Lower Waiwhakaiho
Air Discharges
Compliance Monitoring Programme
Annual Report
2014-2015

Technical Report 2015-120

ISSN: 1178-1467 (Online)
Document: 1665895 (Word)
Document: 1676617 (Pdf)

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June 2016

Executive summary

The Lower Waiwhakaiho area of New Plymouth is the location of several industries that include two abrasive blasting operations, a feed mill, a fertiliser storage and distribution depot, a pallet and drum recycling operation, and an asphalt plant. The companies hold resource consents to allow them to discharge emissions into the air. This report for the period July 2014 to June 2015 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess the companies' environmental performance during the period under review, and the results and environmental effects of the companies' activities in relation to emissions to the air.

The companies monitored during the period under review were Downer EDI Works Ltd, Farmlands Co-operative Society Ltd, Fitzroy Engineering Group Ltd, Katere Surface Coatings Ltd, Ravensdown Fertiliser Co-op Ltd, and Taranaki Drum & Pallet Recycling.

The companies held a total of 6 resource consents, which include a total of 118 special conditions setting out the requirements that the companies must satisfy.

The Council's monitoring during the year under review included 21 inspections, two deposition gauge surveys, and review of two stack test reports.

The deposition gauge surveys found that, in relation to dust resulting in deposited particulates, ambient air quality in the area during the year under review was very good. During the 2014-2015 year 13 % of the "TRC SEM" samples[1] analysed exceeded the 4g/m^2/30 days deposition rate guideline, with only 24% of all the gauges collected in the Lower Waiwhakaiho area exceeding this guideline. There were two gauging locations, one in the vicinity of each of Katere Surface Coatings Ltd and Ravensdown Fertiliser Co-op Ltd, where the guideline was exceeded at the time of both surveys. The highest result during the year under review was obtained by one of the Ravensdown Fertiliser Co-op Ltd gauges, which was over twice the guideline rate. The guideline reflects a deposition rate that may cause complaints in a residential area.

In the 2014-2015 year there was one incident related to a discharge consent in the Lower Waiwhakaiho area. This incident was recorded on the Council's Unauthorised Incidents Register and resulted in Katere Surface Coatings Ltd being issued an abatement notice. No complaints were received as a result of this incident, nor were any adverse environmental effects noted.

During the year, Downer EDI Works Ltd demonstrated a **high** level of environmental performance and compliance with their resource consent, as discussed in Section 2. Particulate emission monitoring (stack testing) was carried out twice during the 2014-2015 year. Each monitoring occasion returned compliant results. Overall, the site was generally found to be well maintained.

During the year, Farmlands Co-operative Society Ltd demonstrated a **high** level of environmental performance and compliance with their resource consent, as discussed in

[1] Taranaki Regional Council's "state of the environment" monitoring sites are sites that are not in the immediate vicinity of any of the industrial dischargers.

Section 3. The 'feedmill' has since been decommissioned and the resource consent surrendered. Monitoring will cease after the 2014-2015 period.

During the year, Fitzroy Engineering Group Ltd demonstrated a **high** level of environmental performance, as discussed in Section 4. A new air treatment system was fitted to the garnet shed during the period under review. This new system is expected to significantly improve air treatment during the blasting process.

An **improvement** in Katere Surface Coatings Ltd's environmental performance is required. During the year under review the Company was instructed that the outdoor accumulation of spent blasting media needed to be addressed on three separate occasions. As a result, an abatement notice was issued. A follow up inspection showed that the spent blasting media had been cleaned up. An improvement in the control of wind blown yard dust is also required.

During the year, Ravensdown Fertiliser Co-op Ltd generally demonstrated a **good** level of environmental performance and compliance with their air discharge consent, as discussed in Section 6. Improved control of yard dust, including the prompt clean up of spilt material, is required.

During the year, Taranaki Drum and Pallet demonstrated a **good** level of environmental performance and compliance with the resource consent, as discussed in Section 7. Future notification prior to burn offs are required in order for the Council to inspect the active operation.

For reference, in the 2014-2015 year, 75% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 22% demonstrated a good level of environmental performance and compliance with their consents.

Overall, the companies assessed in this Lower Waiwhakaiho Air Discharge Compliance Monitoring Programme demonstrated a **good** level of environmental performance.

This report includes recommendations relating to monitoring in the 2015-2016 year.

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1. Introduction

1.1 Compliance monitoring programme reports and the Resource Management Act 1991

1.1.1 Introduction

This report is the Annual Report for the period July 2014 to June 2015 by the Taranaki Regional Council (the Council) describing the results of the monitoring programme associated with the air discharge permits held by six industries in the Lower Waiwhakaiho area. The monitoring covers emissions to air from the companies' activities in the Fitzroy area of New Plymouth.

Since 1 October 1991, with the enactment of the *Resource Management Act 1991* (RMA), the Council has been the agency with primary responsibility for air quality management in the Taranaki region. Early in 1992, the Council initiated air quality monitoring programmes for industries holding discharge permits, and has subsequently issued and monitored air discharge permits for a number of other industrial and trade premises.

The Council began monitoring some of the industries in the Lower Waiwhakaiho area in 1992. This report is the 22nd Annual Report to be prepared by the Council to cover the Companies' air discharges and their effects. It is the 14th Annual Report to deal with emissions in the area as a combined monitoring report.

A separate report covers the results and findings of the Council's monitoring programmes associated with the water discharge permits held by some of these companies[2].

1.1.2 Structure of this report

Section 1 of this report is a background section. It sets out general information about compliance monitoring under the RMA and the Council's obligations and general approach to monitoring sites through annual programmes, lists the resource consents held by companies in the Lower Waiwhakaiho area, and outlines the nature of the monitoring programme in place for the period under review.

Each company's activity is then discussed in a separate section (Sections 2 to 7).

In subsections for each company (e.g. Section 2.1) there is a general description of the industrial activity and its discharges, an aerial photograph or map showing the location of the activity, and an outline of the matters covered by the company's air discharge permit.

Subsection 2 presents the results of monitoring of the company's activities during the period under review, including scientific and technical data.

Subsection 3 discusses the results, their interpretation, and their significance for the environment in the immediate vicinity of the site under discussion.

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[2] Lower Waiwhakaiho Catchment Monitoring Programme Annual Report, 2014-2015

Subsection 4 presents recommendations to be implemented in the 2015-2016 monitoring year.

Section 8 presents the results and findings in relation to any investigations, interventions, and incidents relevant to the Lower Waiwhakaiho area and discusses the deposition gauge results, their interpretation, and their significance for the environment in the Lower Waiwhakaiho area as a whole.

Section 9 presents a summary of recommendations made in relation to the monitoring of each company's activities.

A glossary of common abbreviations and scientific terms, and a bibliography, are presented at the end of the report.

1.1.3 The Resource Management Act 1991 and monitoring

The RMA primarily addresses environmental 'effects' which are defined as positive or adverse, temporary or permanent, past, present or future, or cumulative. Effects may arise in relation to:

(a) the neighbourhood or the wider community around an activity, and may include cultural and social-economic effects;
(b) physical effects on the locality, including landscape, amenity and visual effects;
(c) ecosystems, including effects on plants, animals, or habitats, whether aquatic or terrestrial;
(d) natural and physical resources having special significance (for example recreational, cultural, or aesthetic);
(e) risks to the neighbourhood or environment.

In drafting and reviewing conditions on discharge permits, and in implementing monitoring programmes, the Council is recognising the comprehensive meaning of 'effects' inasmuch as is appropriate for each activity. Monitoring programmes are not only based on existing permit conditions, but also on the obligations of the RMA to assess the effects of the exercise of consents. In accordance with Section 35 of the RMA, the Council undertakes compliance monitoring for consents and rules in regional plans, and maintains an overview of the performance of resource users and consent holders. Compliance monitoring, including both activity and impact monitoring, enables the Council to continually re-evaluate its approach and that of consent holders to resource management and, ultimately, through the refinement of methods and considered responsible resource utilisation, to move closer to achieving sustainable development of the region's resources.

1.1.4 Investigations, interventions, and incidents

The monitoring programme for the year was based on what was considered to be an appropriate level of monitoring, review of data, and liaison with the consent holder. During the year matters may arise which require additional activity by the Council, for example provision of advice and information, or investigation of potential or actual courses of non-compliance or failure to maintain good practices. A pro-active approach that in the first instance avoids issues occurring is favoured.

The Council operates and maintains a register of all complaints or reported and discovered excursions from acceptable limits and practices, including non-compliance with consents, which may damage the environment. The Unauthorised Incident Register (UIR) includes events where the company concerned has itself notified the Council. The register contains details of any investigation and corrective action taken.

Complaints may be alleged to be associated with a particular site. If there is potentially an issue of legal liability, the Council must be able to prove by investigation that the identified company is indeed the source of the incident (or that the allegation cannot be proven).

1.1.5 Evaluation of environmental and administrative performance

Besides discussing the various details of the performance and extent of compliance by the consent holders during the period under review, this report also assigns a rating as to each Company's environmental and administrative performance.

Environmental performance is concerned with actual or likely effects on the receiving environment from the activities during the monitoring year. **Administrative performance** is concerned with the Company's approach to demonstrating consent compliance in site operations and management including the timely provision of information to Council (such as contingency plans and water take data) in accordance with consent conditions.

Events that were beyond the control of the consent holder and unforeseeable (that is a defence under the provisions of the RMA can be established) may be excluded with regard to the performance rating applied. For example loss of data due to a flood destroying deployed field equipment.

The categories used by the Council for this monitoring period, and their interpretation, are as follows:

Environmental Performance

- **High** No or inconsequential (short-term duration, less than minor in severity) breaches of consent or regional plan parameters resulting from the activity; no adverse effects of significance noted or likely in the receiving environment. The Council did not record any verified unauthorised incidents involving significant environmental impacts and was not obliged to issue any abatement notices or infringement notices in relation to such impacts.

- **Good** Likely or actual adverse effects of activities on the receiving environment were negligible or minor at most. There were some such issues noted during monitoring, from self reports, or in response to unauthorised incident reports, but these items were not critical, and follow-up inspections showed they have been dealt with. These minor issues were resolved positively, co-operatively, and quickly. The Council was not obliged to issue any abatement notices or infringement notices in relation to the minor non-compliant effects; however abatement notices may have been issued to mitigate an identified potential for an environmental effect to occur.

For example:

- High suspended solid values recorded in discharge samples, however the discharge was to land or to receiving waters that were in high flow at the time;
- Strong odour beyond boundary but no residential properties or other recipient nearby.

- **Improvement required** Likely or actual adverse effects of activities on the receiving environment were more than minor, but not substantial. There were some issues noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent minor non-compliant activity could elevate a minor issue to this level. Abatement notices and infringement notices may have been issued in respect of effects.

- **Poor** Likely or actual adverse effects of activities on the receiving environment were significant. There were some items noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent moderate non-compliant activity could elevate an 'improvement required' issue to this level. Typically there were grounds for either a prosecution or an infringement notice in respect of effects.

Administrative performance

- **High** The administrative requirements of the resource consents were met, or any failure to do this had trivial consequences and were addressed promptly and co-operatively.

- **Good** Perhaps some administrative requirements of the resource consents were not met at a particular time, however this was addressed without repeated interventions from the Council staff. Alternatively adequate reason was provided for matters such as the no or late provision of information, interpretation of 'best practical option' for avoiding potential effects, etc.

- **Improvement required** Repeated interventions to meet the administrative requirements of the resource consents were made by Council staff. These matters took some time to resolve, or remained unresolved at the end of the period under review. The Council may have issued an abatement notice to attain compliance.

- **Poor** Material failings to meet the administrative requirements of the resource consents. Significant intervention by the Council was required. Typically there were grounds for an infringement notice

For reference, in the 2014-2015 year, 75% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 22% demonstrated a good level of environmental performance and compliance with their consents.

1.2 Resource consents

1.2.1 Air discharge pemits

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

A list of the companies holding air discharge permits monitored as part of the Lower Waiwhakaiho Air Discharges Compliance Monitoring Programme is given in Table 1, and their locations are shown in Figure 1. The companies' activities and the special conditions on their consents are presented in later sections. Copies of the full consents are included (in alphabetical order) in Appendix I

Table 1 Resource consents for the monitored industries in the Lower Waiwhakaiho area

Consent holder	Consent number	Purpose of consent	Next review date	Expiry date
Downer EDI Works Ltd	4060-4	To discharge emissions to air from the manufacture of hot mix asphalt paving mixes and associated activities	-	June 2020
Farmlands Co-operative Society Ltd	4051-5	To discharge emissions to air from the milling and blending of grain and animal meals and associated activities (transferred 17 January 2014)	-	June 2020
Fitzroy Engineering Group Ltd	4025-3	To discharge emissions to air from abrasive blasting operations and associated activities at the factory site and from yard blasting operations and mobile abrasive blasting at various locations throughout the Taranaki region	-	June 2020
Katere Surface Coatings Ltd	4475-2	To discharge emissions to air from abrasive blasting and surface coating activities at a permanent site located at Katere Road, New Plymouth and from mobile operations throughout the Taranaki region including within the Coastal Marine Area at Port Taranaki	-	June 2020
Ravensdown Fertiliser Co-op Ltd	4024-3	To discharge emissions to air from the storage, blending and distribution of fertiliser	June 2020	June 2026
Taranaki Drum & Pallet Recycling	6073-1	To discharge emissions to air from the burning off of pallets	-	June 2020

1.3 Monitoring programme

1.3.1 Introduction

Section 35 of the RMA sets out obligations upon the Council to gather information, monitor, and conduct research on the exercise of resource consents, and the effects arising, within the Taranaki region and report upon these.

The Council may therefore make and record measurements of physical and chemical parameters, take samples for analysis, carry out surveys and inspections, conduct investigations, and seek information from consent holders.

The air quality monitoring programme for the industries in the Lower Waiwhakaiho area consisted of up to four primary components.

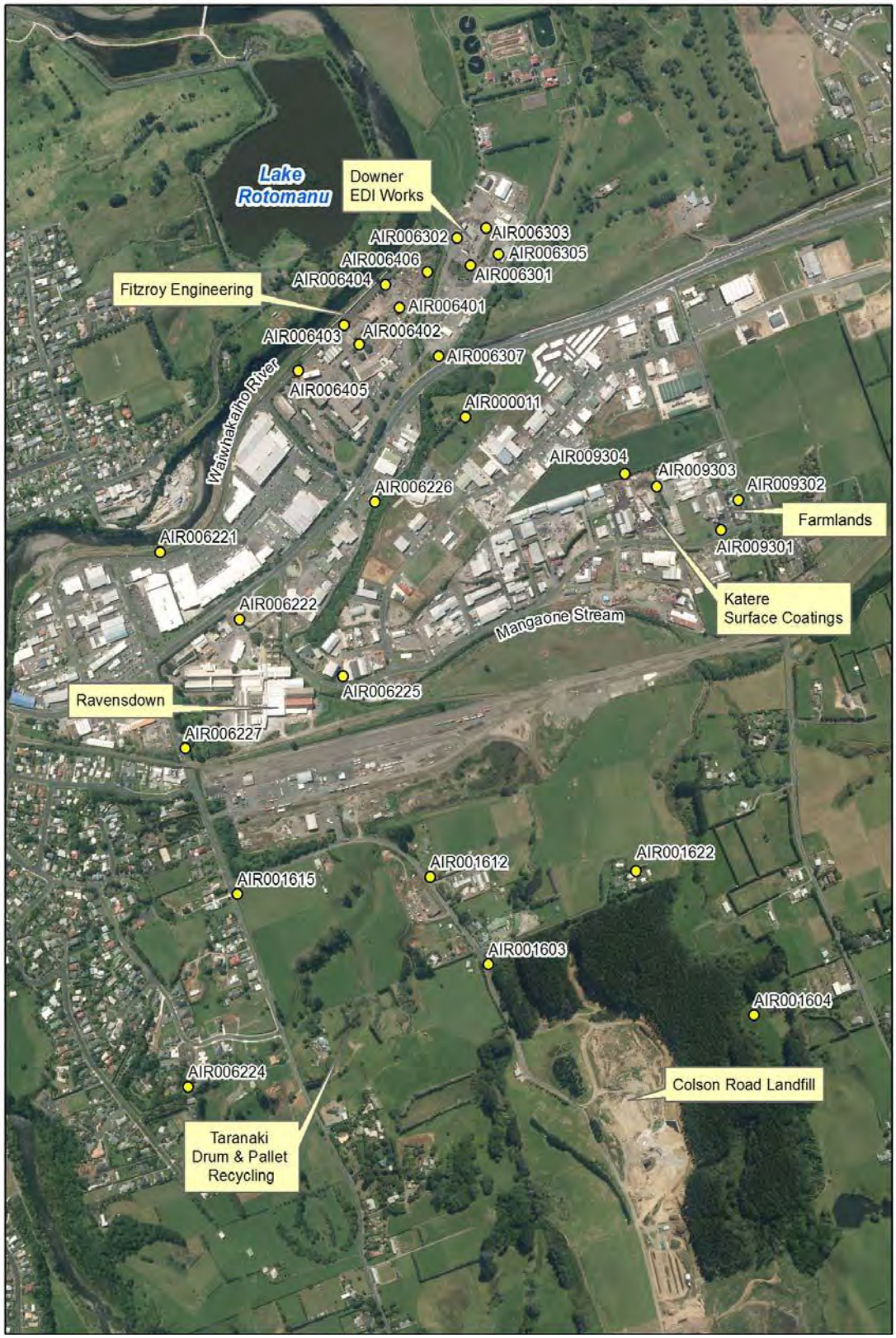

Figure 1 Location of industries holding air discharge permits, and monitoring sites within the Lower Waiwhakaiho area

1.3.2 Programme liaison and management

There is generally a significant investment of time and resources by the Council in:

- ongoing liaison with resource consent holders over consent conditions and their interpretation and application;
- in discussion over monitoring requirements;
- preparation for any reviews;
- renewals;
- new consents;
- advice on the Council's environmental management strategies and content of regional plans and;
- consultation on associated matters.

1.3.3 Site inspections

Each site was visited up to five times during the monitoring period. Inspections focused on plant processes with associated actual and potential emission sources and characteristics, including potential odour, dust, noxious or offensive emissions. Sources of data being collected by the consent holder were identified and accessed, so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council. The neighbourhood was surveyed for environmental effects.

1.3.4 Particulate deposition monitoring

Atmospheric particulate matter can arise from a number of sources, both natural and from human activity, for example vegetation pollens, smoke and ash, sea spray, dust from soils and paved surfaces, and manufacturing processes. While extremely fine particles may remain floating in the atmosphere for weeks or months, coarser dusts may settle out within timeframes ranging from a few seconds to minutes.

The environmental effects of dusts include loss of visibility, loss of the amenity and aesthetic values of a 'clear sky', irritation to breathing, and soiling of surfaces. It has been found that background rates of dust deposition in rural areas of New Zealand are typically 0.1-1.5 g/m^2/30 days, while in urban areas rates are generally higher, in the range of 0.6-3.0 g/m^2/30 days. From experience, rates above 3-4 g/m^2/30 days tend to lead to complaints by neighbours over the objectionable or offensive nature of dust emissions from particular sources.

Many industries emit dust from various sources during operational periods. In order to assess the effects of the emitted dust, industries have been monitored using deposition gauges. From past results of deposition gauging it is likely that factors including seasonal weather variations, vehicle traffic about the site and the type of work being conducted can have some effect on the results.

Photo 1 Examples of a deposition gauge set up and recovered filter pads

Deposition gauges are basically buckets elevated on a stand to about 1.6 m. The buckets have a solution in them to ensure that any dust that settles out of the air is not resuspended by wind.

As a part of the Lower Waiwhakaiho Air Discharge Compliances Monitoring Programme, deposition gauges were placed in the vicinity of selected sites on two occasions during the year, and the collected samples were analysed for deposited particulate. The monitoring locations are shown in Figure 1. The gauges were left in place for approximately three weeks, on two separate occasions.

The rate of dustfall is calculated by dividing the weight of insoluble material (grams) collected by the cross-sectional area of the gauge m^2 and the number of days over which the sample was taken. The units of measurement are $g/m^2/day$.

Guideline values used by the Council for dust deposition are 4 $g/m^2/30$ days or 0.13$g/m^2/day$ deposited matter. Consideration is given to the location of the industry and the sensitivity of the surrounding community, when assessing results against these values. This guideline value has been incorporated as a limit in the Company's consent.

1.3.5 Stack testing data review

The consents held by Downer EDI Ltd and Fitzroy Engineering Group Ltd both contain special conditions requiring that the particulate concentration of their stack emissions are monitored by independent parties on an annual basis. The conditions under which the testing must be performed, and the reporting requirements, are also specified. This emissions monitoring must be completed by 1 June each year, and the reports must be provided to the Council within 20 working days of testing.

2. Downer EDI Works Ltd

2.1 Introduction

2.1.1 Process description

The purpose of the Downer EDI Works Ltd (Downer) plant is to produce asphalt for use on roads and driveways etc. A permanent drum mix plant has replaced the batch plant and mobile plant that were formerly in use at the site.

