

6 Air Module

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6.1 Regional and Local Air Management

Background and Explanation

This Plan addresses several issues relating to air quality. Chapter 6.1 provides the management framework for considering adverse effects on local and ambient air quality*, from the discharge of contaminants. The issue of agrichemical spray drift is excluded from Chapter 6.1 and is specifically addressed in Chapter 6.2.

Clarification of the Relationship Between Air and Other Modules

This Chapter addresses discharges to air where the primary adverse effects are to air quality. Rules in other chapters of the Plan address discharges to air that occur as a consequence of discharges to land or water and soil disturbance or vegetation clearance activities, such as dust or odour. Rather than create separate regulatory regime for discharges to air in these situations, the Plan integrates the management of the Region's natural and physical resources through cross-referencing the relevant provisions of this Chapter at an issue, objective, policy and rule level.

This Chapter addresses the following adverse effects of discharges on air quality:

Odour

Odour is the human perception of one or more chemical compounds in the air. Some chemical compounds in the air stimulate our smell receptors. Odour is one of the most frequently raised air quality issues in this Region, as measured by complaints and enquiries received by Waikato Regional Council. Odours that are considered to be objectionable or offensive can significantly affect the everyday lives of people and can cause adverse effects on human health or the amenity values (qualities and characteristics) of an area.

Most odours are perceived differently by different people. The extent to which an odour is offensive or objectionable to the extent that adverse effects are experienced by an individual, is influenced by one or more of the following:

- i) the frequency of the odour
- ii) the duration of the odour and time of exposure
- iii) the character and intensity of the odour
- iv) the location of the odour
- v) previous experiences of people with the odour
- vi) existing levels of sensitivity⁴⁶.

The difficulty in accurately identifying and measuring odours makes it a contentious and subjective issue that is complicated to manage. The human nose is generally accepted as being the best instrument for measuring odours, particularly at low levels. Methods do exist for sampling and measuring odours, but currently they can only be generally used to measure sources and can be very expensive and time consuming. Guidelines for the assessment of odours are detailed in Chapter 6.4.

Particulate Matter

Particulate matter in the air can be made up of almost any substance that can form in a solid or a liquid state. Particulate matter can enter the air through wind action or directly as a result of an activity. Particles of different sizes behave differently and can be grouped into the following categories:

⁴⁶ Ministry for the Environment. 2003: *Good Practice Guide for Assessing and Managing Odour in New Zealand*. Wellington, New Zealand.

- a) **Respirable particulate** is less than 2.5 µm in diameter and is able to penetrate the nasal cavity and enter the lungs. This type of particulate matter is attributable to changes in, and adverse effects on visibility.
- b) **Inhaleable particulate** is less than 10 µm in diameter and is able to penetrate the nose or mouth under normal breathing conditions.
- c) **Total suspended particulate (TSP)** refers to the whole size fraction of particulate that is suspended in the atmosphere. The larger the particles, the sooner they drop from the air. The human health effects of TSP are usually limited to the irritation of eyes, mucous membranes or skin.
- d) **Deposited particulate** refers to particles primarily greater than 20 µm. This type of coarse particulate matter is also referred to as 'nuisance' dust or particulate of an objectionable nature.

Particulate matter is another frequently raised air quality issue in this Region as measured by complaints and enquiries received by Waikato Regional Council. Adverse effects that have occurred in the Region include:

1. Aggravation of health problems including respiratory problems.
2. Unwanted deposition of particulate matter on properties causing a 'nuisance' and/or damage to buildings or equipment, or where the particulate material is toxic or hazardous deposited particulate matter can contaminate soils.
3. Reduced visibility and amenity of an area.

Products of Combustion

Burning fuel or waste materials forms a range of contaminants including particulate matter and noxious gases (such as carbon monoxide, and oxides of nitrogen and sulphur).

Combustion sources that generate direct or indirect adverse effects on air quality may include:

1. domestic activities such as backyard fires and solid fuel burners for heating homes,
2. industrial activities such as open landfill fires, incinerators, wood by-product boilers, coal fired boilers and furnaces and crematoria,
3. transportation,
4. rural activities such as open fires for land clearance.

Chemicals

The term 'chemical' in the context of this Chapter includes any organic or inorganic gas in the air resulting from human activity. There are overlaps between chemicals noted here and those listed in the paragraphs on odour and products of combustion above. The toxicity of different chemicals can lead to a wide range of different effects on humans, such as headaches or eye irritation, through to life threatening illnesses such as cancer.

The discharge of chemicals in the Region can arise directly or indirectly from the following sources:

1. di-isocyanates and organic plasticiser processes (including spray painting),
2. transportation (such as private vehicle emissions),
3. incineration of waste, open burning or chemical related accidents.

Significant Characteristics of Air Quality in the Waikato Region

The Waikato Region is climatically very diverse, ranging from relatively mild subtropical conditions in the north and east, to the more extreme climates of the central North Island. The range of climatic conditions creates complex challenges for air quality managers⁴⁷.

The Waikato Region currently enjoys a good standard of ambient air quality. It has many characteristics that are considered significant and are valued by the community. Significant characteristics of air quality can be described as the:

1. ability of the air to sustain healthy populations of all forms of life,
2. level of odour,
3. level of particulate matter,
4. visibility,
5. capacity of air to assimilate contaminants,
6. matters of importance to tangata whenua.

The current level of information regarding air quality within the Region is varied, depending on the type of discharge and the areas affected⁴⁸. Waikato Regional Council is currently gathering information and monitoring ambient air quality⁴⁹. It is already known that most areas within the Region have an ambient air quality that is better for the majority of the time than that indicated in the Ministry for the Environment's Ambient Air Quality Guidelines⁵⁰. However, in some areas of the Region guideline levels have been exceeded.

Although the Region will benefit from further air quality information it is already known that different parts of the Waikato have different features that influence and affect air quality and different characteristics that are significant.

⁴⁷ NIWA. 1996: *Waikato Air quality – Air issues and the meteorological data resource*. Consultancy Report. Newmarket, Auckland.

⁴⁸ Refer to Table 6-1 of this chapter for information on air quality features in the Waikato Region.

⁴⁹ Policy 3, Implementation Method 5(i)-(iv) of the RPS outlines the need for information and monitoring strategies to be put in place to ensure the sustainable management of the air resource.

⁵⁰ Ministry for the Environment. 1994: *Ambient Air Quality Guidelines*. Wellington, New Zealand. The guidelines identifies the following eight major contaminants: particulate matter, sulphur dioxide, carbon monoxide, ozone, nitrogen dioxide, lead, fluoride and hydrogen sulphide.

Table 6-1 Significant Characteristics of Air Quality within the Waikato Region⁵¹

Area	Features	Air Quality Issues	State of the Resource
West Coast Waikato	Exposed to strong winds off the Tasman Sea, hilly and wet. Diverse Topography. Very low population density. Pockets of development exist in areas sheltered from the prevailing westerly.	Micro-climates can be created in areas of development generating a build up of contaminants. Local amenity issues associated with: a) natural sources such as sea spray and particulate matter b) occasional smoke from open burning c) deposited particulate matters from unsealed roads d) agrichemical spraydrift.	No monitoring undertaken in this area. The risks of adverse long term and cumulative effects on ambient air quality in these areas are regarded as low.
Hamilton, Cambridge, Te Awamutu	Inland climate with some very sheltered areas, high frequency of calms, and inversion layers.* Frequent fogs in Hamilton basin. High population density (compared to rest of the Region). Trends of population growth in these areas. Major industrial activity – often in close proximity to other industrial areas and residential housing. High level of domestic sources. High level of agricultural activities occurring in the Hamilton Basin. Moderate traffic volume and congestion (area sources) from both transient and local commuters. Large deposits of peat.	High impacts associated with lighter winds and sheltered locations. Greater potential for concentration of contaminants during calm periods. Local amenity issues associated with discharges of/from: a) odour b) deposited particulate matter c) vehicle emission d) agrichemical spraydrift e) home heating during the winter months, BBQ's in the summer months f) smoke from backyard burning and open fires g) peat fires causing reduction in amenity and visibility. Cumulative issues associated with: a) competing uses on air quality from industrial and domestic sources b) density of activities/sources c) population growth d) discharges from home heating during the winter months.	Exceedances and near exceedances of ambient air quality guidelines levels for CO, PM10. Emissions inventory has shown that a risk of high levels of PM10, CO, NOx, from home heating, transportation and industrial sources ⁵²].

⁵¹ NIWA 1996: *Waikato Air quality – Air quality issues and the meteorological data resource*. Consultancy Report. Newmarket, Auckland.

⁵² Noonan, M. 1997: *Industrial Air Emission Inventory*. Commission by Waikato Regional Council, Hamilton.

Area	Features	Air Quality Issues	State of the Resource
Hauraki Plains	<p>High frequency of calm periods, inversion layers often occur.</p> <p>Moderate population density, limited mainly to small settlements.</p> <p>Intensive agriculture, and some isolated industry.</p> <p>Large deposits of peat.</p> <p>Few major sources at present.</p>	<p>High impacts associated with lighter winds and sheltered locations. Greater potential for concentration of air pollution during calm periods.</p> <p>Local amenity issues associated with:</p> <ul style="list-style-type: none"> a) odour b) deposited particulate matter in windy periods c) agrichemical spraydrift d) smoke from open fires <p>peat fires causing reduction in amenity and visibility.</p>	<p>No monitoring data for this area.</p> <p>Ambient air quality mostly at acceptable levels.</p> <p>The risk of adverse long term and cumulative effects on air quality in these areas is regarded as low.</p>
Inland King Country and South Waikato	<p>Cool damp winters. Areas in valleys often have very light winds. Inversion layers are common during the winter especially at Tokoroa and Reporoa.</p> <p>Areas of moderate population and traffic. These are limited to settlements and highways.</p> <p>Moderate levels of agriculture with high stock numbers.</p> <p>Pockets of industrial activity such as in Tokoroa, Te Kuiti and Putaruru that contain large sources of contaminants to air.</p>	<p>Micro-climates in some areas cause a build up of contaminants.</p> <p>Local amenity issues associated with discharges of:</p> <ul style="list-style-type: none"> a) odour b) deposited particulate matter c) smoke from domestic home heating d) backyard burning e) large industrial sources. <p>Cumulative effects associated with discharges from:</p> <ul style="list-style-type: none"> a) home heating during the winter months <p>large industrial sources.</p>	<p>Monitoring has been started in this area but there are no results available as yet.</p> <p>Emissions inventories show large amounts of contaminants from domestic sources are being released in defined areas.</p> <p>Monitoring is being undertaken, concentrating on these areas⁵³.</p>
	Nationally significant cave and karst systems (Waitomo).	<p>Increased use in tourist caves causes changes in air quality (CO₂ build-up) leading to associated effects on the cave ecosystem.</p>	<p>No monitoring data in this area</p>
Taupo, Rotorua (including geothermal areas)	<p>Cool winters, with moderate winds. Inversion layers can occur during fine weather.</p> <p>Significant geothermal areas.</p> <p>Moderate population levels, expanding in the summer months. Significant levels of tourism/transient population.</p> <p>Competing activities for the air resource, specifically between tourism values and industrial discharges.</p>	<p>Odours and gaseous contaminants emitted from geothermal areas.</p> <p>Local and cumulative effects associated with discharges from home heating during the winter months.</p>	<p>Hydrogen sulphide monitoring has been undertaken as part of resource consent processes.</p> <p>Hydrogen sulphide levels are naturally high in the geothermal areas.</p> <p>Ambient air quality is generally acceptable with some possible build up during calm periods.</p> <p>Risks to ambient air quality due to domestic heating and development of geothermal resources.</p>

⁵³ Noonan, M. 1997: *Industrial Air Emission Inventory*. Commission by Waikato Regional Council, Hamilton.

Area	Features	Air Quality Issues	State of the Resource
Tongariro National Park	Exposed, high winds, extremes in temperature, high altitudes. Low population density, sensitive ecosystems, pristine state. No development in this area.	Currently few issues, but potential impact from local sources of emissions. Volcanic and geothermal emissions contribute significantly to background levels of air quality in surrounding areas.	No monitoring undertaken in this area. Ambient air quality regarded as being within acceptable levels, although threatened during times of volcanic activity. Some passive sampling during eruptions. The risks of adverse long term and cumulative effects in these areas are regarded as low.
Coromandel Peninsula	Moderately warm with sea breezes common. The area is exposed to prevailing weather conditions. Geographically close to the Auckland Region. Moderate population levels, expanding in the summer months with tourism. Population generally in areas defined by topography. Low level of development.	In fine, warm and calm conditions this area experiences photochemical smog originating from the transport sector within the Auckland Region affecting visual clarity. Local amenity issues associated with discharges from: a) odour b) deposited particulate matter c) home heating.	No monitoring at this stage. Potential ozone monitoring over the summer. Ambient air quality generally acceptable. Risk that pollution generated in Auckland will degrade the air quality characteristics of the area, particularly visibility.
Bombay Hills (southern side)	Inversion layers can occur during fine weather. Frequent fogs. Geographically close to and down wind from the Auckland Region. Population is moderately dense relative to other areas of the Waikato Region. Commercial vegetable production orchards, maize and asparagus crops in Bombay area. Subsequent high use of agrichemicals.	In fine, warm and calm conditions this area experiences high levels of photochemical smog originating from the transport sector within the Auckland Region affecting visibility. Local amenity issues associated with: a) spray drift. b) odour c) deposited particulate matter from land disturbance.	Ambient air quality generally acceptable. Risk that pollution generated in Auckland will degrade the air quality characteristics of the area, particularly visibility. Monitoring of ground water has been undertaken to investigate the impacts of agrichemicals in this area. Pesticides have been found in 74% of Pukekohe/Pukekawa groundwater wells and 54% of Hamilton basin/Southern Hauraki groundwater wells sampled ⁵⁴ .

⁵⁴ Hadfield, J. and Smith, D. 1997: Pesticide Contamination of Ground Water: An Investigation in the Waikato Region, New Zealand. *Proceedings of the 24th Hydrology and Water Symposium November 1997*, Auckland.

6.1.1 Issue

Ambient air quality in the Region is perceived to be high. However, in some parts of the Region, air quality is degraded by individual site sources and/or by cumulative discharges from diffuse sources.

The discharges may be composed of odour, particulate matter, combustion products and/or hazardous air pollutants. These discharges change the characteristics of air quality and may:

- a) adversely affect human health
- b) adversely affect the health of flora and fauna
- c) adversely affect amenity values
- d) cause accelerated corrosion
- e) adversely affect the relationship tangata whenua as Kaitiaki have with their taonga, such as air, ancestral lands, water and waahi tapu.

6.1.2 Objective⁵⁵

Objective 1:

Significant characteristics of air quality as identified in Table 6-1 are:

- a) protected where they are high
- b) enhanced where they are degraded
- c) otherwise maintained.

Objective 2:

No significant adverse effects from individual site sources on the characteristics of air quality beyond property boundary.

Objective 3:

Cumulative effects of discharges on ambient air quality do not:

- a) present more than a minor threat to the health of humans, flora and fauna
- b) cause odour that is objectionable to the extent that it causes an adverse effect
- c) result in levels of suspended or deposited particulate matter that are objectionable to the extent that they cause adverse effects
- d) have a significant adverse effect on visibility
- e) cause accelerated corrosion of structures
- f) cause significant adverse effects on the relationship tangata whenua as Kaitiaki have with their identified taonga such as air, ancestral lands, water and waahi tapu.

Principal Reasons for Adopting The Objectives

The focus of **Objective 1** is on protection, maintaining or enhancing the significant characteristics of air quality rather than air quality *per se*. Reference to air quality characteristics is appropriate in this context because Waikato Regional Council does not have enough information to formally designate 'areas of air quality' that should be protected, maintained or enhanced. To assist resource users, Table 6-1 gives an indication of the significant characteristics of air quality within the Region. However, due to the general lack of information on air quality across the Region, any assessment of environmental effects will need to include a site specific assessment of the characteristics of air quality. Table 6-1 should be used as an initial guide.

⁵⁵ Also refer to the Objectives in Section 1.2.3 of this Plan.

The determination of the characteristics in a particular location will require knowledge of the natural/background levels of ambient air quality. Degraded air quality is attributal to both human-generated and natural sources such as volcanic eruptions, geothermal steam and sea spray.

Objective 2 identifies that discharges to air should not have significant adverse effects beyond the boundary of the property on which the discharge is occurring. This Objective is necessary to address recurring issues in the Region associated particularly with odour and particulate matter discharges that are having objectionable effects on neighbours. These effects need to be internalised by the discharger even if that means purchasing buffer zones or re-designing processes to ensure that the Objective can be achieved. Guidelines for the assessment of significant adverse effects from odour and particulate matter are detailed in Sections 6.4.1 and 6.4.2 respectively.

Objective 3 focuses on the cumulative adverse effects that can result from a number of discharges to air in the same general location. While the adverse effects of these discharges individually can be minor, collectively their impact on air quality can be much more significant than a single large point source. For instance, home heating is often the major source of fine particulate pollutants in urban areas. These cumulative adverse effects are much harder to manage and monitor than the effects of large point sources as it is often impossible to attribute the effect to a particular site or activity. Factors that cause or exacerbate cumulative adverse effects on air quality are the location of each discharge, the meteorology and topography of the area, population levels and the number of sources in an area.

This Objective identifies that cumulative effects should not have impacts on significant characteristics of ambient air quality. To assist in the interpretation of part f), air, like other natural and physical resources, is considered by Maori to be taonga, to be valued and used with respect and passed on intact to the next generation. To despoil or diminish the resource is a breach of stewardship or kaitiakitanga. The increasing emission of contaminants into the air has long been a concern for tangata whenua. Identification by tangata whenua of specific areas of interest in regards to air discharges will facilitate a greater awareness of these matters in the management of this resource.

6.1.3 Policies

Policy 1: Low Risk Discharges to Air Enabled

Enable the discharge of contaminants into air through permitted and controlled activity rules where:

- a) there are no significant adverse effects on human health and the health of flora and fauna from discharges of hazardous air pollutants,
- b) there is no odour that is objectionable to the extent that it causes an adverse effect beyond the property boundary,
- c) suspended or deposited particulate matter are not objectionable to the extent that they cause adverse effects beyond the property boundary,
- d) significant adverse effects on, or changes to, visibility beyond the property boundary are avoided or remedied,
- e) air quality beyond the property boundary does not cause accelerated corrosion or accelerated deterioration.

Policy 2: Managing Effects of Other Discharges

Manage other discharges of contaminants to air through controlled and discretionary activity rules having particular regard to the effects of the discharge on:

- a) ambient air quality compared to the Regional Ambient Air Quality Guidelines (RAAQG) levels provided in Chapter 6.3,
- b) ambient air quality compared to internationally accepted air quality guidelines or standards for managing and understanding the effects of contaminants on human health, the health of flora and fauna and amenity values,
- c) ambient odour and particulate matter levels compared to the guidelines for assessment provided in Chapter 6.4 of the Plan for odour and particulate matter
- d) adverse effects from contaminants that are hazardous in ambient air, particularly with respect to human health,
- e) the significant characteristics of air quality within an area,
- f) significant adverse effects of the discharge on the identified values of tangata whenua as Kaitiaki,
- g) the sensitivity of the receiving environment,
- h) existing ambient air quality and any cumulative effects as a result of the discharge on the receiving environment,
- i) nationally accepted codes of practice for the relevant activity.

Policy 3: Air Shed Management

Adopt an air shed management approach that takes into account the relative contributions of all contaminant sources in the area in accordance with the Ministry for the Environment's Ambient Air Quality Guidelines (May 2002). Priority for development of air quality management plans is to be given to areas where air quality is degraded as defined in Table 6-2 or where such a plan is necessary to prevent air quality becoming further degraded.

Table 6-2 Regional Ambient Air Quality Categories and Designated Response

Category	Measured Value	Response
Degraded	Exceeds the Regional Ambient Air Quality Guideline value in Chapter 6.3.	Enhance
	Between 66% and 100% of the Regional Ambient Air Quality Guideline value in Chapter 6.3.	Maintain or Enhance
Acceptable	Between 33% and 66% of the Regional Ambient Air Quality Guideline value in Chapter 6.3.	Maintain
High	Between 10% and 33% of the Regional Ambient Air Quality Guideline value in Chapter 6.3.	Maintain / Protect
	Less than 10% of the Regional Ambient Air Quality Guideline value in Chapter 6.3.	Protect

Policy 4: Best Practicable Option*

While having regard to the provisions in Policies 1, 2 and 3, and the likely effects of activities on ambient air quality, Waikato Regional Council will promote the best practicable option to prevent or minimise the discharge of contaminants to air where:

- a) numerical guidelines or standards establishing a level of protection for a receiving environment are not available or cannot easily be established,

- b) the maintenance or enhancement of the existing air quality is desirable or there is uncertainty over existing air quality,
- c) the known adverse effects and costs associated with adopting the best practicable option for an operation are small and the costs of investigating the effect on air quality is large in comparison to the potential effects.

Policy 5: Positive Benefits of Resource Use

Recognise the positive benefits to people and communities arising from activities that affect air quality by enabling a range of activities to use the air (including existing activities) whilst ensuring that:

- a) high quality air resources are protected,
- b) degraded air quality is enhanced,
- c) adverse effects on air quality are avoided, remedied or mitigated.

Explanation and Principal Reason for Adopting the Policies

Objectives 1, 2 and 3 of this Chapter are addressed collectively by the above policies. **Policy 1** provides the minimum requirements for permitted and controlled activities. Inherent in these is the internalisation of the effects of discharges to air so that neighbouring properties are not adversely affected by the activity. Activities have been classed as permitted and controlled on the basis of the likelihood that they can achieve the outcomes in Policy 1. Where the policy is unlikely to be readily complied with, activities have been made discretionary and Policies 2, 3 and 4 provide the basis for decision-making.

The effects-based approach required under the RMA and provided for by **Policy 2**, necessitates a move towards a philosophy of Air Quality Management (AQM). **Policy 3** contemplates the adoption of an air shed management approach, as described in the Ambient Air Quality Guidelines (MfE and MoH, 2002), in order to achieve Objectives 1 and 3. Managing significant sub-regional cumulative effects from air discharges requires consideration of the contributions to air quality effects from both identifiable major point sources, and from multiple small or non-point source discharges that would not of themselves warrant individual attention. Air quality management plans developed under this approach will address all discharges, regardless of their individual size or significance, and aim to achieve air quality improvements on a “whole of air shed” basis. This contrasts with the traditional regulatory approach, which aims to manage the more immediate off site effects of identified discharges from individual sites.

Because of the variability of the state of the air resource and the varied levels of knowledge about it, a range of approaches to air management are needed within the Region. In the short term Waikato Regional Council will need to use existing technical knowledge gained from the application of previous legislation alongside the ambient air quality management approach. In the medium- to long-term Waikato Regional Council may need to establish different management regimes for different parts of the Region based on divisions for high, acceptable or degraded air quality characteristics⁵⁶. The significant characteristics of air quality for different parts of the Region are identified in Table 6-1.

Policy 4 needs to be read in conjunction with the environmental thresholds provided in Policy 1 and the assessment criteria provided in Policy 2. Collectively, these three policies allow for a mix of air quality management and best practicable option (BPO) approaches to air management. The best practicable option should also be applied in a manner that has regard to the likely effects on ambient air quality.

⁵⁶ Waikato Regional Council. March 1996: Regional Policy Statement. Section 3.6.3 Regional and Local Air Quality, Policies One to Three.

