5 Exclusion / Buffer Areas

4.5.1 Analysis of Conditions / Controls

Exclusion and buffer conditions are included in the HSNO regulations, the DoC permits, the MoH permits, and the Regional Council consents for the three aerial operations.

Those conditions are set out in Table 4 below.

Table 4: Exclusion Zone and Buffer area requirements for Pirongia, Whareorino and Rangitoto Range operations.

HSNO	MoH	DoC	Resource Consent
Flight Paths			
<p>77A Requirements for aircraft carrying out aerial application.</p> <p>1) An aircraft that is carrying out an aerial application must not, when flying to or from the area where the substance is applied, fly over a—</p> <p>(a) place specified (if any) in a permission granted in relation to the substance as being a place over which such an aircraft must not fly; or</p>	<p>15. Aerial Exclusions</p> <p>An aircraft that is carrying out an aerial application must not, when flying to or from the area where the VTA is applied, fly over the following 'no fly' areas: Any residential area.</p>	<p>7. Flight paths to and from the bait loading zones by aircraft equipped with loaded or uncleaned bait sowing equipment must avoid: stocked paddocks, residential dwellings, and any other 'no fly zone' specified by consent providers.</p>	
Waterways and drinking water sources			
<p>(b) public drinking water supply; or</p> <p>(c) waterway that is less than 100 metres upstream of a point of extraction from a water source for a drinking water supply (not being a water supply exclusively for stock).</p>	<p>30. Public Water Supplies Mitigation</p> <p>For an aerial application of 1080, applicants must provide mitigation to all public water sources that:</p> <ul style="list-style-type: none"> Source their public water supply from within the operational area; or Source their public water supply from within 3 km of the operational area where the water source is surface waterway that flows through or rises within the operational area. <p>Mitigation shall be mutually agreed in writing between the applicant and water supply managers and involve either or</p>		<p>4. Location</p> <p>This consent may only be exercised within the boundaries of the Waikato Region as they existed prior to the local government boundary changes that came into force on 1 November 2010 and specifically excludes any further amendments to the Waikato Region boundary on and after this date.</p> <p>No Vertebrate Toxic Agent (VTA) shall be Aerial applied within the distances listed below, and not where it is within sight of, the following huts, access points, camping and public areas:</p> <p>Warning signs shall be placed at each of the listed hut(s), access points, camping and public amenity area(s) prior to the laying of before the Vertebrate Toxic</p>

HSNO	MoH	DoC	Resource Consent
	<p>both of the following:</p> <p>1. No 1080 shall be applied to within 200 m of the water supply intakes. For flowing surface waterways the 200 m exclusion shall be extended to 400 m upstream from the point of intake.</p> <p>For Domestic Water Supplies the buffer is 50 m, extending 200 m upstream.</p> <p>If an interim water supply is not available the affected water supply shall be temporarily disconnected until such a time as water testing finds no VTA contamination above 50 percent of the Ministry's PMAV. In accordance with the requirements of the Drinking-water Standards of New Zealand.</p>		<p>Agent.</p> <p>Note: this condition does not apply to the Pirongia operation.</p>
Others			
	<p>10. Exclusion from Public Areas</p> <p>No Vertebrate Toxic Agent (VTA) shall be Aerial applied within the distances listed below, and not where it is within sight of, the following huts, access points, camping and public areas:</p> <p>Whareorino</p> <p>All huts, access points, camping and public areas within and adjacent to the operational area – 80 metres.</p> <p>Pirongia</p> <p>80 metres of Pahautea hut, and any</p>		

HSNO	MoH	DoC	Resource Consent
	<p>other tramping huts, bivvies, shelters, camping site, access points in the area.</p> <p>Rangitoto Range</p> <p>50 m Wildlife Hut</p> <p>50 m Pureora Lodge clearing</p> <p>50 m of any other huts, access points, camping a public areas.</p> <p>Warning signs shall be placed at each of the listed hut(s), access points, camping and public amenity area(s) prior to the laying of before the Vertebrate Toxic Agent.</p> <p>11. Exclusion from Walking and Vehicle Tracks</p> <p>No VTA shall be Aerial applied within the distances listed below and not where it is within sight of the following walking and vehicle tracks:</p> <p>80 metres from any track not listed in the application.</p> <p>12. Exclusion from Roads</p> <p>No VTA shall be Aerial applied within the distances listed below and not where it is within sight of the following roads and lay-bys: 80 metres of any roads and lay-bys in or adjacent to the operational area.</p>		

HSNO	MoH	DoC	Resource Consent
	<p>13. Exclusion from Dwellings</p> <p>No VTA shall be applied within 150m of (or within a different distance if mutually agreed in writing with the occupiers), and not be visible from, dwellings or built-up areas.</p> <p>14. Exclusion from Schools and Early Childhood Centres</p> <p>No VTA shall be applied within 150m of (or a greater distance if mutually agreed in writing with the occupiers), and not where it is visible from, the following schools, kindergartens, kohanga reo and early childhood centres: Any schools, kindergartens, kohanga reo and early childhood centres, within or adjacent to the operational area.</p>		

Under the four permissions, controls, and consents regarding the aerial discharge of 1080, there are exclusion and buffer requirements in respect of:

- Transit flight paths
- Waterways and water supplies
- Public areas
- Walking and vehicle tracks
- Roads
- Dwellings
- Early Childhood Centres

4.5.2 Analysis of Compliance

Flight Paths

Pirongia

The location of the loading zone or transit flight paths has not been provided in the evidence for this review. Therefore compliance against the HSNO controls and DoC conditions cannot be assessed.

Whareorino

A review of the post-operation map (document 3067193) reveals that there were no water bodies between the loading zone and operational area. Information on whether paddocks between the loading zone and operational area were stocked was not provided for review, however, we believe that because of the consultation with the landowner paddocks would likely have been clear of stock during the operation. The operator was therefore in full compliance with HSNO controls and DoC conditions.

Rangitoto Range

The location of the loading zone or transit flight paths has not been provided in the evidence for this review. Therefore compliance against the HSNO controls and DoC conditions cannot be assessed.

Buffers from Waterways and Water Supplies

Buffers to waterways during aerial 1080 operations in the Waikato Region relate to domestic and public water supplies under HSNO controls, MoH permission and DoC permission conditions. There are no conditions requiring operators to buffer any other flowing or standing freshwater bodies. Under MoH conditions the requirement for buffers can be circumvented by enacting water supply testing as the mitigation method. HSNO control and DoC permission waterway buffer conditions only address transit flight paths and do not cover the discharge operation.