The asphalt production is achieved by the following processes. The plant is a parallel-flow drum mix plant consisting of a rotary drum (which is used to both dry and heat the aggregate and to mix the hot aggregate with bitumen), a dual fuel burner and integral combustion air fan, a bitumen drum injection system and expansion box. Aggregate is transferred into the rotating drum at the burner end and then travels down the slightly inclined rotating drum where products of combustion and excess air dry and heat the aggregate. The drum is fitted with flights, which achieve a lifting motion ensuring good contact between the drying gases and the aggregate. Hot liquid bitumen is injected into the drum about half way down. A steam barrier from the drying aggregate, and burner design, prevents the burner from impinging on the hot bitumen. Hot mix temperatures range from 135 °C to 170°C depending on the blend, and mixes generally contain about 5% bitumen. The product is removed continuously by a conveyor at the end of the drum and is transferred to insulated storage bins prior to discharge into trucks.

The spraying of bitumen into the aggregate, and the steam generated by drying the aggregate removes a substantial proportion of the entrained dust. The combustion products, dust, bitumen volatiles, and pyrolysis products are drawn through an expansion box where large dust particles settle out and drop into the aggregate/bitumen mix. The emissions then pass through a venturi water scrubber, which injects water into the exhaust gas stream and centrifugally separates out the water/dust prior to discharge from the 17 metre stack.

Road patching mix can be manufactured in a pugmill serviced via a by-pass conveyor.

The current drum mix plant was installed in 2006. It has a maximum production rate of to 80 tonnes per hour, but is normally operated at around 50 tonnes per hour, with the typical annual operating time being around 200 to 400 hours per year.

The major components of this drum mix plant were either new or refurbished, with only items such as the aggregate storage facilities, control room and weighbridge being existing facilities. The scrubber settling ponds, although existing, were deepened to increase retention/settling time.

The drum burner for this plant operates primarily on natural gas but with dual fuel capability. The plant is able to operate on diesel oil, primarily to give some commercial advantage when negotiating fuel contracts. The burner has a rated capacity of 12 MW gross, but the plant requires only 7 MW gross on average at the plant's maximum production rate of 80 tonnes per hour.

Diesel and kerosene are not blended or stored at the site but at Port Taranaki. If diesel firing of the dual fuel drum burner was required, the consent holder advised that the

existing self bunded (double skinned) 10,000 litre fuel tank would be used for fuel storage.

The plant is designed to be capable of processing recycled asphalt, and Downer indicated that they may want to introduce this at a later date. However no information was provided to the Council at the time of their resource consent application regarding the potential effects from the processing of recycled asphalt paving and so it is not currently permitted by their consent.

The main potential issues associated with the discharges to air from the site are particulates, silica, organic compounds, carbon monoxide, nitrogen oxides and sulphur dioxide.

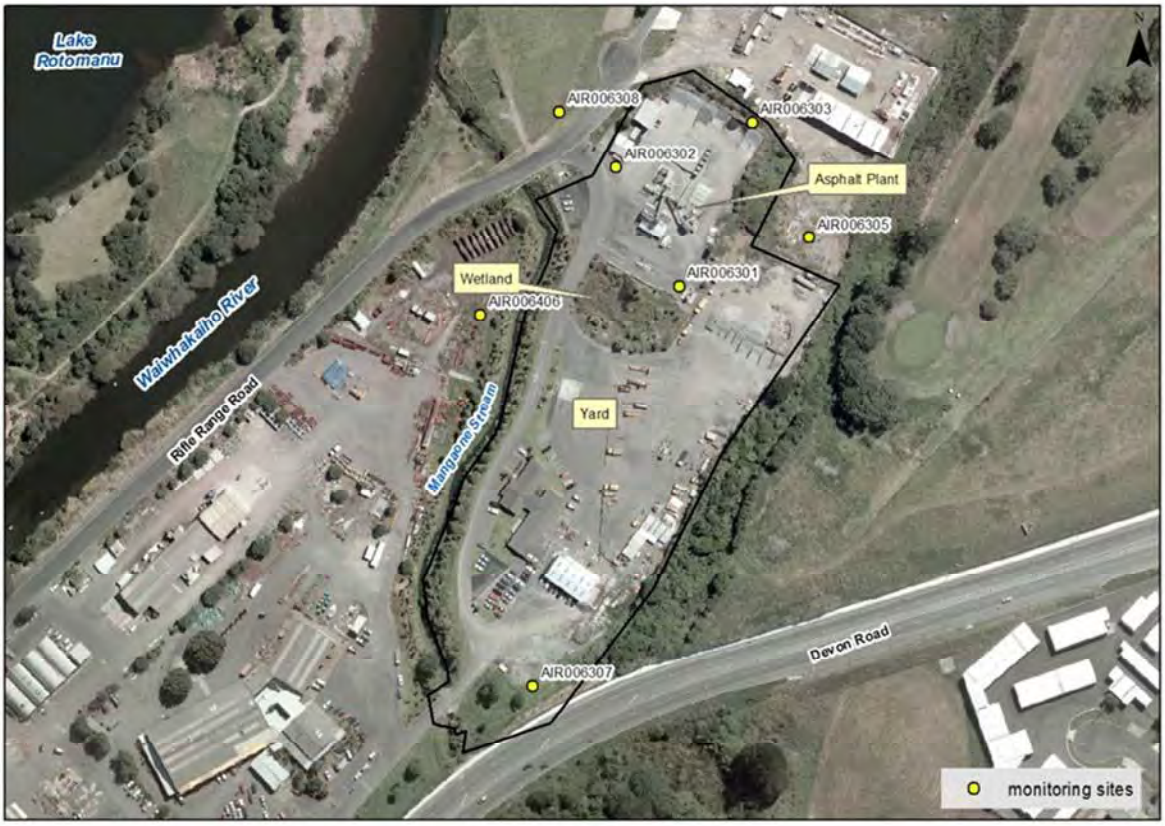

Figure 2 Location of Downer EDI Works Ltd and related deposition gauge sites

In addition to the emissions from the asphalt plant itself during normal operation, the main sources of additional particulates are:

- storage and movements of aggregate and crusher dust, the effects of which are mitigated by keeping the materials damp;
- washing out of the drum between substantially different batches of asphalt;
- run-out of aggregate loaded in excess of requirements;
- fugitive emissions, which are controlled by ensuring that adequate monitoring and maintenance is undertaken by operators at the site, and
- mobilisation of dust from the yard surface due to truck movements. The roads and yard areas have been progressively hard paved and these surfaces are kept damp when appropriate. The yard has been equipped with water sprays to assist in minimising dust during windy weather. Spillage of aggregate is scraped up and the

area washed down as necessary. A speed limit of 10 kph has been imposed to reduced dust generation from vehicle movements in dry weather.

Some of the total organic carbon (TOC) emissions can produce a noticeable odour, however it is expected that these odours would dissipate sufficiently so that they are not considered to be offensive beyond the boundary of the site. Bitumen odour can be apparent beyond the boundaries of the premises resulting from the dumping of hot mix or patching mix into waiting trucks. When the material is deposited in the truck, a moderate cloud of bitumen smoke may drift downwind. This event is of short duration.

Most of the sulphur dioxide and nitrogen oxides produced by the burning of fossil fuels in the plant are removed by the water scrubber in the cyclone.

Ground level concentrations of carbon monoxide and silica are estimated to be well below relevant guidelines.

2.1.2 Air discharge pemit

Downer holds air discharge permit 4060 to cover emissions to air from the manufacture of hot mix asphalt paving and associated processes. This permit was originally issued by the Council on 8 February 1995 to Technic Industries Ltd as a resource consent under Section 87(e) of the RMA. This consent was renewed on 29 March 2004 and then renewed again on 23 March 2005 for a period until June 2020.

Ownership of the plant has changed several times, with Downer (formerly operating under the names of Works Civil Construction and then Works Infrastructure Ltd) taking over the site from Technic Industries Ltd in November 1997.

The special conditions on the consent are intended to control the quality of the emissions from the site, and limit the potential for off-site effects as a result of the operation of the asphalt plant and associated activities. This is achieved by:

- Requiring that the consent holder carry out their activities in a way that is consistent with the information submitted at the time of the consent application, or seek the Council's approval before making any changes (special conditions 1 and 3).
- Ensuring that the consent holder adopts the best practicable option in preventing or minimising any adverse effects that may result from discharges to air from the site (special condition 2).
- Prohibiting the processing of recycled asphalt, as no information was provided in the AEE relating to the potential effects of discharges from this activity (special condition 4).
- Controlling the operation and maintenance of the burner (special conditions 5 to 7).
- Measurable limits on particulate and smoke discharges (special conditions 8 and 20).
- Requiring the consent holder to monitor and report on the particulates in the emissions from the discharge stack at the request of a potentially affected party (special conditions 9 and 10).

- Limiting off site effects in relation to dust, odour, and gaseous contaminants (special conditions 11 to 17).
- Requiring that dust mitigation measures are in place to control potential dust emissions from associated activities (special conditions 18 and 19).
- Requiring that the consent holder operates, monitors, and maintains systems related to emission abatement equipment to ensure optimum performance, and keeps a log, accessible to the Council, detailing the checks and maintenance carried out (special conditions 21 to 25).
- Provision for the review of the conditions attached to the consent (special condition 26).

2.2 Results

2.2.1 Inspections

26 August 2014

Conditions were fine with light southerly winds. Stack testing was undertaken by CRL Energy Ltd during the inspection. The plant was in production and bitumen deliveries were taking place. 'DustTrak' PM10 readings at the Northern gate were 0.7 mg/m^3 when checked in conjunction with the inspection. There was a noticeable bitumen odour downwind at the northern boundary.

Photo 2 Stack testing carried out by CRL Energy Ltd

11 December 2014

There were light westerly winds at the time of the inspection. The plant was not operating at this time. The site was tidy and there was no odour or dust detected beyond the boundary of the property.

10 March 2015

Conditions were fine with light south westerly winds. The plant was not operating at the time of the inspection. No odour or dust was detected beyond the site boundary.

28 May 2015
Conditions were fine with a light westerly breeze. The plant was operating during the inspection. There was no odour detected beyond the site boundary.

2.2.2 Provision of company data

2.2.2.1 Particulate emissions monitoring

Special conditions 8, 9 and 10 of air discharge permit 4060-4 relate to the standard to which the emissions from the asphalt plant must be treated, and outline the frequency and conditions under which emissions testing must be performed to confirm compliance. The timing of the testing, and reporting of the results to the Council are also specified.

Testing must be undertaken as per a specified Australian Standard, by a party independent from the Company before 1 June each year, under production conditions that give rise to maximum emissions. The results are to be reported to the Council within 20 working days of the testing.

The overdue 2013-2014 testing was undertaken on 26 August 2014, with the report received by the Council on 2 September 2014, within the 20 day timeframe required by the consent. A summary of the results is as follows:

Sample 1: 90 mg/m^3
Sample 2: 79 mg/m^3
Sample 3: 77 mg/m^3

Average: 82 mg/m^3

The average result obtained indicates compliance with the limit of 125 mg/m^3 specified in condition 8.

Stack testing for the 2014-2015 monitoring period was undertaken on 17 June 2015, with the report received by the Council on 29 June 2015, within the 20 day timeframe required by the consent. A summary of the results is as follows:

Sample 1: 110 mg/m^3
Sample 2: 100 mg/m^3
Sample 3: 102 mg/m^3

Average: 104 mg/m^3

The average result obtained indicates compliance with the limit of 125 mg/m^3 specified in condition 8.

2.2.3 Results of receiving environment monitoring

2.2.3.1 Deposition gauging

Deposition gauges were deployed on two occasions during the monitoring period. The first deployment began in January and lasted 22 days. The second deployment began

in February and lasted 21 days. See section 1.3.4 for an overview of the purpose and methodology of deposition gauge monitoring.

A site map marking the location of the gauges around the Downer site is shown in Figure 2, with the monitoring site locations also described in Table 2.

Material from the gauges was analysed for solid particulates with the results shown in Table 3. The prevailing wind directions during the surveys are shown in Appendix II.

Table 2 Downer EDI Works Ltd air monitoring site locations

Site Code	Location description	At or beyond site boundary
AIR006301	Approx 80 m SE of asphalt plant	Inside boundary
AIR006302	NW of asphalt plant approx. 10 m from Rifle Range Road	Inside boundary
AIR006303	NE of asphalt plant approx. 50 m along screening bank	Inside boundary
AIR006305	East. Near golf course track	Outside boundary
AIR006307	Between southern site entrance and Devon Road	Inside boundary

For an industry such as this, relatively high deposition rates are expected due to handling and processing of aggregate material. As can be seen from Table 3, two of the nine samples collected and analysed during the year under review exceeded the Council's recommended guideline value of 0.13 g/m^2/day and consent limit of 4 g/m^2/30 days for deposited particulate at monitoring locations at the site boundary. It must be noted however that the consent limit applies only at site AIR006305, the only site "at or beyond the site boundary", and this monitoring site has the potential to be impacted by the activities of the occupiers of the neighbouring property on which the gauge is located.

January 2015 survey

For the January survey, the result for site AIR006303 (within the site boundary) was above the recommended guideline. The filter was described as being dusty, with green weed present. It had a fast filtration rate and heavy brown load. The deposition rate recorded at AIR006305 did not exceed the company's consent limit.

The heavy brown load and weed growth on the filter from site AIR006303 suggest that organic material, unrelated to air discharges from Downer site processes, may have contributed to the breach in the recommended guideline. Furthermore, the magnitude of the exceedance in this sample was minor.

February 2015 survey

For the February survey, site AIR006303 (within the site boundary) was the only gauge from which the results exceeded the recommended guideline. It was described as having a fast filtration rate with a heavy, dusty, dark grey load. It is noted that on retrieval of the samples from this run, the gauge collected from site AIR006305 contained large quantities of grass and vegetation, so was subsequently discarded.

The result from AIR006303 suggests that the guideline exceedance may have been due to the deposition of resuspended yard dust. Predominant winds during the gauging period were split between easterlies and west to south westerlies (Appendix II). Particularly due to these variable winds, the neighbouring properties cannot be discounted as potential contributors to the high deposition rate.

Table 3 Deposition gauge results from around the Downer EDI Works Ltd site

Site ID	Dust deposition rate (g/m²/day)	
	Run1 from 13/01/2015 to 04/02/2015	Run 2 from 12/02/2015 to 05/03/2015
AIR006301	0.05	0.09
AIR006302	0.04	0.05
AIR006303	**0.15**	**0.26**
AIR006305	0.10	Sample discarded
AIR006307	0.02	0.07
Guideline value:	0.13g/m²/day	

Key: results in bold exceed recommended guideline value

2.2.4 Investigations, interventions, and incidents

In the 2014-2015 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with the Company's conditions in their resource consent or provisions in Regional Plans.

2.3 Discussion

2.3.1 Discussion of site performance

Routine compliance monitoring inspections during the year under review found that activities at the site were well managed. There were no off site effects found from either dust or odour due to Downer's activities at the time of inspection. The asphalt plant was in operation on two of the four compliance monitoring inspections undertaken.

In terms of potential dust issues it is considered that activities at the site were generally well managed.

There were two exceedances of the particulate deposition rate guideline value, and no exceedances of the consent limit. The nature of the material collected in the first guideline exceedance was not consistent with that used in the processes covered by the air discharge consent, or any associated activities at the site. However, the material collected in the second exceedance was consistent with resuspended yard dust; possibly originating from, but not limited to, the Downer site. Compliance with the consent limit could only be assessed on one occasion as there was only one applicable gauge location (AIR006305), and on the second run the sample had to be discarded.

There were no dust or odour complaints received by the Council.

Particulate emission monitoring (stack testing) was carried out twice during the 2014-2015 year. The results from both surveys were in compliance with Downer's resource consent.

2.3.2 Environmental effects of exercise of consents

Deposition gauging was conducted for the 51st and 52nd time during the 2014-2015 monitoring year around the Downer site.

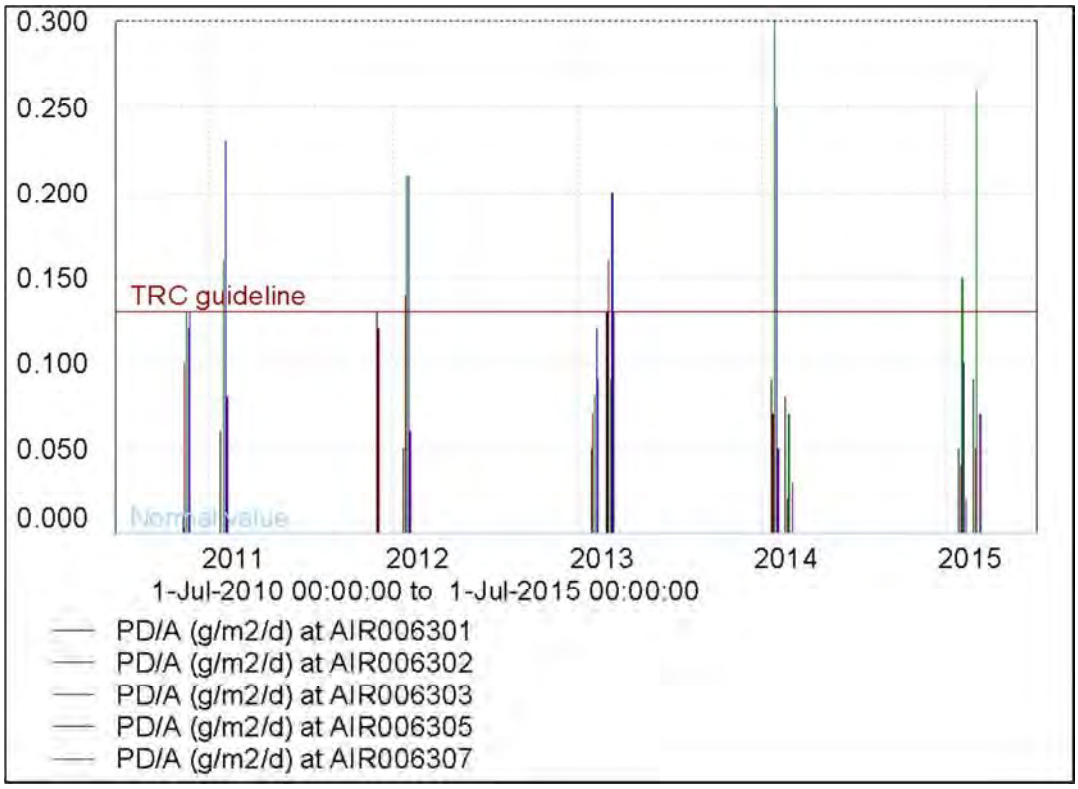

Figure 3 Deposition gauge results at Downer EDI Works monitoring sites (July 2010 – July 2015)

The results from the dust deposition gaugings show that two of nine samples collected during the 2014-2015 period were in excess of the particulate deposition rate guideline values adopted by the Council (Figure 3).

During both surveys the particulate deposition rates measured in the gauge north east of the asphalt plant, behind the aggregate bunkers approximately 50 metres along the screening bank (AIR006303), were in exceedance of the Council guideline. The largest exceedance was recorded during the February survey, where the deposition rate was double the guideline value. The appearance of the material collected on the filter was found to be consistent with re-suspended yard dust. During this gauging period, the site AIR006303 was downwind of the Downer site for approximately 31 % of the time and upwind 36 % of the time. Due to these varied wind directions, neighbouring yards cannot be ruled out as potential sources of the deposited dust.

See section 1.3.4 for more information on the environmental effects of atmospheric particulate matter.

It is noted that there were no complaints received by the Council in relation to dust issues from the Downer site during the 2014-2015 year.

2.3.3 Evaluation of performance

A tabular summary of Downer's compliance record for the year under review is set out in Table 4.

Table 4 Summary of performance for Consent 4060-4, Downer EDI Works Ltd discharge of emissions into the air

Purpose: ***To discharge emissions to air from the manufacture of hot mix asphalt paving mixes and associated activities***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Exercised in accordance with the application	Inspection	Yes
2. Adoption of action likely to minimise adverse effects on the environment	Inspection, liaison with consent holder	Yes
3. Approval prior to alterations to plant or processes	Inspection and liaison with consent holder	N/A
4. Prohibition of recycled asphalt processing	Inspection and liaison with consent holder	Yes
5. Reduction of noxious emissions through six monthly burner maintenance	Discussed during inspection	Yes
6. Operation using waste oil not permitted	Inspection and liaison with consent holder	Yes
7. Sulphur content of fuel	Discussed during inspection. Diesel not used in asphalt plant	Yes
8. Treatment prior to gas discharge	Inspection found emissions captured and treated satisfactorily. No complaints received. Emissions monitoring undertaken twice during the monitoring period	Yes
9. Stack emissions testing	Review of documentation provided to the Council. Plant conditions required for monitoring clarified	Yes
10. Definition of methodology to be used for stack emissions testing	Review of documentation provided to the Council	Yes
11. Particulate deposition rate at site boundary	Deposition gauge monitoring	AIR006303 in exceedance on both sampling occasions, but this gauge was within site boundary
12. Objectionable odour or level of dust not permitted at site boundary	Inspection and observation when inspecting officer is in the vicinity of the site on other business	Yes
13. Definition of factors constituting an objectionable odour	N/A	N/A
14. Limit on suspended particulate matter at or beyond boundary	No visible dust at boundary at inspection	Yes
15. No noxious or toxic levels of airborne contaminants at site boundary	Inspection and observation when inspecting officer is in the vicinity of the site on other business	Yes
16. Control of ground levels of nitrogen dioxide	Compliance demonstrated 2011-2012. Next scheduled 2016-2017	N/A
17. Control of ground levels of sulphur dioxide	Compliance previously demonstrated, and consent holder did not use diesel during year under review	N/A

Purpose: *To discharge emissions to air from the manufacture of hot mix asphalt paving mixes and associated activities*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
18. Minimisation of dust emissions from aggregate and crusher dust through treatment and shielding	Inspection and observation when inspecting officer is in the vicinity of the site on other business. No dust complaints received	Yes
19. Cleaning of yard	Inspection and observation when inspecting officer is in the vicinity of the site on other business. No dust complaints received	Yes
20. Duration of smoke discharges	Inspection and observation when inspecting officer is in the vicinity of the site on other business. No complaints received regarding visible emission/smoke	Yes
21. Maintenance of equipment important to controlling emissions	Information discussed at inspection and observation when inspecting officer is in the vicinity of the site on other business	Yes
22. Inspection of water scrubber and settling pond	Discussed at inspection	Yes
23. Maintenance of a log	Discussed at inspection	Yes
24. Availability of log to Chief Executive of the Council	Available on request	Yes
25. Maximum temperature in hotmix drum	Inspection and liaison with consent holder	Yes
26. Provides opportunity for review of conditions	No further opportunities for review	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**
Overall assessment of administrative performance in respect of this consent		**High**

During the year, the Downer EDI Works Ltd demonstrated a high level of environmental performance and administration performance and compliance with their resource consent, as defined in Section 1.1.5. After several years of delayed stack emission monitoring, Downer was able to get this aspect of the monitoring programme back on schedule.