Policy 4 is specific about when the best practicable option is more likely to be applicable. Parts a) to c) encompass the types of situations where BPO will be considered as an alternative to an air quality management approach but in other situations it may be used in conjunction with an air quality management approach under Policy 3. The best practicable option provides flexibility and allows progressive upgrading of emissions at source, adopting specified treatment and disposal technology or simply adopting good maintenance and operating procedures.

Best practicable option is a useful management tool, particularly in the short term, given the time and research required for developing regionally specific and scientifically credible standards for the protection of ecosystems, amenity and cultural values as well as human health. The BPO approach may be replaced by a more effects-based approach as research and information on ambient air quality and effects is developed. The effects-based approach could apply to the situations listed in parts a) to c) but for part d) the BPO may be the logical option particularly where past practice and experience has demonstrated that a discharge does not cause adverse effects if managed in a certain manner. The BPO approach is more likely to be relevant for small- rather than large-scale operations, for example, where the costs of investigating the effect on the environment is out of proportion to the cost of the development and proven management systems or technology.

Case law has indicated that where a use is established, people may have to accept a level of effect from the discharge provided the discharger is doing everything they reasonably can do to minimise the effect (i.e. using BPO). This suggests that Policy 1 may not always be able to be met for existing uses, but the policy thresholds should be met for new uses.

Policy 5 recognises that activities that affect air quality can have benefits for the community's social, cultural and economic wellbeing. The Policy is necessary to achieve Objective 3 in Chapter 1.2. By recognising existing activities the Policy supports consideration of reverse sensitivity where adverse effects of activities cannot be fully internalised.

6.1.4 Implementation Methods – Regional and Local Air Management

6.1.4.1 Ambient Air Quality Monitoring

Waikato Regional Council will continue to develop and implement a programme to monitor ambient air quality in the Waikato Region. Ambient air quality monitoring will focus on:

1. further identifying and confirming ambient air quality indicators (including those indicators developed as part of the Ministry for the Environment's Environmental Indicators Program⁵⁷),
2. developing long term trend information,
3. peak monitoring, to identify levels of contaminants in the air where there is a known impact,
4. developing regional air quality maps showing areas of varying air quality and air quality characteristics within the Region.

6.1.4.2 Monitoring of Community Perceptions

Waikato Regional Council will, in conjunction with local communities in the Region:

1. monitor community perceptions about the state of the air resource,
2. determine the air quality characteristics within their local areas,

⁵⁷ Ministry for the Environment. 1997: Proposals for air, fresh water and land. *Environmental Performance Indicators*. Ministry for the Environment, Wellington.

3. monitor community perceptions as to what expectations there are for air quality taking into account the nature of the environment, for example, urban versus rural environment.

6.1.4.3 Investigation and Reporting

Waikato Regional Council will:

1. develop and implement a regional emission inventory which will identify the scale and distribution of discharges of contaminants to air,
2. co-ordinate and contribute to research on regional air quality issues and ensure this information is shared between relevant agencies,
3. report on air quality data collected as part of its ambient air quality monitoring programme,
4. undertake a re-assessment of air quality monitoring needs and achievements within four years of this Plan becoming operative.

6.1.4.4 Promotion

Waikato Regional Council will promote to relevant agencies the need for the development of:

1. national guidelines for sampling, characterising and measuring contaminants,
2. a national air quality monitoring database,
3. national ambient air quality indicators,
4. projects that will help Waikato Regional Council to achieve its functions regarding air quality management.

6.1.4.5 Good Practice

Waikato Regional Council will, in conjunction with industry, relevant organisations or interested parties, provide guidance on good practice techniques for discharging contaminants to air, from:

1. domestic sources,
2. intensive indoor farming practices,
3. other industrial and trade sources, particularly those indicated in the permitted activity categories in this Module.

6.1.4.6 Environmental Education

Waikato Regional Council will provide the information generated from Methods 6.1.4.1 to 6.1.4.5, 6.1.5.1 and 6.1.6.2 to improve the regional community's understanding of air quality issues within the Region.

6.1.4.7 Part XII RMA Enforcement

Waikato Regional Council may apply for enforcement orders, issue abatement notices and use other enforcement mechanisms in Part XII of the RMA, where an activity has the effects listed in Policy 1 or breaches conditions of rules in the Plan.

Explanation and Principal Reasons for Adopting Methods 6.1.4.1 to 6.1.4.7

Methods 6.1.4.1 and 6.1.4.2 cover the range of actions Waikato Regional Council will undertake to gather, monitor and assess information relating to the air resource. These methods will provide a process to ensure that the provisions of the Plan are implemented and that Waikato Regional Council continues to gather information to help understand the state of the resource and the threats to it. This information will aid Waikato Regional Council in the resource management decision-making process set out in Policies 1 to 4 of this Chapter.

Method 6.1.4.3 provides a framework for the development and implementation of an emission inventory to gather and report information on the quantity of contaminants being released to the atmosphere for a defined area. When this information is combined with meteorological and ambient air quality monitoring data, it can be used to predict the effects of changing the emissions in the defined area⁵⁸. Emission inventories are one of the cornerstones of the process for preventing the deterioration of, and improving, the air quality within a regional air shed.

Further information gathering and monitoring of air quality through the life of this Plan is still necessary to:

- a) identify existing ambient air quality and indicate changes in trends over time, and from place to place,
- b) assess more adequately the effects (including cumulative effects) of discharges into air, on human health, the health of flora and fauna and amenity values,
- c) identify significant characteristics of air quality for any given area (refer objectives in Section 6.1.2),
- d) use the information in parts a) to c) to aid in decision-making on resource consents and policy development.

Method 6.1.4.4 provides a means for Waikato Regional Council to use its status and resources to promote ideas and preferred approaches to central government, or other agencies involved in the management of air quality. The provisions in parts 1) to 4) are areas where the Council considers national guidance is necessary to help Waikato Regional Council achieve its functions under the RMA.

Method 6.1.4.5 is an approach to assist Waikato Regional Council and resource users to achieve the objectives of this Plan. One of the key principles in this Module is that if operators adopt 'good practice' in relation to their activities, particularly small scale activities, then adverse effects are not likely to occur. This is particularly relevant for those operating under the permitted activity rules provided in this Chapter.

This method is specific about providing guidance on intensive indoor farming operations such as pig and poultry farming. These are industries in the Region that are well established and, depending on the management of the site, are subject to complaints regarding odour and particulate matter. Codes of Practice⁵⁹ for these industries currently exist and Waikato Regional Council does not wish to repeat guidance already developed within the industry. However, Council can still work with the industry to provide regionally specific guidance. Fundamentally, Waikato Regional Council considers good practice for intensive indoor farming operations to include:

- a) finding a suitable location that has adequate separation distances from other users in the area
- b) finding a site that takes advantages of the meteorological conditions and prevailing winds for dispersing contaminants
- c) having adequate litter/effluent management systems
- d) having a regime of feed management that controls consumption of protein.

Environmental education, as provided for in **Method 6.1.4.6**, is an effective means of providing resource users and the wider regional community with information and for encouraging changes in people's behaviour in relation to air quality management. In some cases, environmental education can be more effective than creating and enforcing regulatory rules.

⁵⁸ This is an expansion of the work undertaken by NIWA using Sustainable Management Funding provided through the Ministry for the Environment. Waikato Regional Council is concentrating on emission inventories for areas (such as Hamilton City) where a finer scale study will provide useful information for the City.

⁵⁹ New Zealand Pork Industry Board. 1993: *Code of practice for Pig Farming*. Wellington, and The Poultry Industry Association of New Zealand (Inc). October 1995: *Poultry Industry Code of Practice*.

Method 6.1.4.7 provides a signal that when adverse effects do occur that are contrary to the conditions within the rules of this Plan, then Waikato Regional Council will consider initiating enforcement proceedings. Section 17 and Part XII of the RMA can be used to require a person to cease an activity causing adverse effects or prohibit a person from commencing an activity that may result in adverse effects. This method should be read in conjunction with the guidelines for assessment in Chapter 6.4 where processes for considering enforcement for odour and particulate matter are specifically set out in Sections 6.4.1.6 and 6.4.2.5.

6.1.5 Implementation Methods – Domestic Sources

6.1.5.1 Environmental Education

Waikato Regional Council will use environmental education to help the community understand:

1. the types of adverse effects on air quality that can be caused by domestic sources such as open fires, incinerators, and heating appliances,
2. the energy efficient and environmentally beneficial alternatives that can be adopted, including alternative home heating methods and alternatives to outside burning of combustible materials

6.1.5.2 Consideration of Regulatory Controls

Waikato Regional Council will consider options for regulatory controls on domestic sources where the discharge of contaminants cumulatively cause significant adverse effects on local or regional air quality characteristics. These may include:

1. provision of standards or an approval process for heating appliances
2. restrictions on types of fuel that can be burnt
3. restrictions on the times of day to use domestic heating appliances.

Explanation and Principal Reasons for Adopting Methods 6.1.5.1 and 6.1.5.2

Method 6.1.5.1 recognises environmental education as a means to raise awareness in the regional community regarding emissions of contaminants from the domestic sector. As recognised by Policy 3 and Method 6.1.5.2, the cumulative effects from domestic sources will increasingly become an issue in the Region, particularly in urban centres as populations increase.

For parts of the Region, Waikato Regional Council will need to consider regulatory mechanisms as identified by **Method 6.1.5.2** as a means to control the adverse effects from domestic sources over time, particularly in areas where the RAAQG are exceeded or are predicted to be exceeded unless action is taken.

6.1.6 Implementation Methods –Transport Sources

6.1.6.1 Promotion

Waikato Regional Council will promote the following message to central Government:

1. national standards and initiatives are needed to reduce the adverse effects of transport sources on air,
2. programmes for testing and maintenance of motor vehicle emissions and appropriate driver behaviour should be developed,

3. there is a need for the development and implementation of infrastructural and financial incentives to encourage modes of transport and fuels that minimise the emission of greenhouse gases.

6.1.6.2 Environmental Education

Waikato Regional Council will use environmental education programmes to help the community understand the adverse effects on air quality that can be created by discharges from transport sources and will promote the use of:

1. non-motorised modes of transport such as cycling and walking and other alternative forms of transport,
2. low polluting fuels.

6.1.6.3 Encouragement of Roothing Authorities

Waikato Regional Council will encourage roading authorities and, where relevant, Transit New Zealand to:

1. undertake territorial road planning that aims to reduce motor vehicle congestion in urban areas,
2. consider air quality and energy efficiency issues arising from the transport implications of land use planning and design,
3. undertake transport planning that encourages the development of efficient and effective public transport systems,
4. plan for, and establish, a safe and convenient network of cycle-ways and cycle routes,
5. plan for, and develop, safe and convenient networks of footpaths and walkways
6. consider effects on air quality from land uses and transport sources when preparing draft and proposed district plans, or reviews of plans,
7. take into account effects on air quality that may occur from transport sources, as provided by Waikato Regional Council submissions on resource consent applications or on plans,
8. encourage roading authorities to ensure roads dust from unsealed roads affecting residential properties does not have objectionable effects beyond the boundary of the roading reserve,
9. encourage roading authorities to seal roads adjacent to clusters of houses or take other initiatives to mitigate the effects of unsealed roads on these communities.

Explanation and Principal Reasons for Adopting Methods 6.1.6.1 to 6.1.6.3

The above methods implement Policy 3 of this Chapter by addressing mobile sources that have cumulative adverse effects on air quality through a non-regulatory framework that integrates with agencies that have responsibilities in this area.

Method 6.1.6.1 recognises the role that Waikato Regional Council can undertake particularly in areas where a nationally co-ordinated approach to vehicle emission control is necessary and relevant⁶⁰.

Environmental education as provided for in **Method 6.1.6.2** identifies the need to raise awareness regarding the use of non-polluting transport fuels, and the use of non-motorised forms of transport or alternative means (i.e. public transport) to private motor vehicles. Many of the changes in this area can only come from a change of behaviour

⁶⁰ Provided for by RPS Section 3.6.4. Also provisions in *Operative Regional Land Transport Strategy* (EW, 1996).

based on the awareness of the adverse effects that can be caused by transport sources⁶¹.

Method 6.1.6.3 recognises the important role that roading authorities have in land use planning and road planning to help reduce the adverse effects of transport sources on air quality. This method identifies where Waikato Regional Council can work with and support roading authorities to reduce these adverse effects on air quality.

6.1.7 Implementation Methods – Effects of Land Use on Air Quality

6.1.7.1 Territorial Authority and Regional Council Responsibilities for Air Quality

Waikato Regional Council will, in conjunction with territorial authorities, work to clarify the roles and responsibilities of each agency in relation to air quality, starting from the position that:

1. Waikato Regional Council's responsibility is to develop policy, consider resource consents on the discharge of contaminants to air from specific sources, and undertake the monitoring and enforcement of those discharges.
2. The functions of territorial authorities are to consider the control of effects on air quality from land use when establishing district plan provisions and when considering applications for subdivisions and land use consents, and undertake the monitoring and enforcement of such controls.
3. Waikato Regional Council will work with territorial authorities to reduce duplication and inconsistency in the management of air quality under the RMA.
4. The transfer of powers for processing and/or monitoring of resource consents from Waikato Regional Council to a territorial authority will be considered in an area or on an issue where it satisfies the relevant statutory criteria in s33 of the RMA.

6.1.7.2 Land Use Planning

Waikato Regional Council will encourage territorial authorities to manage, through district plans, building consents, applications for subdivision, land use consent, Land Information Memoranda and education, any significant adverse effects of land use activities on air quality that arise out of any exercise of their powers and functions including:

1. As a first principle, ensuring that discharging activities take all reasonable steps to internalise their discharged effects including making use of the best practicable option.
2. Where this (i.e. Clause One) cannot be reasonably achieved and, it is necessary and reasonable to do so, controlling new land uses that are sensitive to the discharge of contaminants from other existing land uses.
3. Making available to the public information about significant or objectionable sources of discharges to air and surrounding sensitive areas.
4. Considering the effects of land use on air quality issues such as construction and demolition, earthworks and road sealing and other activities not requiring consent for discharge from Waikato Regional Council.

Advisory Note:

- See also land use planning method specific to agricultural spray drift Section 6.2.4.5.
- Waikato Regional Council holds information in regards to discharges to air. For enquiries please refer to Waikato Regional Council's Resource Use Group Enquiries Desk.
- There are various methods open to territorial authorities for the control of land uses. These include, but are not limited to, requiring buffer zones, the separation of potentially conflicting land uses, use of screening or shelter belts etc.

⁶¹ The Regional Land Transport Strategy also addresses these issues as part of Waikato Regional Council functions. Refer Waikato Regional Council. August 1997: *Operative Regional Land Transport Strategy*.

Explanation and Principal Reasons for Adopting Methods 6.1.7.1 and 6.1.7.2

There is a potential overlap between territorial authority and regional council roles for addressing air quality issues, particularly for odour. **Method 6.1.7.1** provides clarification of the responsibilities of each agency under the RMA.

A territorial authority should include consideration of the effects of various land uses on air quality when establishing plan provisions and issuing land use resource consents (i.e. the degree of compatibility with surrounding land uses). Section 31 of the RMA is clear in its intent that if the effects of the use, development or protection of land and associated natural and physical resources of the district significantly affect air quality, then the territorial authority has a responsibility to control those effects. Territorial authorities also retain a role under the Health Act 1956 for nuisance effects, however, this role is primarily for ancillary type activities that are isolated or episodic.

The regional council role is set out in s30 of the RMA. Waikato Regional Council has the responsibility for addressing discharges of contaminants to air, particularly from industrial and trade premises (s15(1)(c) of the RMA). Waikato Regional Council will retain the enforcement and monitoring responsibilities for these discharges, unless it is agreed to transfer these powers under s33 of the RMA.

Part 4 of **Method 6.1.7.2** recognises the important role that territorial authorities can play in making information available to the public about significant or objectionable sources of contaminants, such as odour or particulate matter and surrounding sensitive areas. To focus territorial authority efforts in this area, part 3 would only be relevant if there is a particular air quality issue or problem within a district (for example an accumulation of intensive indoor farms or a significant industrial source). Some territorial authorities in the Region are achieving part 3 already, by including information such as sources of objectionable odour on Land Information Memoranda (LIM). This approach advocates the 'buyer beware' principle, and acts to raise the awareness of new entrants into an area. Waikato Regional Council supports territorial authorities having mechanisms in place that can raise the awareness of people/business entering an area regarding established uses.

Method 6.1.7.2 part 4) specifically relates to controlling the effects of particulate matter discharges occurring from activities. Where effects on air quality are outside of Waikato Regional Council's direct control these effects should be considered in conjunction with other resource management considerations and priorities of the territorial authority. It should be noted that s17 of the RMA, in relation to avoiding, remedying or mitigating adverse effects, applies directly to dusty roads because they are not industrial and trade premises. However, road construction is specifically permitted under Rule 6.1.9.1 part 23) and the permitted activity conditions under Section 6.1.8 apply.

6.1.8 Standard Conditions for Permitted Activity Rules and Standards and Terms for Controlled and Restricted Discretionary Activity Rules

The following are the standard conditions for permitted activity rules and the standards and terms for controlled and restricted discretionary activity rules for discharges to air:

- a) There shall be no discharge of contaminants beyond the boundary of the subject property* that has adverse effects on human health, or the health of flora and fauna.
- b) The discharge shall not result in odour that is objectionable to the extent that it causes an adverse effect at or beyond the boundary of the subject property.

- c) There shall be no discharge of particulate matter that is objectionable to the extent that it causes an adverse effect at or beyond the boundary of the subject property.
- d) The discharge shall not significantly impair visibility beyond the boundary of the subject property.
- e) The discharge shall not cause accelerated corrosion or accelerated deterioration to structures beyond the boundary of the subject property.

Advisory Note:

- Waikato Regional Council will use the Guidelines for Assessment in Chapter 6.4 to determine whether adverse effects are occurring from the discharge of odour or particulate matter.

Explanation and Principal Reasons for Adopting Section 6.1.8

Parts a) to e) apply to wherever this section is cross-referenced by a condition on a rule in this Plan, although clearly some of the conditions or standards and terms may not be relevant in specific cases. For these permitted activity rules, it is important to note that these thresholds have been designed to allow for minor or low scales of activity. Therefore, if an operator adopts good practice techniques then adverse effects on air quality should not occur.

Part a) is specifically designed for avoiding adverse effects on human health. A contaminant in this sense could be an aerosol discharged from the spraying of effluent or a gas or vapour formed from the combustion of materials. To be consistent with Policy 1 of this Chapter, adverse effects on human health from a discharge should be avoided, as remediation or mitigation is not acceptable.

Part b) is specifically designed to avoid adverse effects from odour, in accordance with Objective 3. Waikato Regional Council will, where appropriate and in accordance with the processes set out in Section 6.4.1.3, Section 6.4.1.4 or Section 6.4.1.5, assess compliance with this condition and respond to incidents of particulate matter which may be objectionable to the extent that they are causing an adverse effect.

Part c) is specially designed to avoid adverse effects from particulate matter. Waikato Regional Council will, where appropriate and in accordance with the processes set out in Section 6.4.2.3 or Section 6.4.2.4, assess compliance with this condition and respond to incidents of odour which may be objectionable to the extent that they are causing an adverse effect.

The discharge of contaminants can affect the visual amenity values on adjoining properties. Part d) has therefore been included to ensure that significant adverse effects on visibility (i.e. the clarity and colour of the air) do not occur.

Part e) is designed for the protection of the built environment from the discharge of contaminants that can corrode structures or cause deterioration to equipment and/or structures over time.

6.1.9 Implementation Methods – General Rules

The following rules apply to discharges to air that are not specifically addressed by any other rule in this Plan.

6.1.9.1 Permitted Activity Rule – Miscellaneous

Unless restricted by any other rule in this Plan, the discharge of contaminants into air from the following industrial or trade premises or processes:

1. The manufacture of flock, teasing of textiles, shredding of paper, cleaning of sacks or the crushing or separating of dags from wool,
2. Animal or plant matter processes that have a raw material capacity not exceeding 250 kilograms per hour for deep fat frying or oil frying, curing by smoking, roasting or drying of berries or grains, and organic matter including wood being subject to such temperatures or conditions such that there is partial distillation or pyrolysis,
3. Animal matter processes that singly or together have a raw material capacity not exceeding 0.5 tonnes per hour and being processes for rendering or reduction or drying through application of heat to animal matter,
4. The drying of milk or milk products that singly or together has a raw material capacity not exceeding of 2 tonnes per hour,
5. The storage, blending and distribution of bulk products of fertiliser, animal feeds, roading materials, gardening materials, concrete processing materials associated with concrete manufacture, grains, coke, wood-chips, sawdust, wood-shavings, bark, and other powdered and bulk products,
6. The drying or heating of minerals where the generation capacity, singly or together shall not exceed 100 kilowatts (measured by the high heating value of the input fuel),
7. The discharge of geothermal steam at a rate of heat release not exceeding five megawatts,
8. The retailing, wholesale distribution and bulk storage of automotive fuels, oils, liquefied gases and gases,
9. The printing or manufacture of packaging material or printing of paper,
10. The manufacture of furnishings, clothing or carpets (excluding rubber underlay),
11. The manufacture, restoration or finishing of items made from wood, including cabinet making, furniture making and wood crafts,
12. The operation of dry cleaning, dyeing, laundering and cleaning facilities,
13. The manufacture of beverages, including soft drinks, extraction of fruit juices and fermentation of wine, distilled spirits and alcoholic beverages,
14. The storage of foods in refrigerated units,
15. Fire fighting training,
16. Forced air ventilation from indoor working spaces, (including medical premises or educational institutions),
17. The venting of gas pipelines, pumps, compressors, tanks or associated equipment when related to the purposes of refilling, servicing or repair,
18. Fume cupboards,
19. Tanks used for the storage of liquids including petrol and diesel oil,
20. The release of heated air,
21. The release of energy, including light from sources of electromagnetic radiation, including radio and television transmitters and other telecommunications facilities, cell phones, transmission lines and generators,
22. Vehicle engine maintenance and servicing,
23. Building and construction activities, including road construction and maintenance.
24. The drying of timber in a kiln at a rate singly or together which does not exceed, 20,000 cubic metres of timber per year where the drying temperature is between 100 and 135 degrees Celsius; or 40,000 cubic metres of timber per year where the drying temperature is 100 degrees Celsius or less,

25. Sawing or milling of timber,
26. The manufacture of concrete from cement and other constituents (excluding cement kilns),
27. Any refuse storage or transfer activity,
28. Premises used for the sale, servicing or repair of motor vehicles, trailers and boats, including body and engine repairs such as panel beating, undersealing, steam cleaning and fibreglassing,
29. Fumigation,
30. Water vapour

is a **permitted activity** subject to the conditions specified in Section 6.1.8 of this Plan.

Advisory Notes:

- If good practice is applied in conjunction with this Rule then adverse effects beyond the boundary from this scale of activity should not occur.
- If any of these conditions are not complied with then the activity is a discretionary activity in accordance with Rule 6.1.9.2.

6.1.9.2 Discretionary Activity Rule – General Rule

Except as provided for in any other rule in this Plan, the discharge of contaminants into air from:

1. Any process or activity that is on an industrial or trade premises and is not permitted by or does not comply with Rules 6.1.9.1, 6.1.10.1 to 6.1.19.1; or
2. A mobile source or premises that are not industrial or trade premises, and does not comply with Rules 6.1.9.1, 6.1.10.1 to 6.1.19.1

is a **discretionary activity** (requiring resource consent).

Exclusions to Rule 6.1.9.2:

- a) Non-industrial or trade premises and mobile sources not explicitly controlled by Rules 6.1.9.1 or 6.1.10.1 to 6.1.19.1 are permitted as provided for in s15(2) of the RMA.
- b) Agrichemical application as it is specifically addressed in Chapter 6.2.