Pirongia

The Te Awamutu / Pirongia water supply is on the southern boundary of the operational area. To avoid contamination a buffer was placed around this catchment and no discharge occurred in this area. Several water supplies are identified on the boundary of the operation area (Appendix 12), the sources of these water supplies is unknown due to the poor clarity of the post-operation map, however it can be assumed that MoH mitigation regulations have been observed in relation to these supplies. For future operations a table identifying domestic and public water supplies would be a appropriate evidence to assess compliance with these conditions.

Whareorino

The pre-operation report states that domestic water supply intakes were identified around the operational area and judged not to be at risk from the operation. The pre-operation map (Appendix 13) shows that there are no domestic or public water supplies within the operational area. The operator was therefore in full compliance with MoH conditions regarding water supply mitigation.

Rangitoto Range

A comparison of pre and post operation maps reveals that buffers were enacted around identified domestic water supplies. There was no public water supply within the Rangitoto Range operational area. The operator was therefore in full compliance with MoH conditions.

Exclusion from Public Areas

Pirongia

A review of post-operational maps does not clearly clarify the exclusion of public areas from the discharge, there appears to be an exclusion zone are Pahautea Hut but any other public areas have been covered by poorly formatted toxic flight lines. Therefore an assessment of compliance with condition related to the exclusion from public area cannot be completed.

Whareorino

A review of post-operation toxic flight line maps (Appendix 13), reveals that there are no public areas within the operational area. The operator was therefore in full compliance with MoH conditions regarding the exclusion of public areas.

Rangitoto Range

A review of the Rangitoto Range pre and post operation maps (Appendix 14), reveals a series of exclusion zones within the operational area. None of the areas required to be excluded from the discharge have been labelled on maps, therefore interpretation is difficult. Based on a satellite image review of the area there are no public areas requiring avoidance. The operator is considered to be in full compliance with MoH conditions for the exclusion of public areas.

Exclusion from Walking and Vehicle Tracks

Pirongia

Pre and post operation maps (Appendix 12), do not identify the presence or absence of any walking or vehicle tracks with the operational area. Therefore an assessment of compliance with this condition cannot be completed. However, the post-operation report (document 3160645_v2) states that tracks in the operational area were checked following the operation.

Whareorino

The pre and post operational reports (Appendix 13) show that there are no vehicle or walking tracks in the operational area. Therefore the operator is in full compliance with MoH conditions regarding the exclusion of these areas.

Rangitoto Range

A review of the Rangitoto Range pre and post operation maps (Appendix 14), reveals a series of exclusion zones around walking and vehicle tracks, and roads within the operational area. The operator was therefore in full compliance with MoH conditions regarding the exclusion of walking and vehicle tracks.

Exclusion from Roads

Pirongia

The pre-operation map (Appendix 12), reveals that there are no roads in the operational area, therefore the operator was in full compliance with MoH conditions regarding the exclusion of roads.

Whareorino

The pre-operation map (Appendix 13), reveals that there are no roads in the operational area, therefore the operator was in full compliance with MoH conditions regarding the exclusion of roads.

Rangitoto Range

The post-operational map (Appendix 14), reveals that buffers were placed around the two roads within the operational area, therefore the operator was in full compliance with MoH conditions regarding the exclusion of roads.

Exclusion from Dwellings

Pirongia

The pre-operation map (Appendix 12), identifies one dwelling within the operational area (Pahautea Hut), this had a buffer enacted around it. The operator was therefore in full compliance with MoH conditions relating to buffers around dwellings

Whareorino

No dwellings are identified in the pre and post operational maps (Appendix 13).

Rangitoto Range

No dwellings are identified in the pre and post operational maps (Appendix 14).

Exclusion from Early Childhood Centres

No early childhood centres were identified in any of the three operational areas.

4.5.3 Summary and Recommendations

With the exception of the Pirongia and Rangitoto operations not having evidence of the transit flight paths provided, the operators were in full compliance with all conditions regarding buffers and exclusion zones.

Of note is that in the Waikato Region there is currently no condition, under any of the consents, permissions or controls for aerial 1080 discharge that requires operators to enact buffers around domestic or public water supplies, or freshwater bodies within a discharge area. MoH conditions state that mitigation methods for water supplies can consist of either a buffer and / or water supply testing post operation. This is an obvious shortcoming in the regulatory regime and is addressed as such in Section 5.

4.6 Application and loading rate

4.6.1 Analysis of Conditions / Controls

Application and loading rate conditions are included in the HSNO controls, and the resource consents for the three aerial operations.

Those conditions are set out in Table 5 below, and they contain requirements in respect of:

- Discharge rate.
- Loading rate toxicity.

Table 5: Application and Loading rate requirements for Pirongia, Whareorino and Rangitoto Range operations.

HSNO	Resource Consent
E2 46-48 Restrictions on use of substance in application areas For aerial application of this substance, an application rate not exceeding 30g sodium fluoroacetate (1080)/ha is set.	16. Application rate Bait containing sodium 2-fluoroacetate (1080) shall be aerially applied at a rate no greater than twenty (20) kilograms per hectare. <i>Note this is condition (9) for the Pirongia operation.</i> 10. Loading rate (Pirongia) The loading rate of the bait shall be no greater than 0.15% ± 10% weight for weight. <i>Note: Range of 0.135 – 0.165% toxicity w/w.</i> 17. Loading rate (Whareorino and Rangitoto) The loading rate of the bait shall be no greater than 0.15% ± 25% weight for weight. <i>Note: Range of 0.1125 – 0.1875% toxicity w/w.</i>
<i>Note: When the application and loading rate resource consent condition is expressed in grams / hectare of sodium fluoroacetate (1080), it is the same as the HSNO condition.</i>	

4.6.2 Analysis of Compliance

Discharge Rates

All operators stated application rates of 2 kg/ha in post operation reports. All operations were therefore in full compliance with HSNO controls and resource consent conditions regarding application rates.

Loading Rates

All operators stated average loading rates of 0.15% w/w in post-operation reports. All operations were therefore in full compliance with HSNO controls and resource consent conditions regarding loading rates.

4.6.3 Summary

All operators were in full compliance with application and loading rate conditions.

4.7 Post Drop Management of Excess Bait and Poisoned Carcasses

4.7.1 Analysis of Conditions

Conditions regarding the post drop management of excess bait and poisoned carcasses are included in the DoC permits and resource consents for the three aerial operations.