2.3.4 Recommendations from the 2013-2014 Annual Report

In the 2013-2014 Annual Report, it was recommended:

1. THAT monitoring of consented activities at the Downer EDI Works Ltd site in the 2014-2015 year continues at the same level as in 2013-2014.

These recommendations were implemented.

2.3.5 Alterations to monitoring programmes for 2015-2016

In designing and implementing the monitoring programmes for air discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA the obligations of the RMA in terms

of monitoring emissions and their effects, and subsequently reporting to the regional community. The Council also takes into account the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere.

It is proposed that for 2015-2016 the programme remains unchanged.

2.4 Recommendation

1. THAT monitoring of consented activities at the Downer EDI Works Ltd site in the 2015-2016 year continues at the same level as in 2014-2015.

3. Farmlands Co-operative Society Ltd

3.1 Introduction

3.1.1 Process description

The activity undertaken by Farmlands Co-operative Society Ltd (Farmlands) involves the reception of bulk loads of various grain (generally unprocessed), and molasses. The activities carried out on site include raw materials storage, grinding, blending, palletising, bagging, storage in bulk and reloading onto trucks (whether in bulk or bagged for).Materials are moved around the site from a gravity discharge hammer mill by the use of a screw conveyer and bucket elevator. Both systems are totally enclosed. This process results in less dust generation than the previous pneumatic conveyer.

Releases into the atmosphere are controlled by the treatment of airflows through either cyclones (which separate dust from air by inertia) or by baghouse (giant vacuum cleaners passing airflows through socks or bags and retaining particles on the fabrics). Both of these represent standard modern abatement technology.

Potential discharges also arise from discharge of raw materials from bulk trucks into tipping pits, discharge of final product into dry tankers, spillage during storage, dust generation during processing, bagging and any penetration of pneumatic ducting by abrasive material.

The 'feedmill' was found to have ceased operating at the compliance monitoring inspection in April 2011, when the inspecting officer was also informed that a new mill may be built at the site at some point in the future. Monitoring of the site continued through to the 2014-2015 monitoring period as the Council had not received notification regarding future operations at the site, and the consent remained in effect.

The site was decommissioned late in 2014 and is no longer operated as a 'feedmill'.

3.1.2 Air discharge permit

Farmlands holds air discharge permit 4051 to cover the milling and blending of grain and animal meal and associated activities. This permit was originally issued to Poultrymens Co-operative Ltd by Council on 17 June 1992 as a resource consent under Section 87(e) of the RMA. This consent was due to expire on 1 June 2002. The consent was transferred to PCL Industries Ltd on 23 July 1999. The consent holder applied for a renewal of the consent, and this was issued on 12 April 2002 subject to several additional conditions. The renewed consent was transferred to PCL Feeds Ltd on 21 January 2010, to Viterra (NZ) Ltd on 13 August 2010, and then to Farmlands on 10 December 2013. The consent was surrendered on 25 February 2015.

Special conditions 1, 2, 3, and 8 focus on minimising or eliminating the potential for the emission of dust by requiring that the processes are well managed, are not altered without notification to the Council, and consideration is given to how the generation of dust can be prevented.

Special conditions 4, 5 and 6 place numerical limits on the concentration of dust that may be emitted from on site point sources, and that may be present off-site in either the ambient suspended or deposited form.

Special condition 7 requires that the consent holder logs incidents having actual or potential effects off-site, with the intention that these can help target any control processes that may needed to be improved.

Special condition 9 allows the opportunity to review the conditions attached to the consent in June 2008 and/or June 2014.

Figure 4 Farmlands Co-operative Society Ltd site and deposition gauge locations

3.2 Results

3.2.1 Inspections

The site is inspected four times per year in relation to water discharge matters, with three of the routine compliance monitoring inspections per year scheduled to include a focus on air discharge matters. Any air related matters noted at the additional water focused inspection are also reported here.

14 August 2014

The site was unmanned at the time of the inspection. There was no activity from the feed mill. No dust or odours were emanating from the site. The site was found to be in a tidy condition.

20 November 2014

The site was unmanned at the time of the inspection; however there were vehicles parked onsite. No dust or odours were detected. The site was found to be in a tidy condition.

11 February 2015
The site was unmanned at the time of the inspection; however there were vehicles parked onsite. There was no odour or dust discharging beyond the boundary. The site was found to be in a tidy condition.

3.2.2 Results of receiving environment monitoring

3.2.2.1 Deposition gauging

Deposition gauges were deployed on two occasions during the monitoring period. The first deployment began in January 2015 and lasted 22 days. The second deployment began in February 2015 and lasted 21 days. See section 1.3.4 for an overview of the purpose and methodology of deposition gauge monitoring.

Gauges were placed around the site at the locations shown in Figure 4. The results are given in Table 5, while the prevailing wind directions during the surveys are shown in Appendix II.

During the 2014-2015 year, the samples collected in the vicinity of Farmlands showed that the particulate deposition rate complied with the consent limit on both monitoring occasions.

Table 5 Deposition gauge results from around the Farmlands site 2014-2015

Site ID	Dust deposition rate (g/m²/day)	
	Run1 from 13/01/2015 to 04/02/2015	Run 2 from 12/02/2015 to 05/03/2015
AIR009301	0.04	0.11
AIR009302	0.09	0.07
Guideline value:	0.13g/m²/day	

3.2.3 Investigations, interventions, and incidents

In the 2014-2015 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Farmland's conditions in their air discharge consent or provisions in the Regional Air Quality Plan.

3.3 Discussion

3.3.1 Discussion of site performance

The findings from the air monitoring programme found that the 'feedmill' plant at the Farmlands site has remained non-operational during the year under review. There were no dust or odour issues identified during the inspections.

3.3.2 Environmental effects of exercise of consents

Dust deposition gauging was conducted for the 49th and 50th time during the 2014-2015 monitoring year, at two locations in the vicinity of the 'feedmill' site.

The results from the dust deposition gaugings indicated that during the year under review the rate of dust deposition in the vicinity of the 'feedmill' site remained below Farmland's consent limit (Figure 5).

See section 1.3.4 for more information on the environmental effects of atmospheric particulate matter.

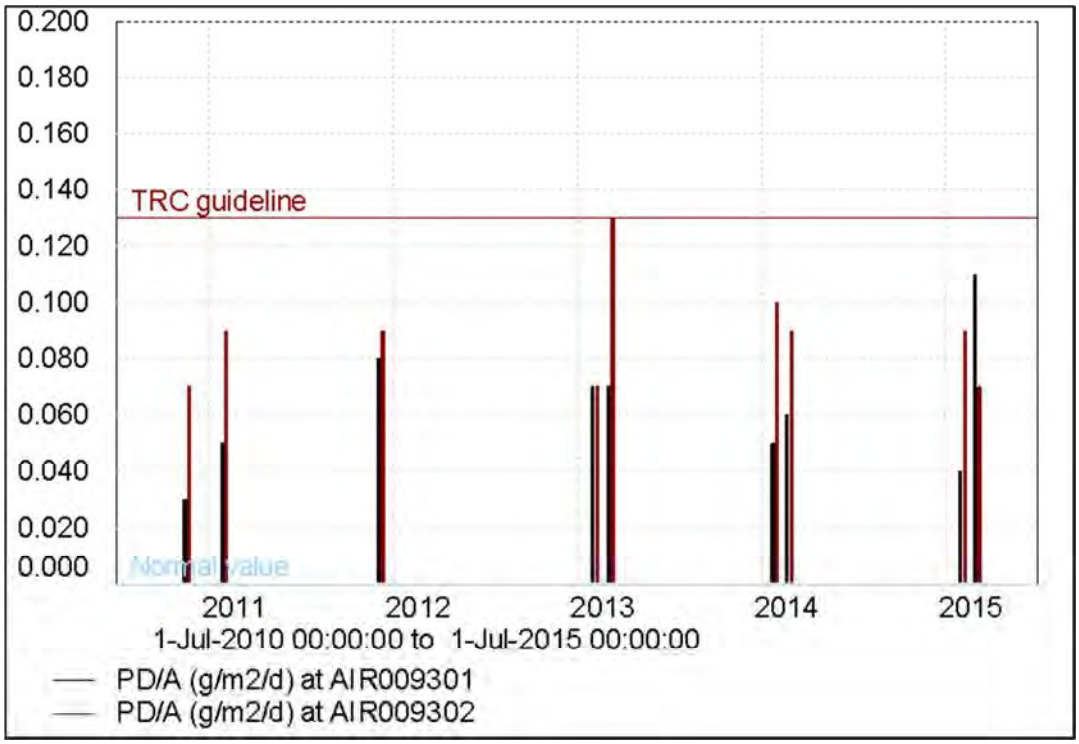

Figure 5 Deposition gauge results for the Farmlands monitoring sites from July 2010 to July 2015

3.3.3 Evaluation of performance

A tabular summary of Farmland's compliance record for the year under review is set out in Table 6.

Table 6 Summary of performance for Consent 4051-5, Farmlands Co-operative Society Ltd discharge of emissions into the air

Purpose: ***To discharge emissions to air from the milling and blending of grain and animal meals and associated activities***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Adoption of best practicable option to minimise adverse effects on the environment	Inspection and liaison with consent holder	Yes
2. Consultation prior to alterations to plant or processes	Liaison during inspection. The Council kept informed about upgrades	Yes
3. Preparation of a management plan	Latest plan received and approved by the Council in 2002. Plan review requested 13 May 2010 due to contribution of air related matters to breach of stormwater consent	No, however mill operation ceased April 2011 and has since been decommissioned
4. Discharge dust concentration	Point source suspended particulate measurements during inspection	Yes

Purpose: *To discharge emissions to air from the milling and blending of grain and animal meals and associated activities*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
5. Dust deposition rate beyond boundary	Deposition gauging	Yes
6. Objectionable dust or odour not permitted beyond boundary	Odour survey at inspection	Yes
7. Records of emission incidents	Inspections to view records	Yes
8. Clearance of dust accumulations	Inspection. Housekeeping generally found to be good during the year	Yes
9. Optional review provision re environmental effects	No further opportunities for review	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**
Overall assessment of administrative performance in respect of this consent		**High**

During the year, Farmlands Co-operative Society Ltd demonstrated a high level of both environmental and administrative performance and compliance with their resource consent, as defined in Section 1.1.5. Although the request on 13 May 2010 for the operation and management plan to be updated and forwarded to the Council for approval has not been responded to, the 'feedmill' was found to have ceased operating in April 2011 and has since been decommissioned.

3.3.4 Recommendations from the 2013-2014 Annual Report

In the 2013-2014 Annual Report, it was recommended:

1. THAT monitoring of consented activities at Farmlands Co-operative Society Ltd's feedmill in the 2014-2015 year continues at the same level as in 2013-2014.

These recommendations were implemented.

3.3.5 Alterations to monitoring programmes for 2015-2016

In designing and implementing the monitoring programmes for air discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA the obligations of the RMA in terms of monitoring emissions and their effects, and subsequently reporting to the regional community. The Council also takes into account the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere.

It is proposed that for 2015-2016 the monitoring programme is discontinued, as the resource consent has been surrendered.

3.4 Recommendation

1. THAT monitoring of activities at Farmlands Co-operative Society Ltd's 'feedmill' is discontinued, as the mill has been decommissioned, and the resource consent surrendered.

4. Fitzroy Engineering Group Ltd

4.1 Introduction

4.1.1 Process description

Fitzroy Engineering Group Ltd (Fitzroy Engineering) carries out abrasive blasting to clean and prepare surfaces for painting. The process involves blasting "garnet", an abrasive sand-like substance, on to the surface of the object in question. Material from the blasting process becomes airborne due to the release of high pressure air used to accelerate the abrasive media to the required cleaning velocities. Spray painting is also carried out on the site.

Emissions from abrasive blasting operations have the potential to cause nuisance and possible health risks, especially when conducted within populated areas. The Fitzroy Engineering permanent site is within an industrial area. The environmental effects of dusts can include loss of visibility, loss of the amenity and aesthetic values of a `clear sky', irritation to breathing, and soiling of surfaces. In the case of dust emissions from Fitzroy Engineering's blasting operation, there is also the potential for the dust to contain metals such as lead, zinc and chromium from the surface of the items blasted. The potential for lead to be contained in the dust has been significantly reduced as Fitzroy Engineering now undertakes lead testing as a matter of course. If a positive result is obtained, special procedures apply to contain and dispose of the debris in accordance with Department of Labour Guidelines. Fitzroy Engineering has also informed Council that the blasting of chromium items is not undertaken.

Fitzroy Engineering has carried out abrasive blasting in the permanent facilities and in the yard at their leased site on Rifle Range Road, New Plymouth since 1990, and also undertakes abrasive blasting work on fixed items at various locations throughout the Taranaki region (mobile blasting).

At the Fitzroy Engineering site there is a permanent facility called the "grit room". The grit room has a wet scrubber unit on its discharge outlet to minimise emissions to the atmosphere. The wet scrubber was commissioned in July 1995. The canvas curtains at the north-east end of the building were replaced by solid doors during the 1998-1999 monitoring period. These doors more effectively contained dust emissions from the operation. The grit room is now used very infrequently, and was not used at all during the year under review.

Fitzroy Engineering has another facility on its premises to provide for unusually sized and/or shaped objects. This facility is called the "garnet shed". A scrubber tower and spray system was installed to mitigate emissions from the garnet shed in June 2000, which was expected to provide a decrease in particulate levels on and off site. An upgrade was carried out in January 2003 when a stack extension, incorporating a third ring of water spray nozzles, was added. Further upgrades were undertaken during the 2005-2006 year when it was found that the discharge from the stack did not comply with condition 7, limiting the particulate emissions to less than 125 mg/m^3. The upgrade consisted of a reduction in nozzle size to achieve a more effective droplet size, and changing the spray configuration from a circumferential pattern to a centrally located arrangement. These upgrades were intended to generate a more effective water mist within the tower. Spent garnet and waste removed from the bottom of the

scrubber towers was stored in bags in the yard, which were then disposed of by a contracted company on an as required basis.

In 2015, a new 'Blastquip' fabric filter air treatment system was installed at the garnet shed (Photograph 3). This new system is considered to be the best practicable option for air treatment and a significant improvement from the wet scrubber system. Essentially, air is extracted from the roof at the northern end of the shed and directed through a filter system. The treated air is then returned to the shed at the southern end of the roof. The system is largely 'closed loop'; however, some of the treated air is discharged to the atmosphere with ambient air introduced into the shed, in order to control the shed temperature.

Photo 3 Newly installed Blastquip fabric filter air treatment system at Fitzroy Engineering

The 'Blastquip' system has since been inspected by an external consultant from JCL Air and Environment Ltd in order to assess the feasibility and necessity of emission monitoring. Due to a number of factors, the consultant determined that emission monitoring was not feasible. Furthermore, the system's specifications provided by Blastquip indicated that the particulate concentration of treated air would be around 0.1 mg/m^3; well below the guideline level of 125 mg/m^3. Instead, the consultant's recommendation was to require compliance of the consent holder through the implementation of a management plan for the 'Blastquip' air treatment system.

Yard blasting is carried out when items can not be blasted within the grit room or garnet shed. The yard areas on site are predominantly gravel, and therefore any sandblasting material spilt or deposited on site from aerial emissions is difficult to manage, and may be resuspended by wind or vehicle movements. A substantial area

of the yard near the offices at the Rifle Range Road end of the site was sealed during the 2002-2003 monitoring period.

The containment of emissions from yard and mobile blasting is limited to the use of screens, tarpaulins and other similar methods of airborne particulate suppression due to the temporary nature of the work being carried out.

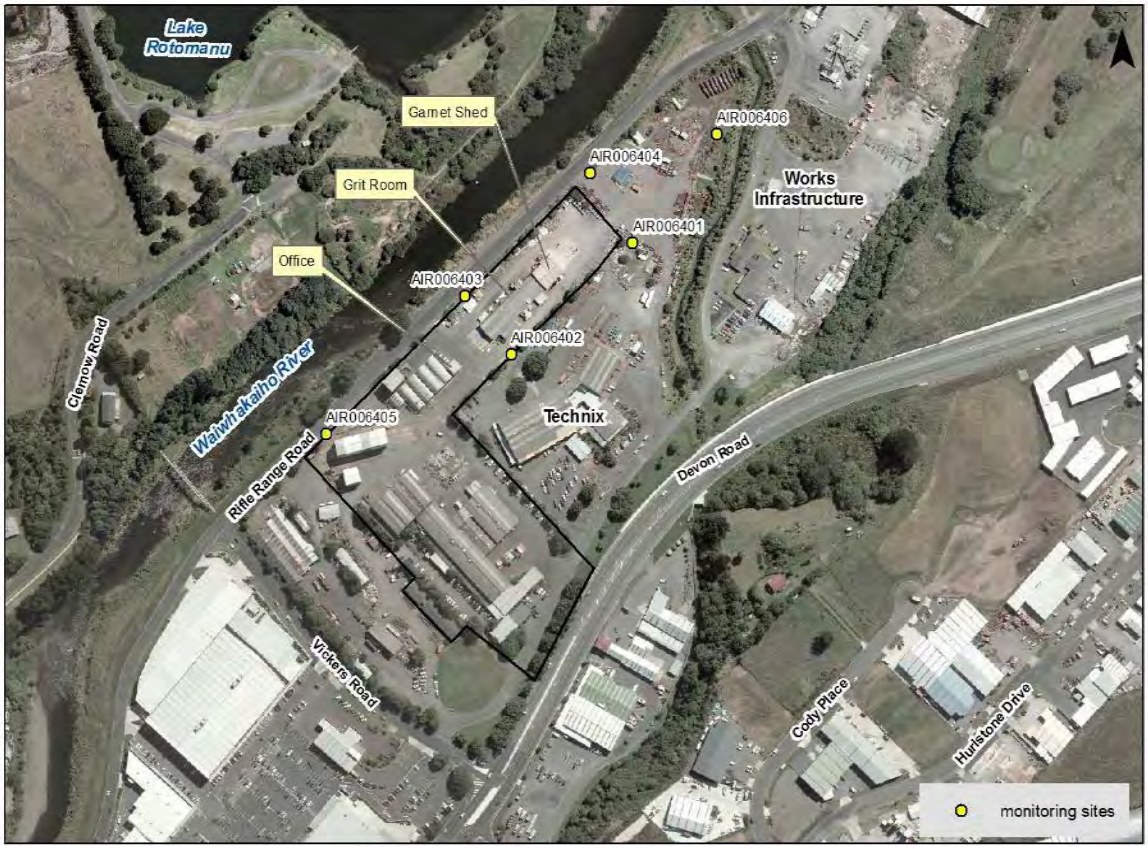

Figure 6 Fitzroy Engineering Group Ltd site and deposition gauge locations

4.1.2 Air discharge pemit

Fitzroy Engineering Group Ltd holds air discharge permit 4025 to cover discharge of emissions into the air from abrasive blasting operations at the factory site and from field abrasive blasting operations at various locations. The Council issued this permit on 6 May 1992 as a resource consent under Section 87(e) of the RMA. The variation to include emissions to air from mobile blasting at various locations throughout the Taranaki region was made on 24 March 1993. The consent expired on 1 June 2002.

Fitzroy Engineering applied for a renewal of consent on 19 October 2001. Therefore, they could continue to operate under the terms and conditions of this consent until a decision on the renewal of consent was made. Negotiations between Fitzroy Engineering and one of the potentially affected parties, relating to the proposed special conditions, took place over an extended period. The final non-notified approval form was received on 17 November 2006 and the renewed consent was issued on 21 November 2006. The consent is due to expire on 1 June 2020.