Advisory Notes:

- Information requirements to enable the assessment of any application under this Rule are as set out in Section 8.1.5.1. In addition assessment shall also take into account the matters identified in the policies in Section 6.1.3 of this Chapter.
- For other discretionary activities in this Module, refer to Section 6.1.13.2 and 6.1.19.1.

Explanation and Principal Reasons for Adopting Methods 6.1.9.1 and 6.1.9.2

Rule 6.1.9.1 provides for activities on industrial or trade premises only. If these activities are not provided for in a permitted activity rule, then under the RMA they would be required to be assessed as a discretionary activity. The provisions in this Rule **do not apply** if the activity is already restricted by some other rule in this Plan.

The nature and scale of discharges from these activities is small and may create only minor effects on air quality. If good practice for these activities is adopted then adverse effects, such as odour or particulate matter, should not occur. Condition a) refers to Section 6.1.8. These conditions have been designed for the protection of human health and to ensure the avoidance of objectionable effects on amenity values. For specific explanation of these provisions refer to Section 6.1.8.

For Rule 6.1.9.1 part 21), territorial authorities control the siting of radio and telephone transmitters and other telecommunication facilities. Also, the National Radiation Laboratory administers the control of ionising radiation (including x-rays and gamma rays) under the Radiation Protection Act 1965. Non-ionising radiation is mainly associated with the broadcasting and communication industries and there is a New Zealand Standard (NZS 6609:1990) available for the control of such radiation. Permitting these activities avoids the duplication of current legislative requirements and controls.

Rule 6.1.9.2 provides for those discharges over which this Council wishes to retain control over through the resource consent process due to their potential adverse effects, but did not incorporate into a specific activity-based rule.

In relation to industrial or trade premises, the discharges provided for under a discretionary activity rule includes, but is not restricted to, the following activities:

- a) **Dry abrasive blasting** not referred to in Rules 6.1.10.1, 6.1.10.2, 6.1.10.3 and 6.1.10.4.
- b) **Combustion processes for fuel conversion** not included in Rules 6.1.12.1 and 6.1.12.2.
- c) **Combustion processes involving fuel burning equipment**, including flaring or incineration of trade wastes or refuse (including pathological waste incinerated at crematoria) not included in Rules 6.1.13.1 and 6.1.14.1.
- d) **Industrial chemical processes** including any processes used in:
 - i) bodying of natural oils or manufacture or reaction of monomers for production of synthetic resins, varnishes and plastics
 - ii) production of soap, grease, detergents and surface active agents
 - iii) synthesis or extraction of organic chemicals, including formulation of insecticides, weedicides, plant hormones, and like toxic or offensive organic compounds
 - iv) production of inorganic chemicals, including concentration of acids and anhydrides, ammonia, and alkalis
 - v) production of phosphatic or nitrogenous synthetic fertilisers, including granulation of single-mixed fertilisers
 - vi) any chemical manufacturing processes using or producing chlorine and any industrial processes using chlorine but only for uses other than water sterilisation
 - vii) separation or concentration for manufacture or disposal of any uranium metal or compound or any radioactive substances.
- e) **Mineral processes** that are not included in Rule 6.1.16.1.
- f) Any process that is:
 - i) part of a manufacturing process for Portland or similar cements and pozzolanic materials
 - ii) part of a manufacturing process for the sintering, calcining, or roasting of metal ores in preparation for smelting or for burning of calcium or calcium-magnesium carbonates to produce calcium or magnesium oxides or hydroxides, or the expansion or exfoliation of minerals, or the dehydration of gypsum
 - iii) part of a manufacturing process for making hot-mix asphalt paving mixes
 - iv) part of a manufacturing process for making glass or frit from raw materials or making mineral wool or glass fibre, including application of any surface coating to the fibres.
- g) **Metallurgical processes**, including galvanising and foundry practices that are not included in Rule 6.1.17.1.
- h) **Industrial carbonising or gasification** processes in which natural gas, petroleum, oil, shale, coal, wood or other carbonaceous material is subject to:
 - i) pyrolysis, carbonisation or destructive distillation, the solid, liquid or gaseous products being covered, or

- ii) gasification by partial combustion with air or oxygen or reaction with steam.
- i) Any **industrial wood pulp or particle board processes** in which:
 - i) wood or other cellulose material is cooked with chemical solutions to dissolve lignin and the associated processes of bleaching and chemical and by-product recovery, or
 - ii) hardboard or particle board or wood pulp are made by processes involving emission of hazardous air contaminants.
- j) The discharge of **geothermal steam** not included in Rule 6.1.9.1.
- k) Any discharge from **di-isocyanate or organic plasticisers** not included in Rule 6.1.11.1.
- l) **Waste management processes** not included in Rules 6.1.18.1 and 6.1.9.1.
- m) The discharge of contaminants into air from the buildings of **intensive indoor farms** not included in Rule 6.1.15.1 and Section 5.2.8.
- n) The discharges of **hydrocarbon or biogas** not included in Rule 6.1.12.1.
- o) **Rendering or fellmongery** processes involving the use of sulphides or the treatment of fellmongery liquid waste containing sulphides.
- p) The process of **wool scouring**.
- q) **Plant and animal processes** excluded from Rule 6.1.9.1.
- r) Processes used for the blending, packaging, or handling of **hazardous contaminants**.
- s) Grain elevators or seed dressing plants.

6.1.10 Implementation Methods – Discharges of Contaminants from Abrasive Blasting

6.1.10.1 Permitted Activity Rule – Abrasive Blasting with an Enclosure

The discharge of contaminants into air and any subsequent discharge onto land from abrasive blasting within a purpose built enclosure is a **permitted activity** subject to the following conditions:

- a) The blasting enclosure shall be fully enclosed and air shall be mechanically ventilated to air pollution control equipment that is designed and maintained to achieve a particulate matter concentration of not exceeding 100 milligrams per cubic metre (at zero degrees Celsius, one atmosphere pressure, dry gas basis), at the point of discharge from the enclosure.
- b) The person responsible for the abrasive blasting activity, upon request from the Waikato Regional Council, shall provide in writing details of the design standard and the maintenance procedures to confirm that the air pollution control equipment achieves the standard required by condition a).
- c) The discharge shall not result in any objectionable effects of particulate matter beyond the boundary of the subject property*.
- d) Any used or unused abrasive media not in use shall be kept covered and protected from the wind.

Advisory Note:

- If any of these conditions are not complied with then the activity is discretionary activity in accordance with Rule 6.1.9.2.

6.1.10.2 Permitted Activity Rule – Wet Abrasive Blasting and Water Blasting

The discharge of contaminants into air and any subsequent discharge onto land or into water from wet abrasive blasting and water blasting is a **permitted activity** subject to the following conditions:

- a) The sand or any other material used for abrasive blasting shall contain less than five percent free silica on a dry weight basis.

- b) The discharge shall not result in any objectionable effects of particulate matter beyond the boundary of the subject property
- c) Any abrasive media not in use shall be kept covered and protected from erosion.
- d) All contaminated material and other associated debris that is discharged to land from the blasting shall be collected and removed from the site after blasting has been completed. The contaminated material and other associated debris shall be disposed of to a facility that has authorisation to accept the contaminants in the debris.
- e) Effective measures shall be taken to prevent as far as is practicable, the discharge of any hazardous particulate, floatable or suspendable material to any water body.

Advisory Notes:

- Refer also to policies in Section 5.2.3 and enforcement method in Section 5.2.4.3 in the discharges to land section and discharges to water Section 3.5.4.5.
- If any of these condition are not complied with then the activity is a discretionary activity in accordance with Rule 6.1.9.2.

6.1.10.3 Permitted Activity Rule – Dry Abrasive Blasting Outside of an Enclosure in Isolated Locations

The discharge of contaminants into air and any subsequent discharge onto land or water from dry abrasive blasting of fixed structures outside of a purpose built enclosure; and where the structure or item to be blasted is 200 metres or more away from any building occupied by people on a regular basis, including houses, hostels, meeting places, schools and hospitals or places of work (other than places of work within the property where the blasting is occurring), is a **permitted activity** subject to the following conditions:

- a) The owner or occupier of any property within 200 metres of the blasting site shall be advised in writing of the proposed work, including information about the dates and location of any abrasive blasting, no more than two weeks and no less than 48 hours before commencement of the work.
- b) The sand or any other material used for abrasive blasting shall contain less than five percent free silica on a dry weight basis.
- c) The discharge shall not result in any objectionable effects of particulate matter beyond the boundary of the property on which the abrasive blasting occurs.
- d) Any abrasive media not in use shall be kept covered and protected from wind erosion.
- e) All contaminated material and other associated debris that is discharged to land from the abrasive blasting shall be collected and stored in a manner that it does not become wind blown after blasting has been completed each day. On completion of the project the contaminated material and other associated debris shall be disposed of to a facility that has authorisation to accept the contaminants in the debris.
- f) Effective measures shall be taken to prevent as far as is practicable, the discharge of any hazardous particulate, floatable or suspendable material to any water body.

Advisory Note:

- If any of these conditions are not complied with then the activity is a controlled activity in accordance with Rule 6.1.10.4.

6.1.10.4 Controlled Activity Rule – Dry Abrasive Blasting of Fixed Structures

Except as provided for in Rule 6.1.10.3, the discharge of contaminants into air and any subsequent discharge onto land or water from dry abrasive blasting of fixed structures outside a purpose built enclosure is a **controlled activity** (requiring resource consent) subject to the following standards and terms:

- a) The owner or occupier of any property or dwelling within 200 metres of the blasting site shall be advised in writing of the proposed work, including information about the dates and location of any abrasive blasting, no more than two weeks and no less than 48 hours before the commencement of the work.
- b) The sand or any other material used for abrasive blasting shall contain less than five percent free silica on a dry weight basis.
- c) All contaminated material and other associated debris that is discharged to land from the abrasive blasting shall be collected and stored in a manner that it does not become wind blown after blasting has been completed each day. On completion of the project the contaminated material and other associated debris shall be disposed of to a facility that has authorisation to accept the contaminants in the debris.
- d) Effective measures shall be taken to prevent as far as is practicable, the discharge of any hazardous particulate, floatable or suspendable material to any water body.
- e) Any discharge to air arising from the activity shall comply with the conditions and standards and terms in Section 6.1.8 except where the matters addressed in Section 6.1.8 are already addressed by conditions on resource consents for the site.

Waikato Regional Council reserves control over the following matters:

- i. Notification of the location and duration of the proposed operation to this Council.
- ii. The type of blasting media to be used.
- iii. Measures to avoid, remedy or mitigate the adverse effects on neighbouring dwelling places or properties.
- iv. Measures to avoid, remedy or mitigate the adverse effects on water quality (as identified in the Water Management Class Maps of this Plan).
- v. Measures to avoid, remedy or mitigate the contamination of soil to levels that present a significant risk to human health or the wider environment.
- vi. Qualifications of the operator/contractor.

Notification:

Applications for resource consent for activities under this Rule will be considered without notification in accordance with s94(1)(b) of the RMA.

Advisory Notes:

- “Significant risk” in terms of soil contamination is defined in Chapters 5.2 and 5.3 of this Plan.
- Refer also to Section 3.5.4.4 for discharges to water.
- Good practice techniques already exist for this type of activity, including the Guide to Lead Paint Management, released by Standards Australia⁶².
- Ministry of Health or Occupational Safety and Health should be contacted in relation to testing for particular contaminants in paint prior to commencing blasting so that appropriate methods can be put in place to ensure containment and minimise human exposure to such contaminants.
- Information requirements to enable the assessment of any application under this Rule are as set out in Section 8.1.5.1. In addition assessment shall also take into account the matters identified in the policies in Section 6.1.3 of this Chapter.
- If any of these standards and terms are not complied with then the activity is a discretionary activity in accordance with Rule 6.1.9.2.

⁶² Standards Australia: A.S. 4361.1 – 1995. *Guide to Lead Paint Management*. Part I Industrial Applications.

Explanation and Principal Reasons for Adopting Methods 6.1.10.1 to 6.1.10.4

These rules apply to the discharge of contaminants to air from both industrial or trade premises and non-industrial or trade premises.

Abrasive blasting can release contaminants to air, land and water particularly where carried out in the open with no emission control equipment. The potential adverse effects of the activity include objectionable effects of particulate matter and adverse effects on human health from exposure to fine particulate matter. Where the blasting is removing lead paints, soil and water may become contaminated as a consequence of the activity.

Rule 6.1.10.1 addresses abrasive blasting undertaken within a purpose built enclosure. For the purpose of this Rule, a purpose built enclosure refers to a facility that is specifically designed and maintained to control ventilation and filtration of particulate matter. Blasting under this Rule is restricted to dry blasting using sand or other materials onto a surface.

Wet abrasive blasting is provided for in **Rule 6.1.10.2**. This Rule enables water blasting and the projection of wet sand and other materials onto a surface. This Rule permits wet abrasive blasting outside of a purpose built enclosure and includes both mobile and stationary sources subject to compliance with the specified conditions.

Rule 6.1.10.3 addresses dry abrasive blasting that is undertaken in isolated areas outside of an enclosure. Compliance with the separation distance to sensitive receptors as identified and notification of any property owners or occupiers within 200 metres will enable the activity to occur in a manner that adverse effects can be avoided. **Rule 6.1.10.4** enables the activity to occur in more built up areas provided that the operator confirms through a non-notified consent process that he or she can adequately avoid, remedy or mitigate adverse effects.

Abrasive blasting which does not comply with these rules is a discretionary activity under the Rule 6.1.9.2. This is because of the potential for significant adverse environmental effects from particulate matter on neighbouring properties and on the wider environment.

Although not provided for explicitly in these rules, resource consents under the controlled activity rule for dry abrasive blasting can be issued on a region-wide basis. Fixed structures can be issued on a region-wide basis, e.g. all bridges owned by Transit but not permanent sites. Permanent sites pertain only to a particular site for which consent has been applied for. This allows those operating in the abrasive blasting area, subject to observance of conditions, to undertake such activities on a wide range of premises or locations without having to again apply for consent each time a singular activity occurs.

6.1.11 Implementation Methods – Coating Processes (including Spray Painting), Di-isocyanate and Organic Plasticiser Processes

6.1.11.1 Permitted Activity Rule – Coating Processes (including Spray Painting) and Di-isocyanate and Organic Plasticiser Processes

The discharge of contaminants into air in connection with:

1. The stoving of enamel or baking and drying of any substance where the rate of heat input into the process does not exceed 500 kilowatts (measured by the higher heating value of the input fuel) or where 500 kilowatts or less of electrical energy is used, or

2. The spray application of coating materials at a rate of consumption which does not exceed 30 litres per day except in the case of roads, buildings, bridges pipelines, transmission towers, or such structures, or
3. Any process involving the use of di-isocyanates or organic plasticisers at a rate which does not exceed eight litres per day;

is a **permitted activity** subject to the following conditions:

- a) With reference to parts 1, 2 and 3 of this Rule, the discharge of particulate matter shall not exceed a concentration of 100 milligrams per cubic metre (at zero degrees Celsius, one atmosphere pressure, dry gas basis) measured at the point of discharge from the premises except in the case where the application is outdoors.
- b) As specified in Section 6.1.8 conditions a) to e) of this Plan.

Advisory Notes:

- If good practice techniques are applied in relation to part 3 this should avoid any adverse effects occurring.
- Refer also to policies in Section 5.2.3 and enforcement method in Section 5.2.4.3 in the discharges to land section of this Plan.
- If any of these conditions are not complied with then the activity is a discretionary activity in accordance with Rule 6.1.9.2.

Explanation and Principal Reasons for Adopting Method 6.1.11.1

Rule 6.1.11.1 applies to the discharge of contaminants to air from both industrial or trade premises and non-industrial or trade premises.

Coating processes as provided for in Rule 6.1.11.1 parts 1 and 2 include the spraying of paints and lacquers, and coating with electrostatic powders. The stoving, baking or drying of enamel or other coating substances provided for in part 1 is necessary to ensure that the enamel, paints or lacquers are hardened and fixed to the surface of an object. This process typically occurs in the ceramics and metal production and finishing industries such as in the finishing of whiteware. The limit in Rule 6.1.11.1 part 1 of 500 kilowatts represents a small scale of activity where adverse effects should not occur if the operator adopts good practice techniques.

Rule 6.1.11.1 also provides for the spray application of paint, paint solvents, varnish, lacquer, dyes, metal oxide coatings, adhesive coatings, elastomer coatings, stains and polishes. The limit of 30 litres represents a small scale of activity where adverse effects should not occur if the operator adopts good practice techniques. The application of paints by paint brushes is a permitted activity regardless of the size of the area being painted as this activity does not result in the discharge of contaminants to air of any consequence.

Part 2 also allows for the painting of roadways (for road marking) buildings, bridges and pipelines. The effects from these activities also have a low risk of having adverse effects on air quality. However by its nature this activity has the potential for discharging contaminants to enter water or soil. However, if good practice techniques are applied in relation to this activity adverse effects on air, land and water should not occur.

Rule 6.1.11.1 part 3 provides for the use of di-isocyanates and organic plasticisers. Di-isocyanates are used in the production of polyurethane materials. In New Zealand the manufacture of flexible and rigid polyurethane foam accounts for the majority of di-isocyanate use, with polyurethane paints and lacquers also having considerable use. Other processes using isocyanates are the manufacture of urethane rubbers, adhesives and binders. Organic plasticisers are chemicals that are mixed with plastic

materials to increase the product's flexibility and workability. There is potential for the fugitive release of additive chemicals during plastics manufacture.

The use of less than eight litres per day of di-isocyanates and organic plasticisers is unlikely to result in any adverse effect as long as the conditions and good practice are adhered to. Processes involving larger quantities of di-isocyanates and plasticisers can result in significant discharges of vapours, aerosols and particulate matter that can irritate the membranes of the nose, throat, lungs and eyes. Prolonged exposure usually in the workplace can result in individuals becoming sensitised or can exacerbate existing health problems such as asthmatic attacks. Therefore, Waikato Regional Council needs to consider such effects under Rule 6.1.9.2.

6.1.12 Implementation Methods – Combustion Processes for Fuel Conversion to Useful Heat, Electricity or Work

6.1.12.1 Permitted Activity Rule – Combustion of Fuel for Heat Release

The discharge of contaminants into air from burning the following fuels for the purpose of generating useful heat, steam, power or electricity:

1. Natural gas and liquefied petroleum gas with a rate of heat release not exceeding 10 megawatts
2. Wood and wood products (with the exception of wood that has been treated), paper and paper products with a rate of heat release not exceeding:
 - i) five megawatts from activities lawfully established or authorised before the date of notification of this Plan
 - ii) two megawatts from activities lawfully established or authorised after the date of notification of this Plan
3. Diesel, kerosene, petroleum, coke, coal, charcoal, oil (excluding waste oil*) or non chlorinated alcohols with a rate of heat release not exceeding five megawatts

is a **permitted activity** subject to the following conditions:

- a) As specified in Section 6.1.8, conditions a) to e) of this Plan.
- b) The limits in this Rule shall not be used as a means for disposal of those materials restricted by Rules 6.1.13.1 and 6.1.13.3 of this Plan.
- c) The sulphur content of fuel must not exceed one percent by weight.
- d) The concentration of particulate matter at the point of discharge must not exceed 250 mg/m³ at zero degrees Celsius, one atmosphere pressure and dry gas basis.
- e) The chimney height shall be at least three metres above the highest point of the roof or any other roof within 20 metres of the chimney.

Exclusion to Rule 6.1.12.1:

The generation of useful heat that is for domestic home heating and does not exceed 40 kW is not covered by this Rule and does not require consent under the presumptions of s15 of the RMA. The generation of useful heat for sources not exceeding 40kW per building is excluded from any need to comply with conditions a) – e) of this rule.

Advisory Notes:

- If good practice is applied in conjunction with this Rule then adverse effects beyond the boundary from this scale of activity should not occur.
- Good practice guidance currently exists for the operation of coal fired boiler installations less than 5 MW (gross) capacity.⁶³

⁶³ Coal Research. December 1996: *Environmental Code of Practice for the operation of coal fired boiler installations less than 5MW (gross) capacity*. Coal Research Ltd, Lower Hutt.

- The conversion of fuel to useful heat for sources not exceeding 40kW per building are covered by the non-regulatory methods in 6.1.5 of this Plan.
- With regard to parts 1 and 3 of this rule, if any of these conditions are not complied with then the activity is a discretionary activity in accordance with Rule 6.1.9.2.
- With regard to part 2 of this rule, if any of these conditions are not complied with then the activity is a restricted discretionary activity in accordance with Rule 6.1.12.2.

6.1.12.2 Restricted Discretionary Activity Rule – Combustion of Wood-Based Fuel for Heat Release

The discharge of contaminants into air from burning the following fuels for the purpose of generating useful heat, steam, power or electricity:

1. Wood and wood products (with the exception of wood that has been treated), paper and paper products with a rate of heat release exceeding:
 - i) five megawatts from activities lawfully established or authorised before the date of notification of this Plan
 - ii) two megawatts from activities lawfully established or authorised after the date of notification of this Plan;

is a **restricted discretionary activity** (requiring resource consent) subject to the following standard and term:

- a) As specified in Section 6.1.8, conditions a) to e) of this Plan.

Waikato Regional Council will restrict discretion on the following matters:

- i) The location of the combustion plant on the site.
- ii) Stack/chimney height.
- iii) Emission control equipment.
- iv) Discharge limits for particulate matter.
- v) Discharge limits for other contaminants likely to be in the discharge.
- vi) Efflux velocity.
- vii) Fuel quality and fuel storage.
- viii) Monitoring.
- ix) Effects on ambient air quality.
- x) Application of Best Practicable Option.
- xi) Duration of consent.
- xii) Administration charges.
- xiii) Requirement for a Management Plan.
- xiv) Effects on the relationship tangata whenua as Kaitiaki have with their identified taonga.

Advisory Notes:

- Information requirements to enable the assessment of any application under this Rule are as set out in Section 8.1.5.1. In addition assessment shall also take into account the matters identified in the policies in Section 6.1.3 of this Chapter.
- If any of these conditions are not complied with then the activity is a discretionary activity in accordance with Rule 6.1.9.2.

6.1.12.3 Controlled Activity Rule – Existing, Lawfully Established Combustion of Coal and Gas for Heat Release up to 50MW

Unless permitted by Rule 6.1.12.1, the discharge of contaminants into air from the burning of coal or gas for the purpose of generating useful heat, steam, power or electricity that was lawfully established or authorised before the date of notification of this Plan, is a **controlled activity** (required resource consent) subject to the following standards and terms:

- a) Those specified in Section 6.1.8 conditions a) to e) of this Plan.

- b) Any change in the activity shall not change the character or increase the scale or intensity of any adverse effects of the activity on the environment.
- c) There shall have been no successful enforcement action taken by Waikato Regional Council in relation to that air discharge in the two years prior to the consent application being lodged.
- d) The combined heat release of the combustion appliances shall not exceed 50MW.

Waikato Regional Council reserves control over the following matters:

- i) Measures to avoid, remedy or mitigate the adverse effects on neighbouring dwelling places or properties;
- ii) The method of discharge, including stack design and exit velocity;
- iii) Emission control equipment, its operation and maintenance;
- iv) Combustion equipment operation and maintenance;
- v) Fuel use, quality (including sulphur content), storage and handling;
- vi) Requirement for a management plan;
- vii) Emission limits (concentrations and/or rates) on the discharge;
- viii) Monitoring and requirements for sampling points;
- ix) Effects on the relationship tangata whenua as Kaitiaki have with their identified taonga; and
- x) Duration of consent.