Those conditions are set out in Table 6 below, and include requirements relating to:

- Bait and Carcass monitoring.
- Excess bait.
- Track clearances.

Table 6: Post drop management of excess bait and poisoned carcasses requirements for Pirongia, Whareorino and Rangitoto Range operations.

DoC	Resource Consent
Bait and Carcass Monitoring – DOCDM 61641 Standard 1 Compulsory bait and carcass monitoring is completed and results are recorded in a report that includes: • Operation name • Pesticide uses in the operation • Caution period start date • Date endpoint(s) reached for each monitoring site	10. Any excess sodium 2-fluoroacetate (1080) stock solution shall be removed from the bait processing site upon the completion of the aerial application. 13. Immediately following the completion of any aerial application the consent holder shall record the volume of excess/left over bait containing sodium 2-fluoroacetate (1080). <i>Note: this is condition (7) for the Pirongia operation.</i> 16. Aerial Applications to Tracks and First Clearances The applicant may aerially apply 1 080 to the following walking and vehicle tracks but not during or within 24 hours of the start of school holidays, public holidays or public holiday weekends: Special condition.

DoC	Resource Consent
<ul style="list-style-type: none"> • Photos for the first and final monitoring visit to each monitoring site • A statement of whether the operational area was 'dry' (i.e. <600mm rainfall/year or low rainfall during the monitoring period) • A statement of whether mean temperature in the 6 months following the operation was <10 degrees. 	<p>If the applicant aerially applies 1080 to any of the above listed tracks, they shall inspect those tracks as soon as possible and not more than 24 hours after the VTA application and make reasonable efforts to find and remove all bait and, if encountered, animal carcasses.</p> <p>17. Second Clearances The applicant shall undertake a second inspection of the following walking and vehicle tracks and make reasonable efforts to find and remove all bait and, if encountered, animal carcasses.</p> <p>29. The consent holder shall ensure following each operation that transit flight paths are physically checked for bait in circumstances where flights paths pass over grazing land or where the loading sites are located outside of the operational area. If so requested by the Resource Use Group of the Waikato Regional Council the consent holder shall supply further details of the transit flight paths.</p> <p><i>Note this is condition 22 in the Pirongia operation resource consent.</i></p>

4.7.2 Analysis of Compliance

Bait and Carcass Monitoring

No evidence or information was provided on bait and carcass monitoring to substantiate compliance with the DoC SOP.

All three operations stated in pre or post operation material that bait and carcass monitoring sites were set up.

Excess Bait

Pirongia

The post-operation report (document 3160645_v2) states that an excess of 1000 kg was returned to the operator's base to be used on another operation. We assume that the operator is in compliance with this resource consent condition, although we do not know for certain if this is all the excess bait involved.

Whareorino

The post-operation report (document 3067195) states that an excess 200 kg of bait was returned to the operator's base following the operation. We assume that the operator is in compliance with this resource consent condition, although we do not know for certain if this is all the excess bait involved.

Rangitoto

Post-operation reports (documents 3119035 and 3148028) state that there was no excess bait following the operation. The operator was therefore in full compliance with this resource consent condition.

Track Clearances

Priongia

The post-operation report (document 3160645_v2) states that the operator carried out first and second clearances of tracks within the operational area as required, removing baits and carcasses encountered. The operator was therefore in full compliance with this resource consent condition.

Whareorino

The post-operation report (document 3067195) states that the operator carried out first and second clearances of tracks within the operational area as required, removing baits and carcasses encountered. The operator was therefore in full compliance with this resource consent condition.

Rangitoto

Post-operation reports (documents 3119035 and 3148028) states that the operator carried out first and second clearances of tracks within the operational area as required, removing baits and carcasses encountered. The operator was therefore in full compliance with this resource consent condition.

Physical Check of Transit Flight Paths

Pirongia

Evidence of physical checks has not been provided in the review evidence.

Whareorino

A review of the post-operational map (document 3067193) reveals that physical checks were performed between the loading zone and operational area. The operator was therefore in full compliance with resource consent conditions regarding the physical checking of transit flight paths.

Rangitoto Range

Evidence of physical checks has not been provided in the review evidence.

Other Matters Regarding the Management of Poisoned Carcasses

We interpret the management of poisoned carcasses to include target and non-target species. The management of target species has been addressed above. This section addresses the management of non-target poisoned species and the measures taken by operators regarding this.

Pirongia

The Regional Council received notification of a feral deer expiring on a property near to the operational area. VCS were notified and representatives stated that the farmer buried the carcass.

Whareorino

The operator removed and disposed of a feral deer carcass following the operation. While this was occurring, two cattle in a nearby paddock died. At the time of submission of the post-operation report an investigation of the cause of the cattle deaths was ongoing.

Rangitoto

There were no other matters raised regarding the management of poisoned carcasses for the Rangitoto operation.

4.7.3 Summary and Recommendations

In regards to the monitoring of the decomposition of baits and carcasses no evidence has been supplied to substantiate compliance with these DoC permission conditions. We therefore recommend that the Regional Council explore the possibility of an inter-agency database where all material related to an aerial 1080 operation is available for all regulatory agencies to access, particularly where similar conditions across the regulatory agencies are concerned.

With the exception of the physical checking of transit flight path, which has only been evidenced for the Whareorino operation, the operators are assessed to be in full compliance with resource consent conditions regarding the post drop management of excess bait and poisoned carcasses.

Provided the cattle deaths following the Whareorino operation was resolved; based on the evidence presented for review, we consider that all three operators have met their obligations under MoH permission and resource consent conditions regarding the management of poisoned carcasses.

4.8 Monitoring of Environmental Effects

4.8.1 Analysis of Conditions

Conditions regarding the post-operation monitoring of effects are included in the HSNO controls and MoH conditions for the three aerial operations.

Those conditions are set out in Table 7 below.

Under the four permissions, controls, and consents regarding the aerial discharge of 1080, there are post-operation monitoring requirements in respect of:

- Flora and Fauna.
- Water supply monitoring.

Table 7: Monitoring of effects requirements for Pirongia, Whareorino and Rangitoto Range operations.

