



Ministry for the
Environment
Manatū Mō Te Taiao

Proposed National Environmental Standards for Air Quality

Report on Submissions

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Contents

1	Introduction	1
1.1	Background	1
1.2	Purpose of this document	2
2	Overview of Submissions	3
2.1	Summary of submitters' positions	3
2.2	Key themes	4
3	Detailed Submission Summary	9
3.1	General submissions	9
3.2	Ambient standards	18
3.3	Implementation	23
3.3.1	Enforcement	36
3.3.2	Emissions testing and dispersion modelling	38
3.4	Proposed ambient standards	41
3.4.1	Particles (PM ₁₀)	41
3.4.2	Nitrogen dioxide (NO ₂)	45
3.4.3	Ozone (O ₃)	45
3.4.4	Sulphur dioxide (SO ₂)	46
3.4.5	Carbon monoxide (CO)	46
3.5	Air toxics, especially dioxins (prohibited activities)	47
3.5.1	General submissions	47
3.5.2	Proposed prohibited standards	49
3.6	Emission standard for new home-heating appliances	60
3.7	Costs and benefits of the standards package	66
	Appendix A: Public Notices	69
	Appendix B: Index of Submitters	71

1 Introduction

1.1 Background

Over the past few years there has been an increasing call from many people in business, local government and the wider community for the Ministry for the Environment to develop national environmental standards. This call was repeated at a series of breakfast meetings the Ministry for the Environment hosted in mid-2002, where there was support in principle for the introduction of standards to provide national consistency and a minimum standard of protection for the community.

The Ministry for the Environment then worked closely with regional councils to agree on priorities for national environmental standards. Air quality management was seen as being the first priority. There are two main reasons for this. Firstly, air quality is a significant health and environmental issue in New Zealand which requires improvement to ensure the sustainability of our towns and cities. Secondly, ambient air quality management has typically used a system of guideline values and guidance so there is considerable technical and scientific analysis on which to base numerical standards that protect human health.

In August 2003 the Government gave the Ministry for the Environment approval to consult on the first suite of national environmental standards. Consequently, in October 2003 the Minister for the Environment notified a range of proposed national environmental standards for air quality. The standards were presented as a package consisting of:

- **ambient standards** for carbon monoxide (CO), particles (PM₁₀), nitrogen dioxide (NO₂), sulphur dioxide (SO₂) and ozone (O₃)
- **prohibitive standards**, which prohibit various activities that discharge unacceptable quantities of contaminants into the air, particularly dioxins
- **an emission standard** for the design of small, domestic, solid-fuel-burning appliances.

Public notices informing people of the submission period were placed in major papers on 25 October 2003. The notices informed people of:

- the subject matter of the proposed national environmental standards
- the Minister's reasons for considering that the proposals are consistent with the purposes of the Resource Management Act 1991
- how people could make a submission
- the deadline for submissions.

A copy of the public notice is included in Appendix A of this report.

During November 2003 the Ministry for the Environment undertook a comprehensive road show across New Zealand, holding over 30 meetings in 16 regions, and talking to over 1000 people. Implementation of the proposed national environmental standards was one of the key topics discussed at the road show meetings, and once again there was support in principle for the development of national environmental standards.

The deadline for submissions was 5 pm on Friday 5 December 2003. Due to concerns expressed by some parties over the short timeframe for comment, submissions were accepted until midday 24 December 2003.

Details of the proposals and how they will be implemented was made available during the submission period in the Ministry for the Environment report *Proposed National Environmental Standards for Air Quality: Air Quality Technical Report No. 46*.

A proposed national environmental standard addressing the collection and destruction of landfill gas was notified in parallel.

1.2 Purpose of this document

This document presents an overview of the submissions received on the proposed national environmental standards for air quality. The public notice recommended that people include in their submission any changes they would like seen to the proposed standards. As a consequence, a large proportion of this report contains submitters' suggested changes to the proposals. These may be viewed as being in opposition to the proposals, although in many cases the submissions offered conditional support.

Chapter 2 is a summary of the key themes raised by submitters, while chapter 3 is a more detailed summary on a submitter-by-submitter basis. The chapter follows the structure of the *Proposed National Environmental Standards for Air Quality: Technical Report No. 46*, with a brief summary of the proposal followed by submissions received relating to that section.

This report is intended to provide a concise summary of the views expressed. It is not intended to provide an analysis of those views or recommendations in response to the submissions. This will be done in a separate report, which will be presented to Cabinet later this year.

The summary of submissions received on the proposed landfill gas collection and destruction standard is included in a separate document available from www.mfe.govt.nz.

2 Overview of Submissions

2.1 Summary of submitters' positions

A total of 1426 submissions were received. The majority of these (1203 or 84%) were form submissions from Greenpeace supporters. Table 1 presents a summary of submissions by source category.

Table 1: Submission breakdown, by source

Category	No. of submissions
Academic	4
Small to medium business	73
Community and NGOs (Greenpeace)	1252 (1203)
Consulting/professional	12
Government – central agency, regional and local	36
Larger industry	49
Total	1426

Of the submissions received from government, nine were from central government departments, agencies or institutes, 13 from regional government and 14 from local government. Submissions from business included a total of 51 from small businesses associated with the Home Heating Association and primarily related to the proposed standard for solid-fuel-burning appliances.

Figure 1: Breakdown of submissions, by source

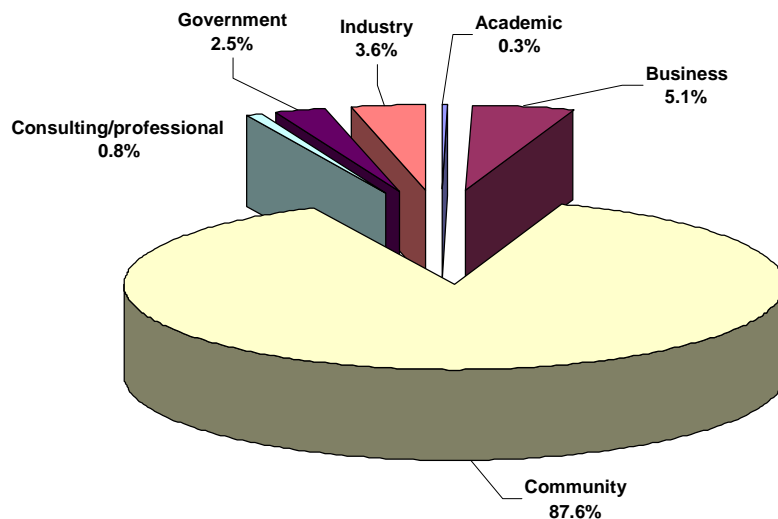
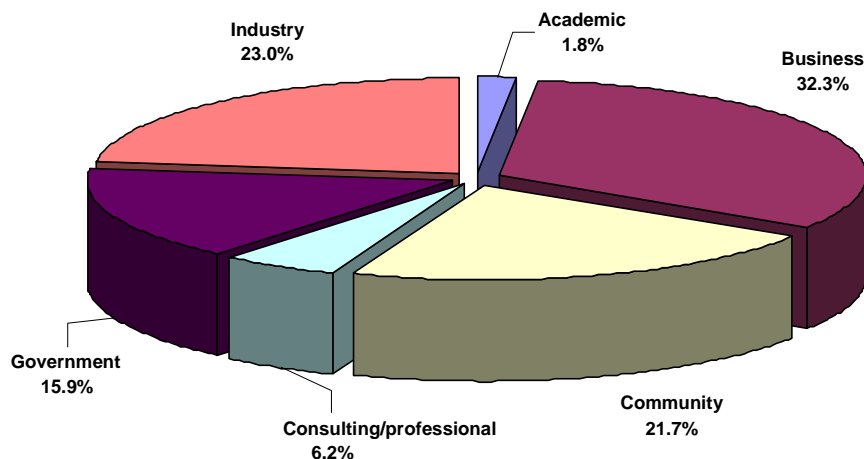


Figure 2 presents a graphical breakdown of the 223 individual submissions, excluding the Greenpeace form submissions.

Figure 2: Breakdown of individual submissions
(excluding Greenpeace form submissions)



2.2 Key themes

The large majority of submissions (1203) were form submissions from Greenpeace supporters. The form submissions supported the proposed prohibited standards but called for the following additional prohibited standards and actions:

- ban new high-temperature hazardous waste incinerators
- ban municipal incineration, including waste-to-energy
- ban backyard burning
- ban new school and hospital incinerators
- phase out existing incinerators
- take further action to eliminate all dioxins from our air, land and water.

The Greenpeace submissions noted that incineration is dangerous, outdated and releases deadly dioxins, and noted that alternatives to incineration exist.

Of the remaining 223 individual submissions, 41 indicated support for the introduction of national environmental standards, although of these, 25 expressed concerns or reservations over some aspects of the proposal. Six submitters directly opposed the proposal.

A comprehensive thematic analysis was carried out on the individual submissions. Key themes were identified from a first initial reading of the submissions and then each submission was reviewed again. On this second review the submissions were categorised in relation to each of the main themes as follows:

- supports this aspect of the proposal/issue
- does not support or directly opposes this aspect of the proposal/issue
- has reservations/concerns about this aspect of the proposal/issue.

The key themes identified are given in Table 2 and discussed in detail below.

Table 2: Key themes identified for analysis

Key theme	Sub-theme
Overall submitter position	Support, conditional support, oppose
Proposed standards	Reasoning and formulation Ambient standards: <ul style="list-style-type: none"> • inclusion of annual limits • percentiles inconsistent Prohibitive standards: <ul style="list-style-type: none"> • high-temperature hazardous waste incinerators Solid-fuel-burning appliances <ul style="list-style-type: none"> • includes efficiency measure Regulation of motor vehicle emissions
Implementation	Timing (3–4 years) How it will apply Achieving objectives
Enforcement	Roles and responsibilities Breaches/exceedances How it would work
Potential impacts	Cost Equity Relocation / closure of industry / degradation of unpolluted areas
Guidance/clarity sought	Monitoring Process and content for notification of exceedances Relationship of the standards to the Air Quality Guidelines Relationship with regional air plans Emissions trading Definitions (eg, air shed, hazardous waste, “insignificant”)
Process	Lack of consultation Desire to see cost–benefit analysis Request for further input

The purpose of the thematic analysis is not simple numerical interpretation but rather an attempt to identify key themes and to understand which issues are of most concern to which submitters. Often submitters had individual concerns or made recommendations that needed to be summarised in more detail. This is addressed in chapter 3 of this document.

The thematic analysis allowed the following conclusions to be drawn.

- Submitters were only slightly optimistic about the ability of the proposed standards to meet its stated objectives. Ten were of the opinion that they would, 20 thought they were heading in the right direction but needed work, and 11 disagreed. The objective most commented on was the inability to “achieve a level playing field” due to local government’s ability to impose more stringent limits than those outlined in the proposed national environmental standards.

- Possibly the most contentious issue was the proposed ban on high-temperature hazardous waste incinerators. The 1203 Greenpeace submissions supported the proposed ban, and commented that government must take action to eliminate all dioxins from our environment. These submissions noted that incineration releases dioxins, which are some of the most toxic chemicals ever made by humans and are linked to health problems such as cancer, birth defects and endometriosis. The submissions state that alternatives to incineration exist, such as steam sterilisation. Of the 223 individual submissions, 30 support the proposed ban, 17 were directly opposed and 24 expressed strong reservations. The reservations identified were based on:
 - the lack of feasible alternatives to deal with some waste streams (eg, biosecurity wastes)
 - the change in policy direction from the previous Ministry position to impose a dioxin emission limit of 0.1 ng/m³ for high temperature hazardous waste incinerators
 - the inequity in the approach compared to other dioxin sources such as domestic fires, when dioxin from hazardous waste incinerators comprises less than 0.1% of the New Zealand total
 - the fact that the policy is based on perception rather than effects.

Suggestions made in response to these reservations were that:

- the activity should be allowed if it can meet internationally accepted dioxin emission standards
 - a combination of the resource consent process and/or a national emission standard would be sufficient to address the issue and would allow for new technologies.
- Twenty-three submitters were in support of the proposed ambient air quality standards, 22 supported the proposal but had concerns or reservations, and 11 were opposed. There were some concerns about the reasoning or basis for the proposed standards. Specific concerns included:
 - nine submitters queried the inconsistent application of percentile exceedance allowances
 - 14 submitters requested an annual standard for PM₁₀
 - a few expressed concern that the proposed standards promote “pollution up to a standard”
 - a few requested that natural particulate sources such as sea salt should be excluded from ambient air quality measurements.
 - A large number of submitters (104) supported the proposed emission standard for solid-fuel-burning appliances, although the majority of these (84) expressed some reservations. Key issues here were:
 - the inconsistency with the current joint New Zealand / Australian standard, which requires 4 g/kg (the majority of these submissions were from businesses associated with the Home Heating Association)
 - 11 submissions requested an additional standard for thermal efficiency to allow comparison between different types of fuel (eg, wood vs coal)
 - the need to place controls on wood moisture content
 - uncertainty over who would implement and enforce the standard
 - the need for a definition of “urban areas”
 - the need for education at a national level on the operation of wood burners.

- There was also strong support for the proposed prohibitive standards (hazardous waste incinerators are discussed above). Key concerns around the proposed prohibited standards were:
 - future costs for schools and hospitals – there appeared to be some confusion between boilers (which are not in the proposal) and incinerators (for which it is proposed that consent should be required)
 - exclusions on prohibiting the burning of oil in the open for fire training and film special effects purposes, and for frost protection (due to a lack of suitable alternatives)
 - the need to include a ban on backyard burning, particularly in urban areas.
- Equity was a key issue identified, as shown in the following points.
 - Industry was primarily concerned at the focus on point source emissions, which does not equate with their relatively low contribution compared to other sources. The predominant concern was that the proposed standard would unfairly inhibit new development. Some submitters considered that technical standards or the best practicable option should be applied in degraded areas.
 - Many regional councils were concerned at the potential for the standards to limit new industrial development, and there was concern that industry may be forced to relocate to other areas, resulting in a degradation of air quality in areas that currently have good air quality.
 - Some regional councils and consulting/professionals expressed concern at the choice of prohibited activities. A few requested further banning of activities, such as backyard burning and all low-temperature waste incineration.
 - Most industry submitters were concerned that they would have limited ability to work with other emitters to reduce emissions.
 - The concern was expressed that it would be difficult for new low-emission industry to develop in a polluted air shed.
- Guidance and clarity were sought on a wide range of issues, including:
 - monitoring – where and how?
 - compliance – how is this demonstrated?
 - enforcement – what actually happens when a standard is breached, and how are exceedances notified?
 - the need for a review of existing consents as a result of the standards
 - how the ambient standards relate to the current ambient air quality guidelines
 - the roles and responsibilities of various agencies under the standards
 - definitions for a number of terms (eg, “urban”, “incineration” and “hazardous waste
 - how industry developers would off-set future emissions in air sheds that were already compromised (three submissions opposed this, five sought clarification and one expressed full support).
- Cost was a key concern for industry and regional councils. A number of industry submissions felt that ambient air quality monitoring is a regional council responsibility and should be borne by rate payers.
- Implementation issues revolved around how the standard would work in practice. Thirty-three submissions commented on the proposed timeline for ambient standards of three to four years, with the majority considering it to be too short.

- There was dissatisfaction over the lack of time to prepare submissions. Twenty-eight submitters commented on this specifically, with 14 requesting further input in the future.
- Similarly, 23 submitters expressed dissatisfaction over the cost–benefit analysis not being available at the time of the proposed standards.
- Eighteen submitters noted that central government needs to address motor vehicles, because these represent a significant portion of emissions.
- A number of submitters were concerned that they were unable to comment on the proposed wording of the final regulations, either at the time of notification or later in the process.

3 Detailed Submission Summary

3.1 General submissions

Air Quality Technical Report Number 46, Section 1.3, contained the following objectives:

- create a level playing field across New Zealand
- provide certainty and consistency
- guarantee a level of protection for the health of all New Zealanders
- drive effective regional and national policies to improve air quality.

Submissions received relating to the broad objectives of the standards, those of a general nature, and those that raise issues not covered in the proposal are summarised below.

Submitter 1 comments that the standards are likely to fail to achieve the first three aims because:

- they tilt the field against industry when it is not the main contributor
- there is no certainty about whether existing consents will be able to be renewed
- there is no real suggestion as to how cars and existing home fires will be dealt with, leaving it up to councils to develop their own solutions.

Submitter 2 comments that care is needed to ensure that the standards do provide a level playing field between different sectors and notes that areas where this is not currently the case are:

- banning high-temperature incineration but allowing school incinerators if they have consent
- banning-high temperature incineration in contrast with controls on other similar-sized emission sources
- controls on industry and domestic sources, which should be consistent.

Submitter 3 is not sure that the objectives will be achieved as long as councils have the power under section 43(b)(2) of the Resource Management Act 1991 (RMA) to set more stringent rules. The submitter agrees that some areas require more stringent guidelines but is concerned at the lack of consistency in regional plans as to how these areas are dealt with. The submitter asks that consideration be given to the stated objectives and the flexibility provided by the RMA, and to developing a range of national environmental standards that can be applied to locations with similar sensitivities.

Submitter 3 is concerned that the standards focus on point sources, and notes that there are some sources such as quarries, landfills and roads that would not be covered by the term “point source”. The submitter wants the types of sources the standards cover to be clearly defined to ensure that all significant sources are covered – not just point sources. Submitter 3 also wants the standards to make it clear that all sources within an air shed must contribute equally to any reduction necessary to meet the proposed standards.

Submitters 6, 163 and 174 support the principle of developing national standards for air quality but do not support the standards in their current form. They are concerned that the standards will have no substantial influence on motor vehicles, significant improvements in air quality can only be achieved by reducing these emissions. The submitters want the Ministry to take a leading role in aspects that affect vehicle emissions, such as the development of national fuel specifications, vehicle emission standards, fuel taxation, major roading developments and other environmental aspects of transport. The submitters also seek the incorporation of practicable measures in the standards to make improvements in vehicle emissions; for example, applying the national standards to major roadway developments and requiring developers to assess the environmental impacts of new roads.

Submitters 6, 163 and 174 are concerned that the consultation process has not allowed for constructive and informed submissions. They seek the opportunity to peer review and provide further comment once the standard has been made more definitive, and they want the Ministry to demonstrate how the submissions have been taken into account in developing the standards. These submitters also want the standards to include a commitment to monitoring their effectiveness following implementation.

Submitter 7 is concerned that the unitary authorities may create more restrictive requirements, which may cause restrictions on its members' activities (operating steam locomotives). The submitter seeks an assurance that no such restrictions will be imposed.

Submitter 10 wants central government to provide guidance to local government on how to effectively and efficiently implement air quality standards, focusing on which measures they can adopt to best manage vehicle emissions within their respective air sheds. The government needs to take a leadership role in managing vehicle emissions to a fair and reasonable level and should not set unrealistic expectations for local authorities or motorists to reduce their emissions to levels outside their control.

Submitter 26 is opposed to the adoption of the standards as presented and seeks an independent review of the relationships that are alleged to exist between urban air pollution and public health. The submitter seeks a programme of research to ascertain the likely quality of indoor air since this is where we spend 85% of our lives, and notes that outdoor air quality is not necessarily the key issue, instead be on things such as pollution from unflued gas appliances.

Submitter 34 strongly supports action taken at the national level to improve air quality.

Submitter 35 is concerned that the emphasis of the standards is on the consenting of commercial and industrial activities and wants the Minister to recognise that industry is a minor contributor and should not become the recipient of draconian standards. The submitter notes that the objectives do not refer to or add direction to either domestic or transport sources.

Submitter 36 supports the standards but considers more consultation may be required to develop something workable.

Submitter 38 wants pesticide contamination from spray application drift to be addressed in the standards because the effects of such drift on human health are unacceptable.

Submitter 45 is concerned that the process fails to meet the requirements of section 44 of the RMA, and in particular the opportunity to make further submissions. The submitter considers that a further submission process is desirable for changes inserted as the result of a submission. The submitter wants both a summary of submissions and a regulatory impact statement to be provided, with an opportunity for further submissions.

Submitter 46 supports the scope of the standards being restricted to specific activities in “rural” and “urban” areas because it would be inappropriate to impose standards for landfill fires and home heating on the rural environment. The submitter is, however, concerned that councils may impose urban standards on rural areas that are in close proximity to urban areas because they are in the same air shed. The standard should provide greater clarity so that the boundary between urban and rural is well defined.

Submitter 72 is concerned that the standard addresses issues in areas with an urban focus to the detriment of areas with a predominantly rural focus, and that there is no recognition that air quality issues vary throughout New Zealand.

Submitters 5 and 73 query the value of the programme since regulatory efficiency is not a primary objective of the standards, and comments that whether they will actually improve environmental effects or reduce costs is now doubtful. These submitters note that the proposal does not provide consistency because regions may override the national standards, and they comment that if local differences in air quality are a primary consideration then the scope for efficiency improvements through standards is limited. Local government’s discretion to impose tighter standards should be removed.

Submitters 5 and 73 are also concerned that existing consents will be reviewed when the regulations are promulgated, which represents a potentially significant cost that is inconsistent with greater efficiency in resource management.

Submitter 75 supports the development of national air quality standards but is concerned about the current proposals. The submitter opposes the timeframe for implementing the ambient standards: it is unrealistic because domestic heating is the main source of pollution, and social and economic costs will be incurred without a reasonable transition period. If a three- to four-year timeframe is retained then funding for communities to change to cleaner heating should be provided.

Submitter 75 wants the standards to be applied to district councils and their district planning tools for air quality management, and provisions regarding monitoring the effectiveness of the standards to be included. The submitter also wants other methods to be included in the standards, such as public information campaigns, non-regulatory action plans and financial incentive schemes, and comments that a national approach to education would mean consistency in messages throughout the country.

Submitters 84 and 90 want motor vehicles to be addressed in the standard (eg, emission standards).

Submitter 85 requests that the Minister circulate the draft regulation to key stakeholders, with a minimum eight-week period for comment to enable adequate time and opportunity to comment.

The proposed standards do not provide an adequate discussion of how the standards will work in practice, including commencement and transitional requirements. The submitter seeks clarification on how the standards and future standards will relate to designations, and wants the roles and responsibilities of all parties affected by the standards to be clearly stated in the regulation.

Submitter 87 considers that the discussion period is too short and that a reasonable timeframe should be provided, compulsory standards and costs should be set out for all regional councils, and the costs and benefits to industry should be accurately assessed.

Submitter 90 considers that councils should not be able to impose stricter standards than the proposed standards because it is inconsistent with the objectives in section 1.3 of the proposed standards.

Submitter 94 supports the introduction of national environmental standards because they provide leadership on important resource management issues. The submitter requests involvement in the ongoing standards work programme and in determining priority issues for the future.

Submitter 96 comments that if regional centres are to grow, it is economically unfair to apply the same restrictive standards of air quality to them. The submitter asks that the air quality standards be implemented to complement the Government's goal of "growing an inclusive, innovative economy for the benefit of all".

Submitter 99 is concerned that the period for making submissions is inadequate and seeks more time and information for submissions. The focus of the standards is on industrial point sources and is not consistent with research that shows domestic fires and motor vehicles are the primary causes of ambient air quality problems. A detailed cost-benefit analysis should be provided because of the major economic and social consequences of the proposal. The submitter requests that the air quality standards not be applied to the assessment of industrial or commercial point source emissions, and that more detail on how the standards will be implemented be provided for further consultation and submissions.

Submitter 102 wants the Ministry to assist Environment Canterbury to meet the standards by providing government funding, argues that electricity companies should be regulated if they continue to raise prices, and wants low-sulphur diesel to be made available in the South Island.

Submitter 107 wants the quality of New Zealand fuels to be lifted to be more in line with that in most developed countries.

Submitter 109 supports the concept of national standards but considers that the Ministry needs to balance the desire for environmental enhancement and human health protection with the need for progressive improvements at an affordable cost.

Submitter 111 supports the explanation and objectives and wants them to be retained.

Submitter 113 is concerned about the process for developing the standards and that there will be no further opportunity for comment even though significant changes could be made. The submitter notes that section 44(b)(i) of the RMA requires a process that "the Minister considers gives the public adequate time and opportunity to comment on the proposed subject matter of the regulations".

Submitter 113 considers that implementation of the standards as proposed takes the decision-making away from local communities, and comments that because many aspects are currently addressed by regional councils the standards are somewhat negated. An overly regulatory approach is not required to achieve the objectives and seeks an approach of working with councils in areas where plans are not in place.

Submitter 113 does not agree that the standards will “create a level playing field” because the impact on industry will vary depending on its location and the existing levels of emissions. The submitter wants central government to take the lead on motor vehicle emissions.

Submitter 119 supports the standards in so far as they achieve the objectives, although they have concerns about the practicality and cost implications, particularly with regard to the proposed air quality standards. The submitter seeks a full cost–benefit analysis, and considers that in the absence of this the consultation is inadequate.

Submitter 122 considers that section 1.3 implies that specific point sources should also achieve the standards; that is, at the point of discharge. The submitter wants the preamble make it clear that the standards apply to the contribution of point sources to ambient air quality and suggests the wording:

It also makes sense for the contribution of specific point sources of contaminants to ambient air quality to achieve the same overall ambient standards, while taking into account any potential cumulative effects etc ...

Submitter 125 wants the standards to reference the National Energy Efficiency and Conservation Strategy, the climate change programme and the Sustainable Development in New Zealand Programme of Action. The submitter seeks an early review of petroleum product specifications to improve air quality, and consideration of evaporative emissions from fuel storage and vehicle refuelling.

Submitter 127 agrees with a consistent national approach and that many issues are appropriately dealt with at a national level, but does not agree that national ambient air quality standards are appropriate to achieve the desired objectives.

Submitter 133 wants vehicle emissions and/or the effects of roading developments to be comprehensively addressed.

Submitter 139 wants the objectives to include evaluating whether the proposed standards are more cost effective than the current guidelines and enhance regulatory efficiency. The submitter wants the standards to exclude the provision for imposing more restrictive standards by regulatory authorities because the approach does not create a level playing field.

Submitter 140 supports the objectives but is not sure that the proposed implementation of the standards will achieve them. The submitter requests that consideration be given to the apparent inconsistency between the stated objectives and the flexibility provided by the provisions of section 43B of the RMA in applying national standards. Where a council intends to impose a more restrictive limit, then section 32 of the RMA must be rigorously applied.

Submitter 151 is concerned that standards that can be re-interpreted to take account of local circumstances will not achieve the stated objectives, and wants the discretion of councils to apply different standards to different areas to be removed.

Submitter 155 comments that unless there are provisions in the regulations to control the ability of councils to set stricter standards then none of the objectives will be achieved. The submitter does not want councils to have the ability to interpret standards on a local basis without very good reason.

Submitter 160 comments that the standards run counter to the RMA, which was couched to take account of different conditions in different parts of New Zealand. The submitter considers there to be no evidence that the current air quality guidelines are not working, while the national standards limit flexibility and force an emphasis on industrial and other significant point sources, with no attempt to control motor vehicle emissions. The submitter also comments that the period allowed for submissions is unacceptable.

Submitter 161 is concerned that regional councils will be able to set their own limits, which does not promote consistent and efficient air quality management, and considers that the approach should be consistent in every region unless clearly justified by local conditions. The submitter is concerned that the standards will not increase regulatory efficiency because consents will still be considered in the current manner. The submitter is also concerned that the standards target industry and therefore do not create a “level playing field”, and requests that the standards address the difficulty of enforcing discharge limits for non-industry emitters.

Submitter 161 is concerned that existing resource consents will be reviewed as a result of the standards and that this re-litigation and amendment represents a potentially significant cost that is inconsistent with the aims of greater efficiency and certainty.

Submitter 167 requests that the standards not proceed without first showing that the current systems for granting resource consents are not working. The submitter comments that the one-size-fits-all approach to ambient standards is not effects-based given that the urban situation is different to that of rural communities.

Submitter 168 requests that the levels in the proposed standards be reduced to 10% or more than the level that would have occurred naturally in the absence of human activity; that the number of allowable exceedances be zero, and that the maximum limit of exceedances be not more than 10% of the allowable concentration.