The conditions on the consent are intended to reduce the quantity, control the quality, and minimise the potential for adverse effects from the emissions from the blasting activities and associated processes. This was achieved by:

- Requiring the consent holder adopt the best practicable option, as defined in the RMA, to minimise emissions (special condition 1).
- Ensuring that consideration is given to weather conditions, and limiting the locations at which blasting may be undertaken (special conditions 5, 10, and 23). In general the basting must be undertaken within the permanent facilities, where the discharge must be contained and treated to meet specific discharge limits (special conditions 11, 12 and 22).
- Ensuring that adequate screening is in place for yard and mobile blasting (special conditions 25 and 26).
- Controlling the blasting media used (special conditions 3 and 7).
- Requiring that certain notifications are made and/or permissions sought prior to undertaking blasting when certain infrequent or "higher risk" blasting activities are undertaken (special conditions 20, 21, 24, 27, and 29). In the case of the Council, this allows for additional requirements to be placed on the consent holder in certain circumstances, and ensures the opportunity for Council to undertake monitoring specific to those activities.
- Addressing housekeeping issues (special condition 6).
- Limiting the effect the discharge may have on ambient air quality, particulate deposition rates, and surface water quality (special conditions 4, 8, 28, and 30).
- Requiring that the consent holder ensures that all operators understand and comply with the conditions of the consent (special condition 9).
- Requiring that the consent holder prepares a management plan to ensure that they have systems in place so that staff manage their work in a way that will comply with consent conditions (special condition 15).
- Requiring that the consent holder adheres to the procedures set out in the management plan, operates in a way that is consistent with the information provided in support of the consent application, and makes any information recorded in relation to the management plan available to the Council (special conditions 2, 17 and 16).
- Provides for sealing of areas of the site if the management practices proposed in the plan are not successful in controlling windblown dust from the site (special conditions 18 and 19).
- Conditions were added placing requirements on the consent holder in relation to monitoring and reporting on the particulates in the emissions from the discharge stack (special conditions 13 and 14) and providing the opportunity for an annual meeting to discuss any concerns (special condition 22) at the request of a potentially affected party.

4.2 Results

4.2.1 Liaison meeting

Special condition 22 of Fitzroy Engineering's consent provides for an annual liaison meeting to be held between Fitzroy Engineering and their landlord, Technix, with the Council also in attendance.

It had been decided at a previous liaison meeting that a meeting held during August each year would allow for the previous year's monitoring information to be collated and circulated to Fitzroy Engineering and Technix prior to the meeting being held. It was agreed by all present that this was a good idea as it would clarify how things were going and any areas that required attention early in the current monitoring year.

Despite a significant amount of electronic correspondence and a number of scheduled meetings that were subsequently postponed as a result of the unavailability of Technix, the liaison meeting was not held.

4.2.2 Inspections

This site was scheduled for four routine compliance monitoring inspections during the 2014-2015 year. Inspections are undertaken in relation to monitoring of the stormwater consent for the site, which up until 21 February 2014 was held by Technix Group Ltd. For completeness, the findings of the inspections that relate to Fitzroy Engineering's stormwater discharge consent were previously reported here, but will now be reported under Fitzroy Engineering's section of the Lower Waiwhakaiho catchment monitoring report.

There is also provision for a further inspection of mobile blasting operations to be undertaken by the Council. The Council was not notified of any mobile blasting undertaken by Fitzroy Engineering.

28 August 2014

Conditions were fine with a light north westerly wind. Blasting was occurring at the time of inspection but no painting took place. Dust monitoring was undertaken at the boundary down wind of the blast shed. The maximum reading was 0.273 mg/m^3 with an average reading of 0.015 mg/m^3. New boundary fences had been built following the purchase of the land from Technix. No dust or odour was found to be discharging beyond the boundary of the property. Overall the site was found to be in a tidy condition.

11 December 2014

Blasting and painting were occurring at the time of inspection. Prevailing winds were light north westerlies at this time. Dust monitoring was undertaken beyond the boundary of the property (downwind of the blast shed). The average reading was 0.011 mg/m^3, which was compliant with resource consent conditions. There was no odour found beyond the boundary of the property. Overall the site was found to be in a tidy condition.

13 March 2015

Conditions were fine with a light westerly wind. Blasting was occurring at the time of inspection. Dust monitoring was undertaken at the boundary of the property. The

maximum reading was 0.093 mg/m^3 with an average reading of 0.012 mg/m^3. There was no odour discharging beyond the boundary of the property. Overall the site was found to be in a tidy condition.

26 June 2015
Conditions were showery with a moderate south westerly wind. Blasting was occurring at the time of inspection but no painting took place. The new extraction unit was in the process of being installed. There was a small volume of blast material escaping from the rear doors of the blast shed. There was no discharge beyond the boundary of the property. No odour was found beyond the boundary of the property. Overall the site was found to be in a tidy condition.

4.2.2.1 Mobile blast inspections

No notifications were received by the Council regarding mobile blasting being undertaken by Fitzroy Engineering during the year under review.

4.2.3 Provision of company data

4.2.3.1 Particulate emissions monitoring

Special conditions 12, 13 and 14 relate to the standard to which the emissions from the blast booth must be treated, and outline the frequency and conditions under which emissions testing must be performed to confirm compliance. The timing of the testing and reporting of the results to the Council is also specified.

Testing must be undertaken as per a specified Australian Standard, by a party independent from the consent holder before 1 June each year, at a time when no less than three blasting nozzles are in use, and the results are to be reported to the Council within 20 days of the testing.

Stack testing was not undertaken in the 2014-2015 monitoring year.

In May 2015, Fitzroy Engineering approached the Council to propose the annual stack test be carried out on the new 'Blastquip' system, which was being installed to replace the old wet scrubber system. The Council agreed to this; however following recommendations from an external consultant, it was decided that stack testing would cease to continue due to issues around feasibility.

4.2.4 Results of receiving environment monitoring

4.2.4.1 Deposition gauging

Deposition gauges were deployed on two occasions during the monitoring period. The first deployment began in January 2015 and lasted 22 days. The second deployment began in February 2015 and lasted 21 days. See section 1.3.4 for an overview of the purpose and methodology of deposition gauge monitoring.

A site map marking the location of the gauges around the Fitzroy Engineering site are shown in Figure 6. The results for the year under review are given in Table 7, with the prevailing wind directions during the surveys given in Appendix II.

Table 7 Deposition gauge results from around the Fitzroy Engineering Group Ltd site

Site ID	Dust deposition rate (g/m²/day)	
	Run1 from 13/01/2015 to 04/02/2015	Run 2 from 12/02/2015 to 05/03/2015
AIR006401	0.11	**0.20**
AIR006402	0.07	0.12
AIR006403	0.08	0.06
AIR006404	0.11	0.09
AIR006405	0.08	**0.19**
AIR006406	0.08	0.12
Guideline value:	0.13g/m²/day	

Key: results in bold exceed recommended guideline value

The monitoring showed that the deposited particulate was in excess of Fitzroy Engineering's consent limit in two of the twelve gauges collected during the year under review. Specifically, the samples collected from gauging locations AIR006401 and AIR006405 exceeded the limit on the second monitoring occasion.

January 2015 survey

All the gauges returned results below the consent limit for the January survey.

February 2015 survey

The February survey found that the particulate deposition rate limit was exceeded at two sites. The elevated particulate deposition rates were found at the western-most monitoring site alongside Rifle Range Road (AIR006405) and beyond the eastern site boundary, near the garnet shed (AIR006401).

The material collected in AIR06405 and AIR006401 ranged from dusty grey to brown. The appearance of the particulate matter collected had an appearance consistent with resuspended yard dust from the surrounding area rather than blasting media.

No dust complaints were received regarding dust issues originating from the Fitzroy Engineering site.

The available evidence indicates that the elevated levels of dust deposition found in the gauges around Fitzroy Engineering were not as a result of the activities occurring on this site.

4.2.5 Investigations, interventions, and incidents

In the 2014-2015 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Fitzroy Engineering's conditions in their air discharge consent or provisions in the Regional Air Quality Plan.

4.3 Discussion

4.3.1 Discussion of site performance

Previous unauthorised incidents have mainly been as a result of inadequate maintenance and a lack of operator training or awareness. During the year under review, blasting was occurring at the time of all four inspections and there were no reported issues associated with the condition of the blast booth or ducting. There were also no visible emissions noted.

In previous years, observations made during inspections have indicated that more frequent use of a water truck would be beneficial during periods of dry weather to minimise that amount of resuspended dust from the metalled yard. A sprinkler system was installed in the 2011-2012 year, and during the year under review no issues were noted at inspection relating to the resuspension of yard dust.

There was only one inspection where it was noted that a small amount of blast debris had escaped through the rear doors of the garnet shed. This indicates that the improved focus on this aspect of Fitzroy Engineering's activities has generally continued during the year under review.

During the year under review there were no complaints received by the Council relating to dust emissions or off site odours from the site.

4.3.2 Environmental effects of exercise of consent

Abrasive blasting operations have the potential to create adverse effects on health and the environment as well as creating nuisance. The impact that sandblasting has is determined by the type of abrasive used (for example is it sand that is dust free with low silica content), the effectiveness of the blasting enclosure and treatment system, the procedures followed by staff when blasting outside the blasting room (for example temporary screening), and the items blasted (e.g. with coatings such as lead-based paints or larger rusted areas resulting in generation of extra detritus). See section 1.3.4 for more information on the environmental effects of atmospheric particulate matter.

Deposition gauging was conducted for the 39th and 40th time during the 2014-2015 monitoring year around the Fitzroy Engineering site.

The results from the gaugings found that two of the twelve samples collected during the 2014-2015 period were in excess of the consent limit (Figure 7). However, the results could not be directly attributed to Fitzroy Engineering's site; rather the high particulate deposition was more likely due to yard dust re-suspension from the wider area. Predominant winds during the gauging period were split between easterlies and west to south westerlies (Appendix II). Particularly due to these variable winds, the neighbouring properties cannot be discounted as potential contributors to the high deposition rate.

The site and immediate surrounding landscape has been significantly reshaped by human activity, and has no features of particular aesthetic, cultural, or other value. The main highway, golf course, and Mangaone Stream/Waiwhakaiho River are unlikely to be affected by activities on the site.

There is the potential for the staff and property of industries in the surrounding area to be affected by dust generated by Fitzroy Engineering and during recent years a significant amount of commercial development has occurred in the area. This increases the potential for complaints, as the number of people working in this area, and the number of public visiting the area has increased.

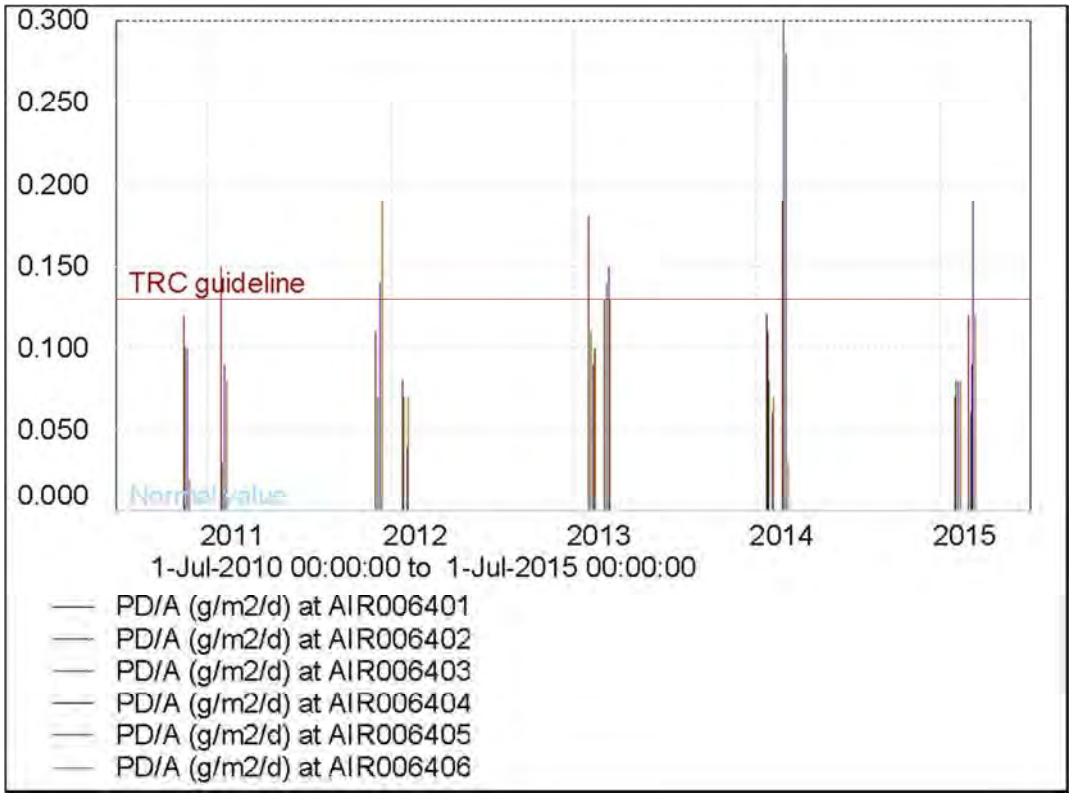

Figure 7 Deposition gauge results for the Fitzroy Engineering monitoring sites from July 2010 to July 2015

4.3.3 Evaluation of performance

A tabular summary of Fitzroy Engineering's compliance record for the year under review is set out in Table 8.

Table 8 Summary of performance for Consent 4025-3, Fitzroy Engineering Group Ltd discharge of emissions into the air

To: ***To discharge emissions to air from abrasive blasting operations and associated activities at the factory site and from yard blasting operations and mobile abrasive blasting at various locations throughout the Taranaki region***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
All operations		
1. Adopt best practicable option to avoid, remedy, or mitigate effects	Inspection, liaison with Company and observation when inspecting officer is in the vicinity of the site on other business, along with deposition gauge monitoring	Yes
2. Exercise consent in manner consistent with consent application	Inspection and liaison with Company	Yes

To: *To discharge emissions to air from abrasive blasting operations and associated activities at the factory site and from yard blasting operations and mobile abrasive blasting at various locations throughout the Taranaki region*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
3. Sand-free silica limit of 5 % and limit of 2% finer than 0.15 mm diameter	Inspection and liaison with Company. Dry sand not used	Yes
4. No offensive, objectionable or toxic odour or dust beyond boundary. Suspended particulate <3 mg/m^3	Inspection and observation when inspecting officer is in the vicinity of the site on other business	Yes
5. Take account of wind conditions to minimise off-site emissions	Inspection and observation when inspecting officer is in the vicinity of the site on other business	Yes
6. Clearance of blasting material	Inspection	Yes
7. Avoidance of dry sand blasting	Inspection and liaison with Company. Dry sand not used	Yes
8. Particulate deposition rate limit of 0.13 mg/m^2/day	Deposition gauging	Two of twelve gauges above limit, but may be attributable to neighbours activities
9. Compliance of operators with conditions	Inspection	Yes
Operations within permanent facilities		
10. Enclosed blasting at permanent site	Inspection and observation when inspecting officer is in the vicinity of the site on other business	Yes
11. All emissions contained and treated as far as practicable	Inspection and observation when inspecting officer is in the vicinity of the site on other business	Yes
12. Particulate limit on emissions from enclosure of 125 mg/m^3	Visual assessment at inspection. Stack testing not carried out during 2014-2015 monitoring period (see Section 4.2.3)	N/A
13. Annual emissions test requirements	Stack testing not carried out during 2014-2015 monitoring period (see Section 4.2.3)	N/A
14. Standard to which emissions testing to be performed	Stack testing not carried out during 2014-2015 monitoring period (see Section 4.2.3)	N/A
15. Provision and maintenance of Management Plan	Plan on file	Yes
16. Consent to be exercised in line with management plan	Inspection and liaison with Company	Yes
17. Availability of information collected for condition 15	Inspection and liaison with Company, and accessing information recorded by consent holder	Yes
18. If control of windblown dust not effective, condition 19 to apply	Inspection and observation when inspecting officer is in the vicinity of the site on other business, deposition gauge results	Yes
19. Yard and roadways to be sealed and maintained subject to condition 18	N/A	N/A

To: *To discharge emissions to air from abrasive blasting operations and associated activities at the factory site and from yard blasting operations and mobile abrasive blasting at various locations throughout the Taranaki region*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
20. Notification prior to using more than 3 blasting nozzles	Check of the Council records, inspection and liaison with Company. No more than 3 nozzles used	N/A
21. Notification prior to using grit room	Receipt of notifications, inspection and liaison with Company. Grit room not used	N/A
22. Emissions limits for lead, chromium and zinc	Not measured. Discussions with consent holder about materials blasted	Yes
22. Meeting to be held between consent holder, Landlord and the Council unless agreed not to	Target for the timing of meeting is approximately August of each year. Not held due to unavailability of Landlord	N/A
Yard operations		
23. Infrequent yard blasting	Inspection and observation when inspecting officer is in the vicinity of the site on other business	Yes
24. Notification seven days to 48 hours before yard blasting	Check of the Council records. Inspection and observation when inspecting officer is in the vicinity of the site on other business	N/A
25. Screening at yard blasting to contain dust emissions	Inspection and observation when inspecting officer is in the vicinity of the site on other business	N/A
Mobile operations		
26. Screening at mobile blasting to contain emissions	Inspection and observation when inspecting officers travelling in region. No mobile blasting found	N/A
27. Notification seven days to 48 hours before blasting near watercourses	Check of the Council records. No notifications received. No complaints received	N/A
28. Prohibited effects in surface watercourses	No complaints received	N/A
29. Notification if blasting close to dwelling or property boundary	No notifications received. No complaints received	N/A
30. Suspended particulate limit of 3 mg/m^3 and deposited particulate of 0.13 mg/m^2/day beyond boundary	Not measured during year under review	N/A
Review		
31. General review condition	No further review dates	N/A
32. Option for review if emissions test standard amended	Standard not amended	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**
Overall assessment of administrative performance in respect of this consent		**High**

During the year, Fitzroy Engineering Group Ltd demonstrated both a high level of environmental and administrative performance as defined in Section 1.1.5. Although

there were exceedance of the particulate deposition rate recorded, these were considered to be a result of yard dust resuspension from the surrounding area.

4.3.4 Recommendations from the 2013-2014 Annual Report

In the 2013-2014 Annual Report, it was recommended:

1. THAT monitoring of consented activities at the Fitzroy Engineering Group Ltd site in the 2014-2015 year continues at the same level as in 2013-2014.

These recommendations were implemented.

4.3.5 Alterations to monitoring programmes for 2015-2016

In designing and implementing the monitoring programmes for air discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA the obligations of the RMA in terms of monitoring emissions and their effects, and subsequently reporting to the regional community. The Council also takes into account the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere.

It is proposed that for 2014-2015 the annual emissions testing is discontinued. Instead, a management plan should be submitted to the Council that outlines the maintenance schedule implemented for the new 'Blastquip' air treatment system.

4.4 Recommendation

1. THAT with the exception of recommendations 1a and 1b, monitoring of consented activities at the Fitzroy Engineering Group Ltd site in the 2015-2016 year continues at the same level as in 2014-2015.
    a. THAT annual emissions testing is discontinued at the Fitzroy Engineering Group Ltd site; effective from the 2015-2016 monitoring year.
    b. THAT a management plan is submitted to the Council which outlines the maintenance schedule to be implemented for the upgraded garnet shed air treatment system in the 2015-2016 year.

5. Katere Surface Coatings Ltd

5.1 Introduction

5.1.1 Process description

Katere Surface Coatings Ltd (Katere Surface Coatings) operates an abrasive blasting and surface coating business from a mobile unit and at a permanent site on Katere Road. A map showing the location of the site is provided in Figure 8.

The emissions from abrasive blasting operations may include sand, grit, dust, silicates, rust, detritus, and various metal compounds including zinc, iron, lead and arsenic. Emissions from surface coating processes may include objectionable odours and spray drift.

Blasting takes place within an enclosed building with emissions passed through a scrubber system before being discharged to the atmosphere. Some items are too large to process in the building and are, therefore, blasted outside. All outside work requires effective screening measures such as tarpaulins and similar covers to contain emissions within the site boundary. Screening also applies to operations carried out by the mobile unit. Weather conditions must be considered before any outside work is carried out.

2014-2015 was the 24th year in which the Council has monitored air emissions from the Katere Surface Coatings site (formerly Vinsen G M Ltd) and their effects within the region.

Figure 8 Location of Katere Surface Coatings Ltd and their deposition gauge sites

5.1.2 Air discharge permits

Katere Surface Coatings holds air discharge permit 4475 to cover emissions to air from abrasive blasting and surface coating activities from a mobile unit at various locations in the Taranaki region and at a permanent site in New Plymouth.

This permit was originally issued to Vinsen G M Ltd by the Council on 9 February 1994 as a resource consent under Section 87(e) of the RMA to cover mobile blasting at various locations within the Taranaki region. A variation of the consent to include the permanent site on Katere Road was issued on 21 March 1996. The consent was transferred to Katere Surface Coatings on 20 January 2003, and was renewed on 18 February 2009. The consent is due to expire on 1 June 2020.

The special conditions attached to the consent are outlined below.

As the consent is for discharges from abrasive blasting at the permanent site (within a blast shed and in the yard) and mobile blasting throughout the Taranaki region, including in the Coastal Marine Area of Port Taranaki, Special condition 1 now clearly specifies which special conditions within the consent apply to which type of activity.

The remaining conditions on the consent are intended to reduce the quantity, control the quality, and minimise the potential for adverse effects from the emissions from the blasting activities and associated processes. This is achieved by:

- Requiring that the consent holder adopts the best practicable option to prevent or minimise effects of all of their operations on the environment (special condition 2).
- Ensuring that consideration is given to weather conditions (special condition 4) and limiting the locations at which blasting may be undertaken. In general the blasting must be undertaken within the permanent facilities (special condition 9), where the discharge must be contained and treated to meet specific discharge limits (special condition 10), although there is provision for occasional yard blasting (special condition 12).
- Ensuring that adequate screening is in place for all blasting activities (special conditions 10, 14, and 15).
- Controlling the blasting media used (special conditions 6 and 7).
- Requiring that certain notifications are made prior to undertaking blasting when certain "higher risk" blasting activities are undertaken (special conditions 13, 16, 17 and 18). In the case of the Council, the notification requirements are now more specific to ensure that sufficient notice is given so that Council staff have the opportunity to undertake monitoring related to those activities and ensure that adequate controls are in place.
- Addressing housekeeping issues (special condition 5).
- Requiring that the consent holder ensures that all operators understand and comply with the conditions of the consent (special condition 8).
- New conditions limiting general off site effects related to dust and odour from all activities (special condition 3), with numerical limits on suspended and deposited particulate concentrations for mobile blasting activities (special condition 19) and

deposited particulate in the vicinity of the permanent site on Katere Road (special condition 11).