HSNO	MoH
Water Supply Monitoring	
	<p>26. Water Supply Testing</p> <p>The water testing shall conform to the requirements attached to this permission. Where water testing reveals VTA contamination over 50 percent of the PMAV*, the alternative potable water supply shall be maintained until such time as a repeat test confirms VTA contamination below 50 percent of the PMAV*, in accordance with the requirements of the Drinking-water Standards of New Zealand.</p>
Flora and Fauna	
<p>77A: Aerial application - provision of information to the Authority.</p> <p>(1) Any person who applies, or engages another person to apply, this substance by aerial application ("the operation") must, as soon as reasonably practicable, but no later than six months, after the operation, provide a written report to the Authority, such report to include the following information—</p> <p>(a) the reasons for the operation, including information on pre-operation notification and the methods and outcomes of any pre-operation consultation;</p> <p>(b) details of the operation, including date(s), location and application rate;</p> <p>(c) a map of the operational area showing relevant waterbodies, any public drinking-water supply, nearby farmland, human habitations and recreational huts and tracks;</p> <p>(d) a measure of possum or other relevant pest numbers before and after the operation (if available);</p> <p>(e) reports on any incidents (for example, accidental releases or overflights) or complaints in relation to the operation, including details of relevant parties, locations, actions, impacts (if available);</p> <p>(f) details and results of pre- and post-operational monitoring of birds and invertebrates (if available);</p> <p>(g) details and results of post-operational monitoring of water quality (if available);</p> <p>(h) details and results of pre- and post-operational monitoring of key species of relevance to Māori (food, rongoa species) (if available); and</p> <p>(i) an overall assessment of the outcome of the operation.</p>	

Freshwater and Water Supplies

MoH condition (26) states that:

“water supply testing shall conform to the requirements attached to this permission”

None of the three permissions came with attached requirements and none of the three operations have been evidenced to have complied with Landcare Research’s best practice protocols.

Pirongia

The resource consent application material and associated assessment of environmental effects states that:

Water sampling for the detection 1080 residues from streams that supply domestic users of water is standard operating procedure. In these instances, V C S staff or trained sub-contractors obtain the field sample from the water supply intake, which is then tested at Landcare Research (a registered laboratory for 1080 testing).

Document 3446404 contains the results of water testing. All tests returned readings below the method detection limit. The operator was therefore in full compliance with MoH conditions and resource consent conditions regarding water supply testing for this operation.

Whareorino

No water supply testing was completed for this operation.

Rangitoto

A total of four samples were taken following the Rangitoto operation, 3 on June 24, 2014 after the first discharge on June 23, 2014 and 1 on August 18, 2014 after the second discharge on August 17, 2014. All four samples returned results less than the method detection limit. However location and time information of the samples has not been supplied. The operator was in full compliance with MoH conditions but evidence for sampling occurring as per the Landcare Research best practice protocols has not been provided.

Flora and Fauna

Under the HSNO controls additional condition 77A, operators are required to report post-operational monitoring results to the EPA, if the monitoring results are available. None of the three operators have completed any of the monitoring set out in the condition based on evidence presented for review, with the exception of the Pirongia operation carrying out post-operation target species population surveys. They therefore do not have to supply the Authority with any post-operation monitoring results.

In regards to the Pirongia operation, resource consent condition 1 states that:

The discharge authorised by this consent shall be undertaken in general accordance with the application documentation recorded as document 3039165 on the Waikato Regional Council's document recording system and as identified in the resource consent conditions below which shall prevail in the event of any inconsistency between the aforementioned documentation and the conditions.

With regards to monitoring the assessment of environmental effects contained in the application documentation states that:

The effectiveness of any aerial 1080 operation is monitored according to the national protocol to measure the Residual Trap Catch Index ("RTCI"). Independent contractors chosen by public tender carry out the monitoring. All such contractors must be certified by monitoring operators under the National Possum Control Agency ("NPCA") system.

Evidence of this condition being met is contained in the post-operation report to the EPA, the objective of the operation was to achieve a RTCI of < 3%, post-operation monitoring resulted in a RTCI of 0.48% ± 0.7%.

4.8.2 Summary and Recommendations

The post-operation monitoring of water supplies, and flora and fauna is covered under HSNO controls and MoH permission conditions. The monitoring of the effects on flora and fauna is not required under any condition, however, there is a requirement under HSNO conditions to provide this information to the EPA if it is available. Under MoH conditions operators are required to conform to water testing requirements attached to the permission; none of the three MoH permissions came with attached requirements regarding water supply testing.

We therefore recommend that the Regional Council add a condition for all future consents requiring operators to conform to Landcare Research's best practice protocol when water supply testing is undertaken. Furthermore it is recommended that the Regional Council require post-operation monitoring of the effectiveness of the operation on target species and monitoring of adverse effects on birds and invertebrates within the operational area.

4.9 Reporting Requirements

4.9.1 Analysis of Conditions

Reporting requirements are included in the HSNO controls, MoH permits, DoC permits and resource consents for the three aerial operations.

Those conditions are set out in Table 8 below.

Table 8: Reporting requirements for Pirongia, Whareorino and Rangitoto Range operations.