Submitter 169 supports the general approach described in the objectives but is concerned that they are generally directed at industry and there is nothing that aims to reduce emissions from activities not covered by resource consents.

Submitter 174 is concerned that the standard does not address motor vehicle emissions or fuel quality and seeks the inclusion of practical measures to improve vehicle emissions. The submitter also seeks clarification on whether regional rules can impose more stringent ambient air quality requirements than national standards, and clarification of the status of the Ministry for the Environment’s *Ambient Air Quality Guidelines 2002* (the 2002 Guidelines) under the proposed standards.

Submitter 175 supports the concept of national environmental standards because they will provide an enforceable regulatory mechanism for air quality management. The submitter is, however, concerned about the proposals in their current form, believing further work is required and would like them to be re-notified when complete to provide an opportunity for further comment on more detailed wording. The opportunity to comment on the full draft wording rather than the Ministry’s intentions will help avoid future conflict and difficulties with implementation.

Submitter 178 wants a minimum mercury emission level to be set for coal-fired power stations similar or better than the proposed US standard.

Submitter 180 considers that there should first be a national policy statement process to determine whether there are air quality problems needing national measures. The submitter is concerned that the document focuses on the management of industrial emissions to achieve air quality standards when the major sources are home heating and vehicles. The submitter does not support a national approach to dealing with industrial consents or air quality management and considers that local authorities are better placed to decide the level of resources for ambient monitoring, inventories and modelling.

Submitter 181 is unhappy with the public consultation process and wants the proposed standards to be withdrawn. The submitter is concerned that the environmental impacts from infrastructure and electromagnetic radiation are not addressed in the standard.

Submitter 183 opposes the standards in their current form because they have the potential to impose prohibitive compliance costs for monitoring, consent processes and mitigation.

Submitter 184 asks that the standards be introduced as part of a policy package that includes provision for economic incentives, monitoring, and enforcement of air quality plans. Any government funding of councils should be conditional on councils being committed to air quality plans and polluter-pays mechanisms that can achieve compliance with the standard by 2009.

Submitter 185 wants special incentives and clean air subsidies to be provided to those in the South Island because they do not have access to reticulated LPG, and the use of coal is more widespread.

Submitter 199 supports the national environmental standards as proposed.

Submitter 200 supports the aim of a level playing field and providing consistency and certainty.

Submitter 201 states that the standards are inconsistent with the aim of creating a level playing field because they will unfairly penalise economic and growth prospects in some areas. The submitter argues that the standards will not provide consistency and certainty because they allow local authorities to impose more stringent restrictions, and the submitter wants these powers to be removed.

Submitter 201 requests that the entire standards process be halted because:

- no cost–benefit analysis has been published
- motor vehicles are often the largest source of pollutants and should be brought into the standards framework
- new developments may be forced into relatively pristine areas when they are more appropriate in industrial areas
- standards should be designed to take account of different exposures in different land-use areas, such as an eight-hour exposure in an industrial area versus a 24-hour exposure in a residential area

- a more explicit risk-based approach would better facilitate standards development
- there is no consideration of how local authorities should allocate the capacity to new developments where ambient air quality is below the limits
- it is unwise to create an enforcement regime when from the outset there is doubt that compliance can be achieved.

Submitter 203 opposes the standards in their current form because they are arbitrary and a four-year timeframe for compliance is unrealistic and unachievable. The submitter considers that there has been inadequate consultation and limited opportunity to be heard. The submitter requests that standards be developed that are based on a robust analysis, that a cost–benefit analysis be made available for comment; and that where there is a proposed plan in place it be allowed to be implemented without arbitrary changes being imposed. Submitter 203 also asks that the process for developing the standards be reviewed so as to be inclusive, with an opportunity to be heard.

Submitter 205 wants financial incentive schemes for educational facilities to be made available to allow them to use clean-fuel heating options, and school boards educated on the risks of air pollution. The submitter also asks that funding be provided for monitoring point sources and air quality at schools.

Submitter 206 supports the standards and wants them to be realistic and achievable for the community.

Submitter 208 supports the objectives but has concerns that the application of the standards will not achieve the objectives or provide any benefits not already provided in the 2002 Guidelines. While the standards have the potential to achieve national consistency, the ability of councils to provide stricter standards undermines the advantages of having national standards. What is more, the requirements to consider the potential cumulative effect may create uncertainty as to how the standards can be achieved and what mitigation would be required.

Submitter 208 is concerned that resourcing issues within councils have not been addressed by the proposed standards, and that it is these issues that have resulted in the 2002 Guidelines being poorly applied. The submitter wants the standards to be better understood and applied than the 2002 Guidelines.

Submitter 208 queries whether the standards will actually create regulatory efficiency gains and environmental improvements because the standards and their application are largely based on the current regime, and technical and financial resourcing is not addressed. The submitter asks that:

- councils not be given the ability to set stricter standards
- greater understanding of the resourcing issues faced by councils and the implications this will have for the efficient application of the standards
- the implication of the standards on a review of consent conditions be further investigated
- evidence be provided on the benefits of the proposed standards over and above the existing 2002 Guidelines.

Submitter 208 notes that there is no review period associated with the standards and considers that a 10-year review period is appropriate.

Submitter 209 is concerned that the standards address only fixed sources of pollution, focusing on commercial enterprises, but do not address motor vehicles, and comments that this is not a level playing field.

Submitter 213 supports the creation of certainty and a fair, level playing field throughout New Zealand, and is opposed to the approach of allowing regional plans to contain provisions that are stricter than the standards because it is contrary to the objectives. The submitter asks that local government not have the ability to interpret national standards on a local basis.

Submitter 221 wants priority to be given to including road discharges from vehicles in the standards, either under point sources or a similar classification, so that regulations can be applied.

Submitter 223 requests that the standards not preclude the opportunity to use fire as a land management tool in forestry and farming.

Submitter 224 supports the development of national standards but is concerned at the timeframe to have standards in place by mid-2004 because:

- of co-ordination with other government policies, particularly the Vehicle Emissions Policy
- implementation details are not sufficiently well developed
- the mechanisms do not allow for an integrated approach of point and non-point sources (also supported by submitter 125)
- application of the standards to existing consents and designations needs to be clarified (also supported by submitter 125)
- of the inconsistency in air quality monitoring approaches and data availability
- enforcement appears to be focused on punitive action rather than achieving tangible improvements within a reasonable timeframe.

Submitter 224 is concerned that the proposed standards note there are implications for national policy making but guidance on how national, regional and local policies may be co-ordinated is not provided. The submitter seeks more detailed discussion on how the standards and vehicle policy interact.

Submitter 226 supports the aim of having a package of mandatory “bottom-line” regulations that apply nationally to achieve the objectives, but comments that the standards need to be soundly researched, consistent with existing regional plans and address motor vehicles. The submitter questions the research basis for the standards and considers that they should be based on high-quality, defensible and transparent scientific research.

Submitter 226 also seeks explicit recognition of the fact that regional guidelines/standards for air quality and particular activities already exist, and that guidance needs to be provided on how the different standards will interact in practice.

Submitter 226 is concerned that implementation fails to address motor vehicle emissions and considers that the objectives in section 1.3 will not be met until fuel quality and motor vehicle emissions are dealt with. The submitter is concerned that the standards continue to focus on point source emissions and that the industrial sector will be penalised as a result of the standards when they are already well controlled.

Submitter 227 supports the development of national environmental standards for air quality but is opposed to them in their current form because there is no visible information to justify the proposals. The submitter is concerned about the unexplained departure from the 2002 Guidelines and considers that the three- to four-year timeframe for implementation is unachievable. The submitter is also concerned that the standards are not equitable and asks who will bear the cost? The submitter asks that standards be developed based on visible robust analysis so that they are not arbitrary, and that plans be prepared at a regional level to implement the standards.

Submitter 227 is concerned about the level of consultation and asks that the consultation process be reviewed to be more inclusive and provide an opportunity to be heard, consistent with the processes under the RMA.

Submitters 228 and 229 support the standards and the four-year timeframe for implementation.

3.2 Ambient standards

Air Quality Technical Report Number 46, Section 2.1, contained the following summary of the proposed ambient air standards:

The key ambient air pollutants of concern are carbon monoxide, particles less than 10 microns in diameter (PM₁₀), nitrogen dioxide, ozone and sulphur dioxide. The proposal sets out a two tiered approach with a level set at the current guideline level with a specified number of times that the standard limit can be exceeded per year and an upper maximum limit that the above exceedances cannot exceed even once.

General issues raised in submissions relating to the standards themselves and how they will be implemented and enforced are summarised below.

Submitters 3, 121, 123 and 206 support the proposed ambient standards and/or their intent. Submitter 123 asks that they be retained as proposed.

Submitters 6, 163 and 174 are concerned that the standards have not been developed according to health-based criteria and that they do not reflect well-debated, expert, national and international best practice and knowledge. The submitters' view is that the standards ignore primary health implications and are inconsistent with the stated objectives. The submitters do not support the concept of an absolute maximum for breaches, or the number of allowable breaches. This is largely because no justification has been provided for the values, they do not appear to have been set on a health basis, and the approaches are inconsistent between pollutants.

Submitters 6, 163 and 174 are concerned that the proposed standards include only one averaging period for each pollutant and that no justification has been provided for the period selected. The submitters seek averaging periods for short and long-term exposures to be included in the standards (where relevant) for health effects, as per the 2002 Guidelines. The submitters are concerned that the standards do not support the key principles of the 2002 Guidelines, which are:

- not polluting up to guidelines/standards
- maintaining air quality where it is below guidelines/standards

- enhancing air quality where it is approaching or exceeding guidelines/standards
- guidelines/standards are minimum criteria and should not be exceeded.

Submitters 6, 75 and 174 want the status of the 2002 Guidelines to be clarified, particularly regarding contaminants not included in the proposed standard. The submitters also seek clarification regarding contaminants that were identified in the 2002 Guidelines as requiring review. Submitters 6, 163 and 174 seek a commitment to developing a PM_{2.5} standard within two years.

Submitter 26 is opposed to the ambient standards because they are assumed to apply to the outdoor environment when we spend 85% of our lives indoors.

Submitter 28 seeks guidance for the protection of humans from fluoride, including guidelines for longer periods of exposure such as 300 days per annum. The submitter also seeks a guideline stating the maximum allowable fluoride or other chemical concentrations in soil for vegetable gardens.

Submitter 31 supports the standards because they are based on existing guidelines that have been extensively reviewed. The submitter asks that the concentration limits be adopted as the “bottom line” in terms of ambient air quality and that regional councils may set more stringent limits to maintain and enhance air quality (ie, they are not to pollute up to levels).

Submitter 33 is opposed to the ambient air standards on the basis that if they are interpreted literally they will effectively stifle business growth in Christchurch.

Submitter 37 requests that the Ministry investigate alternative ways to achieve the standards other than command and control, and in particular asks that there be a range of market-based approaches that are effective and efficient. The submitter wants the standards to be rewritten to reflect the importance of implementing and achieving the standards in the most efficient way.

Submitter 75 supports the development of national ambient air quality standards but is opposed to the standards in their current form. The 2002 Guidelines state that “the main goal for sustainable air quality management is to maintain air quality where it is good and to improve air quality where it has been degraded and is affecting people’s health”. The submitter is concerned about the move away from the Guidelines for PM₁₀ and NO₂, with no accompanying reasoning. The submitter is concerned that there is no underlying justification of the number of allowable exceedances, which vary from the Guidelines. The Submitter 75 wants the values in the standards to be based on the 2002 Guidelines because they were developed on the basis of a process of consultation and “well-debated, expert, national and international best practice and knowledge”.

Submitter 75 asks that exemptions be provided where the most probable source was non-anthropogenic, or for an event such as Guy Fawkes, and comments that exceedance allowances should be set on the basis of an analysis of the costs and benefits of the impacts of such exceedances. The submitter also wants the sampling frequency to be factored into the standard-setting process, such as the one-day-in-six high-volume method.

Submitter 75 is concerned about the relationship between the maximum limit and concentration limit and which value actually represents the standard, and notes that it is also unclear why all contaminants have not been assigned a maximum limit. The submitter requests that:

- evidence be provided in support of the proposed standards and number of exceedances, with a comprehensive analysis of all relevant costs and benefits
- the maximum limits be removed
- the regulations provide very clear methods of monitoring for compliance
- a method for defining an air shed be provided
- no exceedances be allowed for, and that instead a realistic phase-in approach be developed on a regional basis
- the values and averaging periods for contaminants included in the standards be the same as those for the 2002 Guidelines
- the standards provide for maintaining and enhancing existing air quality, including areas of good and excellent air quality
- ambient standards be further developed in consultation with regional councils, including identification of the costs and benefits.

Submitter 85 feels unable to support or oppose the standards because there is a need to clarify the key elements, including:

- where the ambient standards will apply (ie, the nature of the sites to which ambient standards apply)
- how and where ambient monitoring sites are to be established to ensure consistency and accuracy
- how the ambient standards relate to non-point sources, particularly because motor vehicle emissions are not directly regulated by regional councils and regional plans do not form a regulatory means of vehicle emission control
- how the ambient standards relate to land-use planning and designations.

Submitter 85 asks that transitional actions, targets and responsibilities be specified, and considers the timeframe in which ambient standards are to be achieved needs to reflect the long lead times of measures to improve air quality. The submitter wants the standards to state that vehicle emissions are non-point sources, and believes that further policy development and clarification need to occur if the standards are to apply to non-point emissions.

Submitters 88, 91, 117, 153, 167, 170, 172, 180, 215 and 219 are opposed to the standards and consider that the standards should not proceed until:

- the 2002 Guidelines are not working and compulsory standards are needed
- the costs and benefits to a range of industries in each region have been assessed at a local level
- there is a reasonable period of consultation.

Submitter 90 supports the introduction of the specified number of exceedances and an upper maximum limit, and considers that the specified exceedances resolve ambiguity in the 2002 Guidelines as to the meaning of the 99th percentile.

Submitter 93 wants the ambient standards to be amended to remove discretion for local government to apply the standard in response to local conditions because a standard capable of re-interpretation will do little to meet the objectives of consistency, certainty and a level playing field.

Submitter 98 seeks an extension to the timeframe within which the ambient standards come into force because of the costs involved in meeting the standards in a short timeframe.

Submitter 109 supports the ambient standards and notes that they do not preclude a region from taking a more restrictive approach where the local conditions warrant it.

Submitter 117 wants the application of the standards to be deferred until the actions outlined above have been taken.

Submitter 119 wants the principles behind the justification and incorporation of compliance criteria in the ambient standards to be made clear (ie, the averaging periods selected and the inclusion of maximums). The submitter seeks clarification as to why no annual averaging period has been used in the ambient standards, and, if necessary, that this be provided.

Submitter 127 is opposed to the establishment of ambient air quality standards and considers that there has been insufficient analysis of the legal implications and their workability in practice. The most appropriate mechanism for achieving better air quality is a combination of national standards, as proposed for some emissions, and the development of robust methodologies for specifying requirements for discharges to air in regional plans.

Submitter 130 considers that there should be a specific exclusion for emergency and network load-shedding generators, because it would be nonsensical for national standards to prevent the use of emergency generators during a power crisis and network load shedding can avoid costly upgrades of main transmission lines. Alternatively, specific standards could be set to provide a permitted activity for modern, high-efficiency diesel generators.

Submitter 133 requests that the following omissions be addressed: benzene, 1,3-butadiene, benzo(a)pyrene, formaldehyde, metals (lead, mercury, chromium and arsenic) and PM_{2.5}.

Submitter 136 considers that there should be a phased approach to the standards to allow for the permitted number of exceedances to reduce over time as technologies improve. The submitter asks that forecasted traffic growth be factored into projected emissions when considering the potential for exceedances in an air shed.

Submitter 145 considers that the use of the term “maximum limit” to be confusing and queries which criteria is the standard: the maximum limit or the standard limit? Submitter 145 wants the maximum limits to be removed.

Submitter 153 opposes the standards because they would have major impacts on discharges that have particulate matter emissions and would have negative consequences in areas that exceed the standards. The submitter asks that standards only be imposed where it can be shown that local planning is not working, and requests that any standard be grounded in a robust cost-benefit analysis and any changes to the proposal include adequate consultation consistent with the RMA.

Submitter 155 considers that all the proposed standards should be demonstrated to have integrity by the competent application of scientific and engineering knowledge in respect of the assessment of environmental effects, and full peer review. This is not the case for the majority of the information presented in the proposed standards.

Submitter 162 comments that there is a lack of clarity about where the standards will apply and seeks a definition as to where the standards apply, or a mechanism whereby regional councils can determine this.

Submitters 161 and 201 support the proposed standards being applied to the air outside houses and buildings and beyond the property boundary. The statement “where people may be affected” should be clarified to ensure that the boundary is not the de facto measurement point. Wording such as “where people live or gather outside the boundary” is preferred, and the use of “affected” should be changed to “exposed for the periods relevant for each pollutant”.

Submitters 125 and 224 request that where the standards apply should be clarified to specifically address ambient air quality, and that the standards distinguish between ambient monitoring sites and “hot spot” sites.

Submitter 175 is concerned that the wording “the standard only need apply where discharges affect where people live or gather outside that site from where the discharge originates” is very vague.

Submitter 183 requests that:

- all significant sources be accounted for, including vehicles
- a clearer indication of the policy underpinning the standards be provided
- consideration be given to extending the four-year timeframe for implementation
- incentives for non-profit organisations to reduce emissions be considered
- certainty be provided as to whether the standards are primarily for the industrial sector or for broader application
- controls over school boilers or other combustion processes as a result of the standards be not unduly restrictive
- the standards be technically and environmentally sound, as well as economically and socially viable
- the role of tangata whenua and the Treaty of Waitangi be articulated.

3.3 Implementation

Air Quality Technical Report Number 46, Section 2.2.1, contained the following overview of the implementation of the standards:

Regional councils, unitary authorities, territorial authorities and central government agencies will all need to play a role in developing and implementing policies, plans, strategies and monitoring programmes to achieve the standards within four years of their coming into force.

There are two main mechanisms for managing emissions to air and their impacts:

- *regional planning (such as the development of regional air plans)*
- *point source discharge management through resource consent decision-making.*

Other methods such as public information campaigns, non-regulatory action plans and financial incentive schemes are also potentially effective ways of reducing emissions to achieve the standards.

Monitoring is needed to determine areas where ambient air quality does not comply with the standard and where emissions reduction strategies and measures are needed.

Central government agencies will also need to consider how national policies contribute to achieving the ambient standards.

Submissions received in relation to the implementation overview are summarised below.

Submitters 6, 163 and 174 want the methods of implementation required by regional councils to include:

- preparing implementation plans (submitted to the Ministry and made available to the public) which demonstrate how the standards will be met by a certain timeframe
- attainment reporting requirements
- the actions to be taken if the standards are breached
- other necessary transitional arrangements.

Submitters 6, 163 and 174 ask that the timeframes be either:

- absolute and consistent nationally, provided the timeframe is realistic and achievable for all regions, or
- negotiated individually with regional councils, to encourage compliance sooner where possible.

Submitter 35 is concerned that the timeframe is not practicable and notes that 10 years is proposed by Environment Canterbury.

Submitter 90 considers that four years for developing and implementing policies, plans and strategies is arbitrary and too short. However, because existing plans are already consistent with the 2002 Ambient Air Quality Guidelines the submitter considers that the timeframe is acceptable.

Submitters 97 and 164 comment that achieving the standards within three to four years is unrealistic and that the economic and social costs are too great in relation to the benefits. The submitters ask that a more realistic goal of 10 to 15 years be set to allow for the required monitoring and development of strategies.

Submitter 114 is concerned that the ambient standards will preclude the use of stand-by diesel generators at a time of an actual or potential national electricity shortage. The submitter requests that consideration of the authority of the Electricity Commission to call on reserve generation be given in the standards, and that additional allowances be made in the standards in the event of actual or potential electricity shortages.

Submitter 115 requests that heritage boiler plants be excluded from the ambient air quality standards because heritage plants run very few days per year, and because fitting air pollution controls to historical plant would be historically incorrect, be high cost and require specialist knowledge.

Submitter 116 broadly supports the proposed ambient air quality standards and comments that, given the very short timeframe, no doubt there will be future opportunity to examine and discuss the detail of the standards.

Submitter 118 is opposed to the methods to be used to implement the proposed ambient standards because:

- the focus is on limiting industrial point source emissions, which is inconsistent with data indicating motor vehicles and domestic heating are the primary sources
- there will be economic and social consequences in areas with existing air quality problems, and a detailed cost–benefit analysis is therefore needed.
- ambient air quality issues are already being addressed in regional plans in a more equitable and practical manner
- there has been insufficient research and consultation.

Submitter 119 does not support the four-year timeframe because of the additional cost from expanding and advancing monitoring programmes, and asks that implementation be extended to 10 years to alleviate the cost burden.

Submitter 120 does not support the three-to-four-year timeframe given for implementation because of the costs and timeframes associated with gathering quality data, and undertaking the analysis required for their successful implementation.

Submitter 122 considers that the four-year timeframe will place unreasonable demands on industry because industry is easily identifiable and relatively easy to control compared to non-point sources.

Submitter 127 is opposed to the four-year timeframe for compliance because it does not allow time for the council and community to debate the issues of costs and benefits related to the various management options available for improving air quality. The timeframe would cause significant difficulty due to the staff, financial resources and information needed to commence plan preparation immediately. The submitter asks that timeframes be discussed on a council-by-council basis.

Submitter 127 is concerned at the framework for implementation because, on the one hand, monitoring data is needed and air sheds need to be defined in legally robust terms, yet, on the other hand, there is imprecision in setting such boundaries, measuring levels and identifying contributors. As a result the standards are unlikely to be enforceable. Funding would enable councils and communities to meet air quality targets much sooner.

Submitter 154 does not support implementation of the standards in their current form, mainly because the timeframe is unachievable in Nelson. The submitter is concerned at the costs of achieving the standards within the timeframe, as well as the limitations of the planning framework to be able to implement the required changes in the timeframe. The submitter seeks:

- removal of the four-year compliance requirement
- the inclusion of negotiated timeframes
- a partnership by central government to support councils
- a fund to assist councils with the cost of implementation.

Submitter 156 is opposed to the timeframe for implementation of three to four years, and wants a transitional regime to be incorporated for implementing the standards, with longer timeframes for areas that do not meet the standards.

Submitter 156 is concerned that emission inventories provide information on overall emissions in an air shed but not the relative contribution in a local area. More sophisticated monitoring techniques will be needed to determine site-specific source apportionment, which is a significant additional cost for resource users.

Submitter 169 considers that under the standards the onus is on councils to determine through desk-top analysis and/or monitoring which places may be exceeding the ambient standards, and that industry become involved only if it is a major contributor when a standard is exceeded.

Submitter 176 considers that the methods of implementation are inconsistent with the objectives set out in section 1.3.

Submitter 184 considers that it may be difficult to achieve the standards within four years and requests that councils be given more tools to achieve compliance, such as:

- charges on permitted activities (eg, solid-fuel heaters)
- a system of tradeable allowances
- emission charges relative to the amount and toxicity of emissions, to fund ambient monitoring
- road-user charges for using specific roads at particular times of the day.

Submitter 206 considers that the timeframe of four years may be too short, particularly when the primary source is domestic fires.

Submitter 221 supports the timeframe provided for compliance and the requirement to publicly notify exceedances.

Submitters 210 and 215 are opposed to the standards on the basis that they will impact on the operations of coal users and reduce industry's ability to utilise a low-cost energy source needed to keep companies competitive in the export market.

Submitter 221 considers that the standards should discuss the role of transport in contributing to pollution.

Submitter 224 is concerned at the four-year timeframe for the standards to come into effect because it is inconsistent with the timing of the Vehicle Emission Policy, which is not anticipated to commence until late 2006, and any significant reductions in emissions from the fleet will occur some time after this.

Submitter 224 is concerned that there are only two mechanisms identified: regional plans and the resource consent process. Submitters 125 and 224 consider that these mechanisms do not adequately provide for an integrated approach to air shed management that accounts for non-point source contributions such as motor vehicles, small commercial activities and domestic sources. The submitters want the standards to clarify the mechanisms to address all significant sources to achieve the standards.

Air Quality Technical Report Number 46, Section 2.2.2, contained an overview of regional planning and requirements placed on councils:

Regional Plans developed by councils under the Resource Management Act 1991 will play a key role in achieving the standards.

Councils may need to undertake a strategic review of their management controls, including plans and policy statements, to determine whether existing controls need to be changed or new controls added.

Regional councils will be required to publicly notify exceedances of standards.

Potential enforcement action against councils that are not making progress towards achieving the standards will be the same as action that might be taken if any party is not fulfilling its functions and duties under the RMA.

Submissions received in relation to the regional council's role are summarised below.

Submitter 95 comments that the Canterbury Natural Resources Regional Plan should be allowed to proceed through the remaining stages without changes imposed by the standards, in particular the timeframe for compliance at reasonable cost, to ensure that hardship is avoided.

Submitters 6, 163 and 174 are concerned that the standards are likely to undermine the objectives, policies and rules in regional plans, which have largely been based on the 2002 Guidelines. The submitters are concerned that councils will unnecessarily be challenged on these requirements and that the standards will provide a lower level of air quality than is currently required. The submitters seek confirmation that regional councils can adopt more rigorous ambient air quality targets, and that the standards do not inhibit councils from doing this.

Submitter 95 requests that:

- a method for achieving the ambient standards be determined locally, taking into account local circumstances
- time be allowed to introduce changes via an RMA planning process
- where the extent of the changes needed to achieve standards is significant, transitional arrangements be allowed to ensure the alignment of plan rules with the capacity of utility operators to meet the increased demand for electricity; and the standard of insulation for the majority of homes in the area.

Submitter 113 comments that the standards will supersede regional plans rather than allowing a council to determine the most appropriate methods. Given the level of uptake of the 2002 Guidelines the submitter queries why the standards are required.

Submitter 121 asks that the standards clarify how the Ministry will enforce councils to progress the achievement of standards.

Submitter 122 is concerned at the potential confusion over whether standards in plans would have primacy over the national standards.

Submitter 127 seeks clarification on what the standards intend in relation to enforcement action against a council, under what circumstances such action might be taken, and the likely nature of such action.

Submitter 136 considers that the requirement to notify breaches should only occur where breaches are continuing, because one-off reporting would serve very little purpose from a public health perspective.

Submitter 154 is opposed to the potential for enforcement action against a council for not achieving the standards because councils are not responsible for discharges in the same way that individual dischargers are, and there is no detail as to what constitutes “doing enough”. The submitter asks that this section be deleted. The submitter also considers that land- use decisions are important for managing air quality and wants the section to be amended to specifically encompass the role of district planning.

Submitter 156 is opposed to the approach of requiring councils to publicly notify exceedances because the allowable exceedance limit is unrealistic and impracticable, and notification of these could add significant delays and costs to the testing required to comply with consent conditions.

Submitter 162 requests that enforcement provision be developed in the RMA or regulations so that councillors and council staff are subject to similar penalties as those who conduct other activities under the RMA.

Submitter 169 considers that industry emissions are already effectively managed through the consent process and is concerned that there is no specific emphasis on managing emissions such as those from vehicles.

Submitter 220 comments that a timeframe of four years for agencies to develop and implement policies, rules and strategies to achieve the standards is too rigid.

Submitter 221 suggests that transport should be addressed in plans in relation to various air sheds in urban areas. The submitter supports the timeframe provided for compliance and the requirement to publicly notify exceedances.

Submitter 206 is opposed to the notifying of exceedances because of the additional cost involved. The submitter is concerned that they may be subject to enforcement procedures as a result of non-compliances, which may be outside their control (eg, territorial authorities issuing building permits for substandard appliances). The implications of the enforcement regime need to be thought through and a role for territorial authorities added into implementation and enforcement.