Special conditions 20 and 21 contain standard provisions for the consent to lapse if not exercised and for review of conditions.

5.2 Results

5.2.1 Inspections

5.2.1.1 Site inspections

28 August 2014

Conditions were fine with a light north westerly wind. Blasting was occurring at the time of inspection but no painting took place. The average reading from dust monitoring during the inspection was 0.069 mg/m^3, with a maximum reading of 1.73 mg/m^3. This maximum reading occurred when a vehicle drove past causing the re-suspension of dust. The inspecting officer instructed Katere Surface Coatings staff to clean up any used garnet at the end of each day and that an abatement notice would be issued if this protocol was not adopted. The staff notified the inspecting officer that some tanks were scheduled to be blasted outside of the blast shed the following week. The resource consent conditions concerning this practise were discussed.

8 December 2014

Conditions were fine with a light westerly wind. Blasting and painting were occurring at the time of inspection. Blasting was only taking place within the blast shed. The extraction system appeared to be working well. The paint filter was also working well. There was no odour beyond the boundary of the property. The used garnet at the rear of the blast shed had been cleaned up as requested during the previous inspection. There was no dust discharging from the site at the time of inspection; waste oil may have been applied to the yard surface.

10 March 2015

Conditions were fine with a light south westerly wind. Blasting was occurring in the blast shed at the time of the inspection, but no painting took place. There was a small amount of garnet escaping from the shed at the bottom of the rear door. The staff were instructed to clean up the used garnet at the rear of the blast shed. There was no dust or odour discharging beyond the boundary of the property.

8 June 2015

Conditions were showery with a light, swirling wind. No blasting or painting occurring at the time of inspection. There was a large accumulation of blasting material around the blast shed. It was noted that the blast shed was no longer sealed as the bottom had rusted out. Blasting material had also entered the stormwater drain at the rear of the blast shed. Staff onsite stated that the blasting material was only cleaned up on a monthly basis. An abatement notice was issued.

23 June 2015

A follow up inspection was undertaken to ascertain compliance with the abatement notice. It was found that the blast material had been cleaned up around the shed and was no longer in the stormwater drain.

5.2.1.2 Mobile blast inspections

No notifications were received by the Council regarding mobile blasting being undertaken by Katere Surface Coatings during the year under review.

5.2.2 Results of receiving environment monitoring

5.2.2.1 Deposition gauging

Deposition gauges were deployed on two occasions during the monitoring period. The first deployment began in January 2015 and lasted 22 days. The second deployment began in February 2015 and lasted 21 days. See section 1.3.4 for an overview of the purpose and methodology of deposition gauge monitoring.

A site map marking the location of the gauges around the Katere Surface Coatings site is shown in Figure 8, and the results of the 2014-2015 gauging surveys are given in Table 9. The prevailing wind directions during the surveys are shown in Appendix II.

Table 9 Deposition gauge results from around the Katere Surface Coating Ltd site

Site ID	Dust deposition rate (g/m²/day)	
	Run1 from 13/01/2015 to 04/02/2015	Run 2 from 12/02/2015 to 05/03/2015
AIR009303	**0.17**	**0.24**
AIR009304	0.05	**0.20**
Guideline value:	0.13 g/m²/day	

Again, the consent limit was exceeded in three of the four gauges collected during the 2014-2015 year.

January 2015 survey

The material collected at site AIR009303 during the January gauging survey included light brown dust, insects and algae. It should be noted that the organic material, unrelated to Katere Surface Coatings site activity, has contributed to the high particulate deposition rate.

February 2015 survey

The material collected during the February survey at both sites did not contain any notable organic constituents. Instead, the material on both filters was described as being dusty and dark grey; consistent with dust off a metalled yard, resuspended by traffic movements and wind.

5.2.3 Investigations, interventions, and incidents

In the 2014-2015 period, the Council was required to record an incident in association with Katere Surface Coating's conditions in their air discharge consent.

On 8 June 2015, the inspecting officer found the Katere Surface Coatings site to be in contravention with special condition five, of resource consent 4475-2. Special condition five requires that all blast material accumulated on site is tidied at the end of each blasting session and by the end of each working day. At the time of the inspection there was a large accumulation of blast material around the blast shed, some of which had entered a stormwater drain. It was discovered that corrosion of the shed walls had meant that blast material could no longer be effectively contained. Katere Surface

Coatings staff also stated that the blast material was only tidied on a monthly basis, despite having received two warnings from the inspecting officer in relation to the matter in the 2014-2015 year.

A follow up inspection was undertaken on 23 June 2015. The inspection found that the blast material had been cleaned up from around the shed and within the stormwater drain.

5.3 Discussion

5.3.1 Discussion of site performance

For the third consecutive monitoring period, there were no complaints received during the 2014-2015 year in relation to Katere Surface Coating's activities.

Substantial improvements that were made at the site in the 2012-2013 year in relation to the treatment systems for both the blast booth and the paint shed have continued to produce significant reductions in emissions from the site.

Similar to the 2013-2014 period, garnet was observed on the ground in the vicinity of the blast booth on three of the four routine monitoring inspections. Katere Surface Coatings were instructed three times to clean this up. This is a breach of special condition 5 of their consent, which requires that "*As far as is practicable, work areas and surrounding areas shall be cleared of accumulations of blasting material at the end of each blasting session and by the end of each working day*". Katere Surface Coatings received an abatement notice following the final inspection which required the company to clean up the accumulated blast media. A follow up inspection found that this had been done. Accumulation of blast media has the potential to impact on both air and water quality, if it is resuspended by vehicles or the wind during dry periods, or is washed into the stormwater system during rain.

Exceedances of the deposited particulate limit were recorded for both the January and February surveys, including two consecutive exceedances at the same gauging site. The material collected in the latter survey had an appearance particularly consistent with resuspended yard dust.

5.3.2 Environmental effects of exercise of consents

Abrasive blasting operations have the potential to create adverse effects on health and the environment as well as creating nuisance. The impact that sandblasting has is determined by the type of abrasive used (for example is it sand that is dust free with low silica content), the effectiveness of the blasting enclosure and treatment system, the procedures followed by staff when blasting outside the blasting room (for example temporary screening), and the items blasted (for example with coatings such as lead-based paints or larger rusted areas resulting in generation of extra detritus). See section 1.3.4 for more information on the environmental effects of atmospheric particulate matter.

Deposition gauging was not previously programmed to be carried out for this activity, with the main emphasis being on measuring suspended particulates from point source discharges and ambient suspended particulate levels at the site boundary during site

visits. However, with the Council's guideline value of 0.13 g/m^2/day incorporated as a condition of the consent on 19 February 2009, deposition gauging was incorporated into the programme and was conducted around the Katere Surface Coatings permanent site for the 9th and 10th time during the year under review.

The particulate deposition rate was exceeded in three of the four gauges deployed during the year under review (Figure 9). However, there were no complaints received regarding dust impacting beyond the boundary of the property. The exceedance in the first survey can be attributed to organic matter unrelated to the activities of Katere Surface Coatings. The appearance of the deposited material collected during the second survey was consistent with that of dust being generated from the gravelled yard. Predominant winds during this gauging period were split between easterlies and west to south westerlies (Appendix II). Due to these variable winds, neighbouring properties cannot be discounted as potential contributors to the high deposition rate. Nevertheless, consecutive exceedances at site AIR009303, along with consistently high deposition gauge results over the past five years indicate that an improvement in the control of yard dust is required of Katere Surface Coatings (Figure 9).

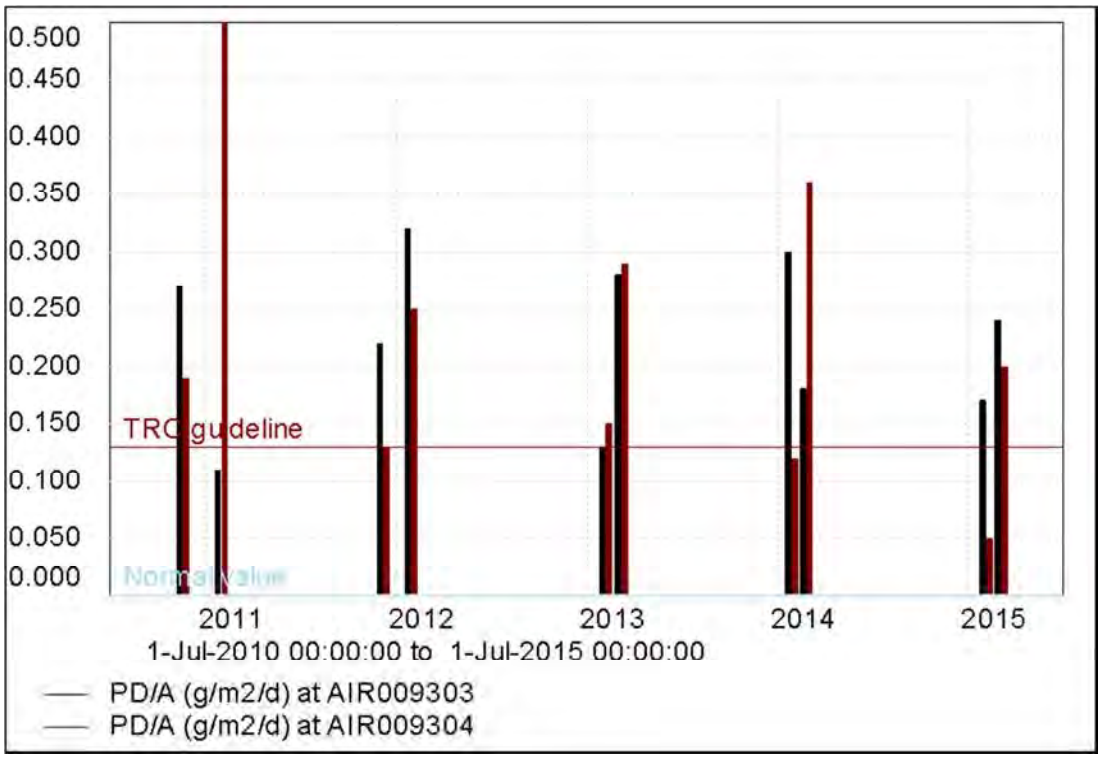

Figure 9 Deposition gauge results for the Katere Surface Coatings monitoring sites from July 2010 to July 2015

There were no off site emissions or odours noted during any inspections, and there were no complaints related to paint odours and overspray. It appears that the new treatment system installed on the paint shed during the 2012-2013 year has continued to be effective in preventing the odour and overspray issues that resulted in a number of complaints during previous monitoring years.

The results of the 2014-2015 monitoring indicate that there were no significant adverse environmental effects that occurred as a result of Katere Surface Coatings' activities. However, there were matters raised regarding housekeeping issues with the potential

to result in off-site effects. These issues (the accumulation of blast material on site) were also encountered in the 2013-2014 period, and have resulted in an abatement notice being issued in the year under review.

5.3.3 Evaluation of performance

A tabular summary of Katere Surface Coating's compliance record for the year under review is set out in Table 10.

Table 10 Summary of performance for Consent 4475-2, Katere Surface Coatings Ltd discharge of emissions into the air

To: ***To discharge emissions to air from abrasive blasting and surface coating activities at a permanent site located at Katere Road, New Plymouth and from mobile operations throughout the Taranaki region including within the Coastal Marine Area at Port Taranaki***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Specifies which special conditions apply to which activities	N/A	N/A
All Activities		
2. Adoption of best practicable option to minimise effects on the environment	Inspection and discussion with consent holder	**Accumulation of garnet on site and/or in stormwater treatment devices at three of four inspections**
3. No offensive, objectionable or toxic odour or dust beyond boundary	Inspection and observation when inspecting officer is in the vicinity of the site on other business	Yes
4. Consideration of wind conditions to minimise of off-site emissions	Inspection	Yes
5. Clearance of blasting material	Inspection	**Accumulation of garnet noted at 3 of 4 inspections**
6. Sand has low active silica content and limited fine particles	N/A – garnet used	N/A
7. Avoidance of dry sand blasting	Inspection and liaison with Company. Dry sand has not been used	Yes
8. Compliance of operators with conditions	Inspection	**No**
Within the permanent facility		
9. Except as provided for by S.C. 12 to 14 blasting must be in enclosed facility	Inspection and discussion with consent holder	Yes
10. Treatment of emissions prior to discharge. Limit on emissions from enclosure of 125 mg/m^3	Inspection and point source suspended particulate monitoring	Yes

To: *To discharge emissions to air from abrasive blasting and surface coating activities at a permanent site located at Katere Road, New Plymouth and from mobile operations throughout the Taranaki region including within the Coastal Marine Area at Port Taranaki*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
11. Particulate deposition rate limit of 0.13 g/m^2/day	Deposition gauging	**3 of 4 gauges exceeded consent limit – 2 of which are attributable to KATERE SURFACE COATINGS site**
Yard blasting at Katere Road site		
12. States provisions for occasional yard blasting as per S.C. 12 to 14	Inspection	Yes
13. Email notification to the Council seven days to 48 hrs prior to yard operations	Inspection and observation when inspecting officer is in the vicinity of the site on other business	Yes
14. Screening of items to be blasted	Discussion with consent holder. Water blasting used rather than dry abrasive blasting	Yes
Any site other than Katere Road		
15. Screening to contain emissions	No mobile blasting undertaken	N/A
16. Notification to District Council prior to blasting in residential areas	Discussion with consent holder, and review of the Council records. No notifications received as no mobile blasting undertaken	N/A
17. Email notification to the Council seven days to 48 hrs prior to blasting in close proximity to watercourse	Discussion with consent holder, and review of the Council records. No notifications received as no mobile blasting undertaken	N/A
18. Notification to affected parties prior to blasting close to boundaries	No mobile blasting undertaken	N/A
19. Suspended and deposited particulate limits 3 mg/m^3 and 0.13 mg/m^2/day respectively	No mobile blasting undertaken	N/A
All Activities		
20. Provision for consent to lapse if not exercised	Consent exercised	N/A
21. Optional review provision re environmental effects	No further opportunities for review	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**Improvement required**
Overall assessment of administrative performance in respect of this consent		**High**

An improvement in Katere Surface Coatings' environmental performance is required. During the year under review the Company was instructed that the spent blasting media needed to be cleaned up on three of the four routine monitoring inspections. The continued breach of compliance resulted in an abatement notice being issued on the third occasion. Improvement in the control of wind blown yard dust is also

required. No significant adverse environmental effects were noted due to the activities of Katere Surface Coatings during the period under review. Katere Surface Coatings achieved a high level of performance with regard to their administration compliance.

5.3.4 Recommendations from the 2013-2014 Annual Report

In the 2013-2014 Annual Report, it was recommended:

1. THAT monitoring of consented activities of Katere Surface Coatings in the 2014-2015 year continues at the same level as in 2013-2014.

These recommendations were implemented.

5.3.5 Alterations to monitoring programmes for 2015-2016

In designing and implementing the monitoring programmes for air discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the RMA in terms of monitoring emissions and their effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere.

It is proposed that for 2014-2015, the monitoring remains unchanged.

5.4 Recommendation

1. THAT monitoring of consented activities of Katere Surface Coatings in the 2015-2016 year continues at the same level as in 2014-2015.

6. Ravensdown Fertiliser Co-operative Ltd

6.1 Introduction

6.1.1 Process description

Ravensdown Fertiliser Co-operative Ltd (Ravensdown) operates a storage, blending and distribution depot at the site which is bounded by Smart, Devon and Katere Roads in the Waiwhakaiho area of New Plymouth. Urea and phosphate fertiliser products are transported to the Ravensdown storage facility by rail or by road from the port.

The product is received either into the "intake" area or directly into the stores by tipping the truck out onto the floor within the store. Product unloaded at the "intake" is then transferred to the stores by an overhead belt transfer system. In the case of the high analysis store, product is sometimes deposited onto the ground outside the store and transferred into the store by front end loader.

In general, products are dispatched by loading the product into a hopper, which feeds a mechanical elevator to the overhead belt system. This then carries the product to the load-out/weighbridges.

The closure of the fertiliser manufacturing plants at the Ravensdown site, in July 1997, eliminated the potential for emissions of gases such as sulphur dioxide and hydrogen sulphide into the air, but an unforeseen dust problem occurred. This was due to the dry fine grain nature of the superphosphate compared to the moist product that was stored after manufacture at the site prior to July 1997.

The main activities that result in the generation of dust are the receipt of product and load-out of product at the weighbridges. The principal potential consequences of these discharges are air-borne dust nuisance effect, soiling of property, and nutrient enrichment of the groundwater and stormwater run-off in the vicinity of the site.

Ravensdown have taken the following steps to mitigate the dust problem:

- establishing two superphosphate receiving sheds, one at the north of the plant and one at the south of the plant;
- initiated procedures where the receiving shed will be selected according to the wind direction at the time of receipt;
- sealing both of these storage sheds.
- sealing roadways to make it easier to clean-up spilt product that could be resuspended by the wind.
- cones fitted to the end of the load-out chutes to improve the degree of containment as the product free falls into the trucks.

The manufacturing plant has been progressively stripped as part of decommissioning. Ravensdown has been continuing to upgrade the buildings, particularly the roof areas. This is contributing to the continued remediation of dust emissions to the atmosphere caused by the storage, blending, packing and dispatch of fertiliser.

Figure 10 Ravensdown Fertiliser Co-operative Ltd site and deposition gauge locations

6.1.2 Air discharge permit

Ravensdown holds air discharge permit 4024 to cover emissions to air from the manufacture, storage and distribution of fertilisers, sulphuric acid, chromium sulphate, and associated practices. The Council originally issued this permit to Farmers Fertilisers on 25 July 1995 as a resource consent under Section 87(e) of the RMA. The consent was transferred to Ravensdown on 21 July 1997. The consent was renewed to cover emissions to the air solely from the storage, blending and distribution of fertiliser and was granted on 4 December 2008 for a period until 1 June 2026.

A summary of the conditions of the consent is provided below.

The conditions of the consent focus on ensuring that there are no effects off site that are more than minor in relation to dust and/or odour, or as a result of aerial discharges resulting in deposited contaminants on site which may then become entrained in the stormwater. This is achieved by:

- Requiring the consent holder to consider in advance, the potential for effects of the activities on site by adopting the best practicable option (special condition 1), taking into account wind direction (special condition 2), undertaking as much product transfer and blending of fertiliser under cover as possible (special condition 6), and supplying an odour management plan to the Council if potentially odorous product are introduced to the site (special condition 9).
- Prohibiting offensive or objectionable dust or odour (special condition 4), placing numerical limits on suspended and deposited particulate beyond the site boundary (special condition 3), and requiring that the consent holder keeps a

record of all incidents that result in, or have the potential to result in off site effects (special condition 7).

- Addressing housekeeping matters (special condition 5).
- Requiring notification to Council prior to making changes at the site that could adversely affect discharges from the site (special condition 8), and allowing the consent conditions to be reviewed in the light of this notification in addition to the standard review provisions to change limits and/or deal with adverse effects (special condition 10).

6.2 Results

6.2.1 Inspections

The site is inspected four times per year in relation to water discharge matters, with two of the routine compliance monitoring inspections per year scheduled to include a focus on air discharge matters. Any air related matters noted at the additional water focused inspection are also reported here.

19 December 2014

There was a light north westerly at the time of the inspection. The stormwater drains looked to be clear of contaminants. No dust or odour was detected beyond the site boundary. There was minimal tracking of material from the storage sheds. Overall, the site was found to be in a tidy condition.

10 March 2015

Conditions were fine with no wind at the time of the inspection. There were three areas of tracking/material spills that required cleaning up. Specifically, there was tracking from the lime store at the rear of the site, a small volume of palm kernel extract (PKE) behind the store and a small sulphur spill beside the South Star store (under the demolished conveyor belt). These issues were passed on to Ravensdown staff by the inspecting officer. Ravensdown staff informed the inspecting officer that PKE would no longer be stored onsite after the final shipment was distributed (by the end of May 2015). No dust or odour was detected behind the boundary of the property. Overall, the site was found to be in a tidy condition.

6.2.2 Results of receiving environment monitoring

During the year under review six deposition gauges were deployed at sample sites in the vicinity of the Ravensdown premises on two occasions. The first deployment began in January and lasted 22 days. The second deployment began in February and lasted 21 days. All of the sites are shown in Figure 1, and those in closer proximity to the site are also shown in Figure 10. Their locations are described in Table 11. The material from these gauges was analysed for solid particulates and total deposited phosphorus. The deposition survey results for the year under review are presented in Table 12. The prevailing wind directions during the surveys are shown in Appendix II.

See section 1.3.4 for an overview of the purpose and methodology of deposition gauge monitoring.