HSNO	MoH	DoC	Resource Consent
<p>77A A requirement to report the misapplication, loss or spillage of the substance is added to this substance.</p> <p>(1) If this substance is applied other than in the intended application area, or is lost or spilt, the person who is in possession of the substance at the time that it was misapplied, lost, or spilt must report the nature and quantity of the substance within 24 hours of the substance being misapplied, lost, or spilt to—</p> <p>(a) if a Permission was granted to apply or otherwise use the substance, the person who granted the Permission; and</p> <p>(b) the officer in charge of the nearest police station to which the person has access; and</p> <p>(c) the nearest Medical Officer of Health or the Medical Officer of Health in whose region the substance was misapplied, lost, or spilt; and</p> <p>(d) each owner or occupier of land on which the substance may have been misapplied, lost, or spilt;</p> <p>(e) the person on whose behalf the substance is being applied;</p> <p>(f) the Regional Council or councils in whose area the substance is being applied; and</p> <p>(g) the Authority.</p> <p>77A Aerial application - provision of information to the Authority.</p> <p>Any person who applies, or engages another person to apply, this substance by aerial application (“the operation”) must, as soon as reasonably practicable, but no later than six months, after the operation, provide a written report to the Authority, such report to include the following information—</p> <p>(a) the reasons for the operation, including information on pre-operation notification and the methods and outcomes of any pre-operation consultation;</p> <p>(b) details of the operation, including date(s), location and application rate ;</p> <p>(c) a map of the operational area showing relevant waterbodies, any public drinking-water supply, nearby farmland, human habitations and recreational huts and tracks;</p> <p>(d) a measure of possum or other relevant pest numbers before and after the operation (if available);</p> <p>(e) reports on any incidents (for example, accidental releases or overflights) or complaints in relation to the operation, including details of relevant parties, locations, actions, impacts (if available);</p> <p>(f) details and results of pre- and post-operational monitoring of birds and invertebrates (if available);</p> <p>(g) details and results of post-operational monitoring of water quality (if available);</p> <p>(h) details and results of pre- and post-operational monitoring of key species of relevance to Māori (food, rongoa species) (if available); and</p> <p>(i) an overall assessment of the outcome of the operation.</p>	<p>31. Water Supply Mitigation: Reporting</p> <p>The applicant shall maintain a list of water mitigation measures provided under Conditions 25 and 30, which shall be available, on request, to Population Health of Waikato District Health Board.</p> <p>32. Water Supply Testing: Reporting</p> <p>The applicant shall provide, or arrange for the provision of, the outcome of all water testing to Population Health of Waikato District Health Board within 24 hours of receipt of the testing results.</p> <p>In the event that water testing reveals VTA contamination over the PMAV*, the applicant shall discuss any further proposed mitigation measures with Population Health of Waikato District Health Board and continue testing in accordance with the requirement for monitoring to establish compliance with the Drinking-Water Standards of New Zealand.</p>	<p>Bait and Carcass Monitoring DOCDM 61641</p> <p>Standard 1</p> <p>Compulsory bait and carcass monitoring is completed and results are recorded in a report that includes:</p> <ul style="list-style-type: none"> • Operation name • Pesticide uses in the operation • Caution period start date • Date endpoint(s) reached for each monitoring site • Photos for the first and final monitoring visit to each monitoring site • A statement of whether the operational area was 'dry' (i.e. <600mm rainfall/year or low rainfall during the monitoring period) • A statement of whether mean temperature in the 6 months following the operation was <10 degrees 	<p>24. Pre-Operation Reporting</p> <p>At least two weeks prior to each aerial operation the consent holder shall provide to the Resource Use Group of the Waikato Regional Council a Pre-Operation Plan which details the following:</p> <ol style="list-style-type: none"> Relevant contact details of the Operational Controller; Identify who the operation is being undertaken for; A topographical map identifying the operational boundaries sensitive areas and sensitive exclusion zones within or immediately adjacent to the operational area; A copy of any written approvals (and any conditions) provided from landowner(s) on whose land where aerial applications are to occur; A list of landowners and/or occupiers and adjacent landowners notified of the discharge as required via Condition 18; Expected date (or expected range of dates) in which the discharge is to occur; Procedures in place to ensure that the bait is applied within the operational area; Proposed application and loading rate of bait; The proposed quality assurance checks to be undertaken on the bait prior to the aerial application; Procedures in place to ensure bait does not enter any infrastructure associated with existing water supplies, or other sensitive exclusion zones within or immediately adjoining the operational area; Details of any post-operation follow ups that are proposed to occur. <p>The requirement for the pre-operational report to be supplied at least two weeks prior to an aerial operation may be reduced with the written approval of the Waikato Regional Council.</p> <p><i>Note this is condition (17) for the Pirongia operation</i></p> <p>Post-Operation Reporting</p> <p>30. The consent holder shall provide to the Resource Use Group of the Waikato Regional Council a Post-Operation Report within thirty (30) days following any aerial application of bait that details the following:</p> <ol style="list-style-type: none"> The date(s) of application; Actual application rate to land applied and how this was calculated; Wind speed (range in km/hr) and direction at the time of application; Type of bait used; A record of all person(s) provided with a copy of this resource consent; A map identifying the flight paths when applying the bait, perennial waterways within the site, all identified sensitive and exclusion areas, the location of any bait processing sites associated with the application and the location of the loading site if different from the bait processing site; Sample results of the toxic loading rate of the bait for each aerial application; Sample result or details of the quality control checks undertaken to ensure compliance with Conditions 8 and 17 are achieved. The details and results of all post-operation checks; The volume of left over bait; The (current and future) measures undertaken to decontaminate each bait processing site; Any problems, unanticipated/unintentional events or results during the operation, and any corrective action undertaken as a result; The date and newspaper public notification of the operation occurred in; and Details of any complaints received directly regarding the operation, and any follow up action taken; and <p>The expected/anticipated date caution period is likely to end.</p> <p><i>Note this is condition (23) for the Pirongia operation.</i></p>

Under the four permissions, controls, and consents regarding the aerial discharge of 1080, there are reporting requirements in respect of:

- Pre-operation.
- Post-operation.
- Reports to the EPA.
- Loss or spillage of substance.
- Water supply mitigation.
- Water supply testing.
- Bait and carcass monitoring.

4.9.2 Analysis of Compliance

Pre-Operation Reports

All Operations

The pre-operation reports (Pirongia: document 31027060, Whareorino: document 3020193, Rangitoto Range: document 3054115) detail the required information for this report. The operator was therefore in full compliance with resource consent conditions regarding pre-operation reporting.

Post-Operation Reports

All Operations

The post-operation reports (Pirongia: document 3160645, Whareorino: document 3067195, Rangitoto Range: documents 3119035 and 3148028) detailed the required information for this report. The operator was therefore in full compliance with resource consent conditions regarding pre-operation reporting.

Reports to the EPA

Of note for the HSNO control condition regarding the provision of information is that only points (a), (b) and (c) are compulsory, with points (d) – (i) only required if available.

Pirongia

The Pirongia post-operation report to the EPA “EPA_report_MtPirongia Te Kauri 2015” contains the required information under HSNO control conditions.

Whareorino

The Whareorino post-operation report to the EPA (document 3446714) contains the required information under HSNO control conditions.

Rangitoto Range

The Rangitoto Range post-operation report to the EPA “*Rangitoto EPA Report 12-12-2014*” contains the required information under HSNO control conditions.

Loss or Spillage of Substance

All Operations

No losses or spillages of the substance occurred across the three operations to trigger this HSNO control condition.

Water Supply Mitigation

All Operations

None of the three operations have evidenced reporting to the MoH or WDHB of their water supply mitigation methods. Pre and post operation maps and other various evidence reveal that in the case of Pirongia and Rangitoto operations that buffers and water testing did occur. There were no water supplies identified in the Whareorino operation that required mitigation.