Air Quality Technical Report Number 46, Section 2.2.3, contained provisions relating to point source discharge management:

Compliance with the ambient standards will need to be determined through assessments for resource consents and compliance monitoring. Assessments typically involve atmospheric dispersion modelling and sometimes ambient monitoring ... to demonstrate that the discharge will not cause the standard to be exceeded, either on its own or cumulatively.

Compliance with the standard applies to locations where the discharge may affect people over the relevant averaging period.

New discharges and consent renewals in areas where existing ambient levels are within the standard

Permits can only be granted for new discharges where existing ambient levels are within the standard and if the discharge does not cause the standard to be exceeded, either on its own or cumulatively in combination with emissions from other existing sources.

New discharges and consent renewals in areas where existing ambient levels exceed the standard

In areas where existing ambient concentrations do not comply with the standard, a new discharge or an existing discharge up for consent renewal should either:

- *contribute only an insignificant amount of emissions or*
- *work with other emitters to reduce emissions, and then contribute an emission that will still result in an overall decrease in emissions and a reasonable trend downwards towards the standard.*

Enforcement

An 'offence' occurs when a point source discharge is the main source of pollution causing an exceedance of the maximum limit or number of allowable exceedances. Where there is sufficient evidence to show that this has occurred, enforcement action should be taken. A council can issue an enforcement order and take action in accordance with provisions in the RMA.

Emissions testing and dispersion modelling

Reasonable judgement will guide assessments and the need for modelling or measurement to show whether the discharge will meet the standard.

Submissions received in relation to point source management are summarised below.

Submitter 1 is concerned that the proposal that “consents cannot be granted where concentrations in air sheds already exceed the standards” will apply to existing activities because existing activities are treated as new discharges when applying for a replacement consent. The submitter requests that:

- how an air shed is determined be clearly defined
- the standard clarifies whether it applies to all contaminants, not just the ones not being met
- a definition of negligible be provided
- the standard clarify whether an application for a renewal before a consent expires is the same as after it expires.

Submitter 2 comments that the costs to industries will be dependent on the definition of “negligible”. In particular, modelling will be required where it currently isn't, and more in-depth models with better meteorological data will be needed, bringing about the possibility of more arguments about the techniques used at hearings. The submitter would prefer an approach that included emissions standards to increase certainty and reduce the need for lengthy hearings.

Submitter 3 supports the position that in areas where guidelines are exceeded there should be agreement between local authorities, industry and the community about the rate at which change will be required to meet a reasonable trend downwards. The submitter is concerned that industry in urban areas will be required to install increasingly expensive control equipment to mitigate relatively minor emissions. The submitter asks that the standard not allow councils to apply blanket mitigation requirements on industry and ensures that individual circumstances are taken into account when mitigation measures are required.

Submitter 3 wants the standard to recognise that dispersion modelling is not an appropriate assessment tool for non-point sources such as quarries, and that compliance with best practice guidance should provide sufficient information to determine whether monitoring is required.

Submitter 4 asks that the standards and any additional controls not be applied to existing resource consents, but that if this is necessary, or additional controls should be applied over a reasonable, staged timetable.

Submitter 5 queries whether standards will be applied to applications lodged prior to their adoption in regulation and asks that resource consents be determined by the rules applying at the time of lodging the applications. The approach may be inappropriate if it encourages a proliferation of geographically sporadic industry rather than recognising that certain industries have certain effects and are best grouped in clusters.

Submitters 6, 163 and 174 consider that the proposed approach appears to force development into rural and residential areas with less degraded air quality, and consider this approach to be contrary to land-use planning principles and the establishment of air quality management areas in the Auckland region's proposed air plan. The submitters request that the appropriateness and practicalities of applying the approach to industrial emissions and resource consents be considered.

Submitter 35 is concerned that the standard appears to relate to adding the maximum modelled level to the maximum background level with no interpretation of whether the two events may coincide. The submitter seeks clarification of:

- who defines the areas where existing levels are within the standards and where levels must be reduced, the extent of the areas, the reduction required, and if the source will interact with these levels
- the background levels
- whether it is realistic to ask other sources to reduce output when consent costs may be incurred for modifications
- whether reduction by industry will have any significant benefit.

Submitter 36 supports the concept that new discharges can only be approved if the discharge does not cause the relevant standard to be exceeded and that there be negotiated solutions with other emitters.

Submitter 75 is concerned that not allowing new discharges in areas where the standards are already exceeded could push development into more rural, less-contaminated areas, and effectively allow a "pollute up to" approach. The submitter requests that consideration be given to a "maintain and enhance" approach for areas with good and excellent air quality.

Submitter 75 comments that it seems unfair to allow new motor vehicles and domestic burners in polluted areas but not new industry, and is concerned at the economic and social costs of such a policy. The submitter seeks clarification as to how industry will work with other emitters to reduce emissions, and who those emitters are.

Submitter 75 also asks that the ambient air quality standards not be applied to industrial point source emissions because determining compliance for individual point sources will be unenforceable. In particular, dispersion modelling and ambient monitoring are too uncertain and it is not possible to distinguish between the point source and background sources with the required level of confidence.

Submitter 93 requests that the potential for regulatory costs to increase be limited by allowing existing resource consents to expire as scheduled, and removing local government's discretion to reinterpret the standard.

Submitter 95 is concerned that industries wishing to locate in Christchurch will be driven outside the main urban area, which has the effect of potentially degrading air quality in new locations. Such a change in the location of industry would be contrary to land-use planning principles that seek to consolidate development, and would also increase transport demand. The submitter notes that industry will have difficulty "working with others" when the major source of air pollution is domestic.

Submitter 97 considers that the provisions for polluted air sheds are too restrictive and the economic and social consequences significant. The submitter wants the statement in relation to new industries in polluted air sheds to be deleted, and for regional councils to be allowed to decide the best way to implement the standards after carefully considering the economic and social wellbeing of the community.

Submitter 98 opposes the prohibition on issuing consents to new industries because there is little sense in prohibiting a new, clean industry when existing industries are working through compliance programmes to achieve higher standards.

Submitter 113 opposes the requirement that new activities be managed in the same manner as existing activities. The submitter comments that if the business has applied the best practicable option, they should not be disadvantaged due to factors over which they have no control. The economic costs of alternatives such as relocation do not appear to have been considered.

Submitter 113 is concerned about the effect of consent reviews creating uncertainty, which will have a flow-on effect on business investment. The submitter comments that the allowance for an "insignificant" amount of emissions is undefined and does not provide any certainty.

Submitter 118 is opposed to the methods because information on how emitters would work with other emitters has not been provided, and industrial development could be pushed into relatively unpolluted areas, which would not maintain air quality where it is already good.

Submitter 118 requests that:

- the standards not specifically apply to assessing industrial point source emissions
- more detail be provided on how standards will be implemented
- a further period of consultation and submissions be allowed.

Submitter 119 wants guidance to be provided on what is deemed to be an “insignificant amount”. The submitter also seeks guidance on the options available when industry is not a major contributor in an air shed where standards have been breached.

Submitter 122 considers the idea that new emitters could work with existing emitters to be naive because there is no financial incentive for existing emitters to reduce emissions to allow for a new entrant. The submitter is concerned that the standards are a potential trigger for councils to review consents, and that while this is a relatively easy step for them to take; the impact may be minor compared to reducing other sources.

Submitter 122 considers that assessing the relative contribution of emissions is difficult and may not easily be determined by dispersion modelling. There is uncertainty over what may cause the standard to be breached and what existing activities to take into account. The submitter feels that councils could be overly conservative in assessing potential emissions when assessing cumulative effects.

Submitter 131 comments that applicants will need to be certain what “insignificant” means, and notes that in consultation the Ministry have advised that this would mean that the discharge would “not interrupt the downward trend” and that regional councils would define the meaning regionally. The submitter suggests that it may be defined via the Environment Court, which will be a significant cost to applicants and could mean that industry will avoid such areas, with considerable social and economic impacts, despite the contribution from industry being low.

Submitter 134 considers that the management regime should provide for targeted improvement by existing consent holders to ensure there is scope for future users of the air shed.

Submitter 136 considers that the inability to review existing consents until the consent expires compromises the purpose of the standards to improve air quality. The submitter requests that provision be made to activate a more timely review of consents in circumstances where it is needed to achieve compliance with the standards.

Submitter 136 also considers that provision could be made for district plan amendments to restrict the development of sensitive activities in areas where air quality standards are breached. The submitter is concerned that it may be difficult to accurately relate overall air shed breaches to a specific plant unless all individual plants are monitored, and the ability to do this depends on the timeframe for review of consent.

Submitter 139 comments that the requirement to demonstrate “that the discharges will not cause the standard to be exceeded” implies no allowance for the inherent uncertainties in modelling. The submitter notes that demonstrating that discharges will not exceed the standard is impossible in marginal cases, and accounting for cumulative effects is inherently difficult if air shed concentrations are at times already high. The issues are:

- having sufficient ambient air quality data for evaluation purposes, and gathering such data is expensive
- the principal assessment tool is air dispersion modelling, which is predictive and relies on high-quality input data to achieve satisfactory predictions, while outputs require high-quality interpretation.

Submitter 139 wants the wording “will not” to be changed to “should not” to recognise that the assessment methods are uncertain, and wants the Ministry to further investigate the implications of considering cumulative effects in relation to the difficulty and expense of providing sufficient data across New Zealand.

Submitter 139 requests that the Ministry consider the implications of requiring a new discharge to contribute only an insignificant amount of emissions in air sheds that do not comply; and if the Ministry means by “insignificant” almost no emission, then this should be clearly stated so that industry is fully aware of the implications of the policy. The policy could be replaced by requiring a minimum level of control equipment.

Submitter 139 suggests that the phrase “work with other emitters” be better defined in terms of how this could be achieved, or that the requirement be deleted.

Submitter 140 wants the standard to ensure that individual circumstances are taken into account when mitigation measures are required.

Submitter 145 requests that section 2.2.3 be deleted, and suggests that the section be replaced with a section that allows regional councils to impose technology standards on industries that seek to locate in polluted areas. This approach is consistent with Environment Canterbury’s plan and the US EPA’s Maximum Achievable Control Technology requirements for non-attainment areas. The submitter is concerned that the current proposals place an unfair burden on industry, whereas the principal causes of air pollution in New Zealand are motor vehicles and domestic heating. Industry contributes only 7% of the emissions, yet the proposed standards will make it more difficult for industrial discharges to obtain new consents, while no controls on motor vehicles are proposed and the emission standard for domestic heaters is a permissive technology standard. The submitter is also concerned that the report fails to suggest in practical terms how industry might work with other emitters to negotiate reductions, and considers that this is not practical, particularly in relation to domestic and motor vehicle emissions.

Submitter 145 is concerned that the terminology lacks clarity, especially the use of the terms “insignificant” and “reasonable trend downwards.” The submitter considers that in addition to the uncertainty associated with “the main source of pollution”, source apportionment techniques are not sufficiently precise to measure compliance with a regulation.

Submitter 145 asks that if section 2.2.3 is not deleted, discharges be judged on their total annual discharge or the discharge that occurs when air pollution levels are high, rather than necessarily adding peaks to peaks. The submitter also wants more stringent controls placed on the activities that cause pollution problems – vehicles and domestic heating.

Submitter 145 comments that the need to undertake additional work to characterise background air quality could mean that industry faces expensive ambient air quality monitoring or complex air shed dispersion modelling studies, which is significantly more than is currently required, although there is no evidence that this is justified. This places an economic burden with no benefit to air quality.

Submitter 151 supports the approach of requiring emission reductions at the time of renewal of consents but would not support an approach that would override existing consents.

Submitter 154 wants the requirement to achieve “a reasonable trend downwards” to be retained.

Submitter 156 is opposed to the principle that a user with an existing resource consent that needs to be reviewed is treated as a new contributor, and considers it causes uncertainty for existing resource consents because consents may be declined or capital expenditure required that may result in plant closure.

Submitter 156 is concerned about the practicality of being able to demonstrate a “reasonable downward trend” given variability as a result of meteorological conditions. This could result in significant additional monitoring costs to demonstrate such trends.

Submitter 156 queries whether current data on ambient air quality are adequate for councils to make decisions on resource consents and considers that data for NO₂ and SO₂ are generally inadequate. The submitter notes that high SO₂ and NO₂ in one location may not necessarily mean there is an ambient air quality issue and there needs to be a clear definition of what is meant by “ambient air quality”. The submitter requests that the areas where ambient air quality is exceeded be given better geographical definition.

Submitter 160 is concerned that standards in Christchurch are exceeded largely due to domestic heating, which is being progressively addressed, and for this to impact on the granting of a consent is not equitable and would not be in the best interests of the community.

Submitter 166 is concerned that high pollution levels may be caused by factors completely outside industry’s control, such as heavy traffic flows, and that negotiation with emitters in this case would be difficult. The submitter requests that what constitutes an “insignificant” emission be defined. The submitter wants emission levels (technology based) to be defined within the standard, and consents to be granted if they comply with the emission standard regardless of background air quality.

Submitter 166 queries the application of the ambient standards and asks that they be made clear and unambiguous. For example, if CO is to be discharged in an environment with SO₂ breaches, will negotiations to reduce SO₂ still be required for the new source? The submitter requests that the standards clearly be applied on a species-by-species basis.

Submitter 169 supports the concept of assessing contaminants “where people may be affected” and that this may be beyond the property boundary. The submitter is concerned, however, that industry may be required to further reduce emissions in addition to existing controls before emissions from other sources such as residential sources are required to, and seeks more emphasis on the control of these sources.

Submitter 169 considers that it may be difficult to “work with other emitters to reduce emissions” (eg, where the main source is vehicles), and considers this to be an unreasonable expectation. The submitter requests that the standard include a commitment from councils to work with both industries and communities to reduce emissions.

Submitter 171 requests that in regions where the pollution levels are higher, local authorities not be allowed to impose stricter emission levels than are practically and economically achievable. The submitter wants consideration to be given to individual circumstances in areas where background emissions are higher than the standards.

Submitter 171 asks that definitions used in the standard make it explicit that the standard applies to all significant sources of pollutants – not just significant industrial point sources – and that the standards make it explicit that all sources of pollutants within an air shed must contribute equally to any reduction. The submitter requests that if new industry wishes to establish in an area and demonstrates that it is using the best practicable option (BPO) or best available control technology (BACT), it should not be disadvantaged when pollution in the air shed exceeds the standard, particularly where existing industry is not using BPO or BACT.

Submitter 175 notes that the meaning of the term “insignificant” is uncertain, and requests that a definition be given of what “insignificant” means in relation to new emissions. The submitter asks that regional councils be given the ability to disallow new resource consents because of cumulative adverse effects even though the individual adverse effect may be “insignificant”. The submitter also asks that the standard clarify the methods that will be used to promote emitters working together to reduce emissions.

Submitter 175 wants the standard to be drafted to ensure that regional councils can review resource consents if necessary to ensure the standards can be met in air sheds where the standards are breached.

Submitter 175 requests that guidelines be developed in consultation with regional councils on how decisions will be made on the dischargers that have priority when renewing resource consents or processing new consents in an air shed that is already fully allocated.

Submitter 176 seeks clarification of what constitutes an “insignificant effect” and “a reasonable trend downwards”. Guidance is needed on how to assess the significance of a discharge and how to consider discharges from a non-related sources that contributes to a reduction. The submitter considers that criteria are needed that allow authorities to take into account the strategic regional significance of an activity such as an airport. The submitter requests that the criteria for assessing proposed discharges in areas where ambient air quality exceeds the standards should also be used for proposals that will result in air quality exceeding the standards in areas where it currently complies.

Submitter 177 is concerned that industry will be targeted for emission reductions rather than unconsented sources. The submitter is concerned about the standards being applied to existing operations during consent renewal, and that consents may be declined due to other nearby polluters rather than a lack of emission control in the applicant’s proposal. The submitter is also concerned that the standards will force new industries to locate away from areas with existing high levels, which is inconsistent with town-planning principles and would increase the incidence of reverse sensitivity and incompatible land-use issues.

Submitter 177 seeks emission control standards for existing industrial activities that will ensure consent renewal, and the provision of guidance to councils to ensure they focus on highly polluting and unconsented practices.

Submitter 183 wants the standards to ensure that:

- there are no unreasonable costs and delays through unavailability of ambient air data
- consent procedures are not unduly delayed
- guidance is provided on how the “scale” and “significance” of emissions is to be assessed
- the Ministry is more realistic about the ability of emitters to negotiate reductions with others

- guidance is provided on what constitutes a “reasonable trend downwards”
- a lower threshold is identified, beyond which reductions are no longer required as part of consent renewal
- the allocation of discharge rights is equitable rather than “first in first served”.

Submitter 184 supports the restrictions on new consents for non-complying areas and considers that the provisions should be applied to existing consents. The submitter suggests that the offset should be twice the emissions of the new source in order to gain an improvement towards meeting the standard.

Submitter 185 supports the proposals but would like clarification on how the standards will be enforced and the methods to be used to encourage co-operation to bring about an overall decrease and a reasonable trend downwards.

Submitter 185 considers that industries should only be prevented from locating in cities like Christchurch if they are not clean enough and that the legislation should ensure that dirty industries cannot relocate to unpolluted areas.

Submitter 200 supports the assessment of background air quality and considers that this should be part of state of the environment reporting. It is unreasonable to require a consent applicant to establish the cumulative effects of operations other than their own contribution. The submitter does not support any provisions that would override existing consents, but supports the requirement for reductions at the time of consent renewal.

Submitter 201 supports the exemption allowing discharges where they contribute only an insignificant amount of emissions but considers that “insignificant” will cause debate and the use of “no more than minor” is more appropriate.

Submitter 201 opposes the requirement to work with other emitters to reduce emissions due to the practical difficulties of dealing with individual motorists and home owners. New emissions or consent renewals should be allowed provided there is a reasonable trend downwards in the air shed.

Submitter 206 considers that those applying for a consent renewal may face a significant cost to gain “a reasonable downward trend” when the major contributor is domestic fires. The wording of the standards in regard to non-compliance of point sources will be difficult to enforce and, realistically, breaches are only likely to be proven if consent conditions are not being met.

Submitter 206 wants a better definition for the term “places where people gather” because this is currently too uncertain.

Submitter 208 opposes in part the regime for areas where existing ambient levels are within the standard. The submitter asks for an investigation into the implications of cumulative assessment of discharges, especially because this may:

- restrict development in some areas
- provide opportunity for poor performers not to improve at the expense of new, clean industries

- be unrealistic if the cumulative effects are from all sources such as vehicles and domestic heating
- be unrealistic and expensive in terms of ambient air monitoring data requirements.

Submitter 208 opposes the regime for areas where existing ambient levels exceed the standard because:

- high-quality information on ambient air quality and emitters would be required to assess an overall downward trend, which is complicated and expensive
- there is no incentive for poor performers to improve
- the cost, skills and knowledge required to participate in a partnership to reduce emissions may be beyond some industries.

Submitter 208 seeks greater investigation into the implications of collaboration to decrease emissions and a mechanism that does not penalise clean technology.

Submitter 220 is concerned that the new regime will preclude new commercial development, such as in Christchurch, where domestic burners are reportedly responsible for 90% of the PM₁₀ emissions. Further analysis needs to be applied to a mix of transitional measures to accompany the standards.

Submitter 221 supports the production of a good practice modelling guide. The submitter also raises concerns in relation to the use of the terms “significant”, “minor”, and “reasonable” which are not defined.

Submitter 221 supports the description of criteria for new discharges and renewals where ambient levels are within the standard, but would like to see a general policy of attempting to achieve the “good” criteria for residential and educational locations. The submitter also considers the use of “insignificant” to be too uncertain.

Submitter 221 supports the approach of working with other emitters to decrease emissions, but notes that the phrase “reasonable trend” needs some definition.

3.3.1 Enforcement

Submitters 6, 163 and 174 consider it to be inappropriate and often impossible to demonstrate beyond reasonable doubt that a pollution event from a single point source resulted in a breach of the ambient standard. In addition, the approach is inconsistent with the 2002 Guidelines of not applying the standard at the boundaries of industrial sites. These submitters seek clarification on whether the penalties under section 339(1) of the RMA will be imposed on regional councils if they cannot meet the ambient criteria, and comment that this aspect needs to be clearly spelt out, including how it will be implemented.

Submitter 35 seeks clarification of who will decide what caused the exceedance and what the burden of proof will be.

Submitter 75 opposes the potential for enforcement action against councils without a phase-in approach and government funding to assist communities to install cleaner heating. The submitter seeks clarification on when the penalties are intended to be applied and what they will be (eg, for not meeting the notification and annual monitoring report requirements).

Submitter 85 is concerned at the interpretation of “main source” and that the report is unclear about how exceeding a standard would impact on non-point source discharges. The submitter asks that the full compliance regime be clarified, particularly for non-point source activities.

Submitter 120 seeks clarification on who the enforcement action would be against, given the standards are ambient standards.

Submitter 127 seeks clarification on the legal provisions that enable a council to take enforcement action against any discharger for non-compliance with an ambient air quality standard, and how the council might defend this sort of action.

Submitter 140 wants it to be made explicit that the standard applies to all significant sources of pollutants within an air shed, not just significant point sources.

Submitter 145 is concerned that the terminology lacks clarity, especially the use of the phrase “main source of pollution”.

Submitter 175 refers to the proposal that “an offence occurs when a point source is the main source of pollutant causing an exceedance”, and states that it is unclear how the standard will be enforced for a consent discharge, where an offence under the RMA would only occur if the discharger exceeds the resource consent. Other uncertainties include what happens when there are a number of equally large discharges, or when small sources make up the largest cumulative discharge. Clarification of how the standards will be enforced is required.

Submitter 162 considers there to be inconsistency between subsections on new discharges in areas where ambient levels exceed the standard, in that the enforcement provision does not recognise the maximum limit or number of allowable exceedances. The submitter requests that the regulations make provision for exceedance allowances in the subsection.

Submitter 185 seeks more detail on the enforcement regime and who will be targeted (eg, industries, domestic burners, vehicles).

Submitter 221 is concerned at the use of the term “reasonable” in the enforcement context because sufficient ambient air quality data are unlikely to be available to provide objective baselines for most assessments.

Submitter 224 is concerned that it is not clear whether enforcement action would be pursued where a non-point source was identified as a major contributor, or how responsibility will be apportioned in a complex air shed with many contributors. The submitter is also concerned that holding a council responsible is a punitive approach without first allowing for guidance and assistance in developing and implementing an appropriate air quality management plan. The submitter also seeks clarification on whether this section would apply to government departments and Crown entities.

3.3.2 Emissions testing and dispersion modelling

Submitter 2 has concerns about the upper limits, especially for modelling, and considers that they introduce the opportunity for a lot of argument about the acceptability of proposals. The submitter prefers the percentile approach.

Submitter 35 raises concerns about the use of dispersion modelling as a tool, in particular the lack of certainty associated with background air quality and cumulative effects. The submitter also seeks a definition of what is meant by “reasonable judgement”.

Submitter 134 considers that the consent holder should carry out monitoring as per consent conditions, that the regulatory agency must ensure compliance through reviews and spot checks, and that central government should carry out an audit of regulatory agencies.

Submitter 164 does not support applying the standards as an absolute maximum to modelling results because maximum concentrations from air dispersion modelling are very uncertain and are dependent on the inputs and model used, and are likely to result in lengthy and technical arguments about modelling. The Ministry’s guidelines for assessing discharges are a more appropriate forum. The submitter considers the *Ministry’s Good Practice Guide to Modelling and Guide to Assessing Discharges* (under development) will need to clearly set out how background concentrations are to be dealt with and what design ground-level concentrations are appropriate to use in modelling. The submitter asks that the maximum limits from the proposed standards not be applied to modelling assessments.

Submitter 175 notes that one of the most likely exceedances of guidelines will be from motor vehicles, and the only way councils could practically control this is through land-use controls. The submitter wants the standards to be clarified as to whether land-use controls can be used to ensure that air quality guidelines are not exceeded.

Submitter 201 opposes the proposal that an offence occurs when a point source discharge is the main source of pollution causing an exceedance, because it could be misinterpreted. For example, there may be one main source contributing in an air shed that is dominated by a large number of small sources, which are responsible for the majority of the pollution but are individually minor, making the one source liable for the breach. The RMA already adequately deals with enforcement provisions for point sources, but the standards should be modified to provide that councils should be subject to enforcement action for failing to adequately plan for air discharges.

Air Quality Technical Report Number 46, Section 2.2.4, contained an overview of ambient monitoring requirements:

Councils will need to prepare an annual monitoring report, which will be made publicly available. The report should include details of where exceedances occur, potential health effects, sources as determined by an emissions inventory, and actions being undertaken to improve air quality.

Where no monitoring has been undertaken because contaminant concentrations are expected to be low, this must be reported (with reasons) in the annual monitoring report.

Submissions received in relation to ambient monitoring are summarised below.

Submitter 2 is concerned that the extra monitoring required will be expensive and take time to set up and manage, and that insufficient expertise is available for this.

Submitter 3 supports monitoring only being required when desk-top studies show pollution concentrations potentially exceed a standard, but does not support the wholesale monitoring of all pollutants in all areas, especially if there is no indication that there are significant sources in the area.

Submitters 3, 5, 73, 93, 140, 150, 151, 156, 161 and 171 request that it be made explicit that the responsibility for ambient monitoring is with regulatory authorities and should be funded by the general rate rather than industry.

Submitters 6, 163 and 174 ask that the standards clearly describe:

- what constitutes an exceedance, and how it will be calculated
- how an air shed will be defined and delineated
- how differences in sampling methods between gravimetric samplers on a one-day-in-three programme and continuous samplers will be considered in determining exceedances
- the methods for monitoring compliance.

Submitter 31 wants the Ministry to take into account the costs of monitoring and notes that the costs of standard test methods is high (eg, \$80,000 for two SO₂ sites for six months). The submitter asks that less expensive screening methods be allowed for in areas where the risk of an exceedance is low.

Submitter 35 seeks clarification as to who does monitoring and who pays for it, where and how monitoring will be undertaken, and what quality assurance, interpretation and certainty will be associated with the results. All required meteorological parameters necessary for dispersion modelling should be included with ambient monitoring.

Submitter 36 supports monitoring and comments that it is a prerequisite of this approach.

Submitter 72 comments that additional monitoring, investigation and staff resources will be required to implement the standards, and requests that central government provide additional funding to councils for this purpose.

Submitter 75 seeks clarification of the monitoring requirements and considers the reference to “where people gather and may be exposed over the relevant averaging period” to be vague. Clarification on whether the exposures under consideration are the peak or typical exposures is also required. The submitter wants guidance on monitoring requirements to include reference to a “significant population”, and guidance to be provided on a minimum population size.

Submitter 90 considers that in cases of exceedances an emission source should not be publicly notified unless there is a clear evidential basis that the named emission source contributed to an exceedance by breaching its consent of permitted standards. Submitter 90 also considers that councils must have financial responsibility for state of the environment monitoring.

Submitter 90 requests that the reference to “including industrial sites” should included a reference to “outside the boundary of industrial sites”. The submitter also wants ambient monitoring to be accompanied by real-time meteorological data. The submitter requests that the council annual reports include details of where exceedances occur, the potential health effects, sources as determined by an emission inventory, and action being undertaken to improve air quality.

Submitter 113 comments that the costs of monitoring will increase, and questions the environmental benefit of such monitoring and annual reporting, particularly in smaller/rural areas.

Submitter 114 requests that a thorough evaluation of the current proposal be undertaken before further regulation is implemented, as indicated in the proposed standards.

Submitter 119 wants clarification on (a) what will be deemed sufficient to provide a reasonable picture of the concentrations of a pollutant and exposure to a pollutant, and (b) what will constitute adequate notification.

Submitter 120 wants the standards to include criteria or additional guidance that would assist regional councils to identify suitable ambient monitoring sites.

Submitter 122 has concerns with notifying exceedances because this has the potential to unfairly target industry, and industry is likely to be required to commission air dispersion modelling to prove that the effects are relatively minor compared to non-point sources. Furthermore, council may seek costs from industry to cover additional modelling and monitoring.