Advisory Notes

- Information requirements to enable the assessment of any application under this rule are as set out in Section 8.1.5.1. In addition assessment shall also take into account the matters identified in the policies in Section 6.1.3 of this chapter.
- If any of these conditions are not complied with then the activity is a discretionary activity in accordance with Rule 6.1.9.2.

Explanation and Principal Reasons for Adopting Methods 6.1.12.1 to 6.1.12.3

The unit megawatt (MW) is used in the above rules to measure heat. In these rules the term refers to the combined heat output of all the appliances on a site. Where more than one fuel type is used on the site the combined heat should not exceed the lowest MW threshold of the fuel types.

These rules cover the use of internal or external combustion engine boilers, heating appliances, electrical generation plants or other fuel combustion for heat or energy, but **excludes** the disposal of wastes and materials listed in the rules in Section 6.1.13 of this Plan.

Rule 6.1.12.1 permits the combustion of various fuels at different energy production thresholds. Where these fuels are considered to be cleaner burning the thresholds are set at higher levels. This encourages the use of cleaner burning fuels as they have less adverse effects to air quality than lower quality fuels. Domestic sources are permitted under the RMA and are not addressed by these rules. Their effects are addressed by the methods in section 6.1.5.

Rule 6.1.12.2 addresses Policy 2 of this Chapter by allowing discharges to air while ensuring there are no adverse effects to the ambient air quality. The more stringent rule allows for higher energy production thresholds for wood based combustion processes. The status of the Rule allows Council to exercise discretion over a range of factors that either influence the adverse effect on air quality, or facilitate the gathering of monitoring information pertaining to the discharge.

Rule 6.1.12.3 provides for a potentially simplified consent process for existing coal and gas fired boilers up to 50MW because the effects from existing plants are generally known and can be dealt with by the inclusion of appropriate conditions.

6.1.13 Implementation Methods – Discharges to Air From Combustion Processes*

6.1.13.1 Permitted Activity Rule – Open Burning and Incineration

The discharge of contaminants into air and any subsequent discharge of contaminants onto land from open burning* and incineration* of:

1. Untreated wood and vegetative matter
2. Paper and cardboard
3. Food waste
4. Non halogenated plastics⁶⁴
5. Animal carcasses on production land

is a **permitted activity** subject to the following conditions:

- a) As specified in Section 6.1.8 conditions a) to e) of this Plan.
- b) The material is sourced only from the property where the burning occurs, except if the material is from authorised vegetative clearance associated with road maintenance.
- c) The material being burnt shall not be within a landfill site or waste transfer station.
- d) The material being burnt or incinerated shall not be material that is listed in Rule 6.1.13.4.
- e) The material being incinerated shall not include the following materials:
 - i) fluorine, chlorine, phosphorous or nitrogen that has been chemically combined by human manufacturing.
 - ii) sulphur.

Advisory Notes:

- Before burning materials under this Rule, consideration of alternatives to burning eg. Composting of organic matter (as provided in Chapter 5.2) should be considered.
- Territorial authority fire permits and by-laws for burning will need to be adhered to in conjunction with this Rule.
- If good practice is applied in conjunction with this Rule then adverse effects beyond the boundary from this scale of activity should not occur.
- Guidance on reducing the effects of burning for land clearance purposes is also available in the New Zealand Forest Cost of Practice (New Zealand Logging Industry Research Organisation; 1993).
- Refer also to Rule 6.1.9.1 Permitted Activity Rule – Miscellaneous and Rule 6.1.9.2 Discretionary Activity Rule – General Rule (Section 6.1.9).
- Refer also to Rules 5.1.4.9 and 5.1.4.10 of this Plan regarding accelerated erosion from vegetation clearance.
- If any of these conditions are not complied with, then refer to Rules 6.1.13.2, 6.1.13.3 and 6.1.13.4.

6.1.13.2 Discretionary Activity Rule – Open Burning and Incineration

The discharge of contaminants into air from open burning and incineration of any material in a manner that is not permitted, or does not comply with Rules 6.1.13.1 or 6.1.13.3 or is not otherwise prohibited by 6.1.13.4 is a **discretionary activity** (requiring resource consent).

Advisory Note:

- Information requirements to enable the assessment of any application under this Rule are as set out in Section 8.1.5.1. In addition, assessment shall also take into account the matters identified in the policies in Section 6.1.3 of this Chapter.

⁶⁴ The Glossary defines halogenated plastics, non halogenated is the opposite of this definition.

6.1.13.3 Non-Complying Activity Rule – Open Burning and Incineration

The discharge of contaminants into air from the open burning of tar and bitumen until 1 January 2006, is a **non-complying activity** (requiring resource consent).

Advisory Note:

- After 1 January 2006, this activity becomes prohibited pursuant to Rule 6.1.13.4.

6.1.13.4 Prohibited Activity Rule – Open Burning of Specified Material

The discharge of contaminants into air and any subsequent discharge of contaminants onto land from the open burning of the following materials:

1. Halogenated organic chemicals
2. Materials containing heavy metals
3. Pitch, paint and paint residues and surface coatings
4. Asbestos
5. Pathological waste (excluding animal carcasses on production land)
6. Agrichemicals and agrichemical containers containing residues
7. Polyvinylchloride (PVC) plastic and plastics containing halogenated material
8. Copper-chrome-arsenic (CCA) treated timber or timber treated with organochlorine (PCP)
9. Rubber and tyres
10. Waste oil and other waste petroleum products including sludge
11. Sludge from industrial processes
12. Hazardous materials from contaminated sites and buildings
13. Materials associated with the recovery of metals from cables
14. Components of motor vehicles
15. Tar and bitumen from 1 January 2006
16. Any material within a landfill* or a refuse transfer station;

is a **prohibited activity**.

Exclusion to Rule 6.1.13.4:

- a) Any authorised open burning undertaken by the New Zealand Fire Service.

Advisory Notes:

- Good practice guides already exist regarding the burning of CCA treated timber⁶⁵. It should be noted that Waikato Regional Council is not going to take a prosecution based on open burning when the source is an accidental house fire.
- Authorised means that the appropriate fire permits are obtained from the relevant territorial authority.

Explanation and Principal Reasons for Adopting Methods 6.1.13.1 to 6.1.13.4

These rules apply to the discharge of contaminants into air from both industrial or trade premises and non-industrial or trade premises. For the purposes of this section opening burning refers to the burning of materials other than in a purpose built incinerator. Incineration refers to the application of a combustion process under controlled conditions to convert waste into ash and gases. The combustion system should have control over oxygen, temperature, turbulence and residence time. Incineration undertaken with adequate control systems (such as temperature and residence time), in general, produces a cleaner and more efficient burn with minimal contaminants being released and also allows for the collection of the ash that can contain hazardous contaminants.

⁶⁵ Department of Labour, Occupational Safety and Health Service. February 1994: Section 8.5. *Code of Practice for the Safe Use of Timber Preservatives and Antisapstain Chemicals*. Department of Labour, Wellington. 50.

Rule 6.1.13.1 provides for the open burning and incineration of specified materials. When burnt, the materials listed in parts 1 to 5 should not create adverse effects on air quality because of the relatively benign nature of the compounds in those materials. Good practice in terms of these materials would mean that alternatives such as composting or recycling should be considered an option before burning. However, if burning needs to occur, conditions a) to e) must be complied with.

Rule 6.1.13.1 provides for open burning and incineration of those materials listed in parts 1 to 5 only if the material being burnt is sourced from the property where the burning occurs, as provided in condition b). This means that materials from neighbouring properties should not be collected and burnt on one site. However, the Rule also recognises that contractors authorised to undertake roadside maintenance require the ability to relocate untreated wood and vegetative matter obtained from this activity, to an appropriate location for burning.

Rule 6.1.13.1 Conditions c), d) and e) are explicit about the materials that should **not** be burnt as part of this permitted activity rule. Waikato Regional Council wishes to retain control of the effects from the incineration of those materials listed in condition e) due to the potential for these materials to generate objectionable, offensive, dangerous or noxious effects. The burning of these materials therefore is discretionary, as provided under Rule 6.1.13.2.

Rule 6.1.13.2 ensures Waikato Regional Council has control over the open burning or incineration of any material not already addressed by Rules 6.1.13.1, 6.1.13.3 and 6.1.13.4.

Rule 6.1.13.3 specifically provides for the open burning of tar and bitumen, as a non-complying activity, until 1 January 2006. After this date this activity will be prohibited. Although this method of removing road seal is considered to be no longer environmentally acceptable, more environmentally sound technologies are yet to be proved. The 5-year period prior to this activity becoming prohibited provides a transition period for the development of these methods.

Rule 6.1.13.4 is a prohibited activity. This means that from the date of public notification of this Plan, subject to existing use rights under s20 of the RMA, the burning of the material listed in this Rule will be prohibited and no resource consent will be granted for this activity. The open burning of these materials is not good practice. Open burning does not allow the combustion process to be controlled sufficiently to avoid or mitigate adverse effects on the receiving environment. There are other technologies that can be used to recover the materials stated or to dispose of them that are economically viable. Examples of the types of materials that shall not be burnt in the open under this Rule are listed in Table 6-3. There is only one exception to this Rule and that is the burning of these materials as part of the authorised activities of the New Zealand Fire Service. These activities relate primarily to fire training activities.

The open burning of the materials listed in Rule 6.1.13.4 produce hazardous contaminants such as known carcinogens, high toxicity contaminants such as dioxins, and potentially mutagenic* and teratogenic* contaminants.

Table 6-3 Examples for Rule 6.1.13.4

Material	Example
1. Halogenated organic chemicals.	Fluorescent light fittings and electrical equipment containing Polychlorinated Biphenyl (PCB's), Pesticides such as Dieldrin or Pentachlorophenol (PCP) and solvents such as Trichloroethane (PEC).
2. Materials containing heavy metals.	Batteries, treated timber and other substances containing metals such as lead, zinc, arsenic, chromium, cadmium, copper, mercury and thorium.
3. Pitch, paint and paint residues and surface coatings.	Painted corrugated iron, paint containers, coated metals.
4. Asbestos ⁶⁶ .	Old linoleum, some roofing material, and insulation material.
5. Pathological waste (excluding animal carcasses on production land).	Waste from medical labs, hospitals, veterinary clinics and doctors surgeries.
6. Agrichemicals and agrichemical containers containing residues.	Waste agrichemicals, chemical containers that have not been triple-rinsed.
7. Polyvinylchloride (PVC) plastic and plastics containing halogenated material.	Any plastic identified with the number '3' in the recycling triangle on the container.
8. Copper-chrome-arsenic treated timber or timber treated with organochlorine.	Timber that has been treated to be highly resistant to rot (e.g. H3 and H4, which refers to the grade of treatment).
9. Rubber and tyres.	Old tyres, and other material containing rubber.
10. Waste oil and other waste petroleum products including sludge.	Petrol engine oil, diesel engine oil, gear and transmission oils, metalworking oils, hydraulic oils.
11. Sludge from industrial processes.	Biosolids, electroplating liquor, spent solvent, contaminated soil and contaminated construction material.
12. Hazardous materials from contaminated sites and buildings.	Covered in numbers 2, 3, 4, 7, 9 and 10 of this Table.
13. Materials associated with the recovery of metals from cables.	Insulated electrical cables.
14. Components of motor vehicles.	Upholstery, plastic, tyres, rubber and waste oil.
15. Tar and bitumen.	Road seal burning.
16. Any material within a municipal waste disposal premises.	Solid waste from domestic and industrial premises, including a range hazardous substances, waste at landfills or refuse transfer stations.

⁶⁶ Includes any of the following fibrous silicates: actinolite, amosite, anthophyllite, chrysolite, crocidolite and tremolite.

6.1.14 Implementation Methods – Processing, Storage, Transfer and Flaring of Hydrocarbons and Biogas

6.1.14.1 Permitted Activity Rule – Hydrocarbons and Biogas

Exception

These Standards do not apply to:

Plantation forestry activities as from 1 May 2018 these activities are regulated under the National Environmental Standards for Plantation Forestry Regulations 2017.

The discharge of contaminants into air in connection with:

1. Any process involving the production and collection (including refining, purification or reforming) of biogas* produced by anaerobic fermentation at a rate of not exceeding 200 cubic metres per day
2. The flaring* and combustion of hydrocarbons and biogas provided that:
 - i) the biogas and hydrocarbons do not contain more than 1 percent halogenated hydrocarbons expressed as chlorine; and
 - ii) the combined rate of combustion does not exceed two megawatts
3. The storage and transfer of hydrocarbons and biogas;

is a **permitted activity** subject to the following condition:

- a) As specified in Section 6.1.8 conditions a) to e) of this Plan.

Advisory Notes:

- If good practice is applied in conjunction with this Rule then adverse effects beyond the boundary from this scale of activity should not occur.
- Refer also Sections 5.2.7.1 and 5.2.7.2 regarding discharges from landfills.
- If any of these conditions are not complied with then the activity is a discretionary activity in accordance with Rule 6.1.9.2.
- Rules relating to the production of compost (such as the production of substrate for the cultivation of mushrooms) including any associated discharges to air are in Section 5.2.8 of this Plan. General ventilation from mushroom cultivation is covered by the miscellaneous permitted activity Rule 6.1.9.1 part 16.

6.1.14.2 Controlled Activity Rule – Combustion of Landfill Gas

The discharge of contaminants into air from the combustion of hydrocarbons and biogas at a combined rate of combustion exceeding two megawatts where:

1. the combustion is for the purpose of generating useful heat, steam, power or electricity; or
2. the discharge is ancillary to the flaring of hydrocarbons

is a **controlled activity** (requiring resource consent) subject to the following standards and terms:

- a) The source of the hydrocarbons or biogas must be a landfill authorised under Rule 5.2.7.1 of this Plan
- b) As specified in Section 6.1.8 Conditions a) to e) of this Plan

Waikato Regional Council reserves control over the following matters:

- i. Measures to avoid, remedy or mitigate the adverse effects of the activity on neighbouring dwelling places or properties.

- ii. The emission control methods to be used.
- iii. Contents of a Management Plan.

Notification

Application for a resource consent under this Rule will be considered without notification or the need to serve notice on affected persons, in accordance with sections 93(1)(a) and 94D(3) of the RMA.

Explanation and Principal Reasons for Adopting Methods 6.1.14.1 and 6.1.14.2

Rule 6.1.14.1 permits the discharge of contaminants to air in relation to the small scale production, storage, transfer and small scale flaring of hydrocarbons and biogas. This Rule applies to the discharges from both industrial or trade premises and non-industrial or trade premises.

The production of biogas not exceeding 200 cubic metres per day is permitted under Rule 6.1.14.1 part 1 because this level is unlikely to have adverse effects on air quality. Waikato Regional Council wishes to encourage the recovery of biogas and facilitate any small scale recovery processes or investigations associated with larger recovery operations.

The technology and risks associated with larger scale operations are such that a consent process is necessary to ensure that adverse effects associated with such larger plants are adequately avoided, remedied or mitigated.

Small scale flaring and combustion (not exceeding two megawatts) is permitted under Rule 6.1.14.1 part 2. Such burning is considered to have minor adverse effects on neighbouring properties, such as light spill. This provision allows for flaring or combustion of gases from sites such as landfills, which is a preferred method to the uncontrolled release of these contaminants into the air.

The transfer and storage of hydrocarbons and biogas is permitted under Rule 6.1.14.1 part 3 because the effects of the discharge from any associated ventilation pipes are generally minimal.

Rule 6.1.14.2 enables the discharge of contaminants from the combustion of hydrocarbons and biogas from consented landfills for the purpose of generating electricity. This activity is enabled relative to other similar activities because the effects that need to be avoided, remedied or mitigated are largely already addressed in the consents for the landfill. The Rule also permits discharges ancillary to the flaring of hydrocarbons from a consented landfill at times when electricity generation systems are not operational. All that is required is a specific management plan and air pollution control equipment appropriate to the site.

The actual production of hydrocarbons including the refining, purification, and reforming of hydrocarbons and any other hydrocarbon and biogas processing not covered in Rule 6.1.14.1 or 6.1.14.2 is a discretionary activity and requires a resource consent under Rule 6.1.9.2.

6.1.15 Implementation Methods – Managing Discharges to Air from Intensive Indoor Farming

6.1.15.1 Permitted Activity Rule – Discharges from Intensive Indoor Farming*

The discharge of contaminants into air from buildings associated with any intensive indoor farms*, excluding intensive indoor pig farms, intensive indoor broiler chicken farms, and compost production for the purposes of the production of substrate for the

cultivation of mushrooms as provided for in Section 5.2.8.1 and 5.2.8.3 of this Plan is a **permitted activity** subject to the following condition:

- a) As specified in Section 6.1.8 conditions a) to e) of this Plan.

Advisory Notes:

- For rules on the production of compost (such as the production of substrate for the cultivation of mushrooms) refer to Section 5.2.8 of the discharge of contaminants to land Chapter. General ventilation from mushroom cultivation is covered by Rule 6.1.9.1, part 16.
- Property owners/managers should consult with their territorial authority and assess whether or not district plan objectives, policies and rules have controls on location, noise levels or any other related issue that may affect the operation or require consent.
- If any of these conditions are not complied with then the activity is a restricted discretionary activity in accordance with Rule 6.1.15.3.

6.1.15.2 **Controlled Activity Rule – Discharges from Existing Intensive Indoor Pig and Broiler Chicken Farms**

The discharge of contaminants into air from buildings associated with intensive indoor pig and broiler chicken farms that were lawfully established or authorised before the date of notification of this Plan, is a **controlled activity** (requiring resource consent) subject to the following standards and terms:

- a) Those specified in Section 6.1.8 conditions a) to e) of this Plan.
- b) Any change in the activity shall not change the character or increase the scale or intensity of any adverse effects of the activity on the environment.
- c) The activity shall have no verified complaint/s of objectionable odour or particulate matter that has resulted in enforcement action being taken against the discharger in the two years prior to the consent application.

Waikato Regional Council reserves control over the following matters:

- i) Measures to avoid, remedy or mitigate the adverse effects on neighbouring dwelling places or properties.
- ii) The emission control methods.
- iii) Contents of a Management Plan.

Advisory Notes:

- If good practice is applied in conjunction with this Rule then adverse effects beyond the boundary from this scale of activity should not occur. Good Practice is outlined in New Zealand Pork Industry Board, 1997: Code of Practice for Pig Farming. Wellington, New Zealand, and The Poultry Industry Association of New Zealand (Inc), October 1995: Poultry Industry Code of Practice, or subsequent versions of the relevant codes.
- Property owners/managers should consult with their territorial authority and assess whether or not district plan objectives, policies and rules have controls on location, noise levels or any other related issue that may affect the operation or require consent.
- Sections 6.4.1 and 6.4.2 detail the guidelines for assessing odour and particulate matter and stipulate the procedure for the verification of complaints for odour and particulate matter.
- Discharges to air from waste management processes are addressed in Rule 6.1.18.1, discharges of broiler poultry farm effluent onto land are addressed by Rule 3.5.5.1 and discretionary activities for discharges to water are addressed by Rule 3.5.4.5.
- Information requirements to enable the assessment of any application under this Rule are as set out in Section 8.1.5.1. In addition, assessment shall also take into account the matters identified in the policies in Section 6.1.3 of this Chapter.
- If any of these standards and terms are not complied with then the activity is a restricted discretionary activity in accordance with Rule 6.1.15.3.

6.1.15.3 Restricted Discretionary Activity Rule – Discharges from Intensive Indoor Farms

Unless provided for by Rules 6.1.15.1 and 6.1.15.2 the discharge of contaminants into air from buildings associated with intensive indoor farms, is a **restricted discretionary activity** (requiring resource consent).

Waikato Regional Council will reserve discretion on the following matters:

- i. Location of the buildings on the site, relative to prevailing winds, climatic conditions and neighbouring properties.
- ii. Emission control equipment.
- iii. Information and monitoring requirements.
- iv. Visual or nuisance effects on neighbours.
- v. Application of Best Practicable Option.
- vi. Measures to avoid, remedy or mitigate the adverse effects on neighbouring dwelling places or properties.
- vii. Measures to avoid, remedy or mitigate the adverse effects of contaminants on neighbouring dwelling places or properties.
- viii. Contents of a management plan.

Advisory Notes:

- If good practice is applied in conjunction with this Rule then adverse effects beyond the boundary from this scale of activity should not occur. Good practice is outlined in New Zealand Pork Industry Board, 1997: Code of Practice for Pig Farming. Wellington, New Zealand, and The Poultry Industry Association of New Zealand (Inc), October 1995: Poultry Industry Code of Practice, or subsequent versions of the relevant codes.
- Property owners/managers should consult with their territorial authority and assess whether or not district plan objectives, policies and rules have controls on location, noise levels or any other related issue that may affect the operation or require consent.
- Sections 6.4.1 and 6.4.2 detail the guidelines for assessing odour and particulate matter and stipulate the procedure for the verification of complaints for odour and particulate matter.
- Discharges to air from waste management processes are addressed in Rule 6.1.18.1, discharges of broiler poultry farm effluent onto land are addressed by Rule 3.5.5.1 and discretionary activities for discharges to water are addressed by Rule 3.5.4.5.
- Information requirements to enable the assessment of any application under this Rule are as set out in Section 8.1.5.1. In addition, assessment shall also take into account the matters identified in the policies in Section 6.1.3.

Explanation and Principal Reasons for Adopting Methods 6.1.15.1 to 6.1.15.3

Rule 6.1.15.1 provides for the discharge of contaminants to air from buildings associated with all intensive indoor farming, excluding pig farms, broiler chicken farms and compost production for the purposes of the production of substrate for the cultivation of mushrooms. Mushroom farming is specifically excluded from this Rule as it is addressed in Section 5.2.8. Pig farms and chicken broiler farms are not permitted by this Rule because they are the most frequent source of odour complaints in the Region. They are complex operations that present a significantly greater risk of breaching the permitted activity conditions for objectionable odour than other activities.

Rule 6.1.15.2 enables existing intensive indoor pig and broiler farms where good management practices or location have meant that there is no history of verified complaints in the two years prior to the application for a new consent. This rewards good operators by giving them certainty at consent renewal time without removing all regulation. The nature of these activities is that the risk of them generating adverse effects from objectionable odour increases if the scale, intensity or management of the operation changes. Where such changes occur, and as a consequence the level of adverse effects from the discharge increases, Council needs to have the ability to decline the consent under **Rule 6.1.15.3**.

In Section 6.4.1.1 of this Plan, Waikato Regional Council has provided a course of action for assessing the odour aspects of resource consent applications for activities (i.e. applying for a new consent or consent renewal). This section is included to provide existing users with some guidance as to those matters Waikato Regional Council will consider when assessing a resource consent for an activity such as intensive indoor farming.

Intensive indoor farming operations that are unable to comply with Rules 6.1.15.1 and 6.1.15.2 are restricted discretionary activities pursuant to **Rule 6.1.15.3**. In this manner, Council is able to retain control over certain aspects of these activities that have been identified as factors that contribute to the ability of the operator to comply with the standards and terms of this Rule.