Water Supply Testing

All Operations

Across all three operations evidence for the provision of water supply testing results to the WDHB has not been provided to substantiate compliance with this MoH condition.

Bait and Carcass Monitoring Reports

All Operations

Across all three operations evidence for the provision of bait and carcass monitoring reports to DoC has not been provided to substantiate compliance with this compulsory DoC SOP.

4.9.3 Summary and Recommendations

HSNO controls, MoH permissions, DoC permissions and resource consents all contain conditions requiring operators to complete pre and post operation reports on various aspects of the respective operations. HSNO controls require operators to report the misapplication, loss or spillage of the substance to the EPA and provide a post-operation report to the EPA which has set information requirements. MoH conditions require operators to report water supply mitigation methods and water supply testing results. DoC require operators to monitor bait and carcass decomposition and provide a summary report which has set information requirements. Finally resource consent conditions require operators to complete pre and post-operation reports which have outlined information requirements.

Compliance with reporting conditions based on the evidence presented for review is variable across the conditions. Evidence has not been presented confirming compliance with the DoC or MoH requirements. The HSNO controls have been met to the minimum standard with extra monitoring not completed. All operators were in full compliance with resource consents conditions set out by the Regional Council regarding reporting.

Because evidence for the compliance with all reporting requirements has not been presented it is difficult to perform a complete review. However, operators and regulatory agencies should be aware of all reporting requirements.

4.10 Summary and Recommendations

Based on the analysis above, it is clear to us that there is a considerable amount of overlap in the regulatory regime for aerial 1080 discharge in the Waikato Region. Within the key conditions analysed above there are examples of the various agencies placing similar conditions on the operator, such as the sign register conditions between DoC and resource consent conditions or the post-operation reporting requirements which broadly require the same report be sent to the Regional Council and EPA.

However this is not universally so and there are a number of examples where inconsistencies arise, and even within the same regulatory agency there are examples of different specifics being applied to the same condition. An example in the MoH exclusion from public areas condition. The Pirongia and Whareorino operation conditions state an 80 m buffer, while the Rangitoto operation states a 50 m buffer around public areas.

Overall in respect of the Regional Councils' role we conclude that the resource consent conditions addressing key factors relating to the aerial 1080 operations are sound and the audits of compliance completed by the Regional Council following each operation were completed to a high standard.

Because of the inter-agency issues that inevitably arise, we are of the opinion that the Regional Council is in a strong position to take a leadership role in addressing outstanding issues and driving consistency. Additionally, given the broad range of Council functions under s30 of the RMA and the wide definition of "effect", we consider that the resource consent conditions is an ideal vehicle to address many of them.

Our overall recommendations resulting from this analysis are:

1. Improved coordination between the regulatory agencies where there is a common issue addressed in multiple consents, where the Regional Council could usefully assume a leadership role.
2. A robust common data storage system where the information regarding each operation is stored for access by all regulatory agencies, with particular regard to common consent conditions. This will allow future compliance assessment to be completed with all available information.

A full summary of the recommendations made based on this review is contained in Section 6.

5. IDENTIFICATION OF AREAS REQUIRING IMPROVEMENT

There are a number of shortcomings in the regulatory regime for 1080 discharges in the Waikato Region. We are of the opinion the regulatory framework for the discharge of 1080 requires simplifying with one set of controls that all operators must abide by throughout the country. However this is not possible within the current regime, and is beyond the scope of this review in any event.

This section therefore focuses on how the implementation of that regulatory regime that can be modified and, in particular where the Regional Council can take a leadership role in that regard.

Section 4 outlines key conditions across the controls, permissions and consents were analysed. Of those examined here four were identified as requiring improvement via the resource consent process. These are:

- Buffers to waterways (see Section 4.5).
- Water supply testing procedures (see Section 4.8).
- Post-operation monitoring of effects (see Section 4.8).
- Requirement for consultation / notification with local tāngata whenua (see Section 4.2 and 4.3).

5.1 Buffers to Waterways

As discussed in Section 4.5 there are no resource consent conditions requiring operators to enact buffers around waterways. Under HSNO Controls and DoC permissions there are conditions requiring operators to avoid flying over public drinking water supplies when flying to and from the operational area. Under MoH permission conditions there is an either or both condition requiring operators to enact buffers around domestic and public drinking water supplies or take water samples until testing contains contamination less than 50 percent of the PMAV¹⁰.

One way that the Regional Council could address this shortcoming is by the inclusion of a buffers to waterways condition within resource consent conditions. An example of a buffers to waterways condition occurs in the Canterbury Regional Council (“**CRC**”) resource consent for the discharge of 1080 by the Biosecurity Section of Environment Canterbury (“**ECAN**”)¹¹. The condition in this resource consent could be used as a basis for a similar WRC condition and is as follows:

- 7 There shall be no aerial discharge of pesticides which would result in pesticide baits being present on land within:

¹⁰ Provisional Maximum Accepted Value.

¹¹ Canterbury Regional Council. *Application CRC102944 – Decision of the Hearing Commissioners Barry Loe and Robin Delamore*. Retrieved July 2015. <http://ecan.govt.nz/news-and-notice/notice/hearingdecisions/hearing-decision-CRC102944.pdf>

- a) 100 metres of any dwelling or any hut used for public accommodation.
- b) **200 metres of any well used for a community drinking water supply;**
- c) **400 metres upstream and 200 metres in any other direction, from an intake from a river used for community drinking water supply;**
- d) **200 metres from the edge of a lake or reservoir used for a community drinking water supply;**
- e) **50 metres of any well used for a domestic water supply;**
- f) **200 metres upstream and 50 metres in any other direction, from an intake from a river used for a domestic water supply;**
- g) **50 metres from the edge of a lake or reservoir used for a community drinking water supply;**
- h) 10 metres of a formed public road;
- i) **20 metres of any flowing or standing water body that is:**
 - a. **in excess of three metres wide, or**
 - b. **less than three metres wide and visible from the air;**
- j) 20 metres of the boundary of the area of a discharge event.

For the purposes of Conditions 7 and 10 a community drinking water supply is defined as a publicly or privately owned drinking water supply that serves 500 or more people at least 60 days of the year, but does not include a rural water scheme established solely to provide water for livestock.