Submitter 127 seeks further information about how ambient air quality should be monitored, on the basis that comments relating to “reasonable judgement” are uncertain.

Submitter 133 requests that monitoring be undertaken to recognised international standards, and that quality assurance procedures be used for monitoring and data handling.

Submitters 133 and 154 request that a methodology/definition for determining what constitutes an air shed be included in the final standards.

Submitter 151 supports the approach to monitoring by regional councils and the requirement for annual reporting.

Submitter 162 requests that the regulations specify the monitoring requirements for regional councils and include appropriate enforcement provisions.

Submitter 164 considers that the amount of monitoring required will increase significantly. Presently many small towns are monitored using mini-volume samplers on a rotating basis. There would be a significant cost in installing permanent hi-vols in terms of purchase, maintenance and analysis. It would seem unnecessary to monitor air quality in these towns permanently when the problem is known to occur in winter. The submitter requests that a system that allows intermittent monitoring only when air quality is likely to be of concern be included in the standard. The submitter also wants an allowance for minimum monitoring requirements to be provided to reflect population and local air quality.

Submitter 175 wants a methodology for defining an air shed to be provided in the standard to help interpret the Ministry’s proposal that compliance with the standards will be determined by examining the maximum concentrations within an air shed.

Submitter 175 requests that the Ministry’s *Good Practice Guide to Air Quality Monitoring and Data Management 2000* be updated so that it can be used to help decide the location of sites to monitor compliance with the standard.

Submitter 185 supports the likely increase in monitoring but considers that funding from government may be needed. The submitter also supports the requirement for an annual report.

Submitter 201 states that council monitoring programmes should be designed to allow the separation of natural background concentrations from those introduced by humans, and that the standard should be modified to reflect this.

Submitter 206 is concerned at the expense of monitoring, specialist staff, and changes to the regional plan that would be needed under the standard. Any costs of a plan review ahead of the normal review cycle should be met by government. The submitter is also concerned that the costs of ambient monitoring are understated and that smaller councils will not be able to achieve the proposed requirements within a four-year period. The submitter asks that the annual report requirement be able to be incorporated into other existing annual reports that local authorities are already producing, or that reports could be made available via websites only.

Submitter 208 supports this provision but is concerned that the level of ambient monitoring will be inadequate for the purpose, or the cost could be unreasonably high. The submitter seeks a cost-effectiveness analysis of introducing the standard compared to other methods, and wants a funding mechanism developed for the most cost-effective method.

Submitter 208 seeks further investigation into monitoring issues when determining ceiling limits of exceedance allowances, in particular where they are beyond the control of a regulatory agency, such as a bush fire affecting the PM₁₀ ceiling limits.

Submitter 209 considers that “reasonable judgement” in regard to where ambient monitoring or modelling may be appropriate to gauge compliance needs to be more precisely defined.

Submitter 221 considers that the phrase “ability to find suitable monitoring sites” should be separated from the rest of the sentence and a clear indication of the need to resolve these difficulties specified. The submitter also comments that an inventory approach to assessing emissions is not necessarily accurate, and wants research to assess the traffic fraction to be made a priority.

Submitter 221 supports monitoring to verify compliance with the standard, in particular because estimation methods are uncertain.

Submitter 223 supports the proposed annual reporting and public notification requirements but also wants there to be a requirement for regional air quality monitoring data to be made available more frequently and in a format readily accessible to the public (eg, pollution indices).

3.4 Proposed ambient standards

3.4.1 Particles (PM₁₀)

Air Quality Technical Report Number 46, Section 2.3, proposed the following:

The proposed standard for fine particles (less than 10 microns in diameter – PM₁₀) is:

- *50 µg/m³ (one-day average) with a maximum of five days per year on which the standard can be exceeded up to a maximum limit of 120 µg/m³ (one-day average).*

The proposed monitoring method is US 40 CFR Part 50, Appendix J, or an equivalent method. Where a tapered elemental oscillating microbalance (TEOM®) is used, it should be co-located with another sampling method, such as a high-volume sampler, to determine an appropriate conversion factor.

Submissions received in relation to the proposed PM₁₀ standard are summarised below.

Submitter 3 wants the standard to make it explicit that all naturally occurring particulate concentrations are excluded from the data used to determine compliance with the standard.

Submitters 6, 163 and 174 note that the weight of evidence relating to the health effects of particles is such that it is appropriate to aim for levels below the current guideline of 50 µg/m³. These submitters do not support the concept of an absolute maximum and consider there is no justification for setting such a level at 120 µg/m³, particularly because this value was replaced in the 2002 Guidelines based on the latest information on the health effects of particulates. The submitters consider that because there are known health effects below the standard of 50 µg/m³ there is good reason not to allow any exceedances.

Submitters 6, 72, 75, 163 and 174 ask that an annual average standard of 20 µg/m³ be included to account for chronic health effects.

Submitter 9 seeks an annual standard for PM₁₀ and/or PM_{2.5} because daily standards do not guarantee protection of public health.

Submitter 26 seeks an annual standard for PM₁₀ in the vicinity of 25 µg/m³. The submitter also wants the standards to be set/applied bearing in mind the actual exposure scenario.

Submitter 31 asks that the Ministry undertake ongoing research into different sources of inhaleable particulate to evaluate whether contributions from sources such as sea salt should be included or excluded.

Submitter 36 supports the standard.

Submitter 72 is concerned that the wording of the standard assumes that daily readings are being collected, which necessitates continuous-monitoring equipment. The submitter wants the standard to be reworded to allow for high-volume samplers using the one-day-in-six or one-day-in-three rotation. The submitter notes that the reduced frequency of monitoring would necessitate the number of exceedance allowances to reduce.

Submitter 72 seeks an exclusion to the standard for excessive PM₁₀ associated with dust from gravel roads, because monitoring in the vicinity of such roads has shown levels in the range 300 to 800 µg/m³, which would require continual notification by the council, who they have little control over these sources.

Submitter 89 opposes the standards with special reference to PM₁₀. The submitter considers that the current state of knowledge does not allow a move from guidelines to standards, and requests that if standards are to be promulgated an annual average of 20 or 25 µg/m³ be added.

Submitter 127 is opposed to a standard, but if there is to be a standard requests that it reflect the provisions of the air quality guidelines more closely, and include an annual average value.

Submitter 102 supports the standard and hopes that eventually the number of allowable exceedances will be zero.

Submitter 111 supports the standard and asks that it be retained. The submitter also seeks an education programme aimed at domestic wood suppliers and consumers to support the standard, and asks that central government increase funding for projects that aim to increase the material qualities of wood products and the efficiency of wood-burning appliances.

Submitter 131 wants a PM_{10} standard to be delayed until a full cost–benefit analysis is provided and the wider social and economic effects on Christchurch can be determined. It is impractical for Christchurch to meet the standard within the four-year timeframe, and considers that the social and economic effects could be significant.

Submitter 138 is opposed to the adoption of the standard for PM_{10} and asks that it be delayed until the statistical basis for the standard has been examined by a competent actuary, independent of the agencies that have developed these standards.

Submitter 139 requests that the ceiling limit be deleted because it is not practicable, that the term “one-day average” be replaced with “24-hour average”, and that a diesel generator being parked next to an ambient air monitor be deleted as an example.

Submitter 145 considers that the proposals are unworkable because while some sophisticated source apportionment techniques can be used, they are not sufficiently precise to be used for measuring compliance with a regulation and will require large studies over long time periods.

Submitter 155 wants existing background concentrations, both natural and human made, to be fully understood before definitive decisions are made about the specific cause. The submitter also wants additional epidemiological research to be conducted and peer reviewed before the estimated premature death rate is used for justification of the standards. The submitter seeks more guidance on natural background concentrations so that the PM_{10} standard is applied consistently at the local level.

Submitter 156 states that the basis for allowing five exceedances (98.5th percentile) is not clear. A 98th percentile approach equates to seven days per year and has been proposed in the United States and European Union, while the United Kingdom allows 10 exceedances. The standard does not take into account the inability of some areas to achieve the standard in the short term, and considers that different local targets and a staged approach would be more sensible.

Submitter 156 supports the approach of allowing naturally occurring PM_{10} to be deducted from the ambient measurement, but considers that a standard method should be adopted to ensure regional consistency.

Submitter 161 requests that a standard for PM_{10} not be specified at this stage, unless it is restricted to combustion particulate in urban areas, because of emerging evidence that ultra-fine particles are more of a concern in relation to health effects.

Submitter 164 queries whether the number of exceedances allowed is based on the one-day-in-six monitoring regime.

Submitter 175 wants $PM_{2.5}$ to be used as the concentration limit for particles rather than PM_{10} because the World Health Organisation has acknowledged that there are no discernible effects on health from the size fraction greater than $PM_{2.5}$.

Submitter 175 comments that justification is required for the maximum limits for key air pollutants, or they should be removed, because the basis on which the values have been selected is not clear. Justification for the number of allowable exceedances is required and that the criteria should be logical and based on New Zealand conditions.

Submitter 175 states that consideration should be given to an annual average standard in addition to the 24-hour standard for PM₁₀, because chronic health effects are correlated with annual average exposures. The submitter considers that the averaging periods for the other gases (NO₂) need to be justified and requests that the averaging periods described in the 2002 Guidelines be retained.

Submitter 175 requests that information on the monitoring method used to measure compliance be included in the standard because the monitoring method can have a considerable effect on the number of exceedances recorded.

Submitter 180 opposes the standard on the grounds that it would have a significant impact on the operations of many coal users. The submitter considers that the standard is not justified and that a risk-based approach would be more credible. If a cost-benefit analysis does justify a PM₁₀ standard, the submitter considers that it should include an annual average. The proposed guideline is set at the same level as the most stringent international target, and is concerned that while it is equivalent to the Australian standard of 50 µg/m³ with five exceedances by 2008, the monitoring locations in Australia are neighbourhood sites away from major sources, while the proposed ambient standards will be applied to peak sites in New Zealand with the rationale that it is more equitable, precautionary and protective.

Submitter 184 seeks a deadline for compliance of four years from the date of proposal (ie, November 2007). The submitter has concerns over the proposed allowance of five exceedances per year and suggests this be lowered over time. The submitter wants work to continue to determine whether a standard for very fine particles is required, and seeks a review period for the standards of at least every 10 years.

Submitter 185 seeks more investigation into smaller particles, and considers that towns experiencing PM₁₀ levels above the maximum should be considered for special funding.

Submitters 140, 171 and 201 support the exclusion of sea spray when monitoring compliance but consider that exclusion should be mandatory/explicit and that a similar provision should be added to exclude naturally occurring particulates.

Submitters 133, 154, 185, 206 and 221 seek an annual average standard for PM₁₀.

Submitter 208 considers that exceedances should only be considered to have occurred when a representative sample of ambient air is being taken. An influence such as a diesel generator near the monitor is not representative and should therefore not be counted, and should be deleted as an example.

Submitter 213 wants natural background particulate concentrations to be measured so that the PM₁₀ standard is applied consistently at the local level. The submitter has concerns relating to background PM₁₀ data, PM₁₀ sources and the epidemiological research.

Submitter 221 considers that PM_{2.5} should be added to the standards and that consideration should be given to fine and ultra-fine particles through research and monitoring programmes. The submitter seeks restrictions on diesel particulate matter to be made a priority. Submitter

221 is also concerned at the reference to “is reasonably consistent with the European Directive value” because this may be used to justify a value of 20 µg/m³ or a 12% margin. The submitter asks that the intention be made clear.

3.4.2 Nitrogen dioxide (NO₂)

Air Quality Technical Report Number 46, Section 2.4, proposed the following:

The proposed concentration limit for NO₂ is:

- 200 µg/m³ (one-hour average) with a maximum of nine allowable exceedances (99.9 percentile of one year's monitoring data), up to a maximum limit of 300 µg/m³ (one-hour average).

Submissions received in relation to the proposed NO₂ standard are summarised below.

Submitters 6, 163 and 174 are concerned that an unjustified non-health-based approach has been adopted when setting the maximum concentration for breaches. The submitters seek two additional standards as follows:

- 100 µg/m³ (24-hour)
- 40 µg/m³ (annual).

Submitter 36 supports the standard.

Submitter 133 seeks an annual average standard for NO₂.

Submitter 139 requests that the ceiling limit be deleted because it is not practicable.

Submitter 156 considers the proposed use of the 99.9th percentile to determine the number of allowable exceedances for NO₂ and SO₂ is too high and should be the 95th or 98th percentile.

3.4.3 Ozone (O₃)

Air Quality Technical Report Number 46, Section 2.5, proposed the following:

The proposed concentration limit for O₃ is:

- 150 µg/m³ (one-hour average) with no allowable exceedances; ambient ozone should be monitored using AS3580.6.1 – 1990.

Submissions received in relation to the proposed O₃ standard are summarised below.

Submitters 6, 163 and 174 seek an additional standard of 100 µg/m³ (eight-hour average)

Submitter 36 supports the standard.

Submitter 85 wants the number of allowable exceedances for O₃ to be set at nine hours per year.

Submitter 164 queries why there are no exceedances allowed for O₃.

Submitter 175 notes that no maximum (not to be exceeded) limit has been provided for O₃ and CO and requests that a limit be provided or that reasons be provided for not doing so.

3.4.4 Sulphur dioxide (SO₂)

Air Quality Technical Report Number 46, Section 2.6, proposed the following:

The proposed standard for SO₂ is:

- *350 µg/m³ (one-hour average) with a maximum of nine allowable exceedances (99.9 percentile of one year of data), up to a maximum limit of 570 µg/m³ (one-hour average).*

Submissions received in relation to the proposed SO₂ standard are summarised below.

Submitters 6, 72, 163 and 174 seek an additional standard of 120 µg/m³ (24-hour average).

Submitter 36 supports the standard.

Submitter 111 supports the standard in part, but wants the position of natural SO₂ released to be clarified.

Submitter 139 requests that the ceiling limit be deleted because it is not practicable.

Submitter 156 considers that the proposed use of the 99.9th percentile to determine the number of allowable exceedances for NO₂ and SO₂ is too high and should be the 95th or 98th percentile.

Submitter 180 is opposed to the standard on the grounds that it would have a significant impact on the operations of many coal users. The submitter considers that the standard should include an annual average.

Submitter 185 requests that more research be undertaken in relation to the health effects of SO₂ even at low levels. The submitter also requests that the synergistic effects of pollutants such as SO₂ and NO₂ be considered in the standards.

3.4.5 Carbon monoxide (CO)

Air Quality Technical Report Number 46, Section 2.7, proposed the following:

The proposed standard for CO is:

- *10 mg/m³ averaged over an eight-hour period, with a maximum of nine allowable exceedances and no upper maximum limit.*

Submissions received in relation to the proposed CO standard are summarised below.

Submitters 6, 163 and 174 seek clarification on whether the standard is intended to be an -hour moving average calculated hourly or a fixed eight-hour average, and comments that if it is intended to be a fixed eight-hour period then the number of exceedances will not represent the 99.9 percentile.

Submitters 6, 72, 163 and 174 seek an additional standard of 30 mg/m³ (one-hour average).

Submitter 36 supports the standard.

3.5 Air toxics, especially dioxins (prohibited activities)

3.5.1 General submissions

Air Quality Technical Report Number 46, Section 3.1, proposed prohibited activities on the basis that:

- ... it is more efficient and effective to simply prohibit activities where the emissions are clearly unacceptable. Such activities involve the discharge into the air of significant quantities of harmful air toxics such as dioxins ...

Submissions received in relation to the prohibited activities are summarised below.

Eighty-four percent (1203) of submissions received, the Greenpeace form submissions, support the proposed ban on new high-temperature hazardous waste incinerators. These submissions note that incineration is dangerous and outdated, it releases deadly dioxins, and alternatives to incineration exist. These submissions support the ban on new high-temperature waste incinerators, and propose that the government also ban municipal waste incineration (including waste-to-energy), ban backyard burning, ban new school and hospital incinerators outright, and phase out existing incinerators. The submissions also ask the government to take action to eliminate all dioxins from our air, land and water.

Submitter 1 queries why the burning of plastics used on farm bales are not included as a prohibited activity.

Submitters 2, 39 and 40 seek a ban on backyard burning to be included as part of the standard.

Submitters 5 and 31 oppose the prohibition of waste-to-energy plants in the standard because it would exclude the use of wood waste and other wastes in energy plants, which is a beneficial use.

Submitters 6, 163 and 174 generally support the prohibited standards but seek the banning of all forms of low-temperature incineration (“backyard” burning), with the exception of units in rural areas burning only untreated wood, vegetation and paper.

Submitter 29 wants the Ministry to consider the submitter’s activities, including fire training, quarantine incineration and disposal of explosives, for which there is no practical alternative.

Submitter 43 wants all unnecessary incineration to be prohibited because industrial and backyard incineration releases extremely health-damaging toxins into the atmosphere and incinerator ashes are contaminated, causing problems when disposed of.

Submitter 46 is concerned that the standards are based on public perception, which is a major divergence from the effects-based approach used under the RMA. The submitter asks that all

the standards be based on RMA effects-based principles and that references to prohibiting activities on the basis of public perception be deleted.

Submitter 65 would like to see remedies for the disposal of farm hazardous wastes and the siting of refuse sites for farm waste disposal – including tyres, coated wire and other prohibited material – before implementing the proposed standards in rural areas. The submitter considers that incineration of farm refuse, not including hazardous waste, should be allowed without resource consent.

Submitter 107 seeks incentives to encourage recycling and prevent burning of plastic wastes on farms.

Submitter 109 supports the prohibited activities in principle, but has concerns that some of the materials may be difficult to dispose of by alternative means and comments that alternatives, without significant adverse effects, need to be established. The submitter requests education to reach small communities to ensure they are aware of the standards and their implications.

Submitter 113 questions the need for the prohibited standards because most councils have prohibited activities in their air plans which emit significant quantities of toxic substances.

Submitter 120 comments that the phrase “in the open” is not clear or certain for enforcement purposes, and suggests that the phrase be defined; for example, “areas not within a specially designed and constructed combustion facility”.

Submitter 121 requests that plastics, other than clean polyethylene, be considered for inclusion among the materials affected by the standard.

Submitter 123 supports the proposed prohibited activities and asks that they be retained as proposed except as they seek amendments to the section addressing school and hospital incinerators.

Submitter 125 wants waste-to-energy to be preserved as an option.

Submitter 128 comments that in order to be consistent the standards need to consider emissions from crematoria and backyard burning.

Submitter 136 wants burning waste at construction sites, including treated timber and plastic offcuts, to be added to the list.

Submitter 143 supports the adoption of prohibitive standards and the principle of banning activities that are toxic and unnecessary. However, for activities that as yet cannot be substituted, such as crematoria and metallurgical processes, the submitter asks that standards based on the best available techniques be put in place.

Submitter 143 also asks for:

- a ban on outdoor burning of waste (excluding vegetation, untreated wood, paper and cardboard)
- education material to be developed on the health and environmental effects of burning waste in outdoor fires
- a ban on municipal waste incineration, with particular reference to waste-to-energy incineration.

Submitter 154 supports the proposed standards in this section and asks that they be retained.

Submitter 162 opposes the prohibited activity status because it is an extreme resource management method and should only be used when the effects are so severe that the activities should not occur under any circumstances. The submitter seeks a review of whether the prohibited activity status is an appropriate mechanism to manage the effects on the environment.

Submitter 171 supports the intention of the majority of the proposed standards but seeks clarification on how they will deal with other air toxics for which ambient air quality guidelines were set in 2002.

Submitter 173 seeks a ban on backyard burning to be included as a national standard.

Submitters 11, 174 and 206 support the proposed standards.

Submitters 36, 75, 100, 187, 148, 202 and 221 support the proposed standards in sections 3.2.1 to 3.2.7, except that submitter 202 opposes proposed standard 3.2.6 and submitters 75, 100 and 187 oppose proposed standard 3.2.7.

3.5.2 Proposed prohibited standards

Open burning of tyres

Air Quality Technical Report Number 46, Section 3.2.1, proposed the following:

The burning of tyres in the open or in open containers is a prohibited activity.

Councils would still be able to consider whether to grant permits for discharges to air from tyres burned in appropriately designed equipment with emission controls.

Submissions received in relation to the prohibited activity are summarised below.

The 1203 Greenpeace submissions support the prohibition on burning tyres.

Submitters 31, 11 and 127 support the prohibition on burning tyres.

Submitter 68 wants it to be made clear in the regulations that councils could consider disposing of tyres through an appropriately designed pyrolysis plant.

Submitter 120 suggests that the standard be reworded to incorporate “tyres and other rubber”.

Submitter 143 supports the ban on the open burning of tyres and wants the ban extended to burning tyres in cement kilns because of concern over dioxin emissions and because “true” recycling of tyres is much more energy efficient.

Road-seal burning

Air Quality Technical Report Number 46, Section 3.2.2, proposed the following:

Road-seal burning is a prohibited activity.

Submissions received in relation to the prohibited activity are summarised below.

The 1203 Greenpeace submissions support the prohibition on road-seal burning.

Submitter 85 wants the term “bitumen burning” to be substituted for “road-seal burning”, and requests a lead time of at least 12 months before the prohibition takes effect.

Submitters 31, 111, 127 and 143 support the prohibition on road-seal burning.

Submitter 177 supports the prohibition of road-seal burning, but wishes to include an exemption for if (or when) future technology is available that is capable of reducing emissions to an acceptable level.

Submitter 186 is concerned about the standard because road-seal burning has traditionally been an important part of road maintenance, it lasts for short periods, and occurs in restricted areas at most every 15 years. The submitter considers that considerable costs could be added to road maintenance as a result of the ban.

Coated-wire burning

Air Quality Technical Report Number 46, Section 3.2.3, proposed the following:

The burning of coated copper wire or any form of coated cable in the open or in an open container is a prohibited activity.

Submissions received in relation to the prohibited activity are summarised below.

The 1203 Greenpeace submissions support the proposed ban on coated-wire burning.

Submitters 31, 127 and 143 support the standard, but submitter 31 also wants the ban to be extended to include “motor vehicles or parts of motor vehicles, or any other mixture or combinations of metals and combustible substances”, other than in a proper incineration facility.

Submitter 175 questions the basis for banning only plastic-coated wire and not other material that can result in dioxins, such as burning copper chrome arsenic timbers, car bodies and machinery, and considers the approach to be inconsistent. The submitter wants criteria to be established for identifying those air toxics that are to be banned, and these criteria used to list activities in the standard that are banned.

Burning of oil in the open

Air Quality Technical Report Number 46, Section 3.2.1, proposed the following:

The burning of any oil (eg, used oil, re-refined oil, diesel oil, heavy fuel oil, light fuel oil) in the open is prohibited.

Submissions received in relation to the prohibited activity are summarised below.

The 1203 Greenpeace submissions support the prohibition on burning oil in the open.

Submitters 2, 75 and 111 support the standard but request that provision be made to burn oil in the open for fire-training purposes and special effects for films.

Submitters 31 and 127 support the standard.

Submitter 113 considers that national standards are not required for this activity and is concerned about statements in the proposed document such as “there is a limited amount of information available on the amount of oil burned in the open air in New Zealand and its potential health effects” and “alternative methods for frost protection are available”. An analysis of the options for frost protection is required because they all have varying environmental effects, costs and effectiveness. The submitter is also concerned that there is no quantification of the terms “temporary activities”, “populated areas” or “adequate controls”, and considers that burning oil for frost protection should be able to be assessed via the resource consent process to allow consideration of the local situation.

Submitter 120 requests that oil burning in “frost-pots” for frost protection be excluded from the prohibited activity, or that a phase-out approach be considered.

Submitter 121 requests that the Ministry allow clean burning of new oil for frost fighting on production land.

Submitter 143 supports the ban on open burning of oil and wants the ban extended to burning in cement kilns because of concern over dioxin emissions and because “true” recycling is much more energy efficient.

Submitters 169 and 209 request that a provision allowing open oil fires for fire-training purposes be included in the standard.

Submitter 202 requests that provision be made for burning oil in smoke pots or similar devices for frost protection, and that this be made a discretionary or restricted discretionary activity.

Landfill fires

Air Quality Technical Report Number 46, Section 3.2.1, proposed the following:

The known burning of material on or near a landfill is a prohibited activity.

This proposal excludes the burning of gaseous waste through purpose-built equipment (landfill gas flaring) or the evaporation of landfill leachate through purpose-built equipment.

Submissions received in relation to the prohibited activity are summarised below.

The 1203 Greenpeace submissions support the proposed standard.

Submitter 109 generally supports the standard and comments that the emphasis on “known burning” of material is appreciated because such fires can occur by accident.

Submitter 113 considers that a definition of landfill is required to ensure that on-farm burning of waste plant material is not included.

Submitters 31, 111, 127 and 143 support the standard.

Submitter 175 considers it is uncertain what “known” burning and “near a landfill” might mean and seeks clarification of these terms.

Waste incineration in schools and hospitals

Air Quality Technical Report Number 46, Section 3.2.1, proposed the following:

The proposed standard is to prohibit:

- *all new waste incinerators in schools and hospitals that do not have a resource consent*
- *by 2008, all existing waste incinerators in schools and hospitals that do not have a resource consent.*

Submissions received in relation to the prohibited activity are summarised below.

The 1203 Greenpeace submissions consider that all new school and hospital incinerators should be banned outright. The submissions note that low-temperature incinerators are just as toxic as the bigger high-temperature incinerators. The submissions request that the government phase out all incinerators that are currently polluting our environment by 2005.

Submitters 6, 163 and 174 want the standards to prohibit these units altogether and comment that allowing the units to continue to operate appears to be inconsistent with the stringent requirements being placed on domestic heating appliances. If low-temperature school and hospital incinerators are not prohibited, the submitters ask that the standards only permit these units in rural areas subject to conditions, including restrictions on the volume (less than 1 tonne/hour) and type of material that may be burnt (untreated wood, vegetation and paper only). The submitters seek clarification that regional councils can decide to prohibit school and hospital incinerators despite the standard requiring these to obtain consent.

Submitter 31 wants the scope of this standard to be clarified. The submitter would support a ban on low-temperature incineration in schools, hospitals and backyard burning in urban areas, but would not support a ban on such burning in rural areas because the level of dioxins in rural areas is low and rural people have limited options for waste disposal.

Submitter 100 considers it would be appropriate to clarify what level of dioxins would be acceptable from such facilities to assist in their assessment via the resource process.

Submitter 111 supports the standard in part but considers that it should be applied to all large-scale waste incineration, such as in hotels or marae facilities. The submitter also asks that financial provisions be available from central government to meet the costs of upgrading to meet the new requirements.

Submitter 112 supports the intention of the standard but can see difficulties with schools implementing the standard with current funding levels. The submitter comments that schools

should be given additional funding for investment in the technology required to gain resource consents if it is the most appropriate option, or to fund zero waste options.

Submitter 119 wants the Ministry to contact and inform schools and hospitals about the proposed standards and assist in identifying other waste disposal options. The submitter wants the wording “encourage” to be replaced with “provide” or “ensure”.

Submitter 120 suggests that references to “hospital” be replaced with a broader term such as “medical centre”, which would incorporate veterinary practices.

Submitter 121 considers that the banning of school and hospital incinerators may cause practical difficulties in disposing of materials, and wants the Ministry to give consideration to practical disposal options for school and hospital waste.

Submitter 123 seeks the following alternative wording for the standard:

The proposed standard is to prohibit

- *all new waste incinerators in schools and hospitals that do not have appropriate pollution controls*
- *by 2008, all existing waste incinerator in schools and hospitals that do not have appropriate pollution controls*

Incinerators that do not have appropriate pollution controls will be required to gain resource consents to operate.

Submitter 127 requests that waste incineration at schools become a prohibited activity and that a more co-ordinated approach to air quality be adopted by central government agencies, including the Ministry of Education.

Submitter 136 supports the requirement for all operations to gain consent by 2008.

Submitter 129 opposes the standard because if school incinerators are operated in a responsible manner, burning suitable materials, then their effects should be no more than minor. The submitter considers that small-scale low-temperature incinerators should be controlled through suitable performance standards as permitted activities in regional plans. Conversely, if the request is not granted, the prohibition should apply to all low-temperature incinerators including those in industrial, commercial and residential premises.