6.1.16 Implementation Methods – Mineral Extraction, Size Reduction, Screening and Storage

6.1.16.1 Permitted Activity Rule – Mineral Extraction, Size Reduction, Screening and Storage

The discharge of contaminants to air from any mineral extraction, processing and storage operation is a **permitted activity** subject to the following conditions:

- a) Where the operation occurs within 1000 metres of a property boundary and there is a discharge of particulate matter beyond the property boundary the following measures shall be implemented:
 - i) the use of water sprays to suppress dust from crushing and screening plants, access ways, haul roads, stockpiles, load out areas and access roads
 - ii) the sealing and maintenance of the access road, when it is within 150 metres of a neighbouring residential dwelling.
- b) As specified in Section 6.1.8 a) to e) of this Plan.
- c) Within seven working days of commencing works at a new site, the operator of the new quarrying site shall provide the Waikato Regional Council with written notification of the location of the site.
- d) Should an emission of particulate matter occur that causes adverse effects of an objectionable nature beyond the property boundary as determined in accordance with the decision making guidelines set out in Section 6.4.2.2, the quarry operator shall provide a written report to the Waikato Regional Council within five days of the incident occurring, which specifies:
 - i) the cause or likely cause of the event and any factors that influenced its severity
 - ii) the nature and timing of any measures implemented by the quarry operator to avoid, remedy, or mitigate any adverse effects
 - iii) the steps to be taken to prevent recurrence of similar events.
- e) There shall be no discharges of hazardous substances into the air,

Advisory Notes:

- A resource consent will be required for the discharge of particulate matter into air from a quarrying operation or associated ancillary activities, if it is deemed by an officer of the Waikato Regional Council, using the decision-making guidelines given in Section 6.4.2, that all reasonable steps are not being taken to keep dust emissions to a practicable minimum, **and** the discharge of particulate matter from the site or ancillary activities is having an objectionable or offensive effect beyond the boundary of the site.
- The operation of an overburden disposal area is considered to be an ancillary activity. Consequently, when stripping and placing overburden for mineral extraction purposes, the conditions in Rule 6.1.16.1 apply. Overburden disposal areas also constitute a discharge of contaminants into or onto land and are addressed in Rule 5.2.5.1.
- Other Rules that should be considered alongside Rule 6.1.16.1 are Rules 6.1.9.1 part 6 and 6.1.9.2.

- If any of these conditions are not complied with then the activity is a discretionary activity in accordance with Rule 6.1.9.2.
- Land use consents may also be required in district plans. These will address issues such as amenity effects, traffic and noise. The thresholds at which resource consents are required vary within each territorial authority area. In some areas the activity may be prohibited under the relevant district plan.

Explanation and Principal Reasons for Adopting Method 6.1.16.1

Rule 6.1.16.1 provides for the discharge of contaminants to air associated with the extraction, size reduction, screening and storage of minerals (including coal, coke, carbon and sand). The rule recognises that the potential for this activity to have adverse effects is generally determined by site management practices and distance to receptors (including vulnerable flora and fauna).

The conditions listed in a) to e) of this Rule constitute a BPO in accordance with Policy 4 of this Chapter, and these conditions must be complied with for the activity to be considered a permitted activity. These conditions address the adverse effects from discharges to air from this activity. Compliance with these conditions will be assessed using the guidelines stipulated in Section 6.4.2.2. If the activity does not meet these conditions the activity becomes a discretionary activity under Rule 6.1.9.2.

6.1.17 Implementation Methods – Metal Processing

6.1.17.1 Permitted Activity Rule – Metal Processing

The discharge of contaminants into air associated with any production or processing (including melting and secondary melting and sweating) of aluminium, ferrous metals, bronze, copper or brass where the aggregated melting capacity not exceeding one tonne per hour, is a **permitted activity** subject to the following condition:

- a) As specified in Section 6.1.8 conditions a) to e) of this Plan.

Advisory Notes:

- If good practice is applied in conjunction with this Rule then adverse effects beyond the boundary from this scale of activity should not occur.
- Metal processing operations may also include activities covered by rules under Sections 6.1.9 miscellaneous permitted activities, 6.1.10 abrasive blasting, 6.1.11 spray coating and 6.1.12 combustion processes. Also refer to the above rules, where relevant, to ensure that requirements of these rules are also met.
- If any of these conditions are not complied with then the activity is a discretionary activity in accordance with Rule 6.1.9.2.

Explanation and Principal Reasons for Adopting Method 6.1.17.1

Rule 6.1.17.1 is restricted to the discharge of contaminants to air involving the processing of aluminium, ferrous metals, bronze, copper and brass. This includes the melting of these metals including secondary melting and the sweating of scrap metal. Secondary melting involves the melting of processed ore, whereas the sweating of scrap metal is a process involving the heating, usually of metal components, to extract valuable metals.

The production and processing of metals at a rate where the aggregated melting capacity is less than one tonne per hour are not likely to result in any adverse effects. Any activity that does not meet the thresholds or conditions in this permitted activity rule is a discretionary activity (refer Rule 6.1.9.2). This is because of the potential significant adverse effects on human health from the discharge and the potential to release objectionable contaminants into the atmosphere including those of a hazardous nature.

6.1.18 Implementation Methods – Waste Management Process

6.1.18.1 Permitted Activity Rule – Waste Management Process

The discharge of contaminants into the air arising from the storage, transfer (excluding refuse transfer stations), treatment or disposal of liquid and solid waste is a **permitted activity** subject to the following conditions:

- a) The activity was lawfully established, except by way of a resource consent, before the date of notification of this Plan.
- b) Any change in the activity shall not increase the scale, frequency, intensity, nature or duration of any discharge to air compared to when the activity was established or authorised.
- c) The activity is not already restricted in Sections 3.5.5, 3.5.6, 3.5.7, 5.2.5, 5.2.6, 5.2.7, 5.2.8 or 6.1.12 of this Plan.
- d) The process does not involve the treatment of hazardous substances.
- e) As specified in Section 6.1.8 conditions a) to e) of this Plan.

Advisory Notes:

- Consideration of district plan objectives, policies and rules with regard to waste management should also be made.
- Adverse effects from these activity should not occur if they are managed in accordance with good practice.
- Rule 6.1.19.1 part 27 addresses refuse transfer stations.
- If any of the these conditions are not complied with then the activity is a discretionary activity in accordance with Rule 6.1.9.2.

Explanation and Principal Reasons for Adopting Method 6.1.18.1

Rule 6.1.18.1 is restricted to activities lawfully established before the date of notification of this Plan and applies to waste management undertaken on both industrial or trade premises and non-industrial or trade premises. Examples of activities permitted by this Rule include municipal sewage treatment plants, trade waste, waste transfer stations, oxidation ponds, and waste from intensive indoor farms. The Rule permits the discharges only to the extent that they remain at the same or lesser scale and of a similar nature to that authorised at the date of notification of this Plan.

This Rule does not apply if the discharge to air is already addressed in other rules in this Plan.

This Rule also does **not** apply if the activity has already been authorised by a resource consent at the date of notification of this Plan.

6.1.19 Implementation Methods – Other Activities

6.1.19.1 Discretionary Activity Rule – Asphalt Plants

The discharge of contaminants into air from fixed or mobile asphalt plants is a **discretionary activity** (requiring resource consent).

Advisory Note:

- Information requirements to enable the assessment of any application under this Rule are as set out in Section 8.1.5.1. In addition, assessment shall also take into account the matters identified in the policies in Section 6.1.3.

Explanation and Principal Reasons for Adopting Method 6.1.19.1

Rule 6.1.19.1 is included because Waikato Regional Council recognises that asphalt manufacturing plants have the potential to release significant quantities of particulate matter, steam and odour. A discretionary activity rule is needed specifically for discharge of contaminants to air from asphalt plants because this Rule encompasses both fixed and mobile sources. This provides the ability to assess these effects relative to the receiving environment on a case-by-case basis.

6.1.20 Implementation Methods – Cooling Processes

6.1.20.1 Permitted Activity Rule - Water Vapour, Water Droplets and Steam from Cooling Processes at a Rate of Heat Release Not Exceeding 50 MW

The discharge of water vapour, water droplets and steam at a rate of heat release not exceeding 50 MW maximum capacity is a **permitted activity** subject to the following conditions:

- a) The plume shall not cause shadowing beyond the boundary of the subject property,
- b) The plume shall not extend beyond the boundary of the subject property or otherwise cause nuisances such as ground fogging or icing,
- c) The discharge shall not impinge upon any aircraft flight path,
- d) Hexavalent chromium compounds shall not be added to the cooling water,
- e) Any biocides added to the cooling water must be used in accordance with the requirements of any licence issued under the Hazardous Substances and New Organisms Act 1996,
- f) As specified in Section 6.1.8 conditions a) to e) of this Plan.

Explanation and Principal Reasons for Adopting Method 6.1.20.1

Rule 6.1.20.1 is intended only to apply to the discharge of water vapour, water droplets and steam that does not contain volatile contaminants, such as from process waters or condensates.

General permitted activity condition 6.1.8 d) provides for visibility impairment beyond the boundary but special provision is needed where a large scale source is located in the vicinity of an aircraft flight path hence condition c) above. Conditions a) and b) above ensure that the plume will not have nuisance effects from blocking sunlight or fogging and will not result in droplet deposition that could cause icing. Conditions d) and e) relate to the use of biocides that are added to cooling water to control microbial growth and are intended to ensure that hazardous compounds are not released in the discharge.

6.1.21 Environmental Results Anticipated

1. Ambient air quality within regional guideline levels.
2. Early detection of degradation of air quality in specific locations.
3. Reduction in instances of reverse sensitivity effects.
4. Adequate data to support the adoption of an Air Quality Management approach.
5. No discharges of particulate matter that are objectionable to the extent that they cause adverse effects beyond the property boundary.
6. No discharges of odour that are objectionable to the extent that they cause adverse effects beyond the property boundary.
7. Discharges of hazardous contaminants at a level where there is a low risk of causing adverse effects on human health and the health of flora and fauna beyond the boundary of the subject property.

8. Discharges to air that do not significantly change visibility on a local or regional scale.
9. Discharges to air that do not cause accelerated corrosion or corrosive effects on structures beyond the boundary of the subject property.
10. Minimisation of short and long term contamination of soil and water as a result of the discharge of contaminants to air.
11. Air management outcomes that are consistent with the values held by tangata whenua as Kaitiaki.

6.1.22 Monitoring Options

Objective	Indicators/ Measurements	Types of Monitoring	Information Sources
<p>Significant characteristics of air quality as identified in Table 6-1:</p> <p>a) Protected where they are high</p> <p>b) Enhanced where they are degraded</p> <p>c) Otherwise maintained.</p>	Air quality variables (see below).	<p>Regional trend monitoring.</p> <p>Compliance monitoring.</p> <p>Emissions inventory.</p>	<p>Air quality database.</p> <p>Compliance monitoring database.</p>
<p>No significant adverse effects from individual site sources on the characteristics of air quality beyond property boundary.</p>	<p>Complaints.</p> <p>Air quality variables (see below).</p>	<p>Regional trend monitoring.</p> <p>Compliance monitoring.</p>	<p>Air quality database.</p> <p>Compliance monitoring database.</p>
<p>Cumulative adverse effects of discharges on ambient air reduced so that there is:</p> <p>a) No or low threat to the health of humans, or the health of flora and fauna.</p> <p>b) No objectionable effects from odour.</p> <p>c) No objectionable effects from suspended or deposited particulate matter.</p> <p>d) No significant adverse effects or change to visibility.</p> <p>e) No accelerated corrosion of structures.</p>	Odour	<p>Compliance monitoring.</p> <p>Guidelines for Assessment – objectionable odour as provided under Chapter 6.4 of this Plan.</p>	<p>Regional Trend Monitoring.</p> <p>Air quality database.</p> <p>Compliance and effects monitoring.</p> <p>Resource consents database.</p> <p>Compliance monitoring database. Incidences spills and accidents</p> <p>Investigation and surveys.</p> <p>Perception surveys database.</p> <p>Regional economy database.</p> <p>Complaints, enquiries and submissions database.</p> <p>External Databases.</p> <p>Territorial Authority files.</p> <p>Central government databases.</p> <p>Industrial/Sector groups</p>

Objective	Indicators/ Measurements	Types of Monitoring	Information Sources
	Particulate Matter	Regional trend monitoring. Compliance and effects monitoring. Emissions Inventory. Standard deposit gauges, arranged around the activity and wind direction and speed measurements and/or total suspended particulate material. PM ₁₀ monitoring (24hr or 7 day averages). Guidelines for Assessment – objectionable particulate deposition as provided under Chapter 6.4 of this Plan.	Regional Trend Monitoring. Air quality database. Compliance and effects monitoring. Resource consents database. Compliance monitoring database. Incidences of spills and accidents. Investigation and surveys. Perception surveys database. Regional economy database. Complaints, enquiries and submissions database. External Databases. Territorial Authority files. Central government databases Industrial/Sector groups
	Visibility	Visual Range. Community Monitoring.	Regional Trend Monitoring. Air quality database. Community monitoring. Investigation and surveys. Perception surveys database. Regional economy database. Complaints enquiries and submissions database.

Objective	Indicators/ Measurements	Types of Monitoring	Information Sources
	CO NO _x SO _x O ₃ Hazardous contaminants	Regional trend monitoring. Compliance and effects monitoring ⁶⁷ . Emissions Inventory.	Regional Trend Monitoring. Air quality database. Compliance and effects monitoring. Resource consents database. Compliance monitoring database. Incidences spills and accidents Investigation and surveys. Perception surveys database. Regional economy database. Complaints, enquiries and submissions database. External Databases. Territorial Authority files. Central government databases. Industrial/Sector groups.
Cumulative adverse effects of discharges on ambient air reduced so that there is: a) No or low threat to the health of humans, or the health of flora and fauna. b) No significant adverse effects on the relationship tangata whenua as Kaitiaki have with their identified taonga such as air, ancestral lands, water and waahi tapu.	Community awareness of issues of significance to tangata whenua. Community awareness of sites of significance to tangata whenua.	Community monitoring. Investigations and surveys.	Iwi/Maori databases. Perception surveys databases. Complaints, enquiries and submissions database.

⁶⁷ Waikato Regional Council may use as a guide the processes set out in: Ministry for the Environment. June 1997: *Source Testing as a Compliance Tool for Air Discharges*. The document provides guidance on the sampling of oxides of nitrogen, sulphur dioxide, solvents, particulate, reduced sulphur compounds, corrections (CO₂ etc) and visible emissions.

6.2 The Discharge of Agrichemicals into Air

Background and Explanation

Agrichemicals⁶⁸ are used to control plant and insect pests and fungal diseases, and are relied on in the agricultural sector to protect and ensure a certain quality of product. The application of agrichemicals from ground or aerial sprays can result in spray drift beyond the intended target.

The application of fertilisers, fumigants, animal remedies and sanitisers has been excluded from the definition of an agrichemical. The effects of fertiliser application are addressed in the Water Module. Exclusion of specific reference to these compounds in this section does not mean that effects on air quality from their application are not addressed. Objectionable effects from particulate matter are addressed in the environment thresholds covered in Policy 1 in Chapter 6.1 and the Guidelines for Assessment in Chapter 6.4, where appropriate. Fumigants are addressed in Rule 6.1.19.1. The discharge of agrichemicals can also have other adverse effects that are covered by the issues, objectives and policies in other parts of the Plan.

Effects of Agrichemical Use on Water Quality

One effect of special concern is the effect of agrichemical discharges to water. These discharges can result in contamination of water bodies with hazardous substances and adverse effects on aquatic ecosystems. The discharges can also result in adverse effects on water quality as a result of vegetation along the margins of water bodies being sprayed then decaying, resulting in a reduction of dissolved oxygen in the water body. This has adversely affected water bodies in the Region in the past.

Agrichemical Spray Drift Management in the Waikato Region

A number of agencies have roles and responsibilities for addressing the effects of spray drift. The key enforcement agencies are Waikato Regional Council, Community Health and the Occupational Safety and Health Unit of the Labour Department. Currently these agencies have an informal agreement identifying how they work together.

6.2.1 Issues

Issue 1:

The discharge of herbicides, insecticides and fungicides into the air can result in the off-target drift of these agrichemicals. Exposure of humans, animals, other crops and vegetation to this off-target drift can have the following significant adverse effects:

- a) **Adverse effects on human health that results in pathological processes such as allergic reactions, skin irritation, acute or chronic toxic effects or mental distress or disorder.**
- b) **Reduction in the amenity values of community facilities due to contamination of grass or foliage.**
- c) **Contamination of domestic and commercial water supplies.**
- d) **Contamination of other water bodies to levels where chemical residues are able to be detected in fish or where non-target flora and fauna are killed.**
- e) **Destruction of or damage to commercial crops or domestic plants to levels where they are unusable for their intended purpose or to the point where the growth or quality of the crop has been significantly adversely affected.**

⁶⁸ Includes pesticides, but excludes animal remedies and fertiliser. Refer Glossary.

Issue 2:

The decay of vegetation as a consequence of weed control using agrichemicals along the margins of water bodies can decrease dissolved oxygen in the water to levels that will have significant adverse effects on aquatic ecosystems.

6.2.2 Objective

Agrichemicals used in a manner that avoids the significant adverse effects of off-target exposure from their discharge and which do not have adverse effects that conflict with the objectives in Section 3.1.2 of this Plan.

Principal Reasons for Adopting the Objective

The objective is to avoid the significant adverse effects from off-target exposure to agrichemicals. By focusing on effects that are significant, this objective recognises that off-target exposure to agrichemicals will not always cause adverse effects. This focus on effects that are significant also recognises that agrichemicals are necessary to support modern conventional agriculture. A stricter standard such as avoiding all off-target exposure to agrichemicals would be impossible to achieve without substantially changing agrichemicals. Such an approach would not promote sustainable management.

The second part of the objective acknowledges that some agrichemicals are designed for use in water. The use of agrichemicals in water, either to control aquatic plant pests or to maintain water flows in drains and flood control areas, is widespread in the Region. The positive environmental effects of agrichemical use in these circumstances mean that their use must not be unduly restricted. The objective therefore provides for their use subject to the objectives for management water quality in Section 3.1.2 of this Plan.

6.2.3 Policy

Policy 1: Application of Agrichemicals

Allow by rules and encourage by other methods, the application of agrichemicals in a manner that avoids the significant adverse effects of off-target exposure to agrichemicals (as identified in Policy 1) beyond the boundary of the property being sprayed.

Policy 2: Sensitive Areas

Recognise that some areas, places or features are sensitive to the adverse effects off off-target exposure to agrichemicals, including, but not limited to:

- a) dwelling-houses
- b) places of public assembly* and public amenity areas*
- c) domestic and community water supplies
- d) water bodies⁶⁹ and the banks of a water body
- e) habitats of significant indigenous flora and fauna (as defined in district plans and Department of Conservation Management Strategies)
- f) plants and/or crops which are sensitive to agrichemical(s) being discharged
- g) certified organically farmed properties⁷⁰.

⁶⁹ As defined in the RMA.

⁷⁰ Such as Biogro.

Explanation and Principal Reasons for Adopting the Policies

Policy 1 allows and encourages the use of agrichemicals so long as significant adverse effects of off-target exposure to agrichemicals do not occur. This enabling approach has been adopted in recognition of the importance of agrichemicals to the Region's agricultural sector and the fact that not all off-target exposure to agrichemicals will have adverse effects.

The policy will achieve the objective in two ways. Firstly the policy identifies that the adverse effects of agrichemical drift should be contained within the boundary of the property being sprayed. If this is done, significant adverse effects of off-target exposure to agrichemicals are unlikely to occur. This policy does not imply that no off-target effect of spray drift are allowed to occur, it focuses implementation methods on ensuring that significant adverse effects are avoided. These effects can be avoided through a range of methods that reduce the likelihood of spray drift occurring (such as notification or land use planning to reverse sensitivity issues).

Policy 2 recognises that some people, activities or resources are more sensitive to agrichemicals than others. If a person spraying agrichemicals takes into account these sensitivities when planning their operation and provides notification and/or alters their plans to take those sensitivities into account, they will be able to avoid significant adverse effects of off-target drift, thereby achieving the objectives of the Plan.

6.2.4 Implementation Methods

6.2.4.1 Support Codes of Practice

Waikato Regional Council will support development, implementation and review of industry-based codes of practice where they provide guidance for avoiding off-target spray drift, and where they:

1. provide formal training and registration of agrichemical applicators
2. promote good practice in relation to:
 - a) notification, signage and reporting of agrichemical use
 - b) storage, transport, application and disposal of agrichemicals
 - c) weather conditions and drift hazard
 - d) the use of buffer zones and shelter belts
 - e) other methods that avoid off-target spray drift
 - f) reporting of any accidents that may result in off-target adverse effects.

6.2.4.2 Environmental Education

Waikato Regional Council will use environmental education to raise awareness within the regional community regarding:

1. the safe, responsible and efficient use of agrichemicals in the Region
2. the use or development of alternative pest management practices that are not inconsistent with the Waikato Regional Pest Management Strategy and Section 3.10 of the Waikato Regional Policy Statement
3. management practices that avoid off-target spray drift from ground and aerial spraying
4. the appropriate organisations to contact about spray drift concerns and complaints
5. methods of identifying areas and crops that are sensitive to the effects of agrichemical spray drift.

6.2.4.3 Promotion

Waikato Regional Council will promote to central Government, industry and other relevant organisations:

1. training and registration of contract agrichemical applicators and their staff
2. training of land managers in the safe and efficient use of agrichemicals
3. tighter controls on the purchasing of high risk agrichemicals
4. monitoring of the amount and type of agrichemicals used
5. development of low risk application techniques
6. the use or development of alternative pest management practices that are not inconsistent with the Waikato Regional Pest Management Strategy and Section 3.10 of the Waikato Regional Policy Statement
7. the benefits of weed management policies or asset management plans for local authorities to manage the risks of off-target agrichemical spray drift.

6.2.4.4 Integration

Waikato Regional Council will work with other relevant organisations to:

1. develop and agree on a Memorandum of Understanding between the Public Health Unit of Health Waikato, the Environmental Risk Management Authority, the Civil Aviation Authority and territorial authorities agreeing on each agencies' responsibilities with regard to spray drift.
2. develop other methods to jointly address complaints about agrichemical spray drift.

6.2.4.5 Land Use Planning

Waikato Regional Council will encourage territorial authorities to manage any significant adverse effects of land use activities on air quality that arise out of any exercise of their powers and functions through district plans, building consents, applications for subdivision or land use consent and education including:

1. As a first principle, ensuring that discharging activities take all reasonable steps to internalise their discharged effects including making use of the best practicable option.
2. Where reasonable and necessary to do so, controlling new land uses that are sensitive to the discharge of contaminants from other existing land uses.
3. making available to the public, information about sensitive areas in the district as listed in Policy 3 of Section 6.2.3.

Advisory Note:

- There are various methods open to territorial authorities for the control of land uses. These include, but are not limited to, requiring buffer zones, the separation of potentially conflicting land uses, use of screening or shelterbelts etc.
- See also Method 6.1.7.2.

6.2.4.6 Part XII RMA Enforcement

Waikato Regional Council may apply for enforcement orders, issue abatement notices and use other enforcement mechanisms in Part XII of the RMA where an activity has the adverse effects listed in Policy 1 or breaches conditions of rules in the Plan.

Advisory Note:

- Refer to Section 6.2.8 for guidance on the course of action to assess significant adverse effects.

6.2.4.7 Information

Waikato Regional Council will, in partnership with territorial authorities, agrichemical contractors and other resource users:

1. maintain registers of people who require notification in particular districts
2. maintain publicly available lists of registered chemical applicators and pilots with a current GROWSAFE® Agrichemical Rating who operate in the Region.

6.2.4.8 Permitted Activity Rule – Spot Spraying Using Hand Held Spray Equipment

The discharge of agrichemicals from the ground into air, and any consequent discharge onto land, using hand held spray equipment⁷¹ for spot spraying⁷² is a **permitted activity** subject to the following conditions:

- a) The discharge does not occur in a public amenity area⁷³.
- b) The agrichemical(s) shall be discharged in a manner that does not contravene any requirement specified in the manufacturer's instructions.
- c) The discharge shall be undertaken in such a way that no significant adverse effect⁷⁴ of off-target drift shall occur beyond the boundary of the property being sprayed.
- d) The owner or occupier of the property on which spraying is to be undertaken, is required to notify anyone who has requested prior notification. Notification shall be either verbal or in writing and shall be provided between 12 hours and three weeks prior to the commencement of the discharge. Notification shall include the:
 - i) date the agrichemical(s) is to be discharged
 - ii) type of agrichemical(s) to be used
 - iii) location of the discharge
 - iv) duration of the discharge
 - v) method of discharge.
- e) Where the agrichemical is being applied in a situation where it may enter water, any downstream water user within one kilometre of the point of discharge must be notified between 12 hours and three weeks prior to commencement of the discharge.

Advisory Notes:

- This Rule does not authorise the direct discharge of agrichemical(s) into water.
- In the event of any accidental or unintended discharge of agrichemicals to air, land or water it is strongly recommended that the person responsible immediately notifies Waikato Regional Council.
- The use of any agrichemical no longer registered in New Zealand or in a manner that contravenes the requirements specified in the manufacturer's instructions is an offence under the Hazardous Substances and New Organisms Act 1996.
- The use of weed wipers, or distribution by hand of granular herbicides is not a discharge of contaminants to air and is not regulated by this Rule.
- The requirement to notify does not give the notified person the right to veto a spraying operation on a neighbouring property or in a public amenity area.
- When applying chemicals near the boundary between the Waikato Region and neighbouring regions, chemical applicators will need to check the requirements of the neighbouring regional council and ensure that potentially affected people in the neighbouring region are notified in accordance with the requirements of that region's air plan.

⁷¹ For the purposes of this rule hand held spray equipment means a hand held sprayer with a single nozzle, used for spot spraying and operated at a pressure no greater than 200kpa (30psi) and excludes high pressure handguns.

⁷² For the purposes of this rule spot spraying means – the application of agrichemicals targeted at a discrete individual plants each not exceeding two square metres for example for forestry tree release and individual plant pest control

⁷³ Public amenity area as defined in the Glossary.

⁷⁴ Significant adverse effect of off-target is defined in the Glossary of Terms.

6.2.4.9 Permitted Activity Rule – Widespread Application of Agrichemical(s)

Unless provided for in Rule 6.2.4.8, the discharge of agrichemical(s) into air, into water and into or onto land is a **permitted activity** subject to the following conditions:

- a) The agrichemical(s) shall be discharged in a manner that does not contravene any requirement specified in the manufacturer's instructions.
- b) The discharge shall be undertaken in such a way that no significant adverse effect of off-target drift shall occur beyond the boundary of the property being sprayed.
- c) Where the agrichemical is being applied to vegetation on the banks and bed of water bodies:
 - i) the application and consequent breakdown of vegetation shall not result in the the contamination of domestic or commercial water supplies, or the death of fauna (and/or residues being detected in fish).
 - ii) Where agrichemicals are applied directly to water any downstream water take within one kilometre of the point of discharge must be notified between 12 hours and three weeks prior to commencement of the discharge.
- d) Within twelve months of the Plan (or this rule) becoming operative:
 - i) Every person undertaking the application of agrichemicals shall have a qualification certified in writing that meets the performance requirements set out in Section 6.2.10, or be under the direct supervision of a person who meets those requirements, or
 - ii) Every contractor or contractor employee undertaking the land based application of agrichemicals shall hold or be under the on site supervision of a person who holds a current National Certificate in Agrichemical Application, a GROWSAFE® Registered Chemical Applicators Certificate or a qualification that meets the performance requirements for contractors and contractor employees in Section 6.2.10
 - iii) Every pilot undertaking the aerial application of agrichemicals shall hold a Pilot's Chemical Rating issued by the Civil Aviation Authority or an equivalent qualification.
- e) The application of agrichemicals shall be undertaken in accordance with New Zealand Standard 8409:2004, Management of Agrichemicals⁷⁵.
- f) The owner, occupier, or manager of the property to be sprayed shall prepare a spray plan, or shall arrange for a spray plan to be prepared, at the beginning of each year or spray season, and the spray plan shall:
 - i) contain as a minimum the information as outlined in Section 6.2.7 of this Plan or with reference to Appendix M4 of New Zealand Standard 8409:2004, Management of Agrichemicals.
 - ii) be given to any person within seven days of that person requesting the spray plan.
 - iii) Notwithstanding the requirements of part i) of this condition, for local authority parks and reserves, road side spraying operations and community based spray programmes where the spraying activities for which spray plans are required cover more than 10 properties a single spray plan can be prepared on an annual basis covering all operations. This spray plan must identify as a minimum all known sensitive areas likely to be affected by the activity and the strategies to be employed to avoid adverse effects on those areas (e.g. specific application techniques, specific notification practices, buffer zones, manning boundaries, restrictions on climate conditions when spraying can occur etc). The plan must be provided to the contractor/applicator prior to spraying commencing.

⁷⁵ New Zealand Standard 8409:2004 Management of Agrichemicals. This document can be obtained from Standards New Zealand, Private Bag 2439, Wellington 6020, or can be viewed at Waikato Regional Council's Hamilton Office.

- g) The owner, occupier, or manager of the property to be sprayed shall keep and maintain records of agrichemical use, or shall arrange for records to be kept. These records shall, as a minimum, include the information in Appendix C of the New Zealand Standard 8409:2004 Management of Agrichemicals.
- h) The owner, occupier, or manager of the property to be sprayed must follow the relevant notification requirements listed in Table 6-4 of this Plan.

Table 6-4 Notification Requirements for Rule 6.2.4.9

Location and Nature of Chemical Application	Signage and Notification Requirements
Ground based application on private* property further than 50 m from boundary of the property	There is no requirement to notify unless someone has requested notification. Where a person requests that they be notified, the owner, occupier or manager of the property to be sprayed shall provide notification in a form agreed between the two parties.
Ground based application on private* property within 50 m of boundary	<ol style="list-style-type: none"> 1. The owner, occupier, or manager of the property to be sprayed shall either: <ol style="list-style-type: none"> a) provide verbal or written notification to owner(s), or occupier(s) of adjoining properties or to any other person requesting notification between 12 hours and three weeks prior to spraying, or b) Provide written advice (at least once a year) to any person who is likely to be directly affected by spray applications that a spray plan prepared in accordance with condition f) of this rule is available on request. Notification procedures that have been mutually agreed by the parties shall be specified and noted in the spray plan. c) And in any case, notification of adjoining private property owner(s) or occupier(s) will not be required if written permission has been obtained from them stating that notification can be in some mutually agreed form or that notification is not required. 2. Where the boundary is with a public amenity area or place of public assembly the discharger shall place signs so that they are clearly visible to the public at all points where the public commonly have entry, to indicate that agrichemical(s) are being sprayed. The signs shall remain in place for a period equivalent to the contact re-entry time* for the agrichemical(s).
Using an aircraft	<ol style="list-style-type: none"> 1. The owner, occupier, or manager of the property to be sprayed shall: <p>Either-</p> <ol style="list-style-type: none"> a) provide verbal or written notification to owner(s), or occupier(s) of adjoining properties or to any other person requesting notification between 12 hours and three weeks prior to spraying, b) Notify adjoining private property owner(s) or occupier(s) will not be required if written permission has been obtained from them stating that notification can be in some mutually agreed form or that notification is not required. <p>OR</p> 2. The owner, occupier, or manager of the property to be sprayed shall give prior notification of the discharge, (or arrange for notification to be given), in local newspapers, or by verbal or written notice to people who may be affected in the adjoining area, between 12 hours and three weeks prior to the discharge. Notice shall include as a minimum: <ol style="list-style-type: none"> a) that the spray plan for the property prepared in accordance with condition e) i) of this rule, is available for viewing b) the likely date, time and duration of the discharge c) the location of the area on which the agrichemical(s) is to be discharged

	<p>d) the trade name and classification of the agrichemical(s) to be discharged</p> <p>e) the name(s) and phone number(s) of the person⁷⁶ who will discharge the agrichemical(s).</p>
<p>In a public amenity area, place of public assembly or as part of a community based spray programmes⁷⁷</p>	<p>Notification shall be in the form of either:</p> <ol style="list-style-type: none"> 1. Prior notification of the discharge in local newspapers, or by verbal or written notice to people who may be affected in the adjoining area, between 12 hours and three weeks prior to the discharge. Notice shall include as a minimum, the following information: <ol style="list-style-type: none"> a) that the spray plan for the property prepared in accordance with condition f) i) of this rule, is available for viewing b) the likely date, time and duration of the discharge c) the location of the area on which the agrichemical(s) is to be discharged d) the trade name and classification of the agrichemical(s) to be discharged e) the name(s) and phone number(s) of the person⁷⁸ from whom further information can be obtained. <p>OR</p> <ol style="list-style-type: none"> 2. Prior notification of the discharge in local newspapers or written notice to people who may be affected in the adjoining area on an annual or seasonal basis. Notice shall include as a minimum, the following information: <ol style="list-style-type: none"> a) that the spray plan prepared in accordance with condition f) i) of this rule, is available for viewing b) the season during which spraying is likely to occur c) the location of the area on which the agrichemical(s) is to be discharged d) the trade name and classification of the agrichemical(s) that are likely to be discharged e) instructions on who to contact if people wish to be notified closer to the date and the process that will be followed to ensure that people requiring individual notification are given sufficient time to take precautions <p>AND</p> <ol style="list-style-type: none"> 3. Any person that identifies that they require notification shall be given notification in a form agreed between the two parties. <p>The following signage requirements shall be met:</p> <ol style="list-style-type: none"> 1. The applicator shall place signs so that they are clearly visible to the public on all normal lines of entry where the public commonly have entry, to indicate that agrichemical(s) are being sprayed. The signs shall remain in place for a period equivalent to the contact re-entry time* for the agrichemical(s) 2. If spraying a road or railway verge from a vehicle, the discharger shall place signs at the front and back of any vehicles used for the discharge, on which it shall be written 'agrichemical application in progress

⁷⁶ As defined in the RMA

⁷⁷ Community based spray programmes are programmes which the community has funded rather than a single landowner. These programmes would include spraying of drains as part of the maintenance programme for drainage areas, spraying of road verges or programmes where a number of landowners engage a single spray contractor.

⁷⁸ As defined in the RMA

Advisory Notes:

- The use of any agrichemical no longer registered in New Zealand or in a manner that contravenes the requirements specified in the manufacturer's instructions is an offence under the Hazardous Substances and New Organisms Act 1996.
- The requirement to notify does not give the notified person the right to veto a spraying operation on a neighbouring property or in a public amenity area.
- 'Written notifications' as referred to in condition h) of this Rule can include circulars using rural delivery, newspaper advertisements, emails, faxes or signage along property boundaries.
- The person discharging the agrichemical(s) should immediately notify Waikato Regional Council in the event of any accidental or unintended discharge of agrichemical(s) to air, land or water.
- The use of local authority managed registers of people who require notification in a particular district to narrow the range of people to be notified in conjunction with seasonal newspaper advertisements or circulars may be one means of compliance with condition h).
- The use of weed wipers, or distribution by hand of granular herbicides is not a discharge of contaminants to air and is not regulated by this Rule.
- When applying chemicals near the boundary between the Waikato Region and neighbouring regions, chemical applicators will need to check the requirements of the neighbouring regional council and ensure that potentially affected people in the neighbouring region are notified in accordance with the requirements of that region's Air Plan

6.2.4.10 Controlled Activity Rule – Application of Agrichemical(s)

Any discharge of agrichemical(s) into air, into water and onto or into land in a manner which is not permitted by, or does not comply with Rules 6.2.4.8, 6.2.4.9, is a **controlled activity** (requiring resource consent) subject to the following standards and terms:

- a) The agrichemical(s) shall be discharged in a manner that does not contravene any requirement specified in the manufacturer's instructions.
- b) The discharge shall be undertaken in such a way that no significant adverse effect of off-target drift shall occur beyond the boundary of the property being sprayed.

Waikato Regional Council reserves control over the following matters:

- i. The preparation and distribution of a spray plan prepared in accordance with Section 6.2.7 of this Plan or with reference to Appendix M4 of New Zealand Standard 8409:2004, Management of Agrichemicals.
- ii. The qualifications of the person discharging the agrichemical(s).
- iii. The provisions of the New Zealand Standard 8409:2004 Management of Agrichemicals shall be adhered to.
- iv. The requirements to keep and maintain records.
- v. The requirements for notification.
- vi. The signage requirements.
- vii. The location or areas at which the activity will occur.
- viii. The duration of the consent.
- ix. The maintenance of water quality and aquatic habitat.
- x. Timing of application to minimise adverse effects on indigenous fish and fish spawning and habitat.

Notification:

Applications for resource consent under this Rule will be considered without notification in accordance with s94(1)(b) of the RMA.

Advisory Notes:

- The use of any agrichemical no longer registered in New Zealand or in a manner that contravenes the requirements specified in the manufacturer's instructions is an offence under the Hazardous Substances and New Organisms Act 1996.
- The person discharging the agrichemical(s) should immediately notify the Waikato Regional Council in the event of any accidental or unintended discharge of agrichemical(s) to air, land or water.

6.2.4.11 Discretionary Activity Rule – Application of Agrichemicals

Any discharge of agrichemical(s) into air, into water and onto or into land that is not permitted by, or does not comply with, Rules 6.2.4.8, 6.2.4.9 or 6.2.4.10 is a **discretionary activity** (requiring resource consent).

Advisory Note:

- Information requirements to enable assessment of any application under this rule are as set out in Section 8.1.5.2 of this Plan. In addition, assessment shall also take into account the matters identified in the policies in Section 6.2.3.

6.2.4.12 Prohibited Activity Rule – The use and discharge of 2,4-D Butyl Ester to Air

The use and discharge of 2,4-D Butyl Ester to air is a **prohibited activity**.

Explanation and Principal Reasons for Adopting Methods 6.2.4.1 to 6.2.4.12

A mixture of regulatory and non-regulatory methods implements the policies in Section 6.2.3. The methods identify the Rules that agrichemical users and sensitive parties have in managing the effects of the agrichemical spray drift. Agrichemical users have a responsibility to follow good practices specified in rules, codes of practice and national legislation. Sensitive parties have an obligation to identify themselves to applicators so that precautions stipulated in those rules, codes and legislation can be followed.

The non-regulatory methods focus on providing information through promotion of codes of practice, good practice guides, environmental education programmes, land use planning and information management processes to all parties about their responsibilities. This will allow them to manage the risks of off-target exposure to agrichemicals. If these non-regulatory measures are effective, the incidence of significant off-target effects will reduce as applicators plan their work to avoid spray drift and notify sensitive parties so that they can take extra precautions to minimise the risk to themselves.

Permitted Activity **Rules 6.2.4.8** and **6.2.4.9** are necessary to codify the most important good practices in a manner that gives all parties certainty. The rules give certainty to agrichemical users that their operations will not require resource consent if they follow accepted good practices. To that end, the rules are entirely consistent with the provisions of NZS8409:2004 Management of Agrichemicals. The only difference from the Code being the provision of greater detail regarding the timing and form of notification. The intent of these extra notification requirements is to give certainty to sensitive parties that agrichemical users will take their concerns into account and that where necessary, they will be notified of agrichemical use so that they can take precautions, thereby avoiding significant adverse effects.

The notification provisions are designed to minimise the costs of notification to resource users, while providing a reasonable amount of time for sensitive parties to take precautions. This is achieved by providing a range of means of compliance.

Different levels of notification and training are required for people operating under the rules based on the different levels of adverse effects from off-target spray drift associated with different application techniques, locations and frequency of application. Risks of adverse effects of off-target drift are most significant where the chemical is being applied close to property boundaries, in public amenity areas or when using high pressure or aerial application techniques. The risks of significant adverse effects occurring are lowest when spot spraying.

Rule 6.2.4.10 provides an alternative for chemical applicators who wish to work as contractors, an alternative to the registration process. **Rule 6.2.4.11** acknowledges that circumstances will not always allow good practices to be followed precisely or significant adverse effects to be avoided. The consent process will ensure that any significant adverse effects are remedied or mitigated.

The chemical 2,4-D Butyl Ester is no longer registered for use in New Zealand but remains in stockpiles on farms around the Region, potentially able to be used. The use of this chemical places the applicator and the environment at risk and has the potential to threaten the livelihood of exporters. **Rule 6.2.4.12** therefore specifically prohibits the use of 2,4-D Butyl Ester.

6.2.5 Environmental Results Anticipated

1. Decreased incidents of substantiated complaints regarding off-target spray drift.
2. Increased awareness and use of good practice and industry codes of practice.
3. Increased training and registration of agrichemical applicators.
4. A more co-ordinated approach to off-target spray drift between parties with functions in this area.

6.2.6 Monitoring Options

Objective	Indicators/ Measurements	Types of Monitoring	Information Source
Agrichemicals used in a manner that avoids the significant adverse effects of off-target exposure and does not have adverse effects that conflict with the objectives in Section 3.1.2 of this Plan.	Complaints. Aquatic ecosystem health. Air quality.	Regional Trend Monitoring. Investigations and Surveys. External databases.	Air quality Database. Water ecology database. Water quality database. Perception srveys. Complaints and enquiries database. Territorial authority files. Health Waikato and OSH databases. Records of numbers trained via GROWSAFE or equivalent courses.

6.2.7 Spray Checklist

Advisory Notes:

- The following is required as a minimum as part of Rules 6.2.4.7, 6.2.4.8, 6.2.4.9 and 6.2.4.10. The general format and content of the checklist may need to be amended for spraying in public amenity areas or as part of community spray plans. Generally local authority asset management plans or weed management policies would be expected to fulfil the role of spray checklist in those circumstances.
- This checklist can be either prepared by the owner, occupier, or manager of the property, or the applicator.
- The purpose of this checklist is to provide information to potentially affected parties.
- Provision of this information **does not** imply a right of any party to object to spraying activities occurring legitimately within the subject property boundary.

Date:

Name	Address (postal/physical)	Phone/Fax Numbers
Property Owner(s)/Occupiers(s)		
Property Manager(s)		
Registered Chemical Applicator(s)		

Neighbours Name ⁷⁹	Address (postal/physical)	Phone/Fax Numbers	Status Owner/Occupier

Roads Adjacent to Property Boundary	Roads Used for School Bus Routes

⁷⁹ At adjoining property boundary as at (date).

Identification of Area to be sprayed (i.e. N/S?E/W ⁸⁰)	Size of Area to be sprayed (in square metres)	Target to be Sprayed (e.g. apples, gorse)

Agrichemical to be used (trade name) and active ingredient	Agrichemical Classification (1) - (5)	Potential Hazard	Year/Season Agrichemical used

Sensitive Areas (description and location) ⁸¹	Measures to be used to avoid contamination of sensitive areas

Factors to be considered before spraying (e.g. weather conditions ⁸²)	Factors that may increase spray hazard potential ⁸³

⁸⁰ Of the adjoining properties

⁸¹ Refer to Sensitive Areas listed in Policy 1 of this chapter.

⁸² Refer Appendices S, T, V and Y of the Code of Practice for the Management of Agrichemicals New Zealand Standard 8409:1999. Wellington.

⁸³ See Section 6.2.9 for a table of potential spray drift hazards

6.2.8 Guidelines for Assessment and Enforcement

6.2.8.1 Course of Action to Assess Complaints Regarding Off-Target Spray Drift

In the event of receiving any complaint(s) regarding off-target spray drift, Waikato Regional Council will undertake the approach outlined in parts a) to d) below, or undertake aspects of this approach, to determine whether or not the spray drift has caused a significant adverse effect:

- a) Waikato Regional Council⁸⁴ will make an assessment of the situation. This assessment will take into account the:
 - i) Witness(es) account of incident
 - ii) types of symptoms and adverse effects apparent
 - iii) meteorological conditions at the time of the incident⁸⁵
 - iv) method of application
 - v) type of agrichemical(s) used
 - vi) types of area affected⁸⁶
 - vii) notification used
 - viii) qualifications of the applicator
 - ix) any previous validated complaints received concerning the same property or contractor.
- b) Waikato Regional Council will undertake a field investigation of the complaint, and interview the complainants and the property owner, manager and/or applicator of the site where the discharge occurred.
- c) Waikato Regional Council will take samples⁸⁷ of the affected area and have these samples assessed by a certified laboratory.
- d) Waikato Regional Council will refer the complaint to another agency with expertise in this area, including:
 - i) a health agency (e.g. Health Waikato)
 - ii) the Civil Aviation Authority
 - iii) the Ministry of Agriculture
 - iv) a territorial authority.

6.2.8.2 Course of Action of Considering Enforcement

In the event that a complaint(s) concerning spray drift is deemed to be justified and the adverse effects are deemed significant through the processes outline in Section 6.2.8.1, then Waikato Regional Council will take the following approach towards enforcement:

- a) The property owner, occupier or manager, or the contractor, will be asked to take whatever action is necessary to mitigate the adverse effects of the discharge, and avoid future spray drift incidents. Waikato Regional Council will outline or negotiate with the discharger a timeline to undertake and complete that work; or
- b) Enforcement proceedings will be initiated. Waikato Regional Council will apply for an enforcement order and/or issue an abatement notice, and/or use other enforcement mechanisms provided in Part XII of the RMA.

Explanation and Principal Reasons for Adopting Sections 6.2.8.1 to 6.2.8.2

The steps listed in **Section 6.2.8.1** provide a checklist for Waikato Regional Council to follow when addressing complaints regarding spray drift. Section 6.2.8.1 part a) provides the criteria for assessment that should be used by a Council officer.

⁸⁴ Council officer or delegated council officer.

⁸⁵ Such as wind direction and strength and weather conditions including temperature.

⁸⁶ Such as sensitive areas such as a dwelling house or waterway, and also includes effects on domestic plants, commercial plants (as provided in Policy 1 of Chapter 6.2).

⁸⁷ In accordance with Waikato Regional Council's *Internal Spray Drift Investigation Manual* or other relevant Guidelines.

Consideration of each separate factor a) i) to ix) is an important first step in the assessment of a complaint, and will usually be the first questions asked when the complaint is received. The steps in parts a) i) to ix) are important in assessing:

- whether or not the complaint is legitimate
- whether there is enough information to establish a cause and effect
- if the discharge had, or had the potential to have, a significant adverse effect.

Section 6.2.8.1 part b) will be undertaken if there is enough information received via parts a) i) to ix) to warrant a field investigation. Interviews of the complainants, property owner/manager and/or applicator are important in determining the facts (including determination of whether the problem has been ongoing or whether it is a 'one off' incident).

Section 6.2.8.1 part c) will be undertaken if, through the processes of parts a) and b) this is warranted. Sample collection may include foliage, water, soil and surface samples. Sample collection may also include photographic evidence. Sample collection will be undertaken in accordance with Waikato Regional Council's Spray Drift Investigation Manual or other Guidelines such as the Ministry of Health's Interim Guidelines for the Investigation and Surveillance of Agrichemical Spray Drift Incidents⁸⁸.

Through the investigation of a complaint the need for enforcement action may become evident. Decisions on enforcement will need to be made on a case-by-case basis, however, guidance is provided in Section 6.2.8.2 parts a) and b) as to when Waikato Regional Council will consider undertaking enforcement action, and in what form such action may take.