Table 11 Description of Ravensdown deposition gauge sample sites

Site Code	Location description
AIR006221	On the banks of the Waiwhakaiho river, north of Harvey Normans
AIR006222	On Devon Road opposite Ravensdown's site entrance
AIR006227*	On the north side of the railway and the east side of Smart Road.
AIR006224	Property between Queens Road and Alberta Road, approximately 100 metres from the roadside
AIR006225	Vacant section on Craig Place off Hurlstone Drive
AIR006226	Site on the verge of roadway at the front of Toops carpark

Key: * (replaced AIR006223)

During the 2014-2015 monitoring period three of the twelve gauges exceeded Ravensdown's consent limit of 0.13 g/m²/day.

Table 12 Deposition gauge results from around the Ravensdown site

Site ID	Run1 from 13/01/2015 to 04/02/2015		Run 2 from 12/02/2015 to 05/03/2015	
	Dust deposition rate (g/m²/day)	Total deposited phosphorus (mg/m²/day)*	Dust deposition rate (g/m²/day)	Total deposited phosphorus (mg/m²/day)*
AIR006221	0.02	0.14	0.01	0.10
AIR006222	**0.19**	1.66	**0.34**	2.60
AIR006224	0.10	1.17	0.12	0.92
AIR006225	0.09	0.87	0.08	0.59
AIR006226	0.06	1.13	**0.23**	0.39
AIR006227	0.11	1.49	0.07	1.08
Guideline value:	0.13g/m²/day		0.13g/m²/day	

Key: results in bold exceed recommended guideline value
* total deposited phosphorus is a sum of dissolve reactive phosphorus and particulate phosphorus

January 2015 survey

During the January survey five of the six gauges complied with the consent limit. The limit was exceeded only at site AIR006222, which is close to the site entrance on Devon Road. The material collected at site had an appearance consistent with resuspended yard dust. During this survey the highest total deposited phosphorus concentration was also found at AIR006222. The gauges from AIR006224 and AIR006227 were found to contain some organic material.

Wind data shows that site AIR006222 was downwind of site activities for approximately 23% of the gauging period (Appendix II).

February 2015 survey

During the February survey four of the six gauges complied with the consent limit, however sites AIR006222 and AIR006226 were in exceedance, with deposition in the former gauge over twice the consent limit. The appearance of the material in the non-compliant gauges was again consistent with that of resuspended yard dust. However, due to the distance between AIR006226 and the Ravensdown site, and the ambiguous material that the gauge contained, this exceedance may have been due to various sources of particulate. Again, the highest total deposited phosphorus concentration was found at AIR006222. The gauge at site AIR006224 contained a high proportion of organic material.

Wind data shows that sites AIR006222 and AIR006226 were downwind of site activities for approximately 26% and 31% of the gauging period, respectively (Appendix II).

6.2.3 Investigations, interventions, and incidents

In the 2014-2015 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Ravensdown's conditions in their air discharge consent or provisions in the Regional Air Quality Plan.

6.3 Discussion

6.3.1 Discussion of site performance

During inspections it was found that as far as control of emissions to air were concerned the site was generally well managed, however deposition gauging results indicate that dust resuspended from the yard has the potential to result in off-site effects. During the second inspection, there were issues with tracking of product on the yard and discoveries of other spilt materials.

6.3.2 Environmental effects of exercise of consents

No adverse environmental impacts were discovered as a result of activities undertaken on the Ravensdown site. No emissions of dust or odour were observed beyond the site boundary during either inspection.

Deposition gauging was conducted for the 46th and 47th time during the 2014-2015 monitoring year around the Ravensdown site. The results obtained from these surveys are illustrated in Figure 11. During both sampling runs, deposition at AIR006222 exceeded the consent limit. Furthermore, total deposited phosphorous at this site was relatively high compared with the other monitored sites. In the second run, it is likely that the exceedance recorded at AIR006226 may have resulted from a number of sources of particulate in the area.

See section 1.3.4 for information on the environmental effects of atmospheric particulate matter.

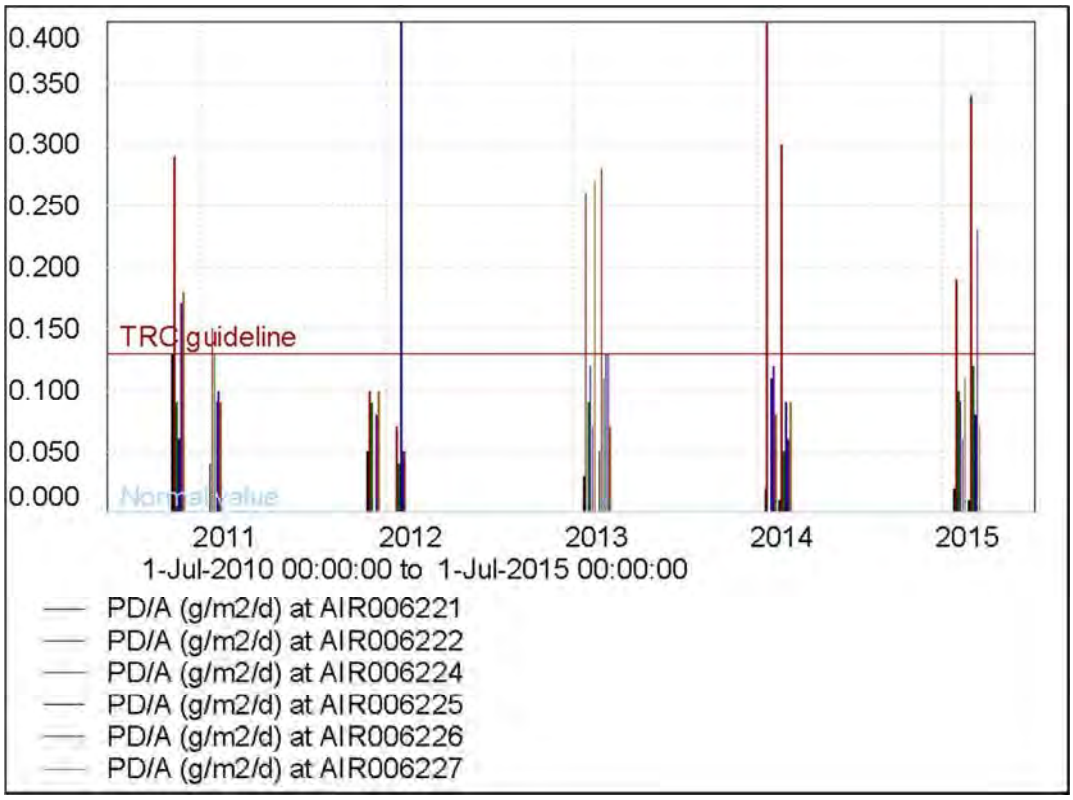

Figure 11 Deposition gauge results for the Ravensdown monitoring sites from July 2010 to July 2015

6.3.3 Evaluation of performance

A tabular summary of Ravensdown's compliance record for the year under review is set out in Table 13.

Table 13 Summary of performance for Consent 4024-3, Ravensdown Fertiliser Co-operative Ltd discharge of emissions into the air

To: ***To discharge emissions to air from the storage, blending and distribution of fertiliser***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Adoption of action likely to minimise adverse effects on the environment	Inspection and liaison with consent holder	Yes
2. Take account of wind direction to minimise off site emissions	Inspection and liaison with consent holder. No complaints received	Yes
3. Suspended and deposited particulate limits	Suspended particulate monitoring at inspection and deposition gauging	Two of six deposition gauges in immediate vicinity exceeded limit
4. No objectionable, offensive of toxic dust or odour beyond boundary	Inspection and liaison with consent holder. No complaints received	Yes
5. Fertiliser spills to be cleaned up as soon as practicable but in any case by the end of the day	Inspection	Yes

To: *To discharge emissions to air from the storage, blending and distribution of fertiliser*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
6. Activities to be carried out inside effectively maintained buildings to minimise emissions	Inspection and liaison with consent holder	Yes
7. Record of dust complaints	Inspection and liaison with consent holder	Yes
8. Notification of changes	Review of the Council records. Inspection and liaison with consent holder. No significant changes notified or found	N/A
9. Odour management plan to be prepared if change involves odorous materials	No changes	N/A
10. Provision for review	Next opportunity for review June 2020	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**Good**
Overall assessment of administrative performance in respect of this consent		**High**

During the year, Ravensdown Fertiliser Co-operative Ltd generally demonstrated a good level of environmental performance and a high level of administrabive compliance with their air discharge consent, as defined in Section 1.1.5. Improved control of yard dust, including the prompt clean up of spilt material, is desirable to avoid the potential for excessive dust deposition off-site. No complaints concerning dust emissions were received.

6.3.4 Recommendations from the 2013-2014 Annual Report

In the 2013-2014 Annual Report, it was recommended:

1. THAT monitoring of consented activities at Ravensdown Fertiliser Co-operative Ltd in the 2014-2015 year continues at the same level as in 2013-2014.

These recommendations were implemented.

6.3.5 Alterations to monitoring programmes for 2014-2015

In designing and implementing the monitoring programmes for air discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the RMA in terms of monitoring emissions and their effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere.

It is proposed that for 2015-2016 the monitoring remains unchanged.

6.3.6 Recommendation

1. THAT monitoring of consented activities at Ravensdown Fertiliser Co-operative Ltd in the 2015-2016 year continues at the same level as in 2014-2015.

7. Taranaki Drum and Pallet Recycling

7.1 Introduction

7.1.1 Process description

The consented activity at the site on Smart Road is the burning of 'clean' timber pallets ie, ones that have not been treated with tanalising solution (copper, chrome and arsenic). No other wastes are to be burned. The location of the site and firepit is shown in Figure 12.

Taranaki Drum and Pallet Recycling (Taranaki Drum and Pallet) burns approximately 100 to 200 pallets, on any one occasion. The place of burning is in a pit located approximately 25 metres away from the nearest property boundary, 130 metres away from the nearest offsite dwelling and 120 metres away from the nearest road. The area in which the burning takes place is relatively isolated, situated on the slope of a small gully near the centre of the property.

The pallets are burnt during daylight hours, no more than twice a week, and in ideal wind conditions. The discharge is for approximately three hours and involves non-tanalised timber, so that the emissions comprise products of combustion, natural volatile oils from timber, and moisture. The prevailing winds in the area are from the south-east and west. These should not blow smoke directly towards any dwellings, the closest of which lie beyond the consent holder's own house, to the west. Winds from the east are rare.

Figure 12 Location of Taranaki Drum and Pallet Recycling site and firepit

The principal consequence of burning the clean pallets would be the potential for smoke. It is a requirement of the consent that the fire must be supervised and managed

at all times. The frequency, time of day, and the types of material that can be burned have been restricted in order to manage air emission on site.

7.1.2 Air discharge permit

Taranaki Drum and Pallet holds air discharge permit 6073 to cover emissions into the air from the burning of pallets. This permit was issued by the Council on 17 September 2002 as a resource consent under Section 87(e) of the RMA. It is due to expire on 1 December 2020.

The aspects of the environmental effects of the emissions from the burning pit that are covered by the RMA, include any possibility of toxic emissions affecting the life supporting capacity of the air, the visual impact of any plume of smoke on amenity values in the area, and any noxious effects upon people downwind of the smoke plume. These aspects were taken into account in the formulation of the special conditions of the consent.

Special conditions 1 and 2 require the consent holder to adopt the best practicable option to prevent or minimise adverse environmental offsite effects, and manage the process so that discharges are maintained at a practicable minimum.

Special condition 3 requires that the fire pit is located no closer than 20 metres from any boundary.

Special conditions 4 and 5 describe the materials that may and may not be burnt in the fire pit to eliminate the potential for toxic effects.

Special conditions 6, 7, and 8 place controls on the times and frequency at which the fire pit may be used, and require that in addition, wind conditions must be taken into account to minimise adverse effects on neighbours and to reduce off-site impacts to what is considered an acceptable level.

Special condition 9 requires that discharges authorised by the consent do not give rise to odours, dust or smoke at or beyond the boundary that, in the opinion of the Council, is offensive or objectionable.

Special condition 10 is a review condition giving the Council the option to review the special conditions of the consent in June 2008 and/or June 2014.

7.2 Results

7.2.1 Inspections

14 August 2014

It was raining at the time of the site visit, with strong westerly winds. There was no material being burned at the time of inspection. The fire pit was full of pallets. There was no smoke or odour discharging beyond the boundary of the property.

25 February 2015
Conditions were fine with a light westerly wind. There were pallets to be burned in the fire pit. There was no fire at the time of inspection. The site was tidy. Consent conditions were being complied with at the time of inspection.

22 May 2015
Conditions were fine with a light easterly wind. The consent holder was not onsite at the time of inspection. The fire pit was empty and no material was being burned at the time of inspection. Overall the site was found to be in a tidy condition.

7.2.2 Investigations, interventions, and incidents

In the 2014-2015 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Taranaki Drum and Pallet's conditions in their air discharge consent or provisions in the Regional Air Quality Plan.

7.3 Discussion

7.3.1 Discussion of site performance

During the year under review the inspecting officer was not able to carry out an inspection when the exercise of the air discharge consent was occurring, as despite the consent holder being requested on a number of occasions during previous monitoring years to notify the Council prior to undertaking a burn off, no notifications were received during the year under review.

7.3.2 Environmental effects of exercise of consent

Particulate emissions can arise from a number of sources, both natural and from human activity for example vegetation pollens, smoke and ash, sea spray, dust from soils and paved surfaces, and manufacturing processes. While extremely fine particles may remain floating in the atmosphere for weeks or months, coarser dusts may settle out within timeframes ranging from a few seconds to minutes.

The potential neighbourhood effects from the activities undertaken on the site in relation air quality also include odour and smoke discharges. Due to the intermittent nature of the activity, and the consent holder not notifying the Council when burning was being undertaken, no burning operations were occurring at the times of inspection. No complaints regarding the burning operation have been received by the Council during the year under review.

7.3.3 Evaluation of performance

A tabular summary of Taranaki Drum and Pallet compliance record for the year under review is set out in Table 14.

Table 14 Summary of performance for Consent 6073-1, Taranaki Drum and Pallet discharge of emissions into the air

To: *To discharge emissions to air from the burning off of pallets*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Adoption of action likely to minimise adverse effects on the environment	Inspection and discussion with consent holder	Yes
2. Minimisation of discharges through control of processes	Inspection and discussion with consent holder. No complaints received	Yes
3. Distance of combustion pit to boundary	Inspection of the site	Yes
4. Restrictions on materials to be combusted	Inspection of residues and materials ready for burning in the fire pit	Yes
5. Materials not to be combusted	Inspection of residues and materials ready for burning in the fire pit	Yes
6. No fires to be lit after 12 noon	Inspection and observation when inspecting officer is in the vicinity of the site on other business. No fires observed	Yes
7. Quenching of fires after 5 pm	Discussion with consent holder at inspection	Yes
8. Consideration of wind direction to minimise of site effects	Inspection and observation when inspecting officer is in the vicinity of the site on other business. No complaints received. No fires observed	Yes
9. Objectionable odour, dust or smoke not permitted at boundary	Inspection and observation when inspecting officer is in the vicinity of the site on other business. No complaints received	Yes
10. Optional review provision re environmental effects	No further opportunities for review	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**
Overall assessment of administrative performance in respect of this consent		**Good**

During the year, Taranaki Drum and Pallet demonstrated a high level of environmental performance and compliance with the resource consent, as defined in Section 1.1.5. There was no evidence of any consented activity having adverse environmental effects. However, this was made difficult to assess as Taranaki Drum and Pallet failed to notify the Council of any burn offs during the period under review, as had previously been requested of them. As a consequence, Taranaki Drum and Pallet was considered to have only demonstrated a good level of administrative performance.

7.3.4 Recommendations from the 2013-2014 Annual Report

In the 2013-2014 Annual Report, it was recommended:

1. THAT monitoring of consented activities at the Taranaki Drum and Pallet Recycling site in the 2014-2015 year continues at the same level as in 2013-2014.

These recommendations were implemented.

7.3.5 Alterations to monitoring programmes for 2015-2016

In designing and implementing the monitoring programmes for air discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the RMA in terms of monitoring emissions and their effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere.

It is proposed that for 2015-2016 the programme remains unchanged.

7.4 Recommendation

1. THAT monitoring of consented activities at the Taranaki Drum and Pallet Recycling site in the 2015-2016 year continues at the same level as in 2014-2015.

8. Lower Waiwhakaiho area performance

8.1 Air related incidents

During the year under review there was one air related incident logged on the Council unauthorised incidents database relating to resource consents in the Lower Waiwhakaiho area. Katere Surface Coatings were issued with an abatement notice as a result of the incident. Consequently, an improvement in Katere Surface Coatings' environmental performance is required (see Section 5 for further details on the incident). There were no incidents recorded in relation to any of the area's four remaining air discharge consent holders. The environmental performance of these consent holders varied from good to high.

8.2 Deposition gauging

With the transient nature of effects upon air quality a combined monitoring approach in the industrial area in question is a good way of assessing consent holder performance. This approach was continued in this monitoring period as adopted following the recommendations in the 2000-2001 annual reports for dischargers in the area.

The deposition gauges were put in place and retrieved at all sites at the same time, including the Council's state of the environment monitoring (SEM) sites. The gauges for the near-by Colson Road landfill site were also deployed for the same period. The wind direction and speed for each of the sampling periods are shown in Appendix II. These were recorded at New Plymouth waste water treatment plant, which is in the same area.

See section 1.3.4 for an overview of the purpose and methodology of deposition gauge monitoring.

8.2.1 Results of deposition gauging

There were ten exceedances of the Council's guideline limit out of 42 total gauge deployments assessing the five consent holder's covered by this report. The results of the deposition gauging undertaken in the Lower Waiwhakaiho area for the year under review are summarised in Figure 13.

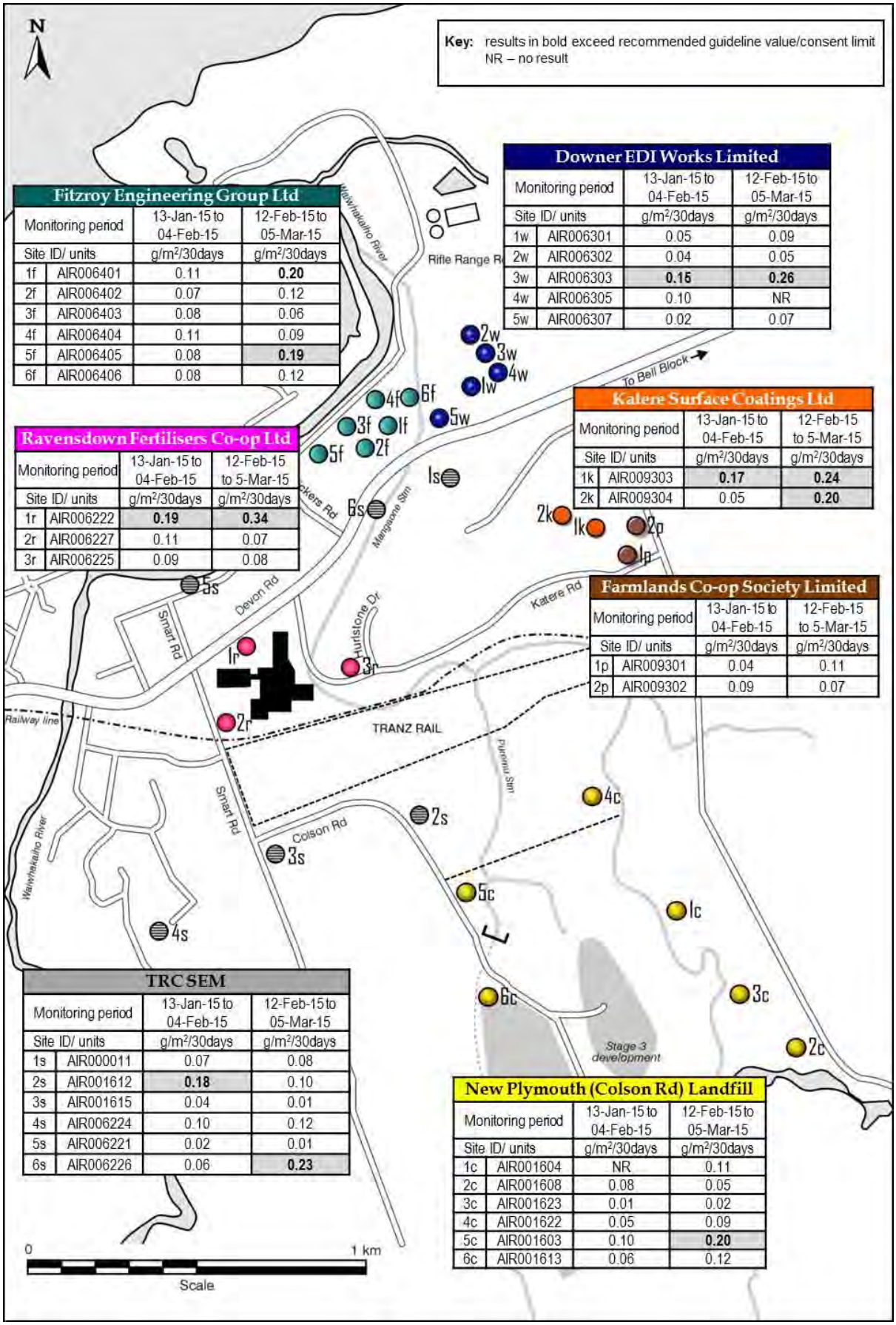

Figure 13 Dust deposition for the Lower Waiwhakaiho area in the 2015-2016 monitoring period

Ravensdown deposition gauges AIR006221, AIR006224 and AIR006226 are also used as the Council's SEM gauges. Accordingly, results from these gauges have been included in the TRC SEM table in Figure 13.