Submitter 139 is opposed to a blanket prohibition on waste incineration in hospitals and considers that if waste incineration is carried out in hospitals it should be done to a standard appropriate for protecting the environment. The submitter wants the words “and hospitals” to be deleted from the standard.

Submitters 143 and 174 seek a prohibition on all forms of low-temperature waste incineration, including hospital and school incinerators, regardless of consent standing.

Submitter 164 requests that all new incinerators be required to conform to internationally recognised design and emission standards and that all incinerators that do not conform to the standards be phased out.

Submitter 175 considers that it appears a new incinerator can get a resource consent but an existing incinerator is prohibited, and seeks clarification of how the standard will apply to new and existing activities.

Submitter 175 considers it inconsistent to single out schools and hospitals, when low-temperature incineration is commonly used on farms, commercial properties and in some residential areas, therefore failing to create a level playing field. The submitter wants criteria to be established for identifying air toxics that require resource consent, and the criteria used to list activities under the standard.

Submitter 226 supports the standard but considers that it is inconsistent (eg, to allow backyard burning), and requests that further consideration be given to consistency over these activities.

High-temperature hazardous waste incineration

Air Quality Technical Report Number 46, Section 3.2.7, proposed the following:

New high temperature, hazardous waste incinerators are a prohibited activity.

Submissions received in relation to the prohibited activity are summarised below.

The 1203 Greenpeace submissions support the proposed prohibition of new high-temperature hazardous waste incinerators because:

- *incineration is dangerous and outdated. Incinerators do not destroy waste; rather they turn waste into toxic ash, gases and harmful chemicals such as dioxins;*
- *incineration releases deadly dioxins. Dioxins are some of the most toxic chemicals ever made by humans, and are linked to health problems such as cancer, birth defects and endometriosis. There is no proven safe level of dioxins;*
- *alternatives to incineration exist. Waste should be reused, recycled, or not created in the first place. Steam sterilisation and other methods exist for dealing with medical, quarantine and other waste that cannot be reused or recycled.*

The Greenpeace submissions call for the government to phase out all incinerators that are currently polluting our environment by 2005. The submissions consider that there should be a ban on municipal waste incineration, including waste-to-energy.

Submitter 1 is concerned about what processes are captured by the standard, and queries what constitutes low-temperature waste incineration: under what temperatures is it acceptable to burn waste and how is “waste” defined?

Submitter 2 is opposed to the standard and considers that applications should be able to be made via the resource consent process.

Submitters 5, 73 and 93 want the prohibition to be limited to situations where the resulting emissions do not comply with the proposed air quality standards.

Submitters 6, 163 and 174 seek a clear definition of “hazardous waste” and/or “high-temperature waste incineration” and clarification of why the proposed standards have moved away from the approach of the Dioxin Action Plan, and why the requirements of the Plan have been omitted from the standards.

Submitter 31 is opposed to the standard, which would capture existing incinerators when their consents expire. The submitter comments that such a ban lacks technical and scientific merit.

Submitters 40, 41 and 42 support the ban on new incinerators and want existing incinerators phased out due to the health hazards from dioxin.

Submitter 46 is concerned that the standards are based on public perception. The submitter opposes the standard because it rejects not only current technology but improved future technology, and because high-temperature incineration is one of a limited number of methods to dispose of agrichemicals. The submitter wants standards to be established for high-temperature incinerators rather than a prohibition.

Submitter 66 is opposed to the standard because the dioxin emissions from high-temperature incineration are very low and do not pose a risk to human health. Incinerators designed and operated to destroy dioxins created in combustion should not be included in the standard as prohibited.

Submitter 67 is concerned that high-temperature incineration is the only practicable option to manage some environmental / public health risks. The submitter wants the standard to include the option to use high-temperature incineration as a permitted activity under specified conditions (eg, during a public health emergency or emergent threat), subject to approval from the Minister for the Environment and effective emission controls.

Submitter 68 seeks clarification on what is defined as an incinerator; for example, whether this includes pyrolysis and what existing and emerging technologies are considered acceptable. The submitter considers that pyrolysis should not be prohibited under the standard because it is a cleaner method for disposing of a range of hazardous wastes.

Submitter 72 requests that high-temperature incineration be considered through the consent process to ensure that future technology can be adopted. The submitter also wants the ban to exclude the disposal of treated wood waste associated with wood-processing plants.

Submitter 75 opposes the standard on the basis that there is no environmental justification for the proposal and that the alternatives are not satisfactory, especially given there has been no risk analysis or cost-benefit analysis of the proposal. The submitter wants the definition of “hazardous waste” to be clarified, and the activity to be provided for subject to stringent conditions.

Submitters 27, 39, 69, 70, 76, 77, 78, 79, 80, 81 and 82 request that all hazardous waste incinerators, including existing incinerators and waste-to-energy, be banned because alternatives exist and the submitters are concerned about health effects of the toxic emissions from incineration.

Submitter 100 opposes the standard and the proposal to prohibit waste-to-energy because:

- thermal treatment methods offer the only practical means of destroying dioxins
- larger releases of dioxins already occur from the land application of biosolids
- there is a very low level of health and environmental effects from modern incinerators.

Submitter 100 comments that the alternative technology of autoclaving is not suitable for toxic hazardous wastes, and wants emissions standards for dioxins to be set for incineration facilities rather than banning the technology.

Submitter 109 comments that the Ministry should ensure that appropriate alternative methods of disposal are available, in particular for medical wastes. The submitter also notes that

alternatives for hazardous waste are crucial because the dangers of allowing waste to persist in the environment could be worse than incineration.

Submitter 113 opposes the standard, and considers that “public concern” is no basis for prohibiting an activity because there is no quantification of whether the concern is justified or perceived. The submitter considers that public concern could be addressed via the resource consent process or a call-in by the Minister. The submitter is concerned that prohibiting such incinerators precludes the uptake of new technology.

Submitter 118 does not support the standard because modern controls are available to the extent that the effects are acceptable, and the submitter considers that the activity is best handled via the resource consent process. The submitter wants the standard to be deleted or only apply where specified conditions have not been met. If the standard is retained, the submitter requests that hazardous waste be clearly defined, crematoria clearly excluded, and a further period allowed for consultation.

Submitter 119 wants the Ministry to clearly identify what is considered to be a hazardous waste and provide justification for banning hazardous waste incineration.

Submitter 120 considers that a non-complying status would be preferable to the prohibited activity and would allow rigorous assessment of proposals on their individual merits.

Submitter 128 is opposed to the standard and is concerned that the Ministry has abandoned the original approach of establishing a discharge limit for dioxins and furans. The submitter considers that should waste currently incinerated on-site need to be transported to another waste disposal facility, that the on-road dioxin emissions from the trucks would be greater than dioxin emissions from the existing incinerator. The submitter is also concerned that the standard is inconsistent with other provisions that will allow other waste disposal activities to continue, such as the controlled burning of tyres and waste incineration in schools and hospitals. Unqualified statements on the impact of dioxins on human health need to be properly referenced and comments relating to public concerns should be contextualised or removed. References highlighting the operation of one high-temperature incinerator in New Zealand should also be removed because they are inappropriate and unnecessary.

Submitter 131 asks that consideration be given to the availability of practical alternatives to medical waste incineration, and notes that high-temperature incineration generates relatively low dioxin levels and that prohibiting this activity should be re-examined to determine whether there are satisfactory alternative methods.

Submitter 136 is concerned that the standard relates to perceived rather than real impacts and considers there to be danger in excluding future options for hazardous waste incineration and waste-to-energy plants, because these plants can be designed to perform within acceptable standards and may be the best option available.

Submitter 139 asks that new high-temperature incinerators not be prohibited activities, but if the proposal is adopted then the standard should confirm that burning biocide-treated wood residues in new heat plant and waste oil in cement kilns are not prohibited activities.

Submitter 143 wants all incineration to be banned because there are alternative technologies and the activity is inherently polluting, creating air emissions and ash residues that are highly toxic and difficult to dispose of. The submitter wants existing incinerators to be phased out by 2005.

Submitter 147 supports the standard in relation to dioxins being released to the environment and the adverse effects associated with them.

Submitter 150 opposes the standard because it will necessitate disposal of waste overseas. The submitter wants the ban to be limited to those facilities that do not comply with the emission limits that were proposed in the draft dioxin national environmental standard.

Submitter 155 is opposed to the standard, and is concerned that it is based on emotive reasoning and is not supported by current fact, science or engineering practice. Dioxins from incineration have been reduced with modern control technologies, and considers that life-cycle analysis and risk assessment should be applied to the proposal. Better definitions are required for “high temperature” and “incineration”, and is concerned that the proposal will allow burning hazardous waste in low-temperature incinerators. Furthermore, clarification is needed over whether using hazardous wastes/substances in energy plant constitutes incineration. The submitter wants high-temperature incineration to be controlled under the RMA, not banned.

Submitters 151 and 160 oppose the standard because it is unnecessarily restrictive and could capture technology that is necessary and beneficial. The submitters ask that such equipment be dealt with on an effects basis via the resource consent process.

Submitter 162 seeks more detail on what processes are included in the definition of incineration and the range of materials included in the ban. The submitter wants a blanket ban on high-temperature incinerators to be removed and any prohibited activity to be restricted to wastes where incineration produces a significant amount of dioxins.

Submitter 164 requests that the ban on high-temperature incinerators be removed, that all new incinerators be required to conform to internationally recognised design and emission standards, and that all incinerators that do not conform to the standards be phased out.

Submitter 166 operates an afterburner to incinerate esters and ethers for odour control, which is effectively a high-temperature incinerator. The submitter requests that afterburners be specifically allowed for in the proposal.

Submitter 169 requests that the effects on biosecurity of banning high-temperature incinerators and the value of high-temperature incineration and other new technologies such as pyrolysis be considered. The submitter requests that “incineration”, “hazardous waste” and “high temperature” be precisely defined.

Submitter 171 wants the standard to explicitly state that it does not apply to the utilisation of waste, such as waste oil, for environmentally friendly energy recovery, particularly in the manufacture of cement, because the loss of the ability to utilise such wastes would be contrary to waste minimisation and reducing greenhouse gas emissions.

Submitter 173 supports the banning of hazardous waste incineration and would also support a ban on waste-to-energy and a phase-out of existing incinerators due to concerns about the impacts of dioxin.

Submitter 175 considers the status of existing high-temperature incineration to be uncertain because the standard only refers to new facilities, and seeks clarification on how the standard will apply to new and existing activities.

Submitter 175 opposes the standard because high-temperature incineration may be the most practical method for waste disposal and the option should not be eliminated. The submitter

seeks a thorough analysis of current technology, costs versus benefits and the risks of high-temperature incinerators before prohibiting them under the standard.

Submitter 182 wants high-temperature hazardous waste incineration to be a discretionary activity.

Submitter 187 is opposed to the standard because prohibiting all new high-temperature hazardous waste incinerators will create problems with the disposal of clinical, cytotoxic and quarantine waste because alternatives are not readily available. It is appropriate to prohibit high-temperature incineration for POPs, PCBs and obsolete pesticides because these incinerators are highly specialised, very expensive and inappropriate for New Zealand given the small quantities of materials requiring destruction here.

Submitter 200 opposes this standard because it is overly restrictive and not effects-based, and the technology is the only viable means of disposal for some forms of waste.

Submitter 201 opposes the standard because resource consents are currently required and this provides a mechanism that allows careful consideration of the technology and circumstances of each proposal. Blanket prohibition is unnecessary and undesirable.

Submitter 202 opposes the standard because there is no practical method of destroying persistent organochlorines other than incineration. The submitter wants strict emissions controls to be set rather than prohibiting the activity.

Submitter 208 opposes the standard because it does not suggest an alternative to high-temperature incineration and does not provide a timeframe for the prohibition. This approach discourages new clean technologies for dealing with problem wastes and may prohibit beneficial waste-to-energy projects, such as from wood waste residues, which could be classed as hazardous.

Submitter 209 opposes the standard on the basis that acceptable technologies may be developed for such waste disposal and these will be excluded by the current wording, which may put New Zealand at a disadvantage. The submitter suggests that the paragraph be reworded to include specific limits on materials or emissions.

Submitter 211 supports the banning of incineration on the basis that it makes our environment unhealthy.

Submitter 212 is opposed to the standard because there have been considerable technological advances since incinerators were identified as a significant source of dioxins. The submitter notes that the ban would mean we would lose control over the impact our hazardous wastes have on the environment when they are exported for incineration. The submitter also asks that the potential for future waste-to-energy projects not be excluded by the ban.

Submitter 213 is opposed to the standard, but if the standard is to remain the submitter requests that detailed definitions of “incineration”, “hazardous waste” and “high temperature” be provided, and that these definitions be agreed with industry representatives. Banning the activity is based on emotion, is not supported by science or engineering practice, and that modern high-temperature incinerators are not a major source of dioxins. The submitter is also concerned that low-temperature incineration poses a substantially greater risk to human health and yet is not addressed in the standard. The intention of the standard is to ban only new incinerators, but the RMA treats renewals as new applications and this may trigger the ban when the submitter seeks renewal of its consent for a combustion process utilising waste oil.

Submitter 213 requests that the banning of high-temperature incineration be removed and replaced with minimum standards for emission performance irrespective of the nature of the incinerator (ie, high or low temperature).

Submitter 214 opposes the standard and wants options for thermally treating hazardous waste (such as pyrolysis) to remain provided site-specific effects criteria are met.

Submitter 218 is opposed to the standard because incineration is sometimes the only disposal option specified on some Material Safety Data Sheets. The proposed standard also closes the door on new technology, and is inconsistent because it does not ban refuse burning in the open. The submitter wants open burning of refuse to be prohibited, and high-temperature incineration removed from the prohibited activities.

Submitter 220 is opposed to the standard and the announcement that the Ministry is also considering banning incinerators for urban waste disposal, because incineration technologies continue to advance and may offer a far more acceptable solution to waste. The submitter wants energy-from-waste schemes to be encouraged rather than prohibited.

Submitter 225 seeks policy and legal clarification to harmonise the definitions of “unwanted organism” or “risk goods” under the Biosecurity Act 1993, and “hazardous waste” under the standard. The submitters also wants the definition of hazardous waste to be made environmentally meaningful rather than applicable exclusively to human and animal health.

Submitter 225 is concerned that the standard implies that medium- or low-temperature burning of infectious material would not adversely affect air quality, which is not substantiated by science. The submitter disagrees with the comment that “incineration is an obsolete technology for disposal of hazardous wastes,” and notes that air curtain incinerators are an internationally accepted option for carcass disposal in the event of an exotic animal disease. The submitter also notes that the statements regarding public concern and ash residues are not applicable to the incineration of unwanted organisms. The submitter seeks a contingency clause to allow MAF to incinerate hazardous biological waste and quarantine waste where other disposal methods are not suitable.

Submitter 226 is opposed to the standard and considers that modern high-temperature incineration may have a place in the disposal of some hazardous wastes. The submitter considers that decisions should be made at the regional level via air quality plans.

3.6 Emission standard for new home-heating appliances

Air Quality Technical Report Number 46, Section 4.1, proposed the following:

Any new appliance installed into a house in an 'urban area' must be identical (in terms of the features that are likely to affect its emissions) to a unit that has been tested in accordance with AS/NZS 4013:1999 entitled 'Domestic solid-fuel-burning appliances – Method for determination of flue gas emission' (or an equivalent test method) and meets an emission limit of 1.5 g of particulate matter per kilogram of fuel burned – averaged over high, low and medium burn rates.

Submissions received in relation to the home-heating proposals are summarised below.

Submitter 1 is concerned about the application of a technology standard to domestic heating that is perhaps not based on modelling, when industry is required to model. The submitter wants modelling to demonstrate that the proposed standard for wood burners is robust and will meet the air quality standards, and that the modelling takes into account the actual emission profile. The submitter also seeks information on the replacement rate of appliances and an analysis of how quickly this will affect air quality.

Submitter 2 considers that the standard should be based on emissions so that it can accommodate any add-on emission control. The submitter considers that the testing standard urgently requires revision and that the standard needs to be lower than 4 g/kg for it to have any effect. The submitter wants direction to be provided to councils on how to encourage replacement of old burners, potentially via a national incentive scheme. Because the rate of burner replacement will be low, a three- to four-year timeframe is very optimistic.

Submitters 6, 163 and 174 generally support the standard, but want:

- clarification on whether the standard applies only to “urban” areas and whether these are defined according to district and city council plans
- all new and retro-fitted open fires to be subject to the requirements of the design standard, and controls over existing open fires to be considered on a regional basis
- district and city councils to be explicitly charged with ensuring compliance with the standard.

Submitters 12 to 24, 30, 32, 47 to 64, 92, 103, 105, 106, 132, 141, 142, 132 and 187 to 196 request that the standard be set at 4 g/kg because they believe this standard has not been allowed sufficient time to take effect. In particular, there are a large number of old appliances, appliances are not properly maintained and operated, and there are no controls on firewood. An education programme for the correct operation of solid-fuel appliances would be more productive.

Submitters 12 to 24, 30, 32, 47 to 64, 92, 103, 105, 106, 132, 141, 142, 132 and 187 to 196 also request that:

- overseas test methods that deliver equivalent results to those in AS/NZS 4013:1999 be recognised as suitable alternatives
- a code of practice and industry regulations be adopted for firewood merchants
- a programme for the removal of inefficient burners and open fireplaces be instigated

- the installation of cookers, heat circulating fires and boilers be exempt
- some areas with unique problems be allowed to adopt lower emission levels provided there is sufficient evidence to justify the action.

Submitter 19 seeks clarification of the role of regional councils in implementing the standard, and wants appropriate amendments to be made to the Building Act 1991 to allow territorial authorities to implement the standard.

Submitter 25 requests that coal burning be banned unless in a 4 g/kg enclosed appliance, that older open fires be phased out and replaced with circulating heat designs, and that the measures not limit the consumer's right of choice. The submitter opposes the 1.5 g/kg limit and considers it should be 4 g/kg.

Submitter 26 is opposed to the 1.5 g/kg standard because there is no evidence that it is justified in an ordinary urban context. The submitter considers that the approach unduly focuses on wood and coal when increasing petroleum fuel combustion is more of an issue. The submitter seeks a standard that is based on a pollution per heat output basis, and a definition of the terms "urban", "wood" and "coal".

Submitter 31 supports the standard in principle but is concerned about its enforceability, and in particular whether the standard would be breached at the point of sale or when a non-complying burning was actually in use. The submitter notes that enforcement officers cannot enter domestic dwellings without a search warrant, and if the standard is unenforceable then it is inappropriate.

Submitter 36 supports the standard.

Submitter 44 seeks more and stronger education programmes aimed at ensuring the market understands all the issues and has all the information to make an informed choice. The submitter seeks financial incentives and subsidies to use lower-emitting fuels where air quality warrants such incentives.

Submitters 25 and 74 request that the standard address controls on:

- firewood quality (eg, moisture content)
- an education programme focusing on fuel, maintenance and operation
- the use of certified people to install and maintain appliances.

Submitter 74 notes that there has been continuous development of the open fire, with innovative design and new materials seeing reduced emissions and increased efficiency.

Submitter 75 supports the development of the standard but wants an efficiency component to be incorporated, or the standard expressed on the basis of g/MJ heat output. This type of standard would allow comparison on the basis of different fuel types. The submitter requests that a test method that allows for innovation be provided, and wants the standard to be applied to wood and coal appliances throughout the country regardless of where they are used because this will provide for certainty and consistency for all parties. The submitter also seeks clarification on whether all appliances not meeting the criteria are prohibited (eg, open fires, second-hand burners, other enclosed burners), and wants central-heating appliances, cooking appliances and appliances solely for water heating to be exempt from the standard.

Submitter 75 requests that the Building Bill 2003 contain provisions so that territorial authorities can easily implement and enforce the standards through the Building Act 1991.

Submitter 89 supports the standard as it only covers new dwellings and appliances and will not affect existing appliances or open fires and appliances in rural areas.

Submitter 109 supports the standard in principle, but considers that it would be appropriate to apply the standard to all areas rather than having separate standards for rural areas.

Submitter 110 seeks a level of 1 g/kg or an emission-to-power output of 77 mg/MJ because there are already 28 approved sub 1 g/kg appliances and they are no more expensive to purchase or install. Efficiency is important because burning less fuel produces less air pollution. The submitter asks that a minimum efficiency level of 65% be imposed and that emission quantification be on the basis of milligrams of particulate per megajoule of useable heat. The submitter wants the test method to encompass the real-time use of wood burners (including start up) to accurately quantify emissions, because the current methods do not reflect real conditions. Finally, a system to control the sale and use of unsuitable fuels should be introduced.

Submitter 111 supports the labelling and testing regime and requests that it be retained.

Submitter 112 comments that it will be important to consider the implications of standards when setting benefit levels and supplements for low-income people, and for local government to develop subsidy schemes to encourage cleaner options.

Submitter 120 supports a national approach to addressing emissions from domestic burners, but is concerned that the standard does not provide flexibility to recognise that air quality characteristics vary across the country. The submitter requests that consideration be given to the standard being made subject to an air shed's PM₁₀ contamination and wants the Ministry to work with regional councils to establish standards. The submitter seeks a clear definition of what is an "urban area", or that the rule be applied to all areas to avoid confusion and assist appliance retailers and purchasers. Educating people on efficient and cleaner techniques for operating domestic burners must emphasise that for health, safety, and comfort reasons clean and efficient home heating techniques are best. The submitter also wants education to include other forms of heating and the programme to be co-ordinated nationally.

Submitter 120 is concerned that the roles and responsibilities of central government, regional councils and district councils in monitoring and enforcement are not identified. The submitter considers that the responsibilities should be linked to agencies approving the appliances for installation (ie, city and district councils).

Submitter 121 wants the proposed emission standard for new appliances to be adopted, and requests that either (a) the standard is universally applied, or (b) the existing identified urban areas, as identified by the *Regional Plan: Air for Otago*, is adopted for Otago.

Submitter 121 wants the terms "installed" or "reinstalled" to be carefully defined to avoid doubt, such as when an appliance is being shifted within a building. The submitter also wants the Ministry to pursue a national campaign to promote the appropriate use of home fires.

Submitter 123 supports the standard and asks that it be retained as proposed.

Submitter 125 wants the Ministry to develop a 1.5 g per kg of fuel standard and a fuel efficiency standard of 65%. The submitter also requests that the Ministry include improvements to the specification of heat output by manufacturers in the standard.

Submitter 127 wants the standard to include an efficiency limit such as a thermal efficiency of 65%, or a MJ/kg of fuel use rating.

Submitter 131 considers that the standard should be “equal to or less than 1g/kg” to reflect current design capabilities. An efficiency or mg/MJ criterion should be considered. There should also be powers to license fuel merchants subject to moisture content and fuel characteristics.

Submitter 133 requests that the standards address all domestic home-heating methods including open fires, and that existing sources of home heating be addressed at a national level. The submitter considers that the 40kW limit is an unnecessary loophole.

Submitter 135 opposes the 1.5 g/kg limit and considers that the 4 g/kg limit is more realistic. The submitter considers that eliminating the “human error factor” is more important. The submitter would support national standards and/or registration for fuel suppliers and public education.

Submitter 136 supports the standard but is concerned about the policing of such controls.

Submitter 144 wants the standards to also cover minimum standards for existing residential burners. In particular, existing as well as new discharges should be required to discharge vertically and unimpeded by any obstruction that would reduce the vertical efflux velocity. The standard should include a prohibition on burning plastics, rubber and other noxious materials in any residential fire and a requirement that any residential burner shall not cause an objectionable effect beyond the boundary of the property where the discharge originates.

Submitter 146 asks that pellet fires be excluded from the standard because in terms of mode of operation and performance they are like an LPG or diesel fire. The submitter wants pellet fires to be permitted anywhere due to their low emissions, and wants a section added stating that local rules should give priority to appliances that are better than the standards.

Submitter 149 considers that a standard of 4 g/kg is achievable and realistic, and that this should be implemented in conjunction with education on burner operation and fuel quality.

Submitter 154 supports the proposed emission standard and asks that an efficiency requirement be included.

Submitter 159 supports the standards but considers that it also needs to:

- include an efficiency standard of 65%
- impose controls on fuel quality
- promote education on operation of wood burners
- prohibit the use of “overnight burns” and burn times as a promotional tool for wood burners
- encourage innovative designs to improve efficiencies.

Submitter 159 is concerned that the standard will eliminate multi-fuel heaters from the market because they cannot achieve the standard, and this will disadvantage some regions.

Submitter 164 requests that a minimum appliance efficiency be included in the standard, that the standard test methods be reviewed to better reflect actual practices in the home, and that a national incentive scheme to replace old fires and wood burners with clean appliances be introduced.

Submitter 165 supports the standard in principle but requests that the emission limit be set at 4 g/kg and considers that there should be no distinction between urban and rural areas. The submitter wants the quality of firewood to be addressed.

Submitter 179 opposes the standard and considers that education about burner operation, maintenance and firewood quality should be the focus to achieve reduced emissions. The submitter is concerned that a person will not be able to reinstall an existing wood burner if it is shifted as part of home renovations. The submitter is also concerned about the definition of an urban area and “changing goal posts” in areas where there is development, and wants all areas to be covered by the current 4 g/kg level.

Submitter 182 requests that the standard only be applied at specific locations where background air quality does not meet the standard. Coal and multi-fuel appliances that are in use on the West Coast cannot meet the standard of 1.5 g/kg and the standard is therefore inappropriate. The submitter considers that an emission standard of 4 to 10 g/kg would be sufficient to bring about an improvement in air quality on the West Coast.

Submitters 146 and 201 want all appliances to be tested using fuel typically used in the appliance, rather than the idealised wood block used to test wood burners, for example. The submitter notes that the idealised fuel is 16 to 20% moisture compared to wood fuel, which is typically 25% moisture, and pellet fuel, which is 8% moisture.

Submitter 146 asks that the limit be set at 1 g/kg because 1.5 g/kg does not represent best available technology.

Submitter 146 wants the weightings for testing to be 5% high, 40% medium and 55% on low setting, while for older houses the equal weightings can be retained.

Submitters 146 and 201 oppose the standard because it does not allow for differing energy contents of fuels or efficiencies of appliances. The submitters propose a dual standard of 1 g/kg plus 0.35 g/kW hr.

Submitter 146 wants the standard amended to require the use of appliances that use manufactured, controlled-quality fuel to be tamperproof in operation and prohibited from burning rubbish or poor-quality fuel.

Submitter 175 asks that the standard ban new open fires in urban areas because they have greater adverse effects on air quality than wood burners. The submitter is concerned that their exclusion from the standard may promote the use of open fires. The submitter also seeks specific exclusion from the standard of central heating appliances, cooking appliances and appliances used for water heating.

Submitter 184 wants the wood-burner standard to be reviewed every five years to keep pace with technology, and the standard to change to 1 g/kg as of 1 January 2006. The submitter requests that “urban area” be defined to protect small settlements and that councils be enabled to impose emission charges based on burner emissions to encourage improvements in technology.

Submitter 186 supports the development of national requirements for home heating, but wants the definition of “urban areas” to be population centres of 1000 persons or more. The submitter also wants the timing for replacement units to be addressed.

Submitter 204 supports the proposed national standards but seeks a standard for wood and coal heaters of 4 g/kg, because the 1.5 g/kg standard is likely to result in more wood being consumed for the same amount of heat output, which means more total emissions.

Submitters 101 and 207 oppose the requirement for mandatory labelling of gas appliances, because gas appliances easily meet the Environment Canterbury requirement that emissions of PM₁₀ be less than 40 mg/MJ. The submitters request that gas appliances be exempt from labelling requirements, but list requirements in relation to flue systems for gas appliances that should be applied.

Submitter 206 considers that the role of the Building Act needs to be addressed as part of the standard.

Submitter 209 comments that the limit of 40 kW for home heating is insufficient for larger homes being built in cold weather zones, which may have other heating demands such as a pool or hot water. The submitter suggests that a limit of 50 kW or more is required to accommodate these developments.

