Before the Independent Commissioners

UNDER The Resource Management Act 1991

IN THE MATTER OF The hearing of submissions and further submissions on the proposed Canterbury Air Regional Plan

MEMORANDUM OF COUNSEL FOR CANTERBURY AGGREGATE PRODUCERS GROUP (SUBMITTER ID: 62784; FURTHER SUBMITTER ID: 1042012) REGARDING POLICIES 6.20 & 6.21 AND Rules 7.17 AND 7.18

DATED 12 FEBRUARY 2016

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May it Please the Hearing Commissioners:

Introduction

1 This Memorandum is filed on behalf of the Canterbury Aggregate Producers Group (CAPG) in accordance with the Hearing Commissioners’ Minute 3 dated 10 December 2015. The Minute invites submitters who filed submission points on Policies 6.20 and 6.21 and/or Rules 7.18 and 7.19 of the proposed Canterbury Air Regional Plan (pCARP) to file written submissions on the Canterbury Regional Council’s (Council’s) proposed redrafting of those provisions by 12 February 2016.

2 The CAPG’s original submission on the pCARP\(^1\) addressed industrial and large scale discharges to air through Rules 7.17 and 7.18. However, neither the CAPG’s original or further submissions\(^2\) specifically addressed Policies 6.20 and 6.21.

3 The CAPG understands that the amendments proposed by Council to Policies 6.19 to 6.24 are intended to be consequential to the proposed deletion of Rules 7.17 and 7.18. It is therefore respectfully submitted that while the CAPG’s original and further submissions did not specifically address Policies 6.20 and 6.21, its original submission points on Rules 7.17 and 7.18 give the CAPG standing to comment on the Council’s redrafted policies, in accordance with Minute 3.

4 The CAPG has prepared its comments on Council’s redrafted policies with assistance from its planning and air quality consultants, Mr Kevin Bligh and Mr Richard Chilton. Both provided evidence on behalf of the CAPG at the pCARP hearing. Should the Hearing