Deposition gauge results from the Colson Road Landfill monitoring programme have also been included in Figure 13 to provide context of air quality in the wider Waiwhakaiho area. There were two exceedances of 16 total gauge deployments for the Colson Road Landfill programme in the year under review. Colson Road Landfill deposition gauges AIR001612 and AIR001615 are also used as SEM gauges. Accordingly, results from these gauges have been included in the TRC SEM table in Figure 13.

Results from the SEM gauges deployed in the Lower Waiwhakaiho area have also been included in Figure 13 to provide context of air quality in the wider Waiwhakaiho area. Additionally, some of these gauges are also incorporated in compliance monitoring programmes, as outlined previously. Two of the 12 total SEM gauges exceeded the Council's guideline limit in the period under review. The two gauges that were in exceedance (AIR001612 and AIR006226) were also used in compliance monitoring programmes (related to the Colson Road Landfill and Ravensdown, respectively).

8.3 Discussion

8.3.1 Environmental effects of exercise of air discharge permits

Ambient air quality (SEM sites) in the Lower Waiwhakaiho area during the year under review was very good; only 13% of the samples exceeded the 0.13 g/m^2/day guideline.

The overall air quality in the Lower Waiwhakaiho area, including deposition survey results for the five consent holders covered in this report, was generally good during both the January and February gauging periods.

Refer to Section 1.3.4 for information on the environmental effects of atmospheric particulate matter and other emissions.

January 2015 deposition gauge survey

In the case of the January survey, 14% of the gauges analysed were in excess of the guideline value. As with previous years, the higher particulate deposition rates were again found to be at monitoring locations in close proximity to industrial sites. The highest results were found at monitoring locations near the Ravensdown, Katere Surface Coatings, and Downer sites. An exceedance was also found in the vicinity of the Colson Road Landfill. Wind direction was variable during the gauging period, with winds predominantly from between the east to the north for 38 % of the time, and from the north west around to the south west for 49 % of the time. The strongest winds were from the west.

February 2015 deposition gauge survey

In the case of the February survey, 33 % of the gauges returned results that were in excess of the guideline value. On this occasion the exceedances were again predominantly at monitoring sites located close to the industrial sites, with the highest results in the vicinity of the Ravensdown, Downer, Katere Surface Coatings, and

Fitzroy Engineering sites. An exceedance was also found in the vicinity of the Colson Road Landfill. The prevailing wind directions observed during this gauging period were from the east (36 % of the time) and the south west to west (31 % of the time), with the strongest winds from the east.

9. Summary of recommendations

1. THAT monitoring of consented activities at the Downer EDI Works Ltd site in the 2015-2016 year continues at the same level as in 2014-2015.

2. THAT monitoring of activities at Farmlands Co-operative Society Ltd's 'feedmill' is discontinued, as the mill has been decommissioned, and the resource consent surrendered.

3. THAT with the exception of recommendations 3a and 3b, monitoring of consented activities at the Fitzroy Engineering Group Ltd site in the 2015-2016 year continues at the same level as in 2014-2015.

    a. THAT annual emissions testing is discontinued at the Fitzroy Engineering Group Ltd site; effective from the 2015-2016 monitoring year.
    b. THAT a management plan is submitted to the Council which outlines the maintenance schedule to be implemented for the upgraded garnet shed air treatment system in the 2015-2016 year.

4. THAT monitoring of consented activities of Katere Surface Coatings in the 2015-2016 year continues at the same level as in 2014-2015.

5. THAT monitoring of consented activities at Ravensdown Fertiliser Co-operative Ltd in the 2015-2016 year continues at the same level as in 2014-2015.

6. THAT monitoring of consented activities at the Taranaki Drum and Pallet Recycling site in the 2015-2016 year continues at the same level as in 2014-2015.

Glossary of common terms and abbreviations

The following abbreviations and terms may be used within this report:

Conductivity	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 20°C and expressed in mS/m.
DRP	Dissolved reactive phosphorus.
g/m^3	Grams per cubic metre, and equivalent to milligrams per litre (mg/L). In water, this is also equivalent to parts per million (ppm), but the same does not apply to gaseous mixtures.
Incident	An event that is alleged or is found to have occurred that may have actual or potential environmental consequences or may involve non-compliance with a consent or rule in a regional plan. Registration of an incident by the Council does not automatically mean such an outcome had actually occurred.
Intervention	Action/s taken by the Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring.
Investigation	Action taken by the Council to establish what were the circumstances/events surrounding an incident including any allegations of an incident.
l/s	Litres per second.
mS/m	Millisiemens per metre.
NOx	Oxides of nitrogen
Physicochemical	Measurement of both physical properties (e.g. temperature, clarity, density) and chemical determinants (e.g. metals and nutrients) to characterise the state of an environment.
PM_{10}	Relatively fine airborne particles (less than 10 micrometre diameter).
QPR	Quality Pavement Repair - a high performance permanent repair material for repairing potholes, filling utility cuts and repairing damaged asphalt
Resource consent	Refer Section 87 of the RMA. Resource consents include land use consents (refer Sections 9 and 13 of the RMA), coastal permits (Sections 12, 14 and 15), water permits (Section 14) and discharge permits (Section 15).
RMA	*Resource Management Act* 1991 and including all subsequent amendments.
Temp	Temperature, measured in °C (degrees Celsius).
UI	Unauthorised Incident.
UIR	Unauthorised Incident Register – contains a list of events recorded by the Council on the basis that they may have the potential or actual environmental consequences that may represent a breach of a consent or provision in a Regional Plan.

For further information on analytical methods, contact the Council's laboratory.

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Taranaki Regional Council (1995): *Technic Industries Ltd Air Monitoring Programme Annual Report 1994-95.* Technical Report 95-56.

Taranaki Regional Council (1995): *Poultrymen's Co-operative Ltd 1994-95 Annual Report 1994-95.* Technical Report 95-40.

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Taranaki Regional Council (1994): *Farmers Fertiliser Ltd Air Monitoring Programme Annual Report 1993–94.* Technical Report 94–62

Taranaki Regional Council (1993): *Technic Industries Ltd Air Monitoring Programme Annual Report 1992-93.* Technical Report 93-36.

Taranaki Regional Council (1993): *Poultrymen's Co-operative Ltd Air Monitoring Programme Annual Report 1992-93.* Technical Report 93-38.

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Appendix I

Resource consents for discharges to air held by industries in the Lower Waiwhakaiho area (alphabetical order)

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Downer EDI Works Limited P O Box 272 NEW PLYMOUTH
Consent Granted Date:	29 March 2005

Conditions of Consent

Consent Granted:	To discharge emissions into the air from the manufacture of hot mix asphalt paving mixes and associated activities at or about (NZTM) 1696853E-5677925N
Expiry Date:	1 June 2020
Review Date(s):	June 2006, June 2008, June 2014
Site Location:	Rifle Range Road, New Plymouth
Legal Description:	Lot 3 DP 20360
Catchment:	Waiwhakaiho
Tributary:	Mangaone

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. This consent shall be exercised generally in accordance with the information submitted in support of application 3225 and to ensure the conditions of this consent are maintained. Where there is any conflict between the information supplied in support of application 3225 and the conditions of this consent, the conditions of this consent shall prevail.

2. The consent holder shall adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any actual or likely adverse effects on the environment arising from the exercise of this consent.

3. Prior to undertaking any alterations to the plant, processes or operations, which in the opinion of the Chief Executive, Taranaki Regional Council, may significantly change the nature or quantity of contaminants emitted from the site, the consent holder shall gain the approval of the Chief Executive, Taranaki Regional Council, and shall obtain any necessary approvals under the Resource Management Act, 1991.

4. Recycled asphalt shall not be processed at the site. This does not prohibit the consent holder from seeking approval for this purpose at a later date as described in special condition 3.

5. The drum burner shall be maintained by a trained service person at least every six months to optimise combustion efficiency and to reduce noxious emissions to air.

6. The consent holder shall not operate the asphalt plant using waste oil. This does not prohibit the consent holder from seeking approval for this purpose at a later date as described in special condition 3.

7. The asphalt plant shall not be operated on any fuel containing more than 0.3 % sulphur (weight/weight basis).

8. All gas streams ventilated or otherwise discharged from the asphalt plant shall be treated to reduce the concentration of total particulate matter to less than 125 milligrams per cubic metre, normal temperature and pressure, at any time.

9. The consent holder shall have emissions tests conducted on discharges from the asphalt plant stack to demonstrate compliance with special condition 8. These tests shall;

   a) be conducted by 1 June 2005 and every twelve months thereafter for the duration of the consent, and

   b) comprise not less than three separate samples taken during production conditions that give rise to maximum emissions from the asphalt plant stack, and

   c) be reported to the Chief Executive, Taranaki Regional Council, within 20 working days of the samples being taken. The report shall include the results of the tests, the relevant operating parameters including pressure drop over the scrubber and the production rate over the period of each test, all the raw data and all the calculations.

10. The emissions tests shall be carried out in accordance with Australian Standard 4323.2-1995, or any other equivalent method subject to the written approval of the Chief Executive, Taranaki Regional Council, and these tests shall be performed to the satisfaction of the Chief Executive, Taranaki Regional Council.

11. The discharge of particulate material from the site shall not raise the particulate deposition rate at or beyond the site boundary, above 4 grams per square metre per 30 days.

12. Any discharge to air from the exercise of this consent shall not give rise to any offensive or objectionable odour at or beyond the boundary of the property.

13. For the purposes of condition 12, without restriction, an odour shall be deemed to be offensive or objectionable if:

   a) it is held to be so in the opinion of an enforcement officer of the Taranaki Regional Council, having regard to the duration, frequency, intensity and nature of the odour; and/or

   b) an officer of the Taranaki Regional Council observes that an odour is noticeable, and either it lasts longer than three (3) hours continuously, or it occurs frequently during a single period of more than six (6) hours; and/or

   c) no less than three individuals from at least two different properties, each declare in writing that an objectionable or offensive odour was detected beyond the boundary of the site, provided the Council is satisfied that the declarations are not vexatious and that the objectionable or offensive odour was emitted from the site as specified in (b). Each declaration shall include the individuals' names and addresses, the date and time the objectionable or offensive odour was detected, the location of the individual when it was detected and the prevailing weather conditions during the event. The declarations shall be signed and dated.

14. The discharge of suspended particulate matter from the site shall not increase the ambient concentration of suspended particulate matter by more than 3 milligrams per cubic metre (measured under ambient conditions), determined by measurements at the upwind and downwind boundaries of the property.

15. The discharge must not result in noxious, toxic levels, or dangerous levels of airborne contaminants at or beyond the boundary of the property, including but not limited to any risk of fire or explosion.

16. The consent holder shall control all emissions to the atmosphere from the site, so as to ensure that the maximum ground level concentration of nitrogen dioxide measured under ambient conditions does not exceed 200 micrograms per cubic metre [one-hour average] with 99.9 percentile compliance across all monitoring data, up to a maximum limit of 300 micrograms per cubic metre [one-hour average], or 100 micrograms per cubic metre [twenty-four hour average], at or beyond the boundary of the site.

17. The consent holder shall control all emissions to the atmosphere from the site, so as to ensure that the maximum ground level concentration of sulphur dioxide measured under ambient conditions does not exceed 350 micrograms per cubic metre [one-hour average] with 99.9 percentile compliance across all monitoring data, up to a maximum limit of 570 micrograms per cubic metre [one-hour average], or 120 micrograms per cubic metre [twenty-four hour average], at or beyond the boundary of the site.

18. Stockpiles of aggregate and crusher dust liable to produce windblown dust shall be treated, or shielded to minimise dust emissions to the satisfaction of the Chief Executive, Taranaki Regional Council.

19. The yard and any roadways in the yard shall be sealed, maintained, and cleaned to minimise windblown dust to the satisfaction of the Chief Executive, Taranaki Regional Council.

20. Any smoke discharged from the site shall not occur for longer than a total of three minutes in any sixty minute period.

21. All equipment used to avoid, remedy, or mitigate any effect on the environment from the discharge of emissions into the air shall be maintained in optimum condition and shall be operated within optimum design parameters at all times the plant is in operation, to the satisfaction of the Chief Executive, Taranaki Regional Council.

22. The consent holder shall visually inspect the water scrubber and settling pond at least once per month, and maintain as necessary to avoid, remedy or mitigate discharges to air.

23. The consent holder shall maintain a log, recording:

    a) dates when the scrubber was inspected and any maintenance undertaken;
    b) dates when the settling pond was inspected and any maintenance undertaken;
    c) dates of burner maintenance; and
    d) complaints received including name and address of complainants, date received and any remedial action in response to the complaint.

24. The log required in terms of special condition 23 shall be made available to the Chief Executive, Taranaki Regional Council upon request.

25. Air temperatures in the hotmix drum shall not exceed 200 degrees Celsius. The drum shall have an audible temperature alarm which shall sound if at any time the drum temperature exceeds 200 degrees Celsius and corrective action shall be taken. All incidents of temperature exceedance must be recorded in the log required in terms of special condition 23.

26. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2006 and/or June 2008 and/or June 2014, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 23 March 2009

For and on behalf of
Taranaki Regional Council

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Director-Resource Management

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Farmlands Co-operative Society Limited 23 Sir William Pickering Drive CHRISTCHURCH 8053
Decision Date:	12 April 2002
Commencement Date:	12 April 2002

Conditions of Consent

Consent Granted:	To discharge emissions into the air from the milling and blending of grain and animal meals and associated activities at or about (NZTM) 1697412E-5677349N
Expiry Date:	1 June 2020
Review Date(s):	June 2008, June 2014
Site Location:	99 Katere Road, New Plymouth
Legal Description:	Lot 2 DP 15406 Blk VI Paritutu SD

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

   i) the administration, monitoring and supervision of this consent; and
   ii) charges authorised by regulations.

Special conditions

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment.

2. No alteration shall be made to plant equipment or processes which may substantially alter the nature, quantity or likelihood of discharges to atmosphere without prior consultation with the Chief Executive, Taranaki Regional Council.

3. Within three months of the granting of this consent the consent holder shall prepare and maintain to the satisfaction of the Chief Executive, Taranaki Regional Council, a management plan addressing the measures adopted to prevent an accumulation of dust within the stormwater catchment as a result of normal operations and emission incidents.

4. The discharge concentration of dust from any point source shall be less than 125 mg/m^3 normal temperature and pressure (NTP).

5. The dust deposition rate beyond the property boundary arising from the discharge shall be less than 4.0 $g/m^2/30$ days.

6. Any discharge to air from the premises shall not give rise to any offensive, objectionable, noxious or toxic levels of dust or odour at or beyond the boundary of the property, and in any case, suspended particulate matter shall not exceed 3 mg/m^3 (measured under ambient conditions) beyond the boundary of the site.

7. The consent holder shall keep, and make available to the Chief Executive, Taranaki Regional Council, upon request, a record of the time, duration and cause of all dust or smoke emissions incidents having actual or potential off-site impacts.

8. As far as is practicable yard areas of the site shall be cleared of accumulations of dust.

9. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2008 and/or June 2014, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 10 December 2013

For and on behalf of
Taranaki Regional Council

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Director-Resource Management

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Fitzroy Engineering Group Limited Private Bag 2053 NEW PLYMOUTH
Consent Granted Date:	21 November 2006

Conditions of Consent

Consent Granted:	To discharge emissions into the air from abrasive blasting operations and associated activities at the factory site and from yard blasting operations at or about GR: P19:068-394 and mobile abrasive blasting at various locations throughout the Taranaki region
Expiry Date:	1 June 2020
Review Date(s):	June 2007, June 2008, June 2010, June 2014
Site Location:	Rifle Range Road, New Plymouth
Legal Description:	Pt Lot 1 DP 12331 C/T E2/740
Catchment:	Waiwhakaiho

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

   i) the administration, monitoring and supervision of this consent; and
   ii) charges authorised by regulations.

Special conditions

All operations

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment.

2. The exercise of this consent shall be undertaken generally in accordance with the information submitted in support of application 1584. In the case of any contradiction between the information submitted in support of application 1584 and the conditions of this consent, the conditions of this consent shall prevail.

3. Sand used for dry blasting must contain less than 5% by dry weight free silica, and less than 2% by dry weight dust able to pass a 0.15 mm sieve.

4. Any discharge to air from the exercise of this consent shall not give rise to any offensive, objectionable or toxic levels of dust or odour at or beyond the boundary of the property on which the abrasive blasting or associated activity is occurring, and in the case of blasting undertaken at the Rifle Range Road site, suspended particulate matter shall not exceed 3 mg/m^3 (measured under ambient conditions) beyond the boundary of the leased site as shown in attachment A.

5. All abrasive blasting is to be conducted with taking into account wind direction and wind strength, such that off-site emissions are kept to a practicable minimum.

6. As far as is practicable, work areas and surrounding areas shall be cleared of accumulations of sand and any other blasting material at the end of each blasting session and by the end of each working day.

7. Dry sand blasting shall be used only when specified by a client. High pressure water blasting, wet sand blasting, garnet blasting, vacuum blasting or an equivalent alternative process must be used when practicable.

8. The discharge of particulate material from the site shall not raise the particulate deposition rate at or beyond the boundary of the leased site of the permanent facility at Rifle Range Road, New Plymouth, above a mean daily rate of 0.13 g/m^2/day collected over a minimum of 21 days.

9. The consent holder shall ensure that all operators of abrasive blasting equipment understand and comply with the all the conditions of this consent prior to the commencement of any work for which this consent is required.

Operations conducted within permanent facilities

10. As far as is practicable, all abrasive blasting on the consent holder's permanent site at Rifle Range Road, New Plymouth, shall be carried out in an enclosed booth or shed.

11. All emissions from abrasive blasting, surface preparation or surface coating operations and all other associated emissions from abrasive blasting at the permanent site at Rifle Range Road, New Plymouth, shall be contained and treated, as far as is practicable, prior to discharge from any operations enclosure.

12. All gas streams ventilated or otherwise emitted from an enclosure shall be treated to a concentration of total particulate matter of less than 125 milligrams per cubic metre [discharge corrected to 0 degrees Celsius and dry gas] at any time.

13. The consent holder shall have emissions tests conducted on discharges from the "garnet shed", and any other treatment stack at the request of the Chief Executive, Taranaki Regional Council,to demonstrate compliance with special condition 12. These tests shall;

    a) be conducted by 1 June 2007 and every twelve months thereafter for the duration of the consent, and

    b) comprise not less than three separate samples taken during operating conditions that give rise to maximum emissions from the stack, in the case of the "garnet shed" no less than three blasting nozzles must be in use, and

    c) be reported to the Chief Executive, Taranaki Regional Council, within 20 working days of the samples being taken. The report shall include the results of the tests, the relevant operating parameters over the period of each test, all the raw data and all the calculations.

14. The emissions tests referred to in special condition 13 shall be carried out in accordance with Australian Standard 4323.2-1995, or any other equivalent method subject to the written approval of the Chief Executive, Taranaki Regional Council, and these tests shall be performed by a party independent from the consent holder, appropriately qualified and experienced in such testing to the satisfaction of the Chief Executive, Taranaki Regional Council.

15. Within three months of the granting of this consent the consent holder shall prepare, and thereafter maintain, to the satisfaction of the Chief Executive, Taranaki Regional Council, an operation, management and maintenance plan detailing the Company's procedures including but not limited to staff training, general housekeeping and yard maintenance, blasting operations, monitoring and maintenance of the blasting buildings and air discharge treatment systems, the recording of training, monitoring and maintenance undertaken, the recording of complaints made directly to the Company, and the frequency of review of the plan.

16. The consent will be exercised in accordance with the procedures set out in the operation and management plan, and the consent holder shall subsequently adhere to and comply with the procedures, requirements, obligations and all other matters specified in the operation and management plan, except by specific agreement of the Chief Executive, Taranaki Regional Council. In the case of any contradiction between the operation and management plan and the conditions of this resource consent, the conditions of this resource consent shall prevail.

17. The monitoring, maintenance and complaints records required by special condition 15 shall be made available to the Chief Executive, Taranaki Regional Council upon request.

18. If the management practices for the control of windblown dust from the yard areas is not implemented within one month of the approval of the management plan, or is not effective at controlling windblown dust such that compliance with special conditions 4 and 8 is achieved, then special condition 19 shall apply.

19. Subject to special condition 18, the yard and any roadways in the yard shall be sealed, maintained and cleaned to minimise windblown dust to the satisfaction of the Chief Executive, Taranaki Regional Council.

20. The consent holder shall notify the Chief Executive, Taranaki Regional Council, not less than 24 hours and not more than 7 days prior to using more than three blasting nozzles simultaneously in the "garnet shed".

21. The consent holder shall notify the Chief Executive, Taranaki Regional Council in writing at least 24 hours and not more than 7 days prior to operation of the grit room.

22. The final discharge after any pre-treatment at the permanent site at Rifle Range Road, New Plymouth, shall not contain lead [Pb] or Pb components at a concentration greater than 0.7 milligrams per cubic metre as Pb, chromium [Cr] or Cr compounds at a concentration of 1.5 milligrams per cubic metre as Cr, or zinc [Zn] or Zn compounds at a concentration of 15 milligrams per cubic metre as Zn [discharge corrected to 0 degrees Celsius and dry gas], at any time.

22. The consent holder and staff of the Taranaki Regional Council shall meet once per year with the consent holder, Landlord, and any other interested party at the discretion of the Chief Executive, Taranaki Regional Council, to discuss any matter relating to the exercise of this consent, and in order to facilitate ongoing consultation, unless it is agreed by the consent holder, Landlord and Chief Executive, Taranaki Regional Council that a meeting is not necessary at that time.