Submitter 209 comments that local authorities do not have the expert resources needed to deal with local issues, and suggests that the standard incorporate a team of nationally recognised experts to assist with setting local standards as required.

Submitter 214 considers that the standards should be applied only in areas where there is an air quality problem. The best multi-fuel burners capable of burning coal can barely meet 4 g/kg, while the replacement of old equipment which may emit 50 g/kg will result in a significant enhancement in air quality. The submitter considers that a non-regulatory approach is appropriate for communities on the West Coast because air quality is improving under the current regime.

Submitter 216 supports the need for national standards but disagrees with the proposed level of 1.5 g/kg because it does not take into account the efficiency of the appliance and does not guarantee that owners will operate the appliances correctly. The submitter considers that more education of wood-fire owners is needed.

Submitter 217 seeks a phase-in period of 5 to 10 years for the proposed emission limit of 1.5 g/kg, with an interim standard of 4 g/kg because many existing appliances meet 4 g/kg and a change to 1.5 g/kg will reduce the range of appliances available.

Submitter 217 supports the use of the AS/NZS test method and would not support the use of alternative test methods unless they are properly verified. The basis on which method equivalency is to be established should be specified in the standard (eg, when accepting results from overseas a requirement for the test laboratory to have IANZ or equivalent accreditation should be incorporated into the standard).

Submitter 217 also considers that the standard should be amended to include limits on efficiency specified in g/MJ (potentially calculated from the energy input), because it provides a better basis for comparison of appliances. While some appliances can comply with the g/kg requirement, they need large quantities of wood to provide the required heat and therefore the effective level of pollution is high in comparison to more efficient units.

Submitter 220 considers that allowing local authorities to introduce higher standards than the proposed national standards is at variance with the aims of the standards to provide “certainty and consistency”.

Submitter 221 wants consideration to be given to fine and ultra-fine particles because there may be situations where all forms of combustion heating should be prohibited from vulnerable urban air sheds.

Submitter 228 wants a ban on the use of coal in domestic burners to be implemented within the four-year timeframe. The use of domestic burners should be prohibited when the pollution is forecast to exceed the guideline level, unless there is a power cut. The submitter also seeks:

- an enforcement regime for excessively smoky burners, burners without a permit and stack height controls
- a prohibition on installing burners in houses where there has not been one
- a requirement that permits to use burners be withdrawn when houses are sold.

3.7 Costs and benefits of the standards package

Air Quality Technical Report Number 46, Section 5, stated that:

A detailed investigation of the costs and benefits of the proposed package of standards is underway The investigation includes health benefit modelling and surveys of industry and local government.

Submissions received in relation to costs and benefits are summarised below.

Submitters 6, 163 and 174 request that a section 32 analysis be provided for public comment and that it include the potential associated health cost of promulgating standards less stringent than the 2002 Guidelines.

Submitter 75 seeks a thorough social, economic and health cost–benefit analysis for the effects of the standards that occur now and in the future, including cumulative effects. The submitter wants \$10,000 to be incorporated for additional plan monitoring on an annual basis as well as an additional \$100,000 per new permanent monitoring site and an annual operating cost of \$30,000 to \$50,000.

Submitter 85 wants the Ministry to ensure that the full range of costs and benefits is taken into account when assessing the impact of the standards.

Submitter 90 comments that is unfortunate that the section 32 report was not publicly notified with the proposed standards, because if the submitter had examined the report they would be in a better position to form a view as to whether the standards are justified.

Submitter 113 is concerned that the standards will increase costs, and that these costs will have to be funded by the rate payer. The submitter considers that the analysis of costs is cursory and inconclusive and there appears to be no opportunity for the public to comment on the more detailed investigations under way.

Submitter 119 is concerned that there has been no adequate cost–benefit analysis justifying the direction taken, and considers that the costs will be unacceptable for small rural communities that are likely to have air quality problems. The submitter does not believe that the cost implications to ratepayers have been adequately taken into account. The submitter estimates the costs of the extra monitoring to be achieved at a faster rate will be an additional \$750,000, and considers that this burden should not be borne by council and the general rate. The submitter wants a cost–benefit analysis to be released to fully inform councils of the implications of the standards.

Submitter 122 comments that the standards will increase the cost of ambient air monitoring and modelling, which will be passed on to industry and rate payers. Industry may also incur additional costs as a result of the vigilance needed to prove compliance with standards.

Submitter 127 wants the Ministry to develop tools for councils to assess the social, economic and environmental costs and benefits of various air quality management options at the local level that take into account the national costs and benefits.

Submitter 131 considers that the costs and benefits should have been published with the proposed standards, and submissions sought concurrently.

Submitter 145 draws attention to the comment in the proposed standards “that industry seeking consent renewals may face additional costs including the costs to negotiate reductions from other sources and additional monitoring”. The submitter is concerned that this is only part of the costs, and that equipment or relocation costs could be prohibitive, leading to downstream costs to the community.

Submitter 150 is concerned about the costs of compliance and requests that they be limited by allowing existing resource consents to continue until their current expiry dates, and by removing councils’ discretion to impose more stringent limits than the standards.

Submitter 154 considers that the costs of implementation within the proposed timeframe are too high. The submitter’s recently notified air quality plan bans open fires from 2008, contains a cap on solid fuel burners, a 1 g/kg standard and a ban on outdoor burning, which would achieve the guideline by 2020 at a cost of \$3.44 million. A proposal to achieve the guideline by 2013 would have cost \$14.87 million. The cost to achieve the standard by 2008 is expected to be much more than this.

Submitter 156 is concerned at the costs to resource users and councils to implement the standards. Capital works required for the submitter to comply with the standards could be \$6 million.

Submitter 160 considers that the monitoring cost to the community and the cost of consents not being granted will be considerable. The submitter argues that considering costs and benefits in a broad-brush manner on a national scale is not appropriate and it would be preferable to have guidelines whereby the costs and benefits can be assessed locally.

Submitter 161 is concerned that the cost of meeting the proposed standard will be significant and that this cost must be clearly justified in terms of environmental benefit.

Submitter 164 considers that the compliance costs for industry are likely to increase due to a need for more precise data on emissions and more ambient monitoring being required. Where consents reviews are required, costs can be very significant, especially if there are appeals. Industry may also incur expenses from having to improve emission controls or (potentially) from relocating. The submitter assumes these costs have been incorporated into the cost-benefit analysis.

Submitter 177 considers that the costs to its members to upgrade from wet-scrubbing technology to bag-house technology are likely to be of the order of \$25 million, while the costs of relocation from a polluted air shed would be tens of millions of dollars for one site.

Submitter 180 seeks a credible cost-benefit analysis, which includes industry compliance costs. The submitter considers that the proposal contains several comments related to potential extra costs without quantifying them. The submitter also considers that the claimed cost reduction in section 1.3 relating to less confusion and arguments is unrealistic because there have been a number of resource consent processes where the focus has been on costly alternative modelling assessments with varying assumptions.

Submitter 183 comments that compliance costs associated with the standards need to be affordable, particularly to schools, and that there is a need to avoid making administration of the standards complex and expensive.

Submitter 208 considers that ways to reduce the costs associated with the proposed standards should be investigated, and is concerned that the required ambient monitoring could draw funds away from more appropriate programmes in areas that do not have an air quality problem.

Submitter 226 wants a cost-benefit analysis to be made available for comment before a decision is made.

Appendix A: Public Notices



(Published in the Waikato Times, Otago Daily Times, Southland Times, New Zealand Herald, Bay of Plenty Times, Christchurch Press and Wellington Dominion.)

In accordance with section 44 of the Resource Management Act (1991), the Minister for the Environment gives notice of her intention to develop national environmental standards (regulations) on the following subject matter:

1. Ambient air quality standards for the following priority contaminants: particles (PM₁₀), carbon monoxide, nitrogen dioxide, sulphur dioxide and ozone.

For each priority contaminant the proposed ambient air quality standards will include: a concentration limit, an allowable number of times per year that this concentration can be exceeded, an absolute maximum concentration limit for the exceedances that triggers enforcement action, and a monitoring method.

These regulations aim to: improve the consistency and certainty with which discharges into New Zealand's air are managed, to safeguard the life supporting capacity of air, and to avoid, remedy or mitigate adverse effects of activities on the environment and people's health and wellbeing.

2. Ban the following activities: deliberate burning of refuse at landfills, burning of tyres in the open, burning of coated wire in the open, burning of bitumen for road maintenance purposes, burning of oil in the open, and new high temperature hazardous waste incinerators.

Require resource consents for the following activities, by 2008: school and hospital low temperature incinerators.

These regulations will avoid significant adverse effects caused by these activities on the environment and people's health, and assist in safeguarding the life-supporting capacity of air.

3. Emission design standard for wood and coal burning appliances in houses in urban areas. This design standard means that any new appliances installed into buildings within urban areas must be identical to a unit that is tested in accordance with AS/NZS 4013:1999 entitled 'Domestic solid fuel burning appliances – Method for determination of flue gas emission' and meets an average emissions limit of 1.5 g of particle per kilogram of fuel burned. The emission limit requirement in the standard supersedes the emission limit of 4 g/kg specified in AS/NZS 4013:1999.

This regulation will assist in remedying and mitigating the potential adverse health and environmental effects caused by emissions from new, small heating appliances.

4. Requirement for the collection and destruction of landfill gas, unless surface methane emissions levels are below a specified emission rate. This standard requires operating municipal waste landfills with a total capacity of over 1 million tonnes to install a landfill gas collection and destruction system (eg, landfill gas flaring) unless they can demonstrate that methane surface emissions are less than 1% methane (by volume in air).

This regulation will assist in avoiding methane emissions resulting from the disposal of solid waste.

Further details on these proposals can be viewed at the Ministry for the Environment, 84 Boulcott Street, Wellington and at www.mfe.govt.nz.

Any person can make a submission on the proposed national environmental standards. The submission must be dated, signed by you and include the following information:

1. Your name and postal address, phone number, fax number and email address (if applicable).
2. Details of the standard in respect of which you are making the submission.
3. Whether you support or oppose the standard.
4. Your submission, with reasons.
5. Any changes you would like made to the proposed standard, if any.
6. The decision you wish the Minister for the Environment to make.

You must forward your submission to the Ministry for the Environment, PO Box 10-362, Wellington, or by email to standards@mfe.govt.nz in time to be received no later than 5 pm on Friday 5 December 2003.

National environmental standards are regulations prescribed by the Governor-General, by Order in Council. For further details on the relevant statutory provisions refer to section 43 and 44 of the Resource Management Act, 1991.

Appendix B: Index of Submitters

Note that a number of submission numbers are labelled as “removed”. “Removed” submissions are submissions that were originally entered twice in the database (ie, once on email, once on hard copy). All submissions received prior to 25 December 2003 were accepted.

No.	Name	Company	Category
1		Nelson Pine Industries Ltd	Industry
2	Garry Macdonald	Beca Carter Hollings & Ferner Ltd	Industry
3	Alan Happy	Winstone Aggregates	Industry
4	Ted Caiger	Penford New Zealand Ltd	Industry
5	Murray Parrish and Matt Klein	Carter Holt Harvey	Industry
6	Kevin Mahon	Auckland Regional Council	Regional government
7	Trevor Burling	National Federation of Rail Organisations	Industry
8	Removed	Removed	
9	Simon Hales		Community
10	GI Fairbairn	New Zealand Automobile Association	Consulting/professional
11	Angela Davies		Community
12	Peter Jericevich	Fire Place Clinic	Business
13	Wallace Lawton (technician)	The Fireplace	Business
14	Sue King	Kings Mowers & Heating	Business
15	Stewart and Trish Gutschlag	MacManus Heating Ltd	Business
16	John Young	The Fire Shop Ltd	Business
17	William Needs	Jacks Mitre 10	Business
18	Colin Hook	Ramada Home Heating	Business
19	GM Aitken	The Gas & Heating Centre Ltd	Business
20	John Packham	Fire & Tile, Blenheim	Business
21	Tania Zammit	Logfire Solutions Ltd	Business
22	Jonathon Wassink	Firetech Fireplace Specialists Ltd	Business
23	Rochelle Zammit	4 Seasons, Wellington	Business
24	Graham Sharp	Heating & Controls Ltd	Business
25	Dave Pullen		Business
26	Dr John L Hoare		Academic
27	Florence Williams		Community
28	Mr van Kampen (President)	Ravensbourne Residents Association Inc	Community
29	GM Pennefather	NZ Defence Force	Central government
30	Ed Hawkes (National Secretary)	New Zealand Home Heating Association	Industry
31	BG Chamberlain (Chief Executive)	Taranaki Regional Council	Regional government
32	Arthur Stanley Lynch	Arts Chimney Sweeping	Business
33	Peter Townsend	Canterbury Employers' Chamber of Commerce	Business
34	Dr Victoria Grace and Dr Louis Arnoux		Community
35	Dr Pullen	AP Consulting Services	Industry
36	Professor Ian Town	Christchurch School of Medicine	Academic
37	Stephen Hickson	Department of Economics, University of Canterbury	Academic
38	Ian McInnes	Toxins Awareness Group NZ (Inc)	Community
39	Kelly Moir		Community

No.	Name	Company	Category
40	Simon Wallace		Community
41	Kate Alterio		Community
42	Duncan Eddy		Community
43	Julian Crawford		Community
44	Peter Gilbert (Executive Director)	LPG Association of New Zealand (Inc)	Industry
45	J Wiltshire	Resource Management Law Association	Consulting/professional
46	Lew Metcalfe	Federated Farmers of New Zealand (Inc)	Industry
47	Peter Hewitson	Hewitsons Ltd	Business
48	Lou Webster	Log Fire Services	Business
49	Peter van Leeuwen	The Fireplace Ltd	Business
50	Steve Devine	The Fireplace Ltd	Business
51	Denis Bradley	Northcote Cycles, Mowers & Heating	Business
52	Robbie Gardiner	The Fireplace Ltd	Business
53	Remco Vis	Mantel Incorporated Ltd	Business
54	Dave Keenan	M&W Installations	Business
55	Ian Jordan	Penniall & Jordan Co Ltd	Business
56	Darren Fox	D&D Landscapes Ltd	Business
57	Peter Bootten	Peninsula Mowers & Heating Centre	Business
58	Greg Keith Morgan	Better Mower & Heating Centre	Business
59	Evan Harris	WH Harris Ltd	Business
60	John Austing	P&M Fireplaces	Business
61	Ian Gallagher	GLG NZ Ltd	Business
62	Gordon Goodman	Warmfloors Gas & Heat Centre	Business
63	Lewis Stronge	Metal Fabrication Industries	Business
64	George McKenzie	Northland Heating & Great Outdoor	Business
65	Jo-Anne Stokes	Rural Women New Zealand	NGO/community
66	Jack Richardson	New Zealand Association for Animal Health & Crop Protection	Industry
67	Chris Edmonds	Hutt Valley District Health Board	Regional government
68	Wayne Moen	The West Coast Waste Management Group	Regional government
69	Cornelia Ihl		Community
70	John Potter		Community
71	Darin Butler	Pioneer Manufacturing Ltd	Business
72	Vaughn Cooper	Northland Regional Council	Regional government
73	Dr Mike Patrick		Community
74	Greg Stevenson	Warmington Industries	Business
75	John Talbot	Environment Canterbury	Regional government
76	Wendy Forte		Community
77	Christina Dostal		Community
78	David Forte		Community
79	Amanda Heger		Community
80	Alex Forte		Community
81	Scott James Guttery		Community
82	Anita Crisinel		Community
83	Rochelle Zammit	Fireworx	Business
84	Mrs Shirley Clarke *Water submission		Community
85	Dr Robin Dunlop (Chief Executive)	Transit New Zealand	Central government
86	Removed		

No.	Name	Company	Category
87	Jaap van Dorsser	Northern Flowergrowers Association (Inc)	Business
88	Paul Vane / Jim Cropper	Skellerup Industries Ltd	Industry
89	Sir David Hay		Academic
90	Tina Hailstone	Contact Energy	Industry
91	Jaap van Dorsser	Shipherd Nurseries	Business
92	Richelle Rowe	Wilson Choat	Business
93	Stephen Jacobi (Chief Executive)	NZ Forest Industries Council	Industry
	Rob McLagan (Chief Executive)	NZ Forest Owners Association	Industry
94	Irene Clarke	New Zealand Planning Institute	Consulting/professional
95	RJ Gerard, Mayor	Waimakariri District Council	Local government
96	Doug Watt		Community
97	John Frizzel		Community
98	W Hove (CEO)	Masterton District Council	Local government
99	K McCracken	Nectar Ltd	Business
100	Dr Craig Stevenson	Air & Environmental Sciences Ltd	Consulting/professional
101	Removed		
102	Joyce Crooks	New Zealand Clean Air Society	Community
103	Andrea Barzotto	The Fireplace Ltd	Business
104	Tony Gardner	Tony Gardner Heating	Business
105	Paul Hayes	BL Rayner 93 Ltd	Business
106	Brian Boakes	Plumbing & Heating Centre	Business
107	John Pedersen		Community
108	Christine Pedersen		Community
109	Bruce Halligan	Southland District Council	Local government
110	Paul Sintes		Industry
111	Marc Fauvel	Rotorua District Council	Local government
112	Beryl Anderson (National President) and Barbara Arnold (Convener)	Environment Standing Committee, National Council of Women	Central government
113	Ken Robertson	Vegfed	Agriculture
114	Fiona Hill	Meridian Energy	Industry
115	Graeme Richardson	Tramway Historical Society (Inc)	Business
116	Ralph Ross	Christchurch Combined Residents Association (Inc)	Community
117	DG Butler	Alliance Group Ltd	Industry
118	John Iseli (Director)	Specialist Environmental Services Ltd	Consulting/professional
119	Jeanette Black	Environment Waikato	Regional government
120	Andrew Caseley (General Manager)	Hawke's Bay Regional Council	Regional government
121	Selva Selvarajah	Otago Regional Council	Regional government
122	Robb Hunter	Mighty River Power	Industry
123	John Mandemaker	Environment Bay of Plenty	Regional government
124		Ravensdown Fertiliser Co-operative Ltd	Industry
125	Robert Tromop	Energy Efficiency & Conservation Authority	Central government
126		Christchurch International Airport Ltd	Industry
127	Dennis Bush-King	Tasman District Council	Local government
128	Tony Gellen	Dow Agro Sciences (NZ) Ltd	Industry
129	Trish Gavin	Ministry of Education	Central government
130	Mike Day	Lyttelton Port Company Ltd	Industry

No.	Name	Company	Category
131	Garry Moore (Mayor)	Christchurch City Council	Local government
132	Barry Cairns	Jetmaster NZ	Business
133	Peter Rogers	Water Care Services	Industry
134	Ram Sharma and Luke McCarthy	Management Engineering Environment	Consulting/professional
135	Werner Janssens	West Glen Industries Ltd	Business
136	Tony Reidy	North Shore City Council	Local government
137	Kevin Hing (Deputy Director)	New Zealand Timber Industry Federation	Industry
138	Pat Palmer		Community
139	Ron Pilgrim	Sinclair Knight Merz	Consulting/professional
140	Neil Bromley	Transpower	Industry
141	Leo Murray	Leo's Clean Sweep	Business
142	Susan Bowater	Bowaters Plumbing Co Ltd	Business
143	Sue Connor	Greenpeace	Community
144	Louise O'Callaghan		Community
145	Stephen Godfrey	Orion New Zealand Ltd	Consulting/professional
146	Andy Matheson	Solid Energy Renewable Fuels Ltd	Business
147	Elizabeth Halford	Support Network for Aldehyde & Solvent Affected	Community
148	Emma Forster		Community
149	David Bertram	Wairarapa Heating & Tiling	Business
150	John Pfahlert	New Zealand Building Industry Federation	Industry
151	Helen Jenkins	Carter Holt Harvey Tasman	Industry
152	Tina Neal / Stephen Parker	Gas Association of New Zealand (Inc)	Industry
153	John Walley	Canterbury Manufacturers' Association	Industry
154	David Jackson	Nelson City Council	Local government
155	Mike Farrier	Mike Farrier Consulting Ltd	Consulting/professional
156	Removed		
157	Donald Hannah	ERMA New Zealand	Central government
158	David MacClement		Community
159	John Fry	Yunca Group	Home heating
160	Neil Shewan	Bowron Sheepskin	Industry
161	Dianne Larking	Fonterra Co-operative Group Ltd	Industry
162	Kevin Duke	New Zealand Aluminium Smelters Ltd	Industry
163	Ian Farrell	Rodney District Council	Local government
164	Gary Macdonald	Beca Water & Environment	Consulting/professional
165	Phil Allen	Masport Ltd	Industry
166	Roscoe Tait	Nuplex Industries Ltd	Industry
167	Sue Cotton	Westland Milk Products	Industry
168	Ross Russell		Community
169	Kimberley Dunning	Newmont Waihi Operations	Industry
170	Removed		
171	Paul Bonetti	Golden Bay Cement	Industry
172	Chris O'Leary	Kai Point Coal	Industry
173	Amanda Briggs		Community
174	Carol Bergquist	Waitakere City Council	Local government
175	Nicola Shorten	Greater Wellington	Regional government
176	Removed		
177	Greg Slaughter	New Zealand Pavement and Bitumen Contractors Association	Industry

No.	Name	Company	Category
178	Tom Mackenzie		Community
179	Alan and Cecilia McCulloch	Dr Flue	Business
180	Wayne Hennessy	CRL Energy Ltd	Industry
181	Denise Ward	The Environmental Protection for Children Trust	Community
182	Jane Bayley	Buller District Council	Local government
183	Removed		
184	Jim Sinner and Guy Salmon	Ecologic	Business
185	Judith Sinclair and Eckehard Brockerhoff	"Children's Task Force", Ilam and Upper Riccarton Residents' Association	Community
186	Warwick Isaacs (Chief Executive)	Timaru District Council	Local government
187	David Hansen	Waste Resources Ltd	Industry
188	Derrick Bryce Foley	Foley's Fire Works	Business
189	Les Dwight	Dallas Metal Industries Ltd	Business
190	Nick Visser and Freda Visser	Tropicair Heating Ltd	Business
191	Russell Smith	Bay Machinery & Heating	Business
192	H C Chong	Foley Industries Ltd	Business
193	CN Webber	T Tricklebank Ltd	Business
194	Ken Brokenshire	Brokenshire & Ross Ltd	Business
195	Jeremy Adams	Pool Patio & Heating	Business
196	Dave Cameron	Collingwood Mowers & Heating Ltd	Business
197	Paul Jeffery	Décor Frame 'n' Heat Shop	Business
198	Removed		
199	Vicki Martin	Healtheries	Business
200	Removed		
201	Don Elder	Solid Energy	Industry
202	John Downey	Enviroservices (2002) Ltd	Consulting/professional
203	Various	Leaders of Christchurch	Local government
204	Barry Kernot	Waegner Stoves "Lion" Ltd	Business
205	Norma Crutchley	Ilam and Upper Riccarton Residents' Association	Community
206	Ken Swinney	Environment Southland	Regional government
207	AW Gregory	Rinnai New Zealand Ltd	Business
208	Andrea Marshall	Genesis Power Ltd	Industry
209	Colin Campbell	Avon Electric Ltd	Business
210	Tony Norton		Community
211	Emily Murray		Community
212	Miles Stratford	Olivine New Zealand Ltd	Business
213	Michael Rynne	Holcim New Zealand Ltd	Industry
214	Chris Ingle	West Coast Regional Council	Regional government
215	Bret Highsted	Newvale Coal Co Ltd	Industry
216	Chris Jensen	Sheetmetal Fabricated Products Ltd	Industry
217	Wayne Webley	Applied Research Services Ltd	Consulting/professional
218	Miljenko Pavlinic	HG Leach & Company Ltd	Industry
219	Peter McKinnel	Dominion Salt Ltd	Industry
220	Peter Whitehouse	Business NZ	Business
221	Don Murray	Nelson Transport Strategy Group – Nelsut Inc	Community
222	Louise Freckleton		Community
223	Murray Dudfield	National Rural Fire Authority	Community

No.	Name	Company	Category
224	Jo Buckner	Ministry of Transport	Central government
225	Barry O'Neil	MAF Biosecurity Authority	Central government
226	Bryan Taylor	Auckland City Council	Local government
227	Alanya Limmer	Lane Neave Lawyers	Business
228	W and R Teeuwen	Christchurch	Community
229	Janet Begg	Christchurch	Community
230	Jeanette Aplin		Community
231	Hans van Kregten	Gisborne District Council	Local government
	Daniell Kukec	Greenpeace	Community
	Sarah Aitken	Greenpeace	Community
	Jenny Wells	Greenpeace	Community
	Zoe Grenville	Greenpeace	Community
	Samuel Leigh	Greenpeace	Community
	J Cleary	Greenpeace	Community
	Rebecca and Winston Gately	Greenpeace	Community
	Sarah Lee	Greenpeace	Community
	Michael Talia Ferro	Greenpeace	Community
	Karyn Hira	Greenpeace	Community
	Addison Course	Greenpeace	Community
	Gene Harris	Greenpeace	Community
	L Te Kiri	Greenpeace	Community
	Wayne Jolly	Greenpeace	Community
	Beth Avid	Greenpeace	Community
	Sean Sturm	Greenpeace	Community
	Sarah Allerby	Greenpeace	Community
	BT Rae	Greenpeace	Community
	Dr Anne O'Reilly	Greenpeace	Community
	Vicki Evans	Greenpeace	Community
	S Hodson	Greenpeace	Community
	Wendy Marr	Greenpeace	Community
	James and Hazel Boulter	Greenpeace	Community
	Elva Day	Greenpeace	Community
	Brendan Moore	Greenpeace	Community
	Daniel Couling	Greenpeace	Community
	M Cubbin	Greenpeace	Community
	Jason Low	Greenpeace	Community
	Gillian Pollock	Greenpeace	Community
	Darren Keenan	Greenpeace	Community
	Angelique Kasmara	Greenpeace	Community
	Katarina Chapman	Greenpeace	Community
	Alicia Olivev	Greenpeace	Community
	Linda Dugmore	Greenpeace	Community
	Alison Mills	Greenpeace	Community
	Sue Knight	Greenpeace	Community
	Andrea Emslie	Greenpeace	Community
	Debbie Matthews	Greenpeace	Community
	Andy Devlin	Greenpeace	Community
	Maureen Farrand	Greenpeace	Community
	Kerry Hiini	Greenpeace	Community

No.	Name	Company	Category
	Ginny Holland	Greenpeace	Community
	Angela Short	Greenpeace	Community
	Lance Clark	Greenpeace	Community
	Mike Cho	Greenpeace	Community
	Marie Holgate	Greenpeace	Community
	DM Duncan	Greenpeace	Community
	Mary Purcell	Greenpeace	Community
	Jackie Papuni	Greenpeace	Community
	Mrs M Borst	Greenpeace	Community
	Dan Cook	Greenpeace	Community
	Gaz Waller	Greenpeace	Community
	Georgia Rolinson	Greenpeace	Community
	Tony Brown	Greenpeace	Community
	Paula Sillars	Greenpeace	Community
	Peter Smith	Greenpeace	Community
	Edward Gray	Greenpeace	Community
	Richard Bird	Greenpeace	Community
	Ivo Wiesner	Greenpeace	Community
	Shayne McGrath	Greenpeace	Community
	Tony Gillespie	Greenpeace	Community
	LM Ryan	Greenpeace	Community
	Andrew Colgan	Greenpeace	Community
	James Martin	Greenpeace	Community
	Craig Foothead	Greenpeace	Community
	Bridgett Baus	Greenpeace	Community
	Jean Amohanga	Greenpeace	Community
	Rob McCarthy	Greenpeace	Community
	Maria Piggott	Greenpeace	Community
	PJ Soo Choon Jnr	Greenpeace	Community
	Terry Weblemore	Greenpeace	Community
	Karl Martin	Greenpeace	Community
	Steven Robertson	Greenpeace	Community
	Aaron Wright	Greenpeace	Community
	Lolo Salulu	Greenpeace	Community
	DJ Panckhurst	Greenpeace	Community
	Grace Riggir-Cuddy	Greenpeace	Community
	Marcia Ducnot	Greenpeace	Community
	Nancy Douglas	Greenpeace	Community
	Yvonne Dion	Greenpeace	Community
	Lyndsay Knight	Greenpeace	Community
	Adrienne Fenwick	Greenpeace	Community
	DJ Grimshaw	Greenpeace	Community
	Donna Brass	Greenpeace	Community
	P Ballantyne	Greenpeace	Community
	Hugh McKenzie	Greenpeace	Community
	Carol Peters	Greenpeace	Community
	Wiremu Tau	Greenpeace	Community
	Colin Lupton	Greenpeace	Community
	Michael Tinling	Greenpeace	Community