- 10 There shall be no ground-based discharge of pesticides which would result in pesticide baits being present on land within:
- a) 5 metres of any flowing or standing water body.
 - b) 50 metres of any well used for a community drinking water supply; Decision of the Hearing Commissioners on application CRC102944 to the Canterbury Regional Council 26
 - c) 50 metres, and extending 100 metres upstream, from an intake from a river used for community drinking water supply;
 - d) 50 metres from the edge of a lake or reservoir used for a community drinking water supply;
 - e) 20 metres of any well used for domestic water supply;
 - f) 20 metres, and extending 50 metres upstream, from an intake from a river used for a domestic water supply;
 - g) 20 metres from the edge of a lake or reservoir used for a domestic water supply.

5.2 Water Supply Testing Procedures

No current consent condition for the discharge of 1080 in the Waikato Region requires operators to test water supplies for contamination post-operation. Throughout this review we have encountered opinions both for and against the post-operation testing of water supplies. The main opinion against the ongoing testing of water supplies is in the *Parliamentary Commissioner for the Environment's Report*¹². For the peace of mind of the public consuming drinking water sourced from areas where aerial 1080 discharge has occurred we recommend that the Regional Council take a cautious approach where water supplies are concerned.

¹² Wright, J. *Evaluating the use of 1080: Predators, poisons and silent forests*. June 2011. Retrieved July 2015. <http://www.pce.parliament.nz/assets/Uploads/PCE-1080.pdf>

One way the Regional Council could address this short coming is to include a consent condition requiring the post-operation testing of public water supplies within an operational area or where there are tributaries within the operational area. The condition could state timeframes of the required testing and outline report requirements to the Regional Council. An example of these conditions is contained in the ECAN resource consent and is as follows.

- 31 Representative samples of surface water shall be taken by an appropriately qualified person from a representative site or range of sites on one or more water bodies. These sites should be located where pesticides discharged within 200 metres of a domestic or community water supply may enter water. The sites shall be identified in consultation with the Canterbury Regional Council Director Investigations and Monitoring before a discharge event commences. Samples shall be taken at each site within:
 - i. 4 to 8 hours after the discharge event has ceased; or
 - ii. As determined by the Medical Officer of Health. In the event that the Medical Officer of Health determines that no water sampling is required, then Condition 30 shall not apply in respect of 1080 discharges, but shall still apply for discharges of pindone.
- 32 Water samples shall be analysed for the substance discharged, either sodium fluoroacetate (1080) or 2-Pivalyl-1,3-Indandione (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.
- 33 A report that provides an analysis of the results of the water sampling undertaken in accordance with Condition 30 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 2-Pivalyl-1,3-Indandione (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.

5.3 Post-Operation Monitoring Of Effects

Under the current regulatory regime for the discharge of 1080 in the Waikato Region there are no conditions requiring operators to assess the effects (both beneficial and adverse) of an operation. While the HSNO Controls require operators to provide this information, if it is available, there is no condition actually requiring this information be collected.

One way that the Regional Council could address this shortcoming is to include conditions requiring the collection of post-operation monitoring data which is then required to be reported in post-operation reports submitted to the Regional Council.

An example of conditions addressing this are contained in the ECAN resource consent.

- 34 A Wildlife Monitoring Plan shall be prepared by the Consent Holder and shall be submitted to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager within six months of the consent being issued and prior to the consent being first exercised.

- 35 The purpose of the Wildlife Monitoring Plan is to set out the methodology and processes to be used in a monitoring programme to assess adverse effects of 1080 or pindone discharges authorised by this consent on native birds and waterfowl, and the procedures to be following in the event of such effects being discovered. The Wildlife Monitoring Plan shall be prepared by a person or persons with relevant expertise in wildlife monitoring and impact assessment and shall include, but not be limited to:
- a) Best practice guidelines or other procedures to be followed in the selection of the methodologies to be used in the monitoring programme.
 - b) Relevant linkages to complementary monitoring and research programmes undertaken by the Canterbury Regional Council or other Local Authorities, the Department of Conservation, the Ministry of Health, Crown Research Institutes, State Owned Enterprises or any other relevant organisations.
 - c) A requirement to carry out an appropriate level of baseline and impact monitoring within at least the first 5 years of the exercise of the consent, including, but not limited to, impact monitoring of a representative sample of discharge events in the following areas:
 - i. Where a discharge area contains or adjoins a waterway, lake, wetland or riverbed; and
 - ii. Where a discharge area contains, is within, or is immediately adjacent to, an area that has been identified as habitat of threatened native bird species.
 - d) Any procedures in addition to Condition 38 to be followed by the Consent Holder in the event of a discharge of 1080 or pindone causing any significant impact on native birds or waterfowl and steps to be taken to mitigate such effects during future discharge events.
 - e) A framework for reporting results to Canterbury Regional Council and other relevant organisations.

5.4 Notification of / Consultation with Tāngata Whenua

As requested by the Regional Council, we have completed an assessment of consultation of tāngata whenua under the RMA and resource consents. Under these conditions there is no requirement to consult tāngata whenua. However, under DoC permission conditions and the associated SOP that are required to be followed by all operations the consultation of tāngata whenua is required under the following condition.

- 2 Consultation on effects with iwi and/or hapū is compulsory for aerial 1080 operations and recommended for other techniques.

Furthermore, is the expectation under s6 of the HSNO Act that consultation of tāngata whenua occurs before DoC and MoH permissions are requested.

- 6 Matters relevant to purpose of Act
All persons exercising functions, powers, and duties under this Act shall, to achieve the purpose of this Act, take into account the following matters:

- a) the sustainability of all native and valued introduced flora and fauna:
- b) the intrinsic value of ecosystems:
- c) public health:
- d) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, valued flora and fauna, and other taonga:**
- e) the economic and related benefits and costs of using a particular hazardous substance or new organism:
- f) New Zealand's international obligations.

Under resource consent and RMA conditions there is a deficiency regarding the consultation of tāngata whenua, and some operators are potentially unaware of the requirements and expectations for the consultation of tāngata whenua under other permissions.

One way for Regional Council to exercise its Part 2 obligations in respect of tāngata whenua would be for the Regional Council to insert a specific condition requiring that such consultation occurs with tāngata whenua. An example of this occurs in the ECAN resource consent.

- 16 Prior to any 1080 or pindone discharge event commencing on any land which is not private land, the Consent Holder shall notify the Papatipu Runanga whose rohe it is, of the proposed operation at least 20 working days prior to the commencement of the discharge event.
- 17 The Consent Holder shall, at least once per year, give Te Runanga o Ngai Tahu representatives the opportunity, through a written invitation, to attend an annual meeting to discuss:
 - i. A summary and review of 1080 and pindone discharge events which have occurred in the previous year under this consent.
 - ii. 1080 and pindone discharge events proposed for the following year.
 - iii. The results of any monitoring or studies carried out on the effects of 1080 and pindone.
- 18 At each meeting Te Runanga o Ngai Tahu shall be given the opportunity to give a presentation about cultural issues relating to the discharge of 1080 and pindone, to any persons authorised to exercise this consent.