Yard operations

23. From time to time the consent holder may receive for abrasive blasting or other surface treatment, an item that because of its bulk, weight, or other factor, cannot be treated inside the appropriate enclosed facility. Such yard operations shall not be permitted on a frequent or continual basis, other than with the written approval of the Chief Executive, Taranaki Regional Council.

24. The consent holder shall specifically notify the Landlord and Chief Executive, Taranaki Regional Council not more than 7 days and not less than 48 hours prior to commencing any yard operation as described in special condition 23.

25. All items which cannot be treated within properly enclosed facilities shall be screened by means of covers, tarpaulins, cladding or other means, as completely as practicable, to contain dust emissions and depositions and to restrict the spread of all blasting debris.

Mobile operations

26. All items or premises to be blasted from a mobile blasting unit shall be screened by means of covers, tarpaulins, cladding, or other means, as completely as practicable, to contain dust emissions and depositions and to restrict the spread of all blasting debris and materials to the satisfaction of the Chief Executive, Taranaki Regional Council.

27. Where abrasive blasting or surface coating from a mobile blasting unit is to take place within 100 metres of a watercourse, the consent holder shall notify the Chief Executive, Taranaki Regional Council, not more than 7 days and not less than 48 hours prior to any operation commencing. The Chief Executive, Taranaki Regional Council, may require additional measures to prevent, minimise or mitigate any potential for adverse environmental effects. The consent holder shall ascertain such measures prior to commencing an abrasive blasting operation, and comply with any and all such measures at all times.

28. The discharge shall not give rise to any of the following effects in any surface watercourse:

    a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
    b) any conspicuous change in the colour or visual clarity;
    c) any emission of objectionable odour;
    d) the rendering of fresh water unsuitable for consumption by farm animals;
    e) any significant adverse effects on aquatic life;
    f) an increase in suspended solids of more than 10 grams per cubic metre;
    g) turbidity above 4 nephelometric turbidity units [NTU], except that if the turbidity within the water body is above 3.2 NTU, no more than 25% increase in NTU;
    h) any increase in the concentration of zinc, lead, arsenic, chromium or thorium-based products.

29. Dry abrasive blasting from a mobile blasting unit shall not be conducted within 200 metres of any dwelling place or property boundary until either public notice or individual notice to the owners or occupiers of those dwellings or properties has been given.

30. The suspended particulate matter shall not exceed 3 mg/m^3 [measured under ambient conditions], and the deposition of dust shall not exceed a mean daily rate of 0.13 g/m^2/day beyond the property boundary or beyond 50 metres of the discharge when sited on public amenity areas, whichever is less.

Review

31. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2007 and/or June 2008 and/or June 2010 and/or June 2014, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

32. Condition 14 of this resource consent may be reviewed at any time, consequent to any amendment or revision of Australian Standard 4323.2-1995.

Signed at Stratford on 21 November 2006

For and on behalf of
Taranaki Regional Council

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Director-Resource Management

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Katere Surface Coatings Limited P O Box 3258 Fitzroy NEW PLYMOUTH
Consent Granted Date:	18 February 2009

Conditions of Consent

Consent Granted:	To discharge emissions to air from abrasive blasting and surface coating activities at a permanent site located at Katere Road, New Plymouth at or about (NZTM) 1697260E-5677411N and from mobile operations throughout the Taranaki region including within the Coastal Marine Area at Port Taranaki
Expiry Date:	1 June 2020
Review Date(s):	June 2014
Site Location:	Katere Road, New Plymouth & Various locations throughout the Taranaki region
Legal Description:	Lot 2 DP 16705 & Various locations throughout the Taranaki region

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. The conditions of this consent shall apply to the various operations of the consent holder as follows;

- Special Conditions 2-8, 20, and 21 apply to all operations.
- Special Conditions 9-11 apply to operations conducted within the permanent facility at Katere Road, New Plymouth.
- Special Conditions 12-14 apply to yard operations conducted at the permanent facility at Katere Road, New Plymouth.
- Special Conditions 15-19 apply to operations conducted at any site other than the permanent facility at Katere Road, New Plymouth (excluding the Coastal Marine Area).

All operations

2. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.

3. Any discharge to air from the exercise of this consent shall not give rise to any offensive, objectionable or toxic levels of dust or odour at or beyond the boundary of the property on which the abrasive blasting or associated activity is occurring.

4. All abrasive blasting is to be conducted taking into account wind direction and wind strength, such that off-site emissions are kept to a practicable minimum.

5. As far as is practicable, work areas and surrounding areas shall be cleared of accumulations of blasting material at the end of each blasting session and by the end of each working day.

6. Sand used for dry abrasive blasting shall contain:

   (i) less than 5% by dry weight free silica; and
   (ii) less than 2% by dry weight dust able to pass through a 0.15 micron sieve.

7. Dry sand blasting shall only be used only when it is the only method suitable for the job.

8. The consent holder shall ensure that all operators of abrasive blasting equipment understand and comply with the all the conditions of this consent prior to the commencement of any work for which this consent is required.

Operations conducted within the permanent facility located at Katere Road, New Plymouth

9. Except as provided for in conditions 12 to 14, all abrasive blasting on the consent holder's permanent site at Katere Road, New Plymouth shall be carried out in an enclosed booth or shed.

10. All emissions from abrasive blasting, surface preparation or surface coating operations and all other associated emissions from abrasive blasting within the permanent site at Katere Road, New Plymouth shall be contained and treated, as far as is practicable, prior to discharge from any operations enclosure. All gas streams ventilated or otherwise emitted from an enclosure shall be treated to a concentration of total particulate matter of less than 125 mg/m^3 [natural temperature & pressure] corrected to dry gas basis, at any time.

11. The dust deposition rate beyond the property boundary of the permanent site at Katere Road, New Plymouth arising from the discharge, shall be less than 4.0 $g/m^2/30$ days.

Yard operations conducted at the permanent facility located at Katere Road, New Plymouth

12. From time to time the consent holder may receive for abrasive blasting or other surface treatment, an item that because of its bulk, weight or other factor cannot be treated inside the appropriate enclosed facility. Subject to conditions 12 to 14 such items may be treated outside the enclosed facility (termed 'yard operations').

13. The consent holder shall specifically notify the Chief Executive, Taranaki Regional Council not more than 7 days and not less than 48 hours prior to commencing any yard operation as described in special condition 12. Notification shall include the consent number and a brief description of the activity consented and be emailed to worknotification@trc.govt.nz. Notification by fax or post is acceptable only if the consent holder does not have access to email.

14. All items which cannot be treated within properly enclosed facilities shall be screened by means of covers, tarpaulins, cladding or other means, as completely as practicable, to contain dust emissions and depositions and to restrict the spread of all blasting debris.

Operations conducted at any site other than the permanent facility at Katere Road, New Plymouth

15. All items to be blasted shall be screened by means of covers, tarpaulins, cladding, or other means to contain dust emissions and deposits to the satisfaction of the Chief Executive, Taranaki Regional Council.

16. Prior to undertaking abrasive blasting within residential areas, the consent holder shall notify the relevant District Council.

17. Where abrasive blasting or surface coating is to take place within 100 metres of a watercourse, the consent holder shall notify the Chief Executive, Taranaki Regional Council, not more than 7 days and not less than 48 hours prior to any operation commencing. Notification shall include the consent number and a brief description of the activity consented and be emailed to worknotification@trc.govt.nz. Notification by fax or post is acceptable only if the consent holder does not have access to email.

18. Dry abrasive blasting that is to be conducted within 200 metres of any dwelling place or property boundary may only take place after either public notice or individual notice to all affected owners or occupiers has been given.

19. The suspended particulate matter shall not exceed 3 mg/m^3 [measured under ambient conditions], and the deposition of dust shall not exceed 0.13 $g/m^2/day$ beyond the boundary of the property on which the activity is occurring or beyond 50 metres of the discharge when sited on public land, whichever is less.

Review

20. This consent shall lapse on 31 March 2014, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

21. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2014, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 18 February 2009

For and on behalf of
Taranaki Regional Council

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Chief Executive

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Ravensdown Limited PO Box 1049 Christchurch 8140
Decision Date:	4 December 2008
Commencement Date:	4 December 2008

Conditions of Consent

Consent Granted:	To discharge emissions into the air from the storage, blending and distribution of fertiliser
Expiry Date:	1 June 2026
Review Date(s):	June 2020 and/or within six months of receiving notification in relation to condition 8
Site Location:	Smart Road, New Plymouth
Legal Description:	Lot 2 DP 339878 Sec 18 Pt Secs 142, 143, 166 & 175 Pt Sbdn of Sec 162 Hua Dist Blk VI Paritutu SD
Grid Reference (NZTM)	1696333E-5677008N

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

   i) the administration, monitoring and supervision of this consent; and
   ii) charges authorised by regulations.

Special conditions

1. Not withstanding any other condition, the consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.

2. All activities permitted by this consent are to be conducted taking into account wind direction and wind strength, such that off-site emissions are kept to a practicable minimum.

3. The suspended particulate matter shall not exceed 3 mg/m^3 [measured under ambient conditions], and the deposition of dust shall not exceed 0.13 g/m^2/ day or 4.0 g/m^2/30 days beyond the property boundary.

4. Notwithstanding condition 3, any discharge to air from the exercise of this consent shall not give rise to any offensive, objectionable or toxic levels of dust or odour at or beyond the boundary of the property.

5. To avoid re-suspension of dust and stormwater contamination, any fertiliser spilt outside the buildings shall be cleaned up as soon as is practicable and in any case, by the end of each working day.

6. As far as is practicable, all intake, blending and dispatch of fertiliser shall be carried out within buildings that are maintained to prevent or minimise any discharges to the environment from the exercise of this consent.

7. The consent holder shall keep, and make available to the Chief Executive, Taranaki Regional Council, upon request, a record of the time, duration and cause of all dust incidents having actual or potential off-site impacts.

8. The consent holder shall notify the Chief Executive, Taranaki Regional Council, prior to making any changes to the activities at the site, which could adversely alter the nature of the discharge. Any such change shall then only occur following receipt of any necessary approval under the Resource Management Act. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to worknotification@trc.govt.nz. Notification by fax or post is acceptable if the consent holder does not have access to email.

9. If potentially odorous products are to be received at the site that were not specified in application 5015, then the consent holder shall notify the Chief Executive, Taranaki Regional Council in accordance with condition 8 and shall in addition provide an odour management plan to the satisfaction of Chief Executive, Taranaki Regional Council, detailing how the product will be handled at the site.

10. The Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during the month of June 2014 and/or June 2020 and/or within 6 months of receiving notification in relation to condition 8 for the purpose of:

    a) adding, amending or deleting any limit on discharge or ambient concentrations of any contaminant or contaminants; and/or
    b) requiring the consent holder to adopt the best practicable option to remove or reduce any adverse effect on the environment caused by any discharge to the environment; and/or
    c) ensuring that the conditions are adequate to deal with any adverse effects of the discharge on the environment arising from the exercise of this consent which were not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 2 December 2015

For and on behalf of
Taranaki Regional Council

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A D McLay
Director - Resource Management

Consent 6073-1

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Taranaki Drum & Pallet Recycling P O Box 3398 NEW PLYMOUTH
Consent Granted Date:	17 September 2002

Conditions of Consent

Consent Granted:	To discharge emissions into the air from the burning off of pallets at or about GR: P19:066-379
Expiry Date:	1 December 2020
Review Date(s):	June 2003, June 2004, June 2008, June 2014
Site Location:	137 Smart Road, New Plymouth
Legal Description:	Pt Lot 1 DP 2545 Blk VI Paritutu SD

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. At all times, the consent holder shall adopt the best practicable option (as defined in Section 2 of the Resource Management Act 1991) to prevent or minimise any actual or likely adverse effect on the environment associated with the discharge of contaminants into the air from the site.

2. The consent holder shall at all times operate, maintain, supervise, monitor and control all processes so that discharges authorised by this consent are maintained at a practicable minimum.

3. The materials shall be combusted only when placed in a pit located no closer than 20 metres to any boundary.

4. The materials combusted in the pit shall be restricted to wood, wood off-cuts and trimmings, from packing pallets.

5. The materials authorised through this consent to be combusted exclude household refuse, timber or wood off-cuts treated with organochlorine substances or with copper, chrome or arsenic, oil, tyres, plastics (including plastic films and wrapping), paints or paint containers, or any trimmings, prunings, or felling of vegetation.

6. The fires shall not be lit later than 12 noon on any day.

7. Any materials still burning or smouldering after 5 pm on the day of lighting shall be raked or otherwise spread thinly, or quenched.

8. The consent holder, prior to lighting any fire, shall have regard to wind direction and speed so as to minimise adverse environmental effects upon neighbours. A fire shall not be lit more than twice in any seven-day period, or in foggy conditions.

9. The discharges authorised by this consent shall not give rise to odour, suspended or deposited dust, or smoke at or beyond the boundary of the site that, in the opinion of an enforcement officer of the Taranaki Regional Council, is offensive or objectionable.

10. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2003, 2004, 2008 and/or 2014for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 17 September 2002

For and on behalf of
Taranaki Regional Council

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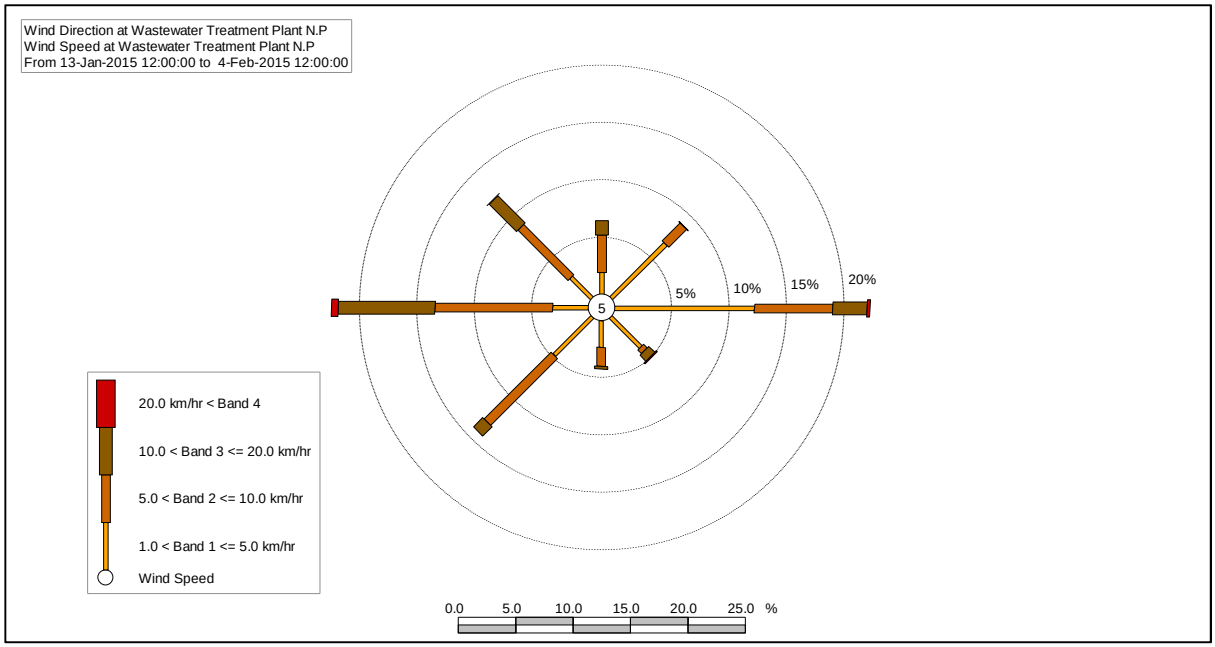
Director-Resource Management

Appendix II

Wind direction information for the New Plymouth area during the deposition gauge monitoring periods



~~~ Hilltop Hydro ~~~ Version 6.49 19-Apr-2016
~~~ PLWind ~~~

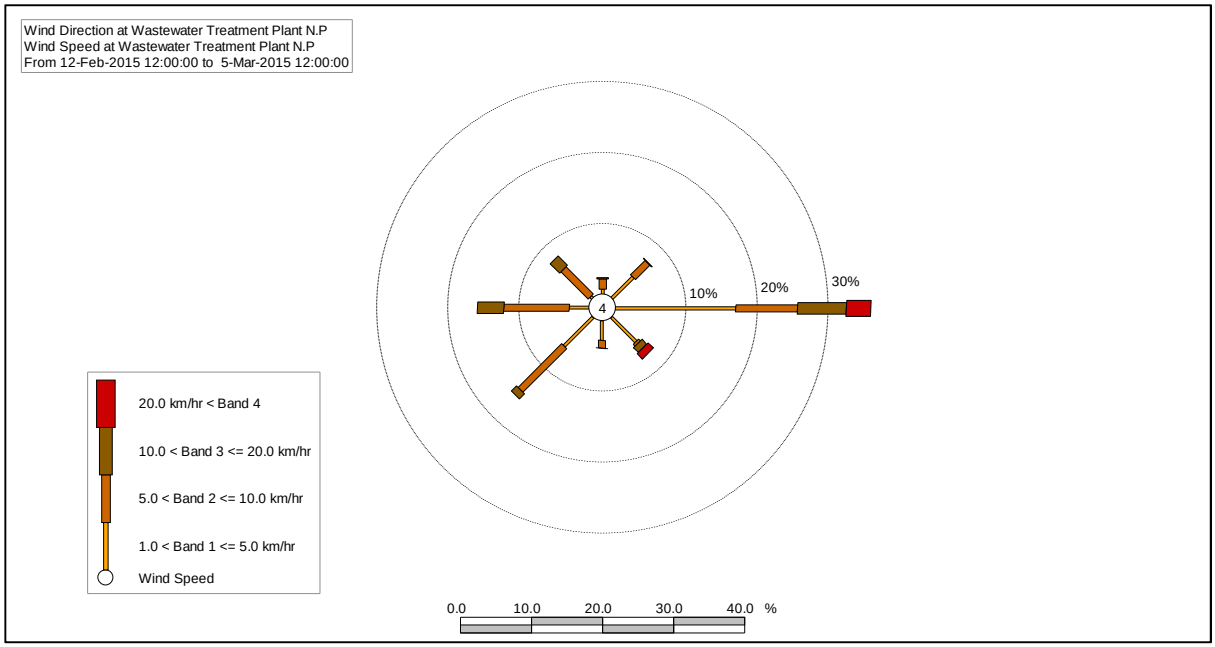
Source is R:\UNAUDITED-DATA\TELEMETRY\TELEMETRY.HTS
Wind Direction at Wastewater Treatment Plant N.P and Wind Speed at Wastewater Treatment Plant N.P
From 13-Jan-2015 12:00:00 to 4-Feb-2015 12:00:00

Number of data points read : 3168
Number of directions <0.0 or >360.0 deg. : 0
Limits for Wind Speed are 0.0 to 50.0 km/hr
Number of readings outside limits : 0
Number of data points used : 3168

Percentange of time in each band

Direction	Band 1	Band 2	Band 3	Band 4	Total
337.5 - 22.4	1.9	3.3	1.3	0.0	6.4
22.5 - 67.4	6.7	2.2	0.1	0.0	9.0
67.5 - 112.4	12.2	6.8	3.0	0.3	22.3
112.5 - 157.4	3.7	0.4	0.7	0.1	4.9
157.5 - 202.4	2.3	1.7	0.2	0.0	4.2
202.5 - 247.4	4.6	8.3	1.1	0.0	14.0
247.5 - 292.4	3.1	10.2	8.5	0.6	22.4
292.5 - 337.4	2.6	6.2	3.4	0.1	12.2
Total	37.1	39.1	18.2	1.0	95.4
			Percentage <= 1.0		4.6

Wind Speed bands (km/hr)
1.0 < Band 1 <= 5.0 5.0 < Band 2 <= 10.0
10.0 < Band 3 <= 20.0 Band 4 > 20.0



~~~ Hilltop Hydro ~~~ Version 6.49 19-Apr-2016
~~~ PLWind ~~~

Source is R:\UNAUDITED-DATA\TELEMETRY\TELEMETRY.HTS
Wind Direction at Wastewater Treatment Plant N.P and Wind Speed at Wastewater Treatment Plant N.P
From 12-Feb-2015 12:00:00 to 5-Mar-2015 12:00:00

Number of data points read : 3024
Number of directions <0.0 or >360.0 deg. : 0
Limits for Wind Speed are 0.0 to 50.0 km/hr
Number of readings outside limits : 0
Number of data points used : 3024

Percentange of time in each band

Direction	Band 1	Band 2	Band 3	Band 4	Total
337.5 - 22.4	0.8	1.5	0.1	0.0	2.4
22.5 - 67.4	4.3	2.8	0.1	0.0	7.2
67.5 - 112.4	17.0	8.7	6.8	3.5	36.0
112.5 - 157.4	4.9	0.3	1.0	1.0	7.2
157.5 - 202.4	2.7	1.0	0.0	0.0	3.8
202.5 - 247.4	5.7	8.7	1.0	0.0	15.4
247.5 - 292.4	2.8	9.2	3.7	0.0	15.7
292.5 - 337.4	0.5	5.3	2.0	0.0	7.8
Total	38.8	37.5	14.7	4.5	95.5
			Percentage <= 1.0		4.5

Wind Speed bands (km/hr)
1.0 < Band 1 <= 5.0 5.0 < Band 2 <= 10.0
10.0 < Band 3 <= 20.0 Band 4 > 20.0