6.2.9 Potential Spray Drift Hazard Chart⁸⁹

Factor	Potential Drift Hazard Scale		Comment
	High	Low	
Wind speed.	Zero/very low (<1 m/s) or greater than 6 m/s	Steady (1 – 3 m/s)	Measurement or estimate using smoke.
Wind direction.	Unpredictable.	Predictable, and away from sensitive areas.	Use smoke to indicate.
Humidity.	Low (delta T>8°C)	High (delta T<4°C).	Measure using whirling psychrometer.
Atmospheric stability.	Inversion layer present.	Inversion layer not present.	Use cold smoke to indicate.
Maximum height of release.	>1.5m above the target.	<0.5m above the target.	Application technique (see Appendix Z of Agrichemical Users' Code of Practice).
Particle droplet size	<50 microns diameter.	>250 microns diameter.	See Appendix Z of Agrichemical Users' Code of Practice.
Volatility.	High (vapour pressure >10 mPa).	Low (vapour pressure <0.1 mPa).	Check label.

⁸⁸ Ministry of Health. September 1996: *Interim Guidelines for the Investigation and Surveillance of Agrichemical Spray Drift Incidents*. Developed by ESR Communicable Disease Centre, Porirua, Wellington.

⁸⁹ New Zealand Agrichemical Trust (June 1999) New Zealand Standard 8409: Code of Practice for the Management of Agrichemicals. Wellington.

Factor	Potential Drift Hazard Scale		Comment
Sensitive area.	Close (<100 m away).	More than 1 km distant.	Identify on property spray checklist.
Buffer zone.	None.	Yes (>100 m).	
Shelter belts.	No shelter.	Live shelter, >3m high and 1m thick.	Not for herbicides.
Toxicity.	Scheduled agrichemicals.	Unscheduled agrichemicals	Check label.

6.2.10 Performance requirements for qualifications to apply agrichemicals

The following are the performance requirements for Condition d) i) of Rule 6.2.4.9 Widespread Application of Agrichemicals

Commercial User

The minimum training programme for applicators of agrichemicals shall include:

Knowing and being able to describe –

- i) The hazard classifications of agrichemicals to be used
- ii) The adverse effects that could be caused by the agrichemicals
- iii) His/her obligations and liabilities under Acts of Parliament relative to the agrichemicals to be used and their use
- iv) Which regulations apply in respect of those agrichemicals and where those regulations can be obtained (including the relevant chapters of the Waikato Regional Plan).
- v) The content of NZS8409:2004 Management of Agrichemicals.
- vi) The precautions required to prevent injury to a person or damage to the environment (including property).
- vii) The procedures to adopt in an emergency involving the agrichemicals to be used.

Knowing and being able to demonstrate

- viii) a working knowledge of the operating equipment (including protective equipment and clothing) necessary to manage the agrichemicals being used.

Contractors and Contractor Employees

The minimum training programme for contract use of agrichemicals (animal and plant health products) where agrichemicals are applied for hire and reward (both ground and aerial application) shall include those matters listed for Commercial Users and these additional matters:

- First aid, health and safety and emergency response
- Environmental effects, including spray drift minimisation
- Notification requirements, including signage
- Product label interpretation
- Protective equipment selection and use
- Transport, storage and disposal of agrichemicals
- Selection, calibration and operation of application equipment for specific operations

6.3 Regional Ambient Air Quality Guidelines

Table 6-5 Regional Ambient Air Quality Guidelines (RAAQG)

Contaminant	Averaging Time	Waikato Region Levels
Carbon monoxide (CO)	1 hour	30 mg/m ³
	8 hours	10 mg/m ³
Nitrogen dioxide (NO ₂)	1 hour	200 µg/m ³
	24 hours	100 µg/m ³
	Annual	30 µg/m ³
Particulate matter (PM ₁₀)	24 hours	50 µg/m ³
	Annual	20 µg/m ³
Sulphur dioxide (SO ₂)	1 hour	350 µg/m ³
	24 hour	120 µg/m ³
Agricultural Crops	Annual and Winter average	30 µg/m ³
Forest and natural vegetation	Annual and winter average	20 µg/m ³
Lichen	Annual	10 µg/m ³
Ozone (O ₃)	1 hour	150 µg/m ³
	8 hours	100 µg/m ³
Forests	6 months	21,400 µg/m ³ – h
Semi-natural vegetation	3 months	6,420 µg/m ³ – h
Crops (yield)	3 months	6,420 µg/m ³ – h
Crops (visible injury) mean daytime vpd below 1.5kPa	5 days	428 µg/m ³ – h
Crops (visible injury) mean daytime vpd above 1.5kPa	5 days	1,070 µg/m ³ – h
Hydrogen sulphide (H ₂ S)	1 hour	7 µg/m ³
Lead content of PM ₁₀	3 month moving average	0.2 µg/m ³
Benzene (current)	Annual	10 µg/m ³
Benzene (2010)	Annual	3.6 µg/m ³

- The RAAQG have been adopted as maximum acceptable levels of priority contaminants for managing ambient air quality in the Waikato Region. The RAAQG are not standards. The acceptable level of these contaminants in air in any given situation will depend upon a site specific analysis in accordance with the policies in Section 6.1.3.
- The application and interpretation of the guideline values shall be in accordance with Chapter 3 of the Ambient Air Quality Guidelines, Ministry for the Environment, May 2002.
- In the absence of a regional guideline value regard shall be had to relevant national and/or international criteria as appropriate.
- The specific monitoring methods to be used will, as a matter of preference, be those specified in the most recent version of the Ministry for the Environment's Ambient Air Quality Guidelines. Where those guidelines are not specific, or are out of date, the monitoring method to be used will be determined on a case by case basis having regard to best practice.
- In some circumstances, such as discharges from the mineral processing industry, PM₁₀ may not be the appropriate indicator of air quality effects from particulate matter. In those circumstances measures such as total suspended particulate and/or dust deposition may be more appropriate.

- These Guidelines are **not** to be used as 'pollute up to' levels in the Region.
- The levels in the Guidelines are concerned with the cumulative impacts of discharges into air from human activities and natural processes.
- When using the Guidelines to calculate allowable emission standards for single sources consideration should be given to the proportion of the available air quality increment that should be allocated to that single source. Consideration also needs to be given to background levels of contaminants so that the Guideline values are not exceeded.
- Critical levels for nitrogen dioxide assume that either O₃ or SO₂ are also present at near guideline levels. Critical levels for ozone are expressed as a cumulative exposure over a concentration threshold referred to as AOT40 values (accumulative exposure over a threshold of 85.6 µg/m³, at 0°C), calculated as the sum of the difference between hourly ambient ozone concentrations and 85.6 µg/m³, when ozone concentrations exceed 85.6 µg/m³. Ozone is only measured during daylight hours with a clear global radiation of 50Wm⁻² or greater; vpd = vapour pressure deficit.
- The hydrogen sulphide value is based on odour nuisance and may be unsuitable for use in geothermal areas.

6.4 Guidelines for Assessment

Chapter 6.4 provides guidelines for how Waikato Regional Council will assess discharges of odour and particulate matter with regard to:

1. Resource consent applications for activities established or authorised after the date of notification of this Plan.
2. Resource consent applications for activities lawfully established or authorised before the date of notification of this Plan.
3. Complaints received by Waikato Regional Council from the regional community.
4. Compliance with permitted and controlled activity rules in this Plan.
5. Compliance with relevant resource consent conditions.

These guidelines for assessment should be read in conjunction with the thresholds in Policy 1 of Chapter 6.1 of this Plan.

6.4.1 Guidelines for Assessing Odour

6.4.1.1 Matters to be Considered in Determining the Likelihood of Adverse Effects from Resource Consent Applications

In assessing a resource consent application for an existing activity, Waikato Regional Council will consider one or more of the following types of information:

- a) History of complaints regarding the discharge.
- b) Experiences of Waikato Regional Council⁹⁰ with the discharge and information held by this Council or a territorial authority regarding past compliance.
- c) Information from community consultation undertaken by the discharger.
- d) Information from odour diaries, odour annoyance surveys or other community surveys undertaken by the discharger.
- e) Dynamic dilution olfactometry⁹¹ measurements, population annoyance surveys where the population sampled is of sufficient size to provide statistically significant results⁹² and dispersion modelling* results.
- f) Whether the best practicable option is being applied for the discharge.
- g) Records of emission control improvements undertaken and those improvements proposed for the future.
- h) Past experiences and knowledge of Waikato Regional Council of the odour effects generated from existing sites of a similar nature and scale.
- i) Other information as justified on a case-by-case basis.

Advisory Note:

- The information Waikato Regional Council will require to assess any application under this Plan is set out in Section 8.1.5.

⁹⁰ Council Officers or delegated Council Officer.

⁹¹ This technique involves collecting a sample of odorous gas from the source and then the sample is taken to an odour laboratory for analysis. Odour free air is mixed with the odorous gas to produce a diluted odour. The diluted sample is then presented to a panel of people through sniffing ports, the panel then responds to the odour.

⁹² This technique involves surveying three discreet population samples, each area selected for high exposure, medium exposure, and a control. The response parameter 'percentage at least annoyed' is used to indicate the extent of odour annoyance, or significance of odour effects. For further information on population annoyance surveys see Ministry for the Environment, *Review of Odour Management in New Zealand, Air Quality Technical Report No.24*, August 2002.

6.4.1.2 Odour Modelling Guideline Values

The following is **not** a modelling standard and should not be used or quoted as a standard. Waikato Regional Council will use the following as a **guide** in assessing whether adverse effects are likely to occur for resource consent applications for activities with the potential to discharge significant levels of odour due to the scale and/or nature of the activity.

The odour dispersion modelling guidelines may be used when assessing new activities or be applied to existing activities as appropriate (for example, where options for improvement are being investigated). It is expected that for existing odour discharges other information on which to assess the potential effects will be available, such as community information and Council's experience. Modelling for new proposals will only be possible where there is a reliable body of information on odour emission rates from the same or very similar processes.

Methods of assessment other than those discussed in Section 6.4 of this Plan need to be justified by a resource consent applicant on a case-by-case basis, for example, measurement of individual chemical compounds and comparison to odour thresholds may be appropriate in some circumstances.

The recommended odour modelling guidelines values are summarised in Table 6-6. The values are as recommended by the Ministry for the Environment⁹³. Other values may be able to be justified on a case-by-case basis for specific odour sources if the work has been adequately peer reviewed.

Table 6-6 Recommended Odour Modelling Guidelines (MfE 2003)

Receiving environment sensitivity	Concentration	Percentile
High (worst case impacts during unstable to semi-unstable conditions)	1 OU/m ³	0.1% and 0.5%
High (worst case impacts during neutral to stable conditions)	2 OU/m ³	0.1% and 0.5%
Moderate (all conditions)	5 OU/m ³	0.1% and 0.5%
Low (all conditions)	5 – 10 OU/m ³	0.5%

Note:

- Examples of receiving environments with various sensitivities are provided in Table 2.2 of the MfE Odour Guide.
- Atmospheric stability has been accounted for in high sensitivity receiving environments. Stability refers to the degree of mixing that occurs.
- The percentile allows for a small level of exceedence of the predictions to account for worst case meteorological conditions, at which adverse effects from odour are unlikely because the conditions occur infrequently.
- The 'baseline' percentile is 0.5%, although 0.1% will also be used to assist in the evaluation of model results depending on the type of source and consistency of emission data. Further discussion of percentile selection is given in the background report⁹⁴ to the MfE Odour Guide.

⁹³ Ministry for the Environment, *Good Practice Guide for Assessing and Managing Odour in New Zealand*, June 2003.

⁹⁴ Ministry for the Environment, *Review of Odour Management in New Zealand, Air Quality Technical Report No.24*, August 2002.

- The concentration components in Table 6-6 already include the peak-to-mean ratio adjustment for all source types, and should be used as design ground level concentrations for one-hour modelling averages.
- Odour emission concentrations (and rates) used in the dispersion model shall be based on certainty-based forced-choice olfactometry.

6.4.1.3 Courses of Action to Assess Odour Complaints for Permitted Activities

In the event of receiving a complaint(s) regarding odour discharges from activities permitted by rules in this Plan, Waikato Regional Council will take the approach outlined in parts a) to e) below, or undertake aspects of this approach, to determine whether or not the odour is objectionable to the extent that it is causing an adverse effect. This approach is distinct from the resource consent approach detailed in Section 6.4.1.4. The approach involves more rapid action and response procedures. For example, the assessment of frequency in a) i) below would substitute use of odour diaries and complaint response with proactive inspections by council officers targeted at times when odour is most likely to occur. It also places a greater duty on the discharger to remain within the permitted activity conditions in Section 6.1.8. The criteria that Waikato Regional Council will apply when assessing whether odour is objectionable to the extent that it is causing an adverse effect; and the standard of evidence required for enforcement action, remains the same for both permitted activities and consented activities:

- a) Waikato Regional Council⁹⁵ will make an assessment of the situation. This assessment will take into account the:
 - i) frequency of the odour⁹⁶
 - ii) intensity of the odour
 - iii) duration of the odour
 - iv) nature of the odour
 - v) location of the odour⁹⁷
 - vi) any previous validated odour complaints relating to the same site.

An adverse effect may be deemed to have occurred or to be occurring from one incident of a significant enough intensity, or duration or offensiveness; or from frequent incidents of lesser intensity or offensiveness; or a combination of these.

- b) In the event that the discharger or complainant(s) dispute Waikato Regional Council's assessment of the odour problem or the problem is ongoing, Council⁹⁸, if it so deems necessary and the dissatisfied party or parties is/are prepared to share costs with Waikato Regional Council, further assessment⁹⁹ by an independent expert will be undertaken.
- c) If through the assessments made in a) and/or b) it is agreed that a discharge of odour that is objectionable to the extent that it caused or is causing an adverse effect has occurred and is likely to reoccur, Waikato Regional Council will require the discharger to identify and implement an appropriate solution to control the adverse effect.

⁹⁵ Council Officer or delegated Council Officer.

⁹⁶ Due to the more rapid response required, by necessity the frequency of assessment will be curtailed. More frequent inspections may replace the use of extensive odour diary systems.

⁹⁷ Location is a consideration because whether an odour is perceived as objectionable may vary in different environments, for example silage in a rural area is generally accepted but may be considered objectionable in an urban area.

⁹⁸ Or a delegated Council Officer.

⁹⁹ Methods that can be used to undertake further assessments include but are not limited to, dynamic dilution olfactometry, population annoyance surveys and dispersion modeling.

- d) In the event that an incident or incidents of odour is/are deemed to be objectionable to the extent that there is/are adverse effects and where agreement can not be reached under b) and c) of this section, Waikato Regional Council will take the following approach:
 - i) Waikato Regional Council will inform the discharger that action is required to avoid, remedy or mitigate the adverse effects from the discharge. Waikato Regional Council will outline a timeline for the discharger to undertake and complete that work. This may be formalised through the use of abatement notices
 - ii) If the discharge of odour continues to cause an adverse effect and timeframes are not met, then enforcement proceedings may be initiated. Waikato Regional Council may also require the discharger to apply for resource consent under the relevant rule in this Plan.
- e) For the avoidance of doubt, if through the assessments made in a) it is determined that an incident resulted in an adverse effect, Waikato Regional Council may take enforcement action, irrespective of the processes in a) and/or b), even if the incident was a 'one-off'.

6.4.1.4 Courses of Action to Assess Odour Complaints for Activities that hold a Resource Consent

In the event of receiving complaint(s) regarding odour from activities that hold a resource consent, Waikato Regional Council will take the approach outlined in parts a) to g) below, or undertake aspects of this approach to determine whether or not the odour is objectionable to the extent that it has caused or is causing an adverse effect:

- a) Waikato Regional Council¹⁰⁰ will make an assessment of the situation. This assessment will take into account the:
 - i) frequency of the odour
 - ii) intensity of the odour
 - iii) duration of the odour
 - iv) nature of the odour
 - v) location of the odour¹⁰¹
 - vi) any previous validated odour complaints relating to the same site.

An adverse effect may be deemed to have occurred or to be occurring from one incident of a significant enough intensity, duration or offensiveness; or from frequent incidents of lesser intensity or offensiveness; or a combination of these.

- b) In the event that the discharger or complainant(s) dispute Waikato Regional Council's assessment of odour problem, or the problem is ongoing, then further assessments will be made by this Council¹⁰².
- c) If through the assessments made in b) it is agreed that a discharge of odour that is objectionable to the extent that it caused or is causing an adverse effect has occurred or is likely to recur, Waikato Regional Council will encourage the discharger to identify and implement appropriate solutions to control the adverse effect.
- d) Waikato Regional Council may request that the discharger keep a complaint register and that the discharger respond to complaints to identify the sources or causes of the odour that is having the adverse effect.

¹⁰⁰ Council Officer or delegated Council Officer.

¹⁰¹ Location is a consideration because whether an odour is perceived as objectionable may vary in different environments, for example silage in a rural area is generally accepted by may be considered objectionable in an urban area.

¹⁰² Or a delegated Council Officer.

- e) Waikato Regional Council may request people living and working in the area to keep a diary that notes the details of any occurrence of odour and the effect it is having on them.
- f) Waikato Regional Council may carry out or commission a public survey or field investigation to determine the extent and impact of the odour.
- g) The discharger may be required to further investigate the significance of the problem using dynamic dilution olfactometry¹⁰³ and dispersion modelling.

6.4.1.5 Courses of Action – Community Triggered Response

Where complaint(s) concerning odour discharges from consented activities are deemed to be justified (in Section 6.4.1.4), and where there is an established working relationship between discharger and the local community, a community triggered response to compliance could be undertaken as follows:

- a) The complainant could go directly to the discharger to lodge a complaint.
- b) The discharger could respond to complaints to identify the sources or causes of the odour that is resulting in the adverse effect.
- c) Through forums such as community working parties or liaison groups, the complainant and/or community, and the discharger can decide on whatever action is necessary to avoid, remedy or mitigate the adverse effect of the odour discharge.

6.4.1.6 Courses of Action for Considering Enforcement Regarding Adverse Effects from Odour for Consented Activities

In the event that complaint(s) concerning adverse effects from odour are deemed to be justified in Section 6.4.1.4, and where agreement cannot be reached under Section 6.4.1.5, and/or the discharger has not complied with condition(s) on the resource consent, Waikato Regional Council will normally take the following approach:

- a) The discharger will be asked to take whatever action is necessary to avoid, remedy or mitigate the adverse effects from the discharge. Waikato Regional Council will outline or negotiate with the discharger a timeline to undertake and complete that work.
- b) If the odour discharge continues to be objectionable to the extent that it is having an adverse effect and/or timeframes are not met, then enforcement proceedings may be initiated.
- c) For the avoidance of doubt, if it is determined that an incident resulted in an adverse effect, Waikato Regional Council may take enforcement action, irrespective of the process in a) and/or b), even if the incident was a “one-off”.

Explanation and Principal Reasons for Adopting Sections 6.4.1.1 to 6.4.1.6

Section 6.4.1.1 provides a guideline for the course of action that Waikato Regional Council can take when assessing a resource consent application for an existing activity (this includes a consent renewal or review of an existing activity which has not previously held consent). The list provided is not hierarchical. Not all of the approaches outlined will necessarily be relevant in an assessment. The Ministry for the Environment, Good Practice Guide for Assessing and Managing Odour in New Zealand (2003), rates odour assessment techniques as having a high, medium or low ranking depending on the situation. The MfE Odour Guide should be referred to if the reader is unsure as to which techniques are most appropriate for a given situation.

¹⁰³ Preferably Forced Choice Dynamic Dilution Olfactometry, refer to explanation in the Section 32 Documentation Air Module.

Section 6.4.1.1 part a) indicates that Waikato Regional Council will consider the history of complaints received by the regional community regarding the discharge. Complaints can be used as an indicator of past performance from the site.

Section 6.4.1.1 parts b) and h) rely on information held by Waikato Regional Council and past experiences of Council Officers regarding any adverse effects caused by the discharge. In situations where new activities are proposed, this Council will draw on experience and knowledge gained from existing sites of a similar nature or scale.

The provisions in parts c) and d) accommodate consideration of community feedback and experience with the discharge. Community feedback need not be restricted to complaints, there are many techniques available to dischargers to gauge whether or not the community considers the odour to be objectionable to the extent that it is causing an adverse effect. Methods include odour diaries and community opinion or odour annoyance surveys. Refer to the Ministry for the Environment Good Practice Guide and Air Quality Technical Report Number 24 for more information. A report by Lincoln Environmental (1997) also provides useful background reading on survey design¹⁰⁴.

Section 6.4.1.1 part e) provides for two further techniques for quantifying and assessing the potential adverse effects from odour discharges. Dynamic dilution olfactometry is a method that can be used for measuring odour concentration¹⁰⁵. Dispersion modelling can be used to estimate the effects of changes in air contaminants discharged into the atmosphere. Models can predict how changes in processes and controls will affect air quality and can improve understanding of complex air quality issues. It is important to use them properly with regard to their limits, and with consideration of the uncertainty of their outputs¹⁰⁶.

Section 6.4.1.1 part f) provides for an assessment based on a best practicable option approach. Policy 4 in Chapter 6.1 outlines where Waikato Regional Council considers best practicable option is preferable over an air quality management approach. Section 6.4.1.1 part g) assesses whether the principles of continuous improvement have been, or could be, adopted by the discharger.

Section 6.4.1.1 part i) allows Council to consider any other information where it can be justified as being relevant to the assessment.

Section 6.4.1.2 part 1 provides dispersion modelling guideline values that will be used by Waikato Regional Council when considering resource consent applications. The guidelines have been provided in this Plan in recognition of the need for criteria on which to make decisions in a consistent manner, which in turn provides certainty to resource users in the Region. Waikato Regional Council wishes to provide certainty and consistency in approach when assessing resource consent applications regarding odour by providing modelling guidelines in the Plan and aligning the values with the MfE Odour Guide. It should be noted that the guidelines are **not modelling standards and should not be used or quoted as such**.

The odour modelling guidelines should be applied to applications for any activity that is of a scale or nature that has the potential to discharge significant levels of odour. For new activities the operations should be designed to meet the guideline values in this

¹⁰⁴ Lincoln Environmental. 1997: *Guidelines for Community Odour Assessment*. Report No.2706/1. Lincoln University, Christchurch; Ministry for the Environment, *Review of Odour Management in New Zealand, Air Quality Technical Report No.24, August 2002*.

¹⁰⁵ With the development of two state-of-the-art olfactometry laboratories in New Zealand, the use of DDO to quantify odour emissions and provide data for dispersion modelling studies has become more prevalent. A joint New Zealand and Australian Standard for olfactometry was promulgated in 2001, AS/NZS 4323.3:2001 available from <http://www.standards.com.au>. The standard is performance-based and is centred around quality assurance procedures, rather than prescribing one or more specific methods.

¹⁰⁶ Guidance on dispersion modelling techniques is provided in Ministry for the Environment, *Good Practice Guide for Atmospheric Dispersion Modelling*, June 2004.

Plan or other values justified on a case-by-case basis, for example guidelines developed for specific industries. However, modelling for new proposals will only be possible where there is a reliable body of information on odour emission rates from the same or very similar processes.

For existing activities it may be more appropriate to assess an application using the provisions in Section 6.4.1.1 rather than to use modelling as a primary assessment tool.

The steps listed in **Section 6.4.1.3** provide a checklist for Waikato Regional Council to follow when addressing complaints regarding odour for permitted activities. It should be noted that this checklist is not hierarchical. Not all of the approaches outlined may be relevant in the assessment of effects for a given activity. The differences between this procedure and the procedure given in Section 6.4.1.4 are to allow Council to respond faster to odour complaints from permitted activities. This method is intended to avoid a long drawn out process in rectifying issues with permitted activities that do not comply with the standard conditions for permitted activities set out in Section 6.1.8.

Section 6.4.1.3 part a) provides the criteria for assessment that should be used by a council officer. Consideration of each separate factor in part a) i) to vi) is important when making an assessment as to whether or not the odour is objectionable to the extent that it is causing an adverse effect. Due to the more rapid response required, by necessity the duration of assessment will be curtailed. More frequent officer inspections may replace the use of extensive odour diary systems. There will often be times where it will be appropriate for an officer with delegated authority to assess the odour event, particularly if the event occurs a large distance from Waikato Regional Council offices. In cases such as this, territorial authority officers can play an important role.

Section 6.4.1.3 part b) provides for the assessment of odorous events by other council officers or by an independent expert. This will be particularly appropriate if the discharger or complainant(s) dispute the first assessment undertaken as part of a), or if the problem is ongoing. If this is the case and the dissatisfied party or parties are prepared to share costs with Waikato Regional Council, then Council, if it deems necessary will undertake a further assessment by an independent expert.

If it is agreed by the discharger and Council that a discharge of odour that is objectionable to the extent that it has caused or is causing an adverse effect has occurred through the assessments made in parts a) and b), then Section 6.4.1.3 part c) provides for a problem solving approach in the first instance. Waikato Regional Council will encourage the discharger to identify and implement solutions to the problem; the responsibility rests with the discharger to avoid, remedy or mitigate the adverse effect.

Section 6.4.1.3 parts d) and e) outline the options available to Waikato Regional Council if through the process from a) to c), the event caused an adverse effect but no agreement has been reached. Waikato Regional Council may request that the discharger undertake measures to avoid, remedy or mitigate the adverse effects of the discharge and/or undertake enforcement procedures against the discharger. Waikato Regional Council may also require the discharger to seek a resource consent for the activity.

The steps listed in **Section 6.4.1.4** provide a checklist for Waikato Regional Council to follow when addressing complaints regarding odour for activities that hold a resource consent. It should be noted that this checklist is not hierarchical. Not all of the approaches outlined may be relevant in the assessment of effects for a given activity.

Section 6.4.1.4 part a) provides the criteria for assessment that should be used by a council officer. Consideration of each separate factor in part a) i) to vi) is important when making an assessment as to whether or not the discharge is objectionable to the extent that it is causing an adverse effect. There will often be times where it will be appropriate for an officer with delegated authority to assess the odour event, particularly if the event occurs a large distance from Waikato Regional Council offices. In cases such as this, territorial authority officers can play an important role.

Section 6.4.1.4 part b) provides for the assessment of odourous events by other Council Officers or by an independent expert. This will be particularly appropriate if the discharger or complainant(s) dispute the first assessment undertaken as part of a), or if the problem is ongoing.

Section 6.4.1.4 parts d) and e) outline the actions that may be requested of the discharger or the community. This may involve Waikato Regional Council requesting the discharger to keep a complaint register and/or requesting people living and working in the area to keep a diary noting the details of any odour and the effect it is having on them.

Under Section 6.4.1.4 part f) Waikato Regional Council could carry out, or commission, a public survey of effects. There are many techniques for public surveying. The technique chosen needs to be carefully developed and the right questions asked in order to produce useful and credible information¹⁰⁷. Waikato Regional Council could also carry out field investigations to determine the extent and impact of the discharge. As with community surveys, there are many techniques that can be undertaken for field investigations and again the technique chosen needs to be carefully developed¹⁰⁸.

Section 6.4.1.4 part g) outlines a further approach if the approaches in parts a) to f) cannot be achieved. The discharger could be required to undertake an odour assessment using dynamic dilution olfactometry and/or be required to use dispersion modelling techniques to investigate means of avoiding, remedying or mitigating adverse effects caused from the discharge of odour.

The provisions in **Section 6.4.1.5** parts a), b) and c) recognise that some dischargers have a well-established relationship with the local community, and have open channels of communication. The community-triggered response is a valid management approach to address adverse effects from odour and already occurs within some communities within the Region. This approach reduces the need for Waikato Regional Council involvement where there are complaints, although it does not rule out involvement from this Council if the problem cannot be solved between the parties.

Notwithstanding Council's ability to take enforcement action at an early stage in certain circumstances, the provisions in Sections 6.4.1.3 to 6.4.1.5 reflect Waikato Regional Council's commitment to a problem solving approach with the community and dischargers and also indicates this Council's desire to see dischargers address their adverse effects in a proactive manner. Where problems still occur Waikato Regional Council will need to consider enforcement action.

Guidance is provided on when to initiate enforcement action in **Section 6.4.1.6** parts a), b) and c). Decisions on enforcement will need to be made on a case-by-case basis but account will be taken of:

¹⁰⁷ The Ministry for the Environment's Good Practice Guide for Assessing and Managing Odour (2003) recommends methods for determining odour annoyance in communities including community diary programmes. The VDI Guideline 3883, 'Determination of Annoyance Parameters by Questioning' Part 1 provides a similar approach to that recommended by MfE, which involves questioning a sample of the community. The VDI Guideline 3883, Part 2 provides an approach that involves a community panel for recording odour impacts, which is an alternative to the diary approach recommended in the MfE guide.

¹⁰⁸ The VDI Guideline 3940 'Determination of Odourants in Ambient Air by Field Inspection' describes two types of field inspection; one to determine how great the odour impact is for a given situation, called a grid measurement, and one to determine the extent of an odour plume, called a plume measurement.

- a) the success of the measures undertaken under Sections 6.4.1.3, 6.4.1.4 and/or 6.4.1.5 parts a) and b),
- b) the commitment of the discharger to rectifying the problem,
- c) the commitment of the discharger entering into consultation with the affected community,
- d) the extent of the adverse effect and the degree to which it was predictable and preventable.

The amount of time given to the discharger to investigate and implement control options before enforcement proceedings are initiated would be dependent on the complexity of the problem, the costs involved, the level of community concern and the degree of adverse effect.

6.4.2 Guidelines for Assessing Particular Matter¹⁰⁹

6.4.2.1 Matters to be Considered in Determining the Likelihood of Adverse Effects from Particulate Deposition for Resource Consent Applications

In assessing a resource consent application for an existing activity, Waikato Regional Council will consider one or more of the following types of information:

- a) History of complaints regarding the discharge.
- b) Experiences of Waikato Regional Council¹¹⁰ with the discharge and information held by this Council or a territorial authority regarding past compliance.
- c) Information from community consultation undertaken by the discharger.
- d) Information from community surveys undertaken by the discharger.
- e) Deposition modelling results.
- f) Whether the best practicable option is being applied for the discharge.
- g) Records of emission control improvements undertaken, and those improvements proposed for the future.
- h) Past experiences and knowledge of Waikato Regional Council of the particulate matter effects generated from existing sites of a similar nature and scale.

Advisory Note:

- The information Waikato Regional Council will require to assess any application under this Plan is set out in Section 8.1.5 of this Plan.

6.4.2.2 Courses of Action to Assess Particulate Matter Complaints for Permitted Activities

In the event of receiving complaint(s) regarding particulate matter discharges from activities permitted by rules in this Plan, Waikato Regional Council will take the approach outlined in parts a) to e) below, or undertake aspects of this approach, to determine whether or not the particulate matter is objectionable to the extent that it is causing an adverse effect. This approach is distinct from the resource consent approach detailed in Section 6.4.2.3. The approach involves more rapid action and response procedures. For example, the assessment of frequency in a) i) below would substitute use of particulate matter diaries and complaint response with proactive inspections by council officers targeted at times when particulate matter discharges are most likely to occur. It also places a greater duty on the discharger to remain within the permitted activity conditions in Section 6.1.8. The criteria that Waikato Regional Council will apply when assessing whether a discharge of particulate matter is objectionable to the extent that it is causing an adverse effect; and the standard of

¹⁰⁹ Woodward-Clyde. October 1997: *Investigation into options for odour and dust deposition management in the Waikato Region*. Report prepared for Waikato Regional Council, Hamilton.

¹¹⁰ Council Officers or delegated Council Officer.

evidence required for enforcement action remains the same for both permitted activities and consented activities:

- a) Waikato Regional Council¹¹¹ will make an assessment of the situation. This assessment will take into account the:
 - i) frequency of the particulate matter discharge¹¹²
 - ii) intensity of the particulate matter discharge
 - iii) duration of the particulate matter discharge
 - iv) nature of the particulate matter discharge
 - v) location of the particulate matter discharge¹¹³
 - vi) any previous validated particulate matter complaints relating to the same site.
- b) In the event that the discharger or complainant(s) dispute Waikato Regional Council's assessment of the particulate matter problem, or the problem is ongoing, this Council¹¹⁴, if it so deems necessary and the dissatisfied party or parties, is/are prepared to share costs with Waikato Regional Council, a further assessment¹¹⁵ by an independent expert will be undertaken.
- c) If through the assessments made in a) and/or b) it is agreed that an adverse effect from particulate matter exists, Waikato Regional Council will require the discharger to identify and implement an appropriate solution to control the adverse effect.
- d) In the event that an incident or incidents involving the discharge of particulate matter is/are deemed to be objectionable to the extent that there is/are adverse effects and where agreement can not be reached under b) and c) of this section, Waikato Regional Council will take the following approach:
 - i) Waikato Regional Council will inform the discharger that action is required to avoid, remedy or mitigate the adverse effects from the discharge. Waikato Regional Council will outline a timeline for the discharger to undertake and complete that work. This may be formalised through the use of abatement notices
 - ii) If the discharge continues to cause adverse effects and timeframes are not met, then enforcement proceedings may be initiated. Waikato Regional Council may also require the discharger to apply for resource consent under the relevant rule in this Plan.
- e) For the avoidance of doubt, if through the assessments made in a) it is determined that an incident resulted in an adverse effect, Waikato Regional Council may take enforcement action, irrespective of the processes in a) and/or b), even if the incident was a 'one-off'.

6.4.2.3 Courses of Action to Assess Particulate Matter Complaints for Activities that hold a Resource Consent

In the event of receiving complaint(s) regarding particulate matter from activities that hold a resource consent, Waikato Regional Council will take the approach outlined in parts a) to f) below, or undertake aspects of this approach, to determine whether or not

¹¹¹ Council Officers or delegated Council Officer.

¹¹² Due to the more rapid response required, by necessity the frequency of assessment will be curtailed. More frequent inspections may replace the use of extensive particulate matter diary systems.

¹¹³ Location is a consideration because whether a particulate matter discharge is perceived as objectionable to the extent that there is an adverse effect may vary in different environments.

¹¹⁴ Or a delegated Council Officer.

¹¹⁵ Methods that can be used to undertake further assessments include, but are not limited to, population annoyance surveys and dispersion modelling.

the matter is objectionable to the extent that it has caused or is causing an adverse effect.

- a) Waikato Regional Council¹¹⁶ will make an assessment of the situation. This assessment will take into account the:
 - i) frequency of the particulate matter discharge
 - ii) intensity of the particulate matter discharge
 - iii) duration of the particulate matter discharge
 - iv) nature of the particulate matter discharge
 - v) location of the particulate matter discharge
 - vi) any previous validated particulate matter complaints relating to the same site.
- b) In the event that the discharger or complainant(s) dispute Waikato Regional Council's assessment of the particulate matter problem or the problem is ongoing then further assessments will be made by this Council¹¹⁷.
- c) If through the assessments made in b) it is agreed that an adverse effect from particulate matter exists, Waikato Regional Council will encourage the discharger to identify and implement appropriate solutions to control the adverse effect.
- d) Waikato Regional Council may request that the discharger keep a complaint register and that the discharger responds to complaints to identify the sources or causes of the objectionable particulate matter.
- e) Waikato Regional Council may request people living and working in the area to keep a diary that notes the details of any occurrence of particulate matter discharge and the effect it is having on them.
- f) Waikato Regional Council may carry out or commission a public survey or field investigation to determine the extent and impact of the discharge.
- g) The discharger may be required to undertake deposition monitoring at appropriate locations in accordance with the Draft ISO standard 4222.2, Measurement of Atmospheric Dustfall – Horizontal Deposit Gauge Method or total suspended particulate monitoring in accordance with DSIR Necal Method 101.

6.4.2.4 Courses of Action – Community Triggered Response

Where complaint(s) concerning particulate matter are deemed to be justified (through Section 6.4.2.2) and where there is an established working relationship between the discharger and the local community, a community triggered response to complaints could be developed as follows:

- a) The complainant could go directly to the discharger to lodge a complaint.
- b) The discharger could respond to complaints to identify the sources or causes of the particulate matter that is resulting in the adverse effect.
- c) The complainant and/or community and the discharger can decide on whatever action is necessary to avoid, remedy or mitigate the adverse effect of the discharge.

¹¹⁶ Council Officer or delegated Council Officer from a territorial authority.

¹¹⁷ Or a delegated Council Officer from a territorial authority.

6.4.2.5 Courses of Action for Considering Enforcement Regarding Particulate Matter

In the event that complaint(s) concerning adverse effects from discharges of particulate matter are deemed to be justified through application of Section 6.4.2.2 and/or where agreement cannot be reached under Section 6.4.2.3 and/or the discharger has not complied with condition(s) on the resource consent, then Waikato Regional Council will normally take the following approach:

- a) The discharger will be asked to take whatever action is necessary to avoid, remedy, or mitigate the adverse effects from the discharge. Waikato Regional Council will outline or negotiate with the discharger a timeline to undertake and complete that work.
- b) If the discharge continues to be objectionable to the extent that it is causing an adverse effect and/or timeframes are not met, then enforcement proceedings may be initiated.
- c) For the avoidance of doubt, if it is determined that an incident resulted in an adverse effect, Waikato Regional Council may take enforcement action, irrespective of the process in a) and/or b), even if the incident was a 'one-off'.

6.4.2.6 Modelling Guideline Values for Particulate Matter for Resource Consent Applications

The following is **not** a modelling standard and should not be used or quoted as one. Waikato Regional Council will use the following as a **guide** in assessing resource consent applications for activities that are at a scale or nature likely to discharge significant levels of particulate matter:

- a) The particulate deposition rate beyond the boundary of the subject property should not exceed four grams per square metre per 30 days.
- b) The particulate deposition rate beyond the boundary of the subject property should not exceed 130 milligrams per square metre averaged over 24 hours.

6.4.2.7 Preferred Method for Testing Discharges of Particulate Matter at Source

The following is Waikato Regional Council's preferred method for testing discharges of particulate matter at source:

- a) Testing should be undertaken using isokinetic¹¹⁸ methods such as USEPA method 5 or equivalent. This method will also provide guidance on location of sampling points.

Explanation and Principal Reasons for Adopting Sections 6.4.2.1 to 6.4.2.7

Section 6.4.2.1 provides a guideline for the course of action that Waikato Regional Council can take when assessing a resource consent application for an existing activity (this includes a consent renewal or review of an existing activity that has not previously held a consent). The list provided is not hierarchical. Not all of the approaches outlined will necessarily be relevant in an assessment.

Section 6.4.2.1 part a) indicates that Waikato Regional Council will consider the history of complaints received by the regional community regarding the discharge. Complaints can be used as an indicator of past performance from the site. Complaints received after notification of this Plan can be validated by undertaking the processes in Section 6.4.2.3.

Section 6.4.2.1 parts b) and h) rely on information held by Waikato Regional Council and past experiences of council officers regarding any adverse effects resulting from

¹¹⁸ Means that the gas sample is drawn from the stack so that the velocity of the sample gas at the nozzle tip is identical to the flue gas velocity at that point.

the discharge. In situations where new activities are proposed, Council will draw on experience and knowledge gained from existing sites of a similar nature or scale.

The provisions in parts c) and d) accommodate consideration of community feedback and experience with the discharge. Community feedback need not be restricted to complaints, there are many techniques available to dischargers to gauge whether or not the community considers the discharge of particulate matter to be objectionable to the extent that it is having an adverse effect.

Section 6.4.2.1 part e) provides for deposition modelling for quantifying and assessing effects from particulate matter. Models can predict how changes in processes and controls will affect air quality and can improve understanding of complex air quality issues. It is important to use them properly with regard to their limits, and with consideration of the uncertainty of their outputs.

Section 6.4.2.1 part f) provides for an assessment based on a best practicable option approach. Policy 4 in Chapter 6.1 outlines where Waikato Regional Council considers best practicable option is preferable over an air quality management approach. Section 6.4.2.1 part g) assesses whether the principles of continuous improvement have been or could be adopted by the discharger.

The steps listed in **Section 6.4.2.2** provide a checklist for Waikato Regional Council to follow when addressing complaints regarding particulate matter for permitted activities. It should be noted that this checklist is not hierarchical. Not all of the approaches outlined may be relevant in the assessment of effects for a given activity. The differences between this procedure and the procedure given in Section 6.4.2.3 are to allow Council to respond faster to particulate matter complaints from permitted activities. This method is intended to avoid a long drawn out process in rectifying issues with permitted activities that do not comply with the standard conditions for permitted activities set out in Section 6.1.8 of this Plan.

Section 6.4.2.2 part a) provides the criteria for assessment that should be used by a Council Officer. Consideration of each separate factor in part a) i) to iv) is important when making an assessment as to whether or not the discharge is objectionable to the extent that it is having an adverse effect. Due to the more rapid response required, by necessity the duration of assessment will be curtailed. More frequent officer inspections may replace the use of extensive particulate matter diary systems. There will often be times where it will be appropriate for an officer with delegated authority to assess the particulate matter event, particularly if the event occurs a large distance from Waikato Regional Council offices. In cases such as this territorial authority officers can play an important role.

Section 6.4.2.2 part b) provides for the assessment of particulate matter events by other council officers. This will be particularly appropriate if the discharger or complaint(s) dispute the first assessment undertaken as part of a) or if the problem is ongoing. If this is the case and the dissatisfied party or parties are prepared to share costs with Waikato Regional Council, then Council, if it deems necessary will undertake a further assessment by an independent expert.

If it is agreed by the discharger and Council that a discharge of particulate matter that is objectionable to the extent that it has caused or is causing an adverse effect has occurred through the assessments made in parts a) and b), then Section 6.4.2.2 part c) provides for a problem solving approach in the first instance. Waikato Regional Council will encourage the discharger to identify and implement solutions to the problem; the responsibility rests with the discharger to avoid, remedy or mitigate the adverse effect.

Section 6.4.2.2 parts d) and e) outline the options available to Waikato Regional Council if, through the process from a) to c), no agreement has been reached. Waikato Regional Council may request the discharger undertakes measures to avoid, remedy or mitigate the adverse effects of the discharge and/or undertake enforcement procedures against the discharger. A resource consent for the activity may be required.

The steps listed in Section 6.4.2.3 provide a checklist for Waikato Regional Council to follow when addressing complaints regarding particulate matter for activities that hold a resource consent. It should be noted that this checklist is not hierarchical. Not all of the approaches outlined will necessarily be relevant in the assessment of effects.

Section 6.4.2.3 part a) provides the criteria for assessment that should be used by a council officer. Consideration of each separate factor in a) i) to vi) is important when making an assessment as to whether or not the discharge is objectionable to the extent that it is having an adverse effect. Issues such as frequency will need to be assessed in most cases, on the basis of the type of activity involved, the level of community response and knowledge of the local meteorology. There will often be times where it will be appropriate for an officer with delegated authority to assess an event, particularly if the event occurs a fair distance from Waikato Regional Council offices. In cases such as this territorial authority officers can play an important role.

Section 6.4.2.3 part b) provides for the assessment of events by other council officers or by independent experts. This will be particularly appropriate if the discharger or complainant(s) dispute the first assessment undertaken as part of part a) or if the problem is ongoing.

If it is agreed by the discharger and this Council that a discharge of particulate matter that is objectionable to the extent that it has caused or is causing an adverse effect has occurred through the assessments made in parts a) and b) then Section 6.4.2.3 part c) provides for a problem solving approach in the first instance. Waikato Regional Council will encourage the discharger to identify and implement solutions to the problem, the responsibility rests with the discharger to avoid, remedy or mitigate the adverse effect.

Section 6.4.2.3 parts d) and e) outlines the actions that may be requested of the discharger or the community. This may involve Waikato Regional Council requesting the discharger to keep a complaints register and/or requesting people living and working in the area to keep a diary noting the details of any particulate matter and the effect it is having on them.

Under Section 6.4.2.3 part f) Waikato Regional Council could carry out or commission public surveys or undertake field investigations to determine the extent and impact of the discharge. There are many techniques for surveying and investigation in the field. The technique chosen needs to be carefully developed and the right questions asked in order to produce credible information.

Section 6.4.2.3 part g) provides another course of action if resolution under parts a) to f) cannot be reached. Deposited particulate monitoring in New Zealand is usually carried out in accordance with the Draft ISO Standard 4222.2 'Measurement of Atmospheric Dustfall – Horizontal Deposit Gauge Method'. An alternative to this method is the Australian Standard AS 3580.10.1-1991 'Determination of Particulates – Deposited Matter – Gravimetric Method'. Total suspended particulate monitoring in New Zealand is usually carried out in accordance with DSIR Necal Method 101. Dischargers should check with Waikato Regional Council for confirmation that these methods are suitable for use.

The provisions in **Section 6.4.2.4** parts a), b) and c) recognise that some dischargers have a well-established relationship with the local community, and have open channels of communication. The community-triggered response can work well where there is an established relationship between the discharger and community. This is a valid management approach to address adverse effects from discharges of particulate matter and already occurs within the Region. This approach reduces the need for Waikato Regional Council involvement where there are complaints, although it does not rule out any involvement from this Council if the problem cannot be solved between the parties.

Notwithstanding Council's ability to take enforcement action at an early stage in certain circumstances the provisions in Sections 6.4.2.2, 6.4.2.3 and 6.4.2.4 indicate Waikato Regional Council's commitment to a problem solving approach with the community and also indicates this Council's desire to see dischargers to address their adverse effects in a proactive manner. Where problems still occur, Waikato Regional Council will need to consider enforcement action.

Guidance is provided as to when to take enforcement action in **Section 6.4.2.5** parts a), b) and c). Decisions on enforcement will need to be made on a case-by-case basis, but account will be taken of:

- a) the success of measures undertaken under Sections 6.4.2.2, 6.4.2.3 and 6.4.2.4
- b) the commitment of the discharger to rectifying the problem
- c) the commitment of the discharger entering into consultation with the affected community
- d) the extent of the adverse effect and the degree to which it was predictable and preventable.

The amount of time given to the discharger to investigate and implement control options before enforcement proceedings are initiated would be dependent on the complexity of the problem, the costs involved, the level of community concern and the degree of adverse effect.

Section 6.4.2.6 parts a) and b) provide a modelling guideline that will be used, where appropriate, by Waikato Regional Council when assessing whether discharges are likely to have an adverse effect. This guideline has been provided in the Plan in recognition of the need for criteria on which to make decisions in a consistent manner, which in turn provides certainty to resource users in the Region. Waikato Regional Council wishes to provide certainty and consistency in approach when assessing resource consent applications regarding particulate matter by providing this guideline in the Plan. It should be noted that this guideline is **not a modelling standard and should not be used or quoted as one**. Part of the reasoning for this is what is acceptable will vary depending on the receiving environment and the background levels of deposited particulate matter already present.

The use of 4 g/m² averaged over 30 days and 130 mg/m² averaged over 24 hours are not an appropriate means of determining whether a particular activity is resulting in adverse effects. The methods cannot readily distinguish between contributions from various sources or reflect peak emission episodes. Instead, these numbers can be best used as a **guide for resource consent assessment purposes**. It is not intended that they be used for assessing whether an activity is causing an adverse effect or as a basis for considering enforcement action.

Section 6.4.2.7 outlines Waikato Regional Council's preferred method for testing discharges of particulate matter. Applicants should use this method when preparing resource consent applications to discharge particulate matter to air. This method will be used for testing resource consent compliance by Waikato Regional Council, where appropriate.