5.5 Opportunities to Improve Monitoring

As discussed above, we have identified two areas where post-operation monitoring could be improved. Namely:

- 1. Water sampling.
- 2. Monitoring of effects.

Neither of these areas are required under any of the various permits currently issued in the Waikato Region for the aerial discharge of 1080, although, water sampling is presented as an option for water supply mitigation.

As discussed above, we have recommended that the Regional Council add resource consent conditions to address these matters and have given an example of resource consent conditions currently used in the Canterbury region.

We also consider that specific monitoring of the effectiveness of the operation on eradicating the target species would be useful. The 2013 annual report by the EPA on information received following aerial 1080 operations states that pre-operation monitoring of pest species occurred in 89% of operations carried out that year, and post-operation monitoring occurred in 54% of aerial 1080 operations. The report notes that the monitoring of species which benefit from 1080 operations occurs over several years in order to identify trends in populations is occurred in 30% of operations in 2013¹³.

To address what is obviously best practice based on the EPA statistics of operation effects, we suggest that the Regional Council could usefully include additional resource consent conditions to require operators to carry out at least target species monitoring in accordance with National Possum Control Agencies ("NPCA") best practice¹⁴ to determine the effectiveness of operations.

5.6 Pre and Post Operation Maps

The standard of the pre and post operation maps for the three operations reviewed in this report was poor. Many maps lacked typical mapping conventions such as north arrow, scale and an understandable legend.

Both the Rangitoto Range (Appendix 13) and Whareorino (Appendix 14) pre-operations are reasonable despite lacking north arrows and scales. The Pirongia pre-operation map (Appendix 12) provided for review is blurry, however this could be due to the size of the map, or it being scanned into reports.

Pre-operation maps should, along with typical mapping conventions, contain:

- The boundary of the operation area – unfilled in the middle for clarity.
- Identified roads, walking and vehicle tracks.
- Warning sign locations.
- Domestic and public water supplies.
- Standing and flowing waterbodies.
- Dwellings.
- Schools and Early Childhood Centres.
- The loading zone.

If multiple maps are required to clearly communicate the above information this should be the case.

Post-operation maps should then include all of the above along with the toxic flight lines and transit paths between the operational area and loading zone in a clear format. The use of different colours for different dates of discharge or application rates is encouraged as the use of different line width to display the same information results in difficult interpretation.

¹³ Environmental Protection Authority (EPA), 2013. *Annual Report on the Aerial Use of 1080 - For the year ended 31 December 2013*. Retrieved July 2015. http://www.epa.govt.nz/Publications/2013_1080_Annual%20Report.pdf

¹⁴ National Pest Control Agencies (NPCA), 2011. *POSSUM POPULATION MONITORING USING THE TRAP-CATCH METHOD*. Published October, 2011, Retrieved July 2015. http://www.npca.org.nz/images/stories/NPCA/PDF/a1_monittrapc_201110_web.pdf

6. SUMMARY OF RECOMMENDATIONS

Throughout this report we have made recommendations to improve the regulatory regime of 1080 discharge operations across the Waikato Region. The following is a summary of these recommendations.

1. There is considerable scope for improved inter-agency cooperation and for the standardisation of information and regulatory requirements. We anticipate that the Regional Council is well placed to play a leading role in this regard. We recommend that where there are common conditions between the regulatory agencies, that the Regional Council draft a set of conditions that can be agreed upon by the respective regulatory agencies. This will have the effect of streamlining the various consenting processes, provide greater clarity for the operators and prevent conditions being over ruled or undermined by conditions from other regulatory agencies.
2. In addition, we recommend the implementation of a common, inter-agency database for the storage of information regarding aerial 1080 operations in the region, particularly in regard to the common conditions between the regulatory agencies. We believe the Regional Council is well placed to take a leadership role in this regard.
3. Evidence presented and analysed here does not clearly outline the methodology required for post-operation water sampling. We therefore recommend that the Regional Council include resource consent condition(s) requiring operators to adhere to the Landcare Research best practice protocol with regard to water sampling and require a post-operation report to be prepared that details the water sampling undertaken and enable compliance to be assessed.
4. Regarding the buffering of flowing and standing water bodies, and drinking water sources, there is currently no explicit condition under the HSNO controls, MoH permission, DoC permission or resource consents requiring operators in the Waikato Region to enact these buffers. We therefore recommend that a resource consent condition be added to all future resource consents requiring operators to avoid the discharge of baits into standing and flowing water bodies within the operational area, including the enactment of buffers around water ways and drinking water sources identified during the pre-operation phase.
5. Regarding the lack of evidence of consultation with tāngata whenua and other stakeholders across the three operations reviewed here, we recommend that a region wide consultation practice, led by the Regional Council be developed and incorporated into all future resource consents. The consultation practice should outline the information required and identify the parties to be consulted with to gain this information. This could be completed alongside recommendations 1 and 2, but with input from the other regulatory agencies who have consultation requirements in their standard operating procedures, particularly DoC.

6. The pre and post operation monitoring of the effects of a 1080 operation on target species is not currently required in the Waikato Region. Based on EPA report statistics this places the Waikato Region operations, with the exception of the DoC operation (post-operation only), in the minority regarding this aspect. We therefore recommend that a resource consent condition should be added to all future resource consents requiring the pre and post operation survey of target species populations within the operational area.
7. Similarly post-operation monitoring of the benefits of a 1080 operation on native flora and fauna only occurs in 30% of operations and is required over a number of years after an operation. We recommend the Regional Council includes a resource consent condition in all future operations requiring the post-operation effects on native flora and fauna be assessed and reported on.
8. Overall through our review of information completed here, we have developed the opinion that the information required for confirmation of compliance with many of the conditions from all regulatory agencies would be best communicated on pre and post operation maps, instead of as lists of information. We therefore recommend that the Regional Council include an advice note on all future resource consents outlining the information required to be presented on pre and post operation maps.

EMBARGOED UNTIL 30 OCTOBER 2015

APPENDICES

EMBARGOED UNTIL 30 OCTOBER 2015