No.	Name	Company	Category
	Nathan Dodds	Greenpeace	Community
	Nigel Love	Greenpeace	Community
	William Daus	Greenpeace	Community
	Craig Miller	Greenpeace	Community
	Isa Tamgjanau	Greenpeace	Community
	Fiona Blackmore	Greenpeace	Community
	Deidre Simms	Greenpeace	Community
	P and E McMillan	Greenpeace	Community
	Eira Kuttner	Greenpeace	Community
	Kim and Russ Osborne	Greenpeace	Community
	DJ McCahon	Greenpeace	Community
	Marie Pene	Greenpeace	Community
	Georgis Tatana	Greenpeace	Community
	Deborah Szentesi	Greenpeace	Community
	LM Alexander	Greenpeace	Community
	Richard Lamb	Greenpeace	Community
	Mark Anthony Wharerau	Greenpeace	Community
	Anthony Snelling Berg	Greenpeace	Community
	Donna Tearii	Greenpeace	Community
	Shirley A New	Greenpeace	Community
	R Headford	Greenpeace	Community
	Russell Wilson	Greenpeace	Community
	Pauline Taylor	Greenpeace	Community
	Jess Prescott	Greenpeace	Community
	Avirl Toia	Greenpeace	Community
	Lyndell Solouota	Greenpeace	Community
	Virginia Thorne	Greenpeace	Community
	IR MacDonald	Greenpeace	Community
	Ian Squire	Greenpeace	Community
	Harley Samuel	Greenpeace	Community
	Bob and Jules McMurtrie	Greenpeace	Community
	Dallas Malcolm	Greenpeace	Community
	Gretchen Gulick	Greenpeace	Community
	Lara Flowers	Greenpeace	Community
	SJ Hassell	Greenpeace	Community
	Daniel Williams	Greenpeace	Community
	Faith Read	Greenpeace	Community
	Christine McArthur	Greenpeace	Community
	Stephen Leslie Newton	Greenpeace	Community
	David Perry	Greenpeace	Community
	Helen Margaret Swiney	Greenpeace	Community
	Margery Ethel du Plessis	Greenpeace	Community
	Richard Peters	Greenpeace	Community
	Nicki Fairbairn	Greenpeace	Community
	Meryl Jocelyn Lowrie	Greenpeace	Community
	Misko Spiridonovic	Greenpeace	Community
	George Waldemar Skellerup	Greenpeace	Community
	Alethea	Greenpeace	Community
	Christine Bramwell	Greenpeace	Community

No.	Name	Company	Category
	Keith Maree Mead	Greenpeace	Community
	Shayne McGrath	Greenpeace	Community
	Scott Lawrence	Greenpeace	Community
	Pakeeza Abeedah Rasheed	Greenpeace	Community
	Nicci Mardle	Greenpeace	Community
	Lucan David Frank Trill	Greenpeace	Community
	Theresa Jean Smith	Greenpeace	Community
	Heather McGarvey	Greenpeace	Community
	Peter Hamilton	Greenpeace	Community
	Caragh Jess Briggs	Greenpeace	Community
	David Bruce Woodnorth	Greenpeace	Community
	Shaune Price	Greenpeace	Community
	Gareth George	Greenpeace	Community
	Nirelia Mebina Indrus	Greenpeace	Community
	William van Heugten	Greenpeace	Community
	Claire Patricia Convey	Greenpeace	Community
	Tane Wallace	Greenpeace	Community
	Raquel Montan	Greenpeace	Community
	Amy Heath Butt	Greenpeace	Community
	Phillip Jeffery Clayton Hart	Greenpeace	Community
	Louise Plewman	Greenpeace	Community
	Talia Hope	Greenpeace	Community
	Bede Williams	Greenpeace	Community
	Michael John Veevers	Greenpeace	Community
	Vicky-Less Mueller	Greenpeace	Community
	Yaniv Mizrahi	Greenpeace	Community
	Ginnette Adams	Greenpeace	Community
	Teresa DeCicco	Greenpeace	Community
	Anne Farquharson	Greenpeace	Community
	Sharon Mclver	Greenpeace	Community
	Mary Elizabeth Brown	Greenpeace	Community
	Jason Russell Edmunds	Greenpeace	Community
	Louise Kelly	Greenpeace	Community
	Hannah Thorne	Greenpeace	Community
	Tarn Elvis Evans	Greenpeace	Community
	Katarina Te Maihoroa	Greenpeace	Community
	Andrew Kevin McKay	Greenpeace	Community
	Jean Patricia Harrison	Greenpeace	Community
	Emily Chang	Greenpeace	Community
	Tessa Johnstone	Greenpeace	Community
	Tania Wood	Greenpeace	Community
	Wieteke Idzerda	Greenpeace	Community
	Alannah Grainger	Greenpeace	Community
	Daniel Rupert John Dickie	Greenpeace	Community
	Suzette King	Greenpeace	Community
	James Trotman	Greenpeace	Community
	Nick Young	Greenpeace	Community
	Joshua James Burdett Briscoe	Greenpeace	Community
	Cha Smith	Greenpeace	Community

No.	Name	Company	Category
	Anna Frances Vincet	Greenpeace	Community
	Alys Longley	Greenpeace	Community
	Marilyn Patricia Hannah	Greenpeace	Community
	Chris van de Molen	Greenpeace	Community
	Andrew Carey	Greenpeace	Community
	Steve McClellan	Greenpeace	Community
	Paul Rehu McGregor Murchie	Greenpeace	Community
	Jonathan Lewis Campbell	Greenpeace	Community
	Heather Goodwin	Greenpeace	Community
	Desaree Buchanan	Greenpeace	Community
	Anastasia Turnbull	Greenpeace	Community
	Thomas Nevison	Greenpeace	Community
	Kathrine Anne Smith	Greenpeace	Community
	Allan Meredith	Greenpeace	Community
	Sarah Kok	Greenpeace	Community
	Sabine Schnieder	Greenpeace	Community
	Mark Cole	Greenpeace	Community
	Selene Morwood	Greenpeace	Community
	Lisa Marshall	Greenpeace	Community
	Barbara Arbon	Greenpeace	Community
	Victoria Crookes	Greenpeace	Community
	Jean-Francois Fauconnier	Greenpeace	Community
	William McNab	Greenpeace	Community
	Faye Wendy Thompson	Greenpeace	Community
	Sharon Young	Greenpeace	Community
	Dr Mynhard Rudolph	Greenpeace	Community
	Samantha Hayes	Greenpeace	Community
	Maree Elizabeth Merle Walker	Greenpeace	Community
	Karen Kay Walker	Greenpeace	Community
	David Hards	Greenpeace	Community
	Lillian Fougere	Greenpeace	Community
	Natalie Jessup	Greenpeace	Community
	Stephen Hards	Greenpeace	Community
	Susan Hards	Greenpeace	Community
	Elizabeth Jury	Greenpeace	Community
	Melanie Cussins	Greenpeace	Community
	Ahn Chul Sang	Greenpeace	Community
	Mirian Culpitt	Greenpeace	Community
	Geraldine Anna Smyth	Greenpeace	Community
	John Macfarlane	Greenpeace	Community
	Emma Braund	Greenpeace	Community
	Anson betts	Greenpeace	Community
	Rebecca Ellis	Greenpeace	Community
	Colin Charles Croft Hewens	Greenpeace	Community
	Eve Barlow	Greenpeace	Community
	Sarah Webster	Greenpeace	Community
	Linda Hansen	Greenpeace	Community
	Kate Giles	Greenpeace	Community
	Ariana Baker	Greenpeace	Community

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	Wendy Hay	Greenpeace	Community
	Sarah Anne Bedford	Greenpeace	Community
	Bradley Neil Robertson	Greenpeace	Community
	Metua Parr	Greenpeace	Community
	Natasha Webb	Greenpeace	Community
	Heather Wadsworth	Greenpeace	Community
	Mamen Illan	Greenpeace	Community
	Benjamin Joseph Allan	Greenpeace	Community
	David Purdie	Greenpeace	Community
	Nyree Ingle	Greenpeace	Community
	Sam Hay	Greenpeace	Community
	Jolene Morrell	Greenpeace	Community
	Maria Jesus Calzon	Greenpeace	Community
	Helen Whiting	Greenpeace	Community
	Catherine Margaret Amy Jackson	Greenpeace	Community
	Campbell Bruce Rousselle	Greenpeace	Community
	Kylie Hospenthal	Greenpeace	Community
	Ashley Hooper	Greenpeace	Community
	Bevan Hambling	Greenpeace	Community
	Camron Roy Kerr	Greenpeace	Community
	Diana M Austring	Greenpeace	Community
	Luas Ferreirim	Greenpeace	Community
	Joanne Frances Keenan	Greenpeace	Community
	Matthew Simon Clark	Greenpeace	Community
	Toby Falconer	Greenpeace	Community
	Jade Smith	Greenpeace	Community
	Albert Rodriguez	Greenpeace	Community
	Kayla Lynne MacKenzie-Kopp	Greenpeace	Community
	Lindsey Britton	Greenpeace	Community
	Andrew Mark Baynes	Greenpeace	Community
	Elizabeth Ann Baynes	Greenpeace	Community
	Rowena Spankie	Greenpeace	Community
	Lorraine Ann Thompson	Greenpeace	Community
	Suzanne Gilbert	Greenpeace	Community
	Phillip James Bush	Greenpeace	Community
	Jill Thomson	Greenpeace	Community
	Alexandra Shirley Siobhan Winter-Billington	Greenpeace	Community
	Emma Nicole Hilderink	Greenpeace	Community
	Gary Alec Baxter	Greenpeace	Community
	Fane Likio	Greenpeace	Community
	Maelanie Jane Gizzy-Neither	Greenpeace	Community
	Celeste Marie Donovan	Greenpeace	Community
	Alexia Smits Sandano	Greenpeace	Community
	Micheal Herbert McClelland	Greenpeace	Community
	Adrienne Patricia Worsfold	Greenpeace	Community
	Ralf Kleinsorge	Greenpeace	Community
	Delaine Jones	Greenpeace	Community
	Michelle Meades	Greenpeace	Community

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	Jennifer Sally Heke	Greenpeace	Community
	Robert Anthony Holt	Greenpeace	Community
	Martin Gray	Greenpeace	Community
	Rachel Trounson	Greenpeace	Community
	Alice Leney	Greenpeace	Community
	Nicola Kathleen Wood	Greenpeace	Community
	Stephen Tierney	Greenpeace	Community
	Natalie Wilkinson	Greenpeace	Community
	Madeline Drew	Greenpeace	Community
	Erica Tiedemann	Greenpeace	Community
	Robina Broughton	Greenpeace	Community
	Jonathan Clark	Greenpeace	Community
	Nicola Sayers	Greenpeace	Community
	Sarah Louise Lynagh	Greenpeace	Community
	Pearl Sutcliffe	Greenpeace	Community
	Mildred Jane Young	Greenpeace	Community
	Emma Gregory	Greenpeace	Community
	Linda Ann Bench	Greenpeace	Community
	Barbara Marie Vincent	Greenpeace	Community
	Hayley Kathleen Preston	Greenpeace	Community
	Michelle Mathis	Greenpeace	Community
	Sacha Dowell	Greenpeace	Community
	Nicolaas Thiemen Francken	Greenpeace	Community
	Janica Dale Amooore	Greenpeace	Community
	Ann Caroline Malan	Greenpeace	Community
	James Andrew Cuming	Greenpeace	Community
	Carly Mould	Greenpeace	Community
	Franceaska Francina	Greenpeace	Community
	Zara Coghill	Greenpeace	Community
	Julienne McRae	Greenpeace	Community
	Andrea Copland	Greenpeace	Community
	Helen Williamson	Greenpeace	Community
	Tina Marie McDowall	Greenpeace	Community
	Steve Abel	Greenpeace	Community
	Nathan Lovell	Greenpeace	Community
	Kim Brown	Greenpeace	Community
	Nigel Collins	Greenpeace	Community
	Ruth Upsdell	Greenpeace	Community
	Francisco Gonzalea	Greenpeace	Community
	Janika Cleghorn	Greenpeace	Community
	Caren Schroder	Greenpeace	Community
	Kathy Anne Mathieson	Greenpeace	Community
	Christina Hartung	Greenpeace	Community
	Alice Jamieson	Greenpeace	Community
	Ma Josac Serra	Greenpeace	Community
	Juan Vaquer	Greenpeace	Community
	Tony William Donovan	Greenpeace	Community
	Jason Paul Penny	Greenpeace	Community
	Heath Milligan	Greenpeace	Community

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	Claire Richardson	Greenpeace	Community
	Angela Marie Gibson	Greenpeace	Community
	Ayesha Rewa Evans	Greenpeace	Community
	Danielle Turnbull	Greenpeace	Community
	Alicia Fenton	Greenpeace	Community
	Lucinda McConnon	Greenpeace	Community
	Sally Stevens	Greenpeace	Community
	Charles David Fitzgerald	Greenpeace	Community
	Liam Taylor	Greenpeace	Community
	Robbie Macaskill	Greenpeace	Community
	Ana Pacrez	Greenpeace	Community
	Rangi Jackson	Greenpeace	Community
	Kirsty Sheridan	Greenpeace	Community
	Donna Dalzell	Greenpeace	Community
	David Rei Miller	Greenpeace	Community
	Karoline Lalahi	Greenpeace	Community
	Pini Tahana	Greenpeace	Community
	Cherie Todd	Greenpeace	Community
	Glyn Micheal Jones	Greenpeace	Community
	Kimberley Ann Rooney	Greenpeace	Community
	Mike Gregory	Greenpeace	Community
	Monica Farras	Greenpeace	Community
	Antonio Peaa Garcia	Greenpeace	Community
	Libertad S Alvarez Martan	Greenpeace	Community
	Brian Milham	Greenpeace	Community
	Micheal Fleck	Greenpeace	Community
	Erin Elizabeth Jolly	Greenpeace	Community
	Tony Trevor Chandler	Greenpeace	Community
	Robert Skinner	Greenpeace	Community
	Robin Skinner	Greenpeace	Community
	Bailey Hunt	Greenpeace	Community
	Paul Rawson	Greenpeace	Community
	Amanda Elvin	Greenpeace	Community
	Murchie Lyons	Greenpeace	Community
	David Ward Curtis	Greenpeace	Community
	Cheryl Butterworth	Greenpeace	Community
	Toby James Shanley	Greenpeace	Community
	Marjorie Evelyn Glaister	Greenpeace	Community
	Eddie Warren	Greenpeace	Community
	Teressa Odette Hansard	Greenpeace	Community
	Carol Knutson	Greenpeace	Community
	Gundrun Draga Wilson	Greenpeace	Community
	Mary Bain Petley	Greenpeace	Community
	Guy Charles Nicoll	Greenpeace	Community
	Angelina van Driel	Greenpeace	Community
	Louise Thebald	Greenpeace	Community
	Suzie Ranson	Greenpeace	Community
	Kate Geange	Greenpeace	Community
	Kelly Donaldson	Greenpeace	Community

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	Emma Louise Ryburn	Greenpeace	Community
	Carol Anke	Greenpeace	Community
	Luis Guijarro Martinez	Greenpeace	Community
	Suzanne Lisbeth Jolly	Greenpeace	Community
	Sarah Karen Weusten	Greenpeace	Community
	Sonia Michelle Kerr	Greenpeace	Community
	A Mitikulena	Greenpeace	Community
	Robet Schraders	Greenpeace	Community
	Rachel Fenton	Greenpeace	Community
	Kerri du Pont	Greenpeace	Community
	Michelle Wood	Greenpeace	Community
	Cameron Moreno Sachez	Greenpeace	Community
	Craig Easson	Greenpeace	Community
	Christina Hine Green	Greenpeace	Community
	Joan Sutton	Greenpeace	Community
	Peter Sutton	Greenpeace	Community
	Amelia Fellerhoff	Greenpeace	Community
	Stefan N. Riederer	Greenpeace	Community
	Barbara Anne Barrett	Greenpeace	Community
	Sandra Jaine Vanderweg	Greenpeace	Community
	Richard Tuturu Iti	Greenpeace	Community
	Mark Stuart-Jones	Greenpeace	Community
	Juanma Urban Martinez	Greenpeace	Community
	Jesaoa Maran Fernandez	Greenpeace	Community
	Merren Tait	Greenpeace	Community
	Tara Daellenbach	Greenpeace	Community
	Javier Suarez Levia	Greenpeace	Community
	Maria Amparo Muatoz Lladra	Greenpeace	Community
	Janet Ray	Greenpeace	Community
	Dan Cooper	Greenpeace	Community
	Jamie Campbell	Greenpeace	Community
	Luis Crespo	Greenpeace	Community
	Amber Lahikainen	Greenpeace	Community
	Samantha Prytz	Greenpeace	Community
	Neus Vila	Greenpeace	Community
	Asa Lind-Chong	Greenpeace	Community
	Jason Carl Webber	Greenpeace	Community
	Nicola Carruthers	Greenpeace	Community
	Lorraine Halliwell	Greenpeace	Community
	Adrienne Chowen	Greenpeace	Community
	Margret Petrie	Greenpeace	Community
	Gary Hutchinson	Greenpeace	Community
	Susan Marris	Greenpeace	Community
	Eva Riederer	Greenpeace	Community
	Naomi Ruth Price	Greenpeace	Community
	Faith Mane	Greenpeace	Community
	David John Evans	Greenpeace	Community
	Jasmine Olivia May Taylor	Greenpeace	Community
	Amelia Geary	Greenpeace	Community

No.	Name	Company	Category
	Rebecca Leanne Prosser	Greenpeace	Community
	Karen Forno	Greenpeace	Community
	Joanna Gwen Ellis	Greenpeace	Community
	Celia Robinson	Greenpeace	Community
	Craig Youngjay	Greenpeace	Community
	Peter Dutch	Greenpeace	Community
	Gwenda Hicks	Greenpeace	Community
	Pauline Ann Cook	Greenpeace	Community
	Claude-Michael Wecke	Greenpeace	Community
	Paula Denby	Greenpeace	Community
	Emma Beryl Panther	Greenpeace	Community
	Kylie McCallum	Greenpeace	Community
	Alana Belin	Greenpeace	Community
	Jessica Grouden	Greenpeace	Community
	Blair Ion	Greenpeace	Community
	Kelly Stewart	Greenpeace	Community
	Yolanada Clare	Greenpeace	Community
	Sam Villian	Greenpeace	Community
	Mark R	Greenpeace	Community
	Mark Jeremy Newton	Greenpeace	Community
	Matthew David Michael Donaldson	Greenpeace	Community
	Katherine Rapley	Greenpeace	Community
	Jurgen Lottermoser	Greenpeace	Community
	N King	Greenpeace	Community
	Belindalee Hope	Greenpeace	Community
	S Gawn	Greenpeace	Community
	Tracey Maxwell	Greenpeace	Community
	Jason Warren Gibson	Greenpeace	Community
	Rebecca May	Greenpeace	Community
	Jarrold Kilner	Greenpeace	Community
	Marion Van Kempen	Greenpeace	Community
	Thomas Conrad Wedde	Greenpeace	Community
	Rachel Copper	Greenpeace	Community
	Jill Basker-Lowe	Greenpeace	Community
	Jasmine Gallagher	Greenpeace	Community
	Graham Jury	Greenpeace	Community
	Mary Beth Weeber	Greenpeace	Community
	Lisa Rachel Schroder	Greenpeace	Community
	William Brislen	Greenpeace	Community
	Tracey Lyons	Greenpeace	Community
	Shana Cameron	Greenpeace	Community
	Paul Ketko	Greenpeace	Community
	Melanie Dowdall	Greenpeace	Community
	Marta Besier	Greenpeace	Community
	Louise Sawers	Greenpeace	Community
	Erika Jayne Bond	Greenpeace	Community
	Sarah Amy Christieson	Greenpeace	Community
	Richard Allen	Greenpeace	Community
	Amanda Jarden	Greenpeace	Community

No.	Name	Company	Category
	Junita Rand	Greenpeace	Community
	Michelle Michael	Greenpeace	Community
	TDH Parker	Greenpeace	Community
	William Pablo Fenton	Greenpeace	Community
	Andrzej Suchanski	Greenpeace	Community
	Maureen Joblin	Greenpeace	Community
	Walter Thomas McCahon	Greenpeace	Community
	Katerina Zuzanna Seligman	Greenpeace	Community
	June Anthony Calder	Greenpeace	Community
	Graeme Ramsay	Greenpeace	Community
	Jane England	Greenpeace	Community
	Katherin Le Roux	Greenpeace	Community
	Valerie Lane	Greenpeace	Community
	Wayne George Davison	Greenpeace	Community
	Charo Muatoz Alba	Greenpeace	Community
	Malcon Dacker	Greenpeace	Community
	Elizabet Purves	Greenpeace	Community
	William D Watson	Greenpeace	Community
	Ellen Chang Watson	Greenpeace	Community
	Xavier Climent	Greenpeace	Community
	Daniel Steven Vincent	Greenpeace	Community
	Marilyn Carbone	Greenpeace	Community
	Carles Iriarte	Greenpeace	Community
	Sonia Rubino Hernando	Greenpeace	Community
	Mona-Lynn Courteau	Greenpeace	Community
	Consuelo Gonzalez Zamora	Greenpeace	Community
	Carlos Moreno	Greenpeace	Community
	Carl de Malmanche	Greenpeace	Community
	Ivan Macndez Hidalgo	Greenpeace	Community
	Joesphine Dudson	Greenpeace	Community
	Peter McMillian	Greenpeace	Community
	Erica McMillian	Greenpeace	Community
	Diana Cornkerton	Greenpeace	Community
	Elaine Susan Lain	Greenpeace	Community
	Eben Sinclair	Greenpeace	Community
	Norma Ellen Mary Michael	Greenpeace	Community
	Michelle Jane Ashbury	Greenpeace	Community
	Tony James Tarasiewicz	Greenpeace	Community
	Sarah Brown	Greenpeace	Community
	Grant Seamer	Greenpeace	Community
	Shaun Christopher McGirr	Greenpeace	Community
	Jessica Juliet Reedy	Greenpeace	Community
	Anne Clark	Greenpeace	Community
	Dylan Tomlinson	Greenpeace	Community
	Susanna Wyn Mathias	Greenpeace	Community
	Liz Nieburg	Greenpeace	Community
	Jennifer Reid	Greenpeace	Community
	Emily Bullough	Greenpeace	Community
	Richard Fuller	Greenpeace	Community

No.	Name	Company	Category
	Kathryn Willis	Greenpeace	Community
	Alisa Trotman	Greenpeace	Community
	Barbara Hoskins	Greenpeace	Community
	Toussiroit Marine	Greenpeace	Community
	Katharine Kinross White	Greenpeace	Community
	Audrey Susan Chamberlain	Greenpeace	Community
	Miguel Santiago	Greenpeace	Community
	Elizabeth McGlinn	Greenpeace	Community
	Suzie Peek	Greenpeace	Community
	Gregory Roger Henstock	Greenpeace	Community
	Jean Nuttall	Greenpeace	Community
	Jonas Mead	Greenpeace	Community
	Marilyn Tomes	Greenpeace	Community
	Aimee Hamlin	Greenpeace	Community
	Kenichi Robert Lynch	Greenpeace	Community
	Bridget Ann White	Greenpeace	Community
	Tony Hodder	Greenpeace	Community
	Joachim Kusche	Greenpeace	Community
	Greg Welch	Greenpeace	Community
	Margert Ruth Fraser	Greenpeace	Community
	Paddy Gilgenburg	Greenpeace	Community
	Denise Ward	Greenpeace	Community
	Ralph Johnson	Greenpeace	Community
	Ara Swanney	Greenpeace	Community
	Caroline A Wilson	Greenpeace	Community
	Sharon O'Callaghan	Greenpeace	Community
	Henning Borches	Greenpeace	Community
	Ralph Wallace	Greenpeace	Community
	Kerri Shirley	Greenpeace	Community
	Anne Maclean	Greenpeace	Community
	Grant Waterson	Greenpeace	Community
	Hannah Skitt	Greenpeace	Community
	Quentin Bradley	Greenpeace	Community
	Joshika Prasad	Greenpeace	Community
	Shalvina Govind	Greenpeace	Community
	Mang Hup	Greenpeace	Community
	Isileli Uilou	Greenpeace	Community
	Kawa Velkogui	Greenpeace	Community
	Kristeearna Hill	Greenpeace	Community
	Melissa Rays	Greenpeace	Community
	Catis Akitt	Greenpeace	Community
	Andrew Heinz Jones	Greenpeace	Community
	Cornelia Baumgartner	Greenpeace	Community
	Suzi Phillips	Greenpeace	Community
	Trish Worsfold	Greenpeace	Community
	Phyllis Knott	Greenpeace	Community
	Halina Stollery	Greenpeace	Community
	Pat Davis	Greenpeace	Community
	Mr KF Wildman	Greenpeace	Community

No.	Name	Company	Category
	Mrs JD Narekivell	Greenpeace	Community
	Cheryl Lineham	Greenpeace	Community
	Chris Adamson	Greenpeace	Community
	Natalie Jessup	Greenpeace	Community
	Kelly Stewart	Greenpeace	Community
	Susan Washington	Greenpeace	Community
	Alice McKay	Greenpeace	Community
	Rhys Dewar	Greenpeace	Community
	Jacob Harvey	Greenpeace	Community
	Jared Motu	Greenpeace	Community
	John Haslam	Greenpeace	Community
	Zena Kareem	Greenpeace	Community
	Jo Watson	Greenpeace	Community
	Natalie Jonas	Greenpeace	Community
	Byron	Greenpeace	Community
	Loie Lace	Greenpeace	Community
	WT Maangi	Greenpeace	Community
	Athel Gick	Greenpeace	Community
	Antione Deane	Greenpeace	Community
	Sefo Motuliki	Greenpeace	Community
	Fang Yan	Greenpeace	Community
	Avis Magnall	Greenpeace	Community
	Blake Gillard	Greenpeace	Community
	Grace Lin	Greenpeace	Community
	Osuyin Morgan	Greenpeace	Community
	Jo-Anne Saper	Greenpeace	Community
	Maike Fichtner	Greenpeace	Community
	Rona Craig	Greenpeace	Community
	Louise Hunt	Greenpeace	Community
	AF Bege	Greenpeace	Community
	JS Cran	Greenpeace	Community
	Daryl Parkes	Greenpeace	Community
	Miss BE Wise	Greenpeace	Community
	R Hughes	Greenpeace	Community
	Julie Madigan	Greenpeace	Community
	Nathan Davis	Greenpeace	Community
	Debbie Lovett	Greenpeace	Community
	Mrs VL Manson	Greenpeace	Community
	Murray Eagle	Greenpeace	Community
	Barbara Shaw	Greenpeace	Community
	Sarah Johnson	Greenpeace	Community
	Marion Taylor	Greenpeace	Community
	Sarah van Leeuwen	Greenpeace	Community
	Ann Parish	Greenpeace	Community
	M Parish	Greenpeace	Community
	Dawn Parish	Greenpeace	Community
	Nick Jansen	Greenpeace	Community
	Sue Hirst	Greenpeace	Community
	Michelle Pocking	Greenpeace	Community

No.	Name	Company	Category
	Mohala Buokley	Greenpeace	Community
	Sue Robertson	Greenpeace	Community
	Steven Shane Carey	Greenpeace	Community
	Pam Kohlis	Greenpeace	Community
	Tracey Kenyon	Greenpeace	Community
	Maria Fairweather	Greenpeace	Community
	Jane Elizabeth Harding	Greenpeace	Community
	Omar Hoetawa	Greenpeace	Community
	Lindsay Stapp	Greenpeace	Community
	Stan Ward	Greenpeace	Community
	Carol Lambert	Greenpeace	Community
	Max Love	Greenpeace	Community
	Vicky Cunnigham	Greenpeace	Community
	Alton Pingaha	Greenpeace	Community
	Aaron Foley	Greenpeace	Community
	WR Kenyon	Greenpeace	Community
	Jason Johnson	Greenpeace	Community
	Paul Chambers	Greenpeace	Community
	Natalie Demetrim	Greenpeace	Community
	Darren Hunter	Greenpeace	Community
	Lynne Stewart	Greenpeace	Community
	Robert William Morse	Greenpeace	Community
	Natalie McKelvey	Greenpeace	Community
	Kabala Muru Forte	Greenpeace	Community
	Arthur Verrier Jones	Greenpeace	Community
	Pirkko Pauliina Verrier Jones	Greenpeace	Community
	Robyn Tepania	Greenpeace	Community
	Charmaine Taipeti	Greenpeace	Community
	Martine Jefferson	Greenpeace	Community
	Amanda Pomana	Greenpeace	Community
	Leonard Walton	Greenpeace	Community
	Diane Walton	Greenpeace	Community
	Steve Gordon	Greenpeace	Community
	Te Aranga Emery	Greenpeace	Community
	Clayton Pinkney	Greenpeace	Community
	Diane M Strevens	Greenpeace	Community
	Jan Eggleton	Greenpeace	Community
	Taina Gardner	Greenpeace	Community
	Natalie Torrens	Greenpeace	Community
	Howie Sampson	Greenpeace	Community
	Belinda Crichton	Greenpeace	Community
	Errol J Bruce	Greenpeace	Community
	Phillip Adams	Greenpeace	Community
	Mike Plunkett	Greenpeace	Community
	Vanessa	Greenpeace	Community
	Stuart Jones	Greenpeace	Community
	Julie Cates	Greenpeace	Community
	Jose Antonio Flores Piviz	Greenpeace	Community
	Marcus Resnald	Greenpeace	Community

No.	Name	Company	Category
	Hilary Himes	Greenpeace	Community
	Scott James Guttery	Greenpeace	Community
	Sandy White	Greenpeace	Community
	Fiona Maule	Greenpeace	Community
	Carolyn Goodman	Greenpeace	Community
	Allen Reynolds	Greenpeace	Community
	Brodie Andrews	Greenpeace	Community
	Natasha Pronk	Greenpeace	Community
	Rhys Huws	Greenpeace	Community
	Chantel Crisinel	Greenpeace	Community
	Andrew Butler	Greenpeace	Community
	Siggi Goldman	Greenpeace	Community
	Deb Treder	Greenpeace	Community
	Emma Paton	Greenpeace	Community
	Thomas McGuire	Greenpeace	Community
	Maia Fowler	Greenpeace	Community
	Lisa Clist	Greenpeace	Community
	Kamaea Erlbeck	Greenpeace	Community
	Ian Burke	Greenpeace	Community
	Faye Rae Ngawaka	Greenpeace	Community
	Phil Ranch	Greenpeace	Community
	Jaala Smith	Greenpeace	Community
	Kurt Freudlich-Mayne	Greenpeace	Community
	Bridget Thompson	Greenpeace	Community
	Mani Barr	Greenpeace	Community
	Mary Masters	Greenpeace	Community
	Scott Minhinnick	Greenpeace	Community
	John Phimester	Greenpeace	Community
	Tammy Van Mil	Greenpeace	Community
	Vikki Sole	Greenpeace	Community
	Joe Rotes	Greenpeace	Community
	Corrina Shaw	Greenpeace	Community
	Wiremu Hohaia	Greenpeace	Community
	Alex Daniel Forte	Greenpeace	Community
	Chantelle Rae	Greenpeace	Community
	Wendy Peacock	Greenpeace	Community
	Darin Lee	Greenpeace	Community
	Hannah Hong	Greenpeace	Community
	A Nakagawa	Greenpeace	Community
	Peton Van Hoeve	Greenpeace	Community
	W O'Connell	Greenpeace	Community
	T Harawera	Greenpeace	Community
	Tama Tutai	Greenpeace	Community
	Tomo Cook	Greenpeace	Community
	Zelda Croft	Greenpeace	Community
	Wesley Dowdell	Greenpeace	Community
	Wendy Davis	Greenpeace	Community
	Cheryl MacLeod	Greenpeace	Community
	Nicholas Parangi	Greenpeace	Community

No.	Name	Company	Category
	Lucy Hawcroft	Greenpeace	Community
	Vicki Yu	Greenpeace	Community
	Lulu	Greenpeace	Community
	Zoe Hainge	Greenpeace	Community
	Aiyana Ferens	Greenpeace	Community
	Frank L Holden	Greenpeace	Community
	Anna Delaney	Greenpeace	Community
	John Ringer	Greenpeace	Community
	Karen Johnston	Greenpeace	Community
	Anita Walker	Greenpeace	Community
	Chrissie Gray	Greenpeace	Community
	Sandie Horn	Greenpeace	Community
	SA Burgess	Greenpeace	Community
	Bernice Elvy	Greenpeace	Community
	A Stewardson	Greenpeace	Community
	Anthony Downs	Greenpeace	Community
	Terri Newton	Greenpeace	Community
	Debbie Laing	Greenpeace	Community
	MA Culpitt	Greenpeace	Community
	Hilda Daw	Greenpeace	Community
	Ruth Clarke	Greenpeace	Community
	Hilda Cookson	Greenpeace	Community
	V Martin	Greenpeace	Community
	Joseph Howard	Greenpeace	Community
	Tenealle Webster	Greenpeace	Community
	Angela Bearley	Greenpeace	Community
	Alma Stevens	Greenpeace	Community
	Nicola Dye	Greenpeace	Community
	Miss Roche	Greenpeace	Community
	Charlene Clark	Greenpeace	Community
	Mark Windleborn	Greenpeace	Community
	Vanessa Coupland	Greenpeace	Community
	Shale Evans	Greenpeace	Community
	Allan Herbert	Greenpeace	Community
	Julia King	Greenpeace	Community
	Ben Jefferson	Greenpeace	Community
	Catherine Evans	Greenpeace	Community
	Zoe Olsen	Greenpeace	Community
	Jan Ferrie	Greenpeace	Community
	Aegean Moana Te Paa	Greenpeace	Community
	Nelly Simpson	Greenpeace	Community
	Billie Lythberg	Greenpeace	Community
	Janet Kalava	Greenpeace	Community
	Andrew Stewart	Greenpeace	Community
	Daniel Hanks	Greenpeace	Community
	Phillip Ryder	Greenpeace	Community
	Jessica Stephens	Greenpeace	Community
	Gareth Shrinkfield	Greenpeace	Community
	Janet Walkerly	Greenpeace	Community

No.	Name	Company	Category
	Dellaina Andrew	Greenpeace	Community
	Jenny Drummond	Greenpeace	Community
	Emily Redgrove	Greenpeace	Community
	Bryan Arthur-Worsop	Greenpeace	Community
	Trevor Ofano'oni	Greenpeace	Community
	Catherine O'Sullivan	Greenpeace	Community
	Maria Hunt	Greenpeace	Community
	John Buck	Greenpeace	Community
	Sulle Fisher	Greenpeace	Community
	Anna Priaulx	Greenpeace	Community
	Seilona Tuia	Greenpeace	Community
	Jingbo Liu	Greenpeace	Community
	Charlie Tredway	Greenpeace	Community
	Bev Walkee	Greenpeace	Community
	Amanda	Greenpeace	Community
	David Edmundson	Greenpeace	Community
	Jacqui Faitau	Greenpeace	Community
	Yvonne Purcell	Greenpeace	Community
	Elaine Curin	Greenpeace	Community
	David Playle	Greenpeace	Community
	Caroline Viesnin	Greenpeace	Community
	Imogen Asshar	Greenpeace	Community
	Mark Chappell	Greenpeace	Community
	Bill Leonard	Greenpeace	Community
	Jack Turner	Greenpeace	Community
	C Desousa	Greenpeace	Community
	Hape Morgan Harris	Greenpeace	Community
	Elvis A Presley	Greenpeace	Community
	M Wier-Aperahana	Greenpeace	Community
	Jane Stark	Greenpeace	Community
	Wendy Rattray	Greenpeace	Community
	Lynette Ayo	Greenpeace	Community
	Warren Kohlis	Greenpeace	Community
	Pieter Koes	Greenpeace	Community
	Lyn Koes	Greenpeace	Community
	Leanne Cameron	Greenpeace	Community
	Merie Kenyon	Greenpeace	Community
	Karen Bridger	Greenpeace	Community
	E Frew	Greenpeace	Community
	Te Pare Douglas	Greenpeace	Community
	Marua Wharepouru	Greenpeace	Community
	Jesse Wade	Greenpeace	Community
	Sharleen Debney	Greenpeace	Community
	Shane Joseph Darbyshire	Greenpeace	Community
	Sophie Cunliffe	Greenpeace	Community
	Kevin Sandom	Greenpeace	Community
	Joshua Siataga	Greenpeace	Community
	Paul Jurosovich	Greenpeace	Community
	Sonya Stone	Greenpeace	Community

No.	Name	Company	Category
	Kevin Carroll	Greenpeace	Community
	Andrea Braver	Greenpeace	Community
	Amy Melchior	Greenpeace	Community
	Melody Johnstone	Greenpeace	Community
	Ben Young	Greenpeace	Community
	Shaloh Mitchell	Greenpeace	Community
	Nathan Charles Reid	Greenpeace	Community
	Paul Thompson	Greenpeace	Community
	Fiona Bennetts	Greenpeace	Community
	Dermot Sallis	Greenpeace	Community
	Christopher T Currau	Greenpeace	Community
	Leon Shaw	Greenpeace	Community
	Mrs Jacqui Past	Greenpeace	Community
	Alan Wilson	Greenpeace	Community
	David McCarthy	Greenpeace	Community
	Julie Hampton	Greenpeace	Community
	Eileen O'Connor	Greenpeace	Community
	Alex Sauter	Greenpeace	Community
	Ashley Catton	Greenpeace	Community
	Sam West	Greenpeace	Community
	James J Ullrich	Greenpeace	Community
	Josh McFadden	Greenpeace	Community
	Laura Williams	Greenpeace	Community
	Sam Brown	Greenpeace	Community
	Christina Walker	Greenpeace	Community
	Rebecca So'e	Greenpeace	Community
	Tutasi Paul	Greenpeace	Community
	Colin Russell	Greenpeace	Community
	Anna Wylie	Greenpeace	Community
	Warren Coogan	Greenpeace	Community
	Dawn Page	Greenpeace	Community
	Teresa Belireus	Greenpeace	Community
	LA Rodley	Greenpeace	Community
	Annie Laurie Rudolph	Greenpeace	Community
	Gerard Boekel	Greenpeace	Community
	Ellen Cuthers	Greenpeace	Community
	Pirekopa Taylor	Greenpeace	Community
	Maria Chan Foug	Greenpeace	Community
	Ellen Manihera	Greenpeace	Community
	Stacy Rangiera Priestly	Greenpeace	Community
	Justine O'Kane	Greenpeace	Community
	Greg O'Kane	Greenpeace	Community
	Barbara Willis	Greenpeace	Community
	Antionette Hannah	Greenpeace	Community
	Tony Christopher Meredith	Greenpeace	Community
	Horomona James Tomlins	Greenpeace	Community
	Anastacia Anderson	Greenpeace	Community
	Fiona McNeil	Greenpeace	Community
	J Curran	Greenpeace	Community

No.	Name	Company	Category
	Abbie Ward	Greenpeace	Community
	Pieter Rose Smisson	Greenpeace	Community
	Vaolele Siatu	Greenpeace	Community
	Emma Drand Boyd	Greenpeace	Community
	Rebecca Hope	Greenpeace	Community
	Janene Carmody	Greenpeace	Community
	Gwyneth Parmee	Greenpeace	Community
	Liam Browne	Greenpeace	Community
	Alistair Stewart	Greenpeace	Community
	Ofeila Tuua	Greenpeace	Community
	Mrs Nancy Stewart	Greenpeace	Community
	Geraldine Boyd	Greenpeace	Community
	Brenda Dwane	Greenpeace	Community
	Sonal	Greenpeace	Community
	Michelle Kevern	Greenpeace	Community
	Leanne Walker	Greenpeace	Community
	Rangioranga Maihi	Greenpeace	Community
	Rose Clarke	Greenpeace	Community
	Margaret Taipari	Greenpeace	Community
	Ben Lewis	Greenpeace	Community
	Katrina Bayliss	Greenpeace	Community
	Hazel Walls	Greenpeace	Community
	Nicky Tompkins	Greenpeace	Community
	Medadane Kipa	Greenpeace	Community
	A Whelam	Greenpeace	Community
	John Root	Greenpeace	Community
	Chyanne Carroll	Greenpeace	Community
	Hinerangi Erstich	Greenpeace	Community
	A Jurisick	Greenpeace	Community
	Sarah Allen	Greenpeace	Community
	Danielle Plowman	Greenpeace	Community
	Brian Vaile	Greenpeace	Community
	H Davis	Greenpeace	Community
	L Vanstroe	Greenpeace	Community
	J Vanstroe	Greenpeace	Community
	Angelina van Driel	Greenpeace	Community
	Rachel Wapenaar	Greenpeace	Community
	Toni Adams	Greenpeace	Community
	Claudine Earley	Greenpeace	Community
	J Thomson	Greenpeace	Community
	Graeme Turnwald	Greenpeace	Community
	Lotus Doranson	Greenpeace	Community
	Ms A Torrens	Greenpeace	Community
	Mahoney Swinburn	Greenpeace	Community
	William E Caffi	Greenpeace	Community
	Leeanne Murray	Greenpeace	Community
	John Herbert	Greenpeace	Community
	Kingsley Emery	Greenpeace	Community
	Mary Williams	Greenpeace	Community

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	Jade Palmer	Greenpeace	Community
	Jane Sime	Greenpeace	Community
	Darran Fielding	Greenpeace	Community
	Leli Vaeagi	Greenpeace	Community
	Michelle Mathis	Greenpeace	Community
	Paul Batters	Greenpeace	Community
	Wanda Connon	Greenpeace	Community
	Clayton Spence	Greenpeace	Community
	Charlotte Penman	Greenpeace	Community
	Elisa Coventry	Greenpeace	Community
	ME Aperhana	Greenpeace	Community
	Adrian Roche	Greenpeace	Community
	Sharleen Edmonds	Greenpeace	Community
	Joni Hudson	Greenpeace	Community
	June Victoria Firth	Greenpeace	Community
	Clair Petley	Greenpeace	Community
	Nigel Lynam	Greenpeace	Community
	Wendy Moore	Greenpeace	Community
	Sonny Ashby	Greenpeace	Community
	Ana Simon	Greenpeace	Community
	NJ.P Hewett	Greenpeace	Community
	Oliver Sander	Greenpeace	Community
	Krissy Hunter	Greenpeace	Community
	Rodrigo Reyes	Greenpeace	Community
	J Campbell	Greenpeace	Community
	Shane Cutter	Greenpeace	Community
	Charlotte Smith	Greenpeace	Community
	Scott Bibby	Greenpeace	Community
	Taina White	Greenpeace	Community
	Ward Frieson	Greenpeace	Community
	Bronwyn Hall	Greenpeace	Community
	Wayne Gordon	Greenpeace	Community
	Jeremy Evans	Greenpeace	Community
	Jane Butel	Greenpeace	Community
	Allan Leach	Greenpeace	Community
	Rosie Smith	Greenpeace	Community
	Paula Miller	Greenpeace	Community
	Dr Toni Bunnell	Greenpeace	Community
	Kylie Hobhan	Greenpeace	Community
	Stuart Tunnicliffe	Greenpeace	Community
	Laura Keesing	Greenpeace	Community
	Tareg Cher	Greenpeace	Community
	Joan Balle	Greenpeace	Community
	Shirley Cracknell	Greenpeace	Community
	Mrs Renae Weston	Greenpeace	Community
	John Brown	Greenpeace	Community
	Melissa Allan	Greenpeace	Community
	Beverly Cooper	Greenpeace	Community
	David Gillies	Greenpeace	Community

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	Sidney Neale	Greenpeace	Community
	Timothy York	Greenpeace	Community
	J Shepard	Greenpeace	Community
	Diana Joy Hood	Greenpeace	Community
	Denise Watts	Greenpeace	Community
	T Purcell	Greenpeace	Community
	Lara Williamson	Greenpeace	Community
	Brett Kannemeyer	Greenpeace	Community
	JA Stoddart	Greenpeace	Community
	Annetta Keys	Greenpeace	Community
	SR McKeon	Greenpeace	Community
	Jill West	Greenpeace	Community
	Richard Thompson	Greenpeace	Community
	Gail Dawson	Greenpeace	Community
	Catalina Jimenez Herrera	Greenpeace	Community
	Makita Tarrant	Greenpeace	Community
	Kristen Cappaccio	Greenpeace	Community
	Fiona Gleeson	Greenpeace	Community
	Trevor Gleeson	Greenpeace	Community
	Wikitoria Brown	Greenpeace	Community
	Natalie Mist	Greenpeace	Community
	David Andrew Washer	Greenpeace	Community
	Daimon Pitiroi	Greenpeace	Community
	Nicola Easthope	Greenpeace	Community
	Carmen Strachan	Greenpeace	Community
	Peta Hudson	Greenpeace	Community
	Dr David Austin Forss	Greenpeace	Community
	Stewart McKenzie	Greenpeace	Community
	Melissa Davidson	Greenpeace	Community
	Jeffery John Nagle	Greenpeace	Community
	Eoin O'Liddigh	Greenpeace	Community
	Adrian Jensen	Greenpeace	Community
	Jonah Daniel Marinovich	Greenpeace	Community
	Hema Broad	Greenpeace	Community
	Sarah Ballard	Greenpeace	Community
	Matthew John Herbert	Greenpeace	Community
	Adrian Hansen	Greenpeace	Community
	T'ai Rangi Govinda	Greenpeace	Community
	Carolyn Eatherley	Greenpeace	Community
	Helena McMullin	Greenpeace	Community
	Christopher Scott	Greenpeace	Community
	Michelle Johnstone	Greenpeace	Community
	Hevin Hay	Greenpeace	Community
	Gillian Claire Carter	Greenpeace	Community
	Angela Wadsworth	Greenpeace	Community
	Jessica Ritchie	Greenpeace	Community
	Christina Ranson	Greenpeace	Community
	Morgan Jones	Greenpeace	Community
	Helene Leaf	Greenpeace	Community

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	Judith Mary Bryson	Greenpeace	Community
	Terence James Woods	Greenpeace	Community
	Matthew Rohan Vella	Greenpeace	Community
	Rebecca Alice Dozell	Greenpeace	Community
	Annie Naylor	Greenpeace	Community
	Stephine Verteeg	Greenpeace	Community
	Frances Ann Brett-Petersen	Greenpeace	Community
	Kyra O'Neill	Greenpeace	Community
	Jane Rosaline Hunter	Greenpeace	Community
	Veeaum Suum	Greenpeace	Community
	Lisa Gery	Greenpeace	Community
	Janie Wihongi	Greenpeace	Community
	Tania Marie Forgie	Greenpeace	Community
	Caryl Denniston Boyle	Greenpeace	Community
	Helen Wittaker	Greenpeace	Community
	Bryonny Joy Goodwin	Greenpeace	Community
	Gail Christine King	Greenpeace	Community
	Melani Kelly	Greenpeace	Community
	Nicola Jane Gibbons	Greenpeace	Community
	Kirsten Smiler	Greenpeace	Community
	Gillian Louise Wastell	Greenpeace	Community
	Karen Jacquard	Greenpeace	Community
	Diana Mellor	Greenpeace	Community
	Robyn Gaye Greenwood	Greenpeace	Community
	Vance Rowe	Greenpeace	Community
	Julie Harrison	Greenpeace	Community
	Barbara Joyce Baragwanath	Greenpeace	Community
	Janet Digby	Greenpeace	Community
	David Godfrey Kay	Greenpeace	Community
	Saipaia Finau	Greenpeace	Community
	Cath Long	Greenpeace	Community
	Marina Jo-ann Vlastic	Greenpeace	Community
	Peggy Read	Greenpeace	Community
	Beate Wiebel	Greenpeace	Community
	Mels Barton	Greenpeace	Community
	Linda Shewan	Greenpeace	Community
	Sarah Aitken	Greenpeace	Community
	Karen Burgess	Greenpeace	Community
	Pamela Mills	Greenpeace	Community
	Patrick Lee	Greenpeace	Community
	Hilary Jackson	Greenpeace	Community
	Frances B Turner	Greenpeace	Community
	Emily Elizabeth Buchanan	Greenpeace	Community
	Sandra Anderson	Greenpeace	Community
	Craig Lee Parker	Greenpeace	Community
	Lalena Celeste Hanlon	Greenpeace	Community
	Daren James Day	Greenpeace	Community
	Lashana Knight	Greenpeace	Community
	Eunice Anne Stott	Greenpeace	Community

No.	Name	Company	Category
	Sasha Madarasz	Greenpeace	Community
	Georgia Olsen	Greenpeace	Community
	Stephanie Dodd	Greenpeace	Community
	Annette Stanford	Greenpeace	Community
	Angela and Neal Palmer	Greenpeace	Community
	Jodie Whitelaw	Greenpeace	Community
	Holly Emma Stewart Smith	Greenpeace	Community
	Jane Arkle	Greenpeace	Community
	Sandra Hinni	Greenpeace	Community
	Scott Douglas Gray	Greenpeace	Community
	Miranda Hickling	Greenpeace	Community
	Chris Lewis	Greenpeace	Community
	Murray David Brown	Greenpeace	Community
	Brian Andrew Cowie	Greenpeace	Community
	Belinda Carrigan	Greenpeace	Community
	Sonya Adele Cameron	Greenpeace	Community
	Grant Waterson	Greenpeace	Community
	Stephen Leslie Newton	Greenpeace	Community
	David Perry	Greenpeace	Community
	Belinda Hughes	Greenpeace	Community
	Lynne Barton	Greenpeace	Community
	Jesse Chalmers	Greenpeace	Community
	Carol-Anne Malcom	Greenpeace	Community
	Caroline Burgess	Greenpeace	Community
	Greg Donnison	Greenpeace	Community
	Meigan J Madden	Greenpeace	Community
	Scott Kuegler	Greenpeace	Community
	Rachel Davies	Greenpeace	Community
	Audrey Greening	Greenpeace	Community
	Blair Stephen Boardman	Greenpeace	Community
	Doug Beisly	Greenpeace	Community
	Brigid Connor	Greenpeace	Community
	Cameron Forbes	Greenpeace	Community
	Yana Pemberton	Greenpeace	Community
	Colin Belfit	Greenpeace	Community
	John William Geraets	Greenpeace	Community
	Karen Tania Weston	Greenpeace	Community
	Kevin Murray Philpott	Greenpeace	Community
	Graham Gulbransen	Greenpeace	Community
	Christine Todd	Greenpeace	Community
	Lillian Kim	Greenpeace	Community
	Amy Shenton	Greenpeace	Community
	Samuel Lawrence	Greenpeace	Community
	Fiona Lyttle	Greenpeace	Community
	Paul David Baragwanath	Greenpeace	Community
	Caitlin Lally	Greenpeace	Community
	Elizabeth Harper Brown	Greenpeace	Community
	Susan Sweetman	Greenpeace	Community
	Paola Favaretti	Greenpeace	Community

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	Nicola Anne MacDonald	Greenpeace	Community
	Vegard Toresen	Greenpeace	Community
	Jacqueline Vivien Patterson	Greenpeace	Community
	Christopher Garton	Greenpeace	Community
	Andrew Gregory Barron	Greenpeace	Community
	Spencer Fairhurst	Greenpeace	Community
	Shannon Morley	Greenpeace	Community
	Geraldine Whiteford	Greenpeace	Community
	David Lindner	Greenpeace	Community
	Angela Boland	Greenpeace	Community
	Sue Copas	Greenpeace	Community
	Audrey Cliffe	Greenpeace	Community
	Cornelia Martin-Austin	Greenpeace	Community
	Kim Parker	Greenpeace	Community
	Susan Jane Pickernell	Greenpeace	Community
	James Lincoln Reilly	Greenpeace	Community
	Miss Theda Hall	Greenpeace	Community
	Brad Newall	Greenpeace	Community
	Ilse K Hawes	Greenpeace	Community
	Rowena Price	Greenpeace	Community
	Joseph Nunweek	Greenpeace	Community
	Andrew Umbers	Greenpeace	Community
	Julia Chard	Greenpeace	Community
	Tamma Robles Smith	Greenpeace	Community
	Eve Manning	Greenpeace	Community
	Neil Bremner Abel	Greenpeace	Community
	Thomas Noel Eagles	Greenpeace	Community
	Eric Light	Greenpeace	Community
	Pamela Lim	Greenpeace	Community
	Loralie Burns	Greenpeace	Community
	Nguyen Xuan Hanh	Greenpeace	Community
	Josiah Banbury	Greenpeace	Community
	Jamie Adams	Greenpeace	Community
	Leith McMurray	Greenpeace	Community
	Martyn Goldsworthy Howells	Greenpeace	Community
	Stephen John Skipworth	Greenpeace	Community
	Jennifer Margaret White	Greenpeace	Community
	Susan Elizabeth Barker	Greenpeace	Community
	Alistair Pharo	Greenpeace	Community
	Jon Barlow	Greenpeace	Community
	Anne Virginia Allen	Greenpeace	Community
	Lian Miri Buckett	Greenpeace	Community
	Miss Linda Cameron	Greenpeace	Community
	Pamela Hanna	Greenpeace	Community
	Margaret Whittaker	Greenpeace	Community
	Sarah Katherine Watson	Greenpeace	Community
	Samantha Beattie	Greenpeace	Community
	Ali Haywood	Greenpeace	Community
	Carina	Greenpeace	Community

No.	Name	Company	Category
	Sean Barry	Greenpeace	Community
	Jill Blair	Greenpeace	Community
	Sue Tutty	Greenpeace	Community
	Julie Robyn Benseman	Greenpeace	Community
	Michael Foster	Greenpeace	Community
	Phillip Cochrane	Greenpeace	Community
	Ani Parata	Greenpeace	Community
	Rebecca Lythe	Greenpeace	Community
	Catherine Davidson	Greenpeace	Community
	Timothy James Merkens	Greenpeace	Community
	Roslyn Day	Greenpeace	Community
	Amber Jennifer Moora	Greenpeace	Community
	Tony Trilford	Greenpeace	Community
	Louise Clifford	Greenpeace	Community
	Tania Anne Aroha Ware	Greenpeace	Community
	Joanna Greig	Greenpeace	Community
	Emily Hohaia Wharewaka	Greenpeace	Community
	Stella Belgrave	Greenpeace	Community
	Dorothy Cawdron	Greenpeace	Community
	Denise Chubb	Greenpeace	Community
	Tammy Smith	Greenpeace	Community
	Richard Baker	Greenpeace	Community
	Keryn Derby	Greenpeace	Community
	Margaret Mahy	Greenpeace	Community
	Donna Whittington	Greenpeace	Community
	Lyndsay Nichols	Greenpeace	Community
	Erika Lindsay	Greenpeace	Community
	Charles Fuller	Greenpeace	Community
	Sandie Parr	Greenpeace	Community
	Alice Leney	Greenpeace	Community
	Tony Doy	Greenpeace	Community
	Jeanette Aplin	Greenpeace	Community
	John and Veronica Leaper	Greenpeace	Community
	Phillip McConrey	Greenpeace	Community
	Deborah Morris	Greenpeace	Community
	Richard Bayly	Greenpeace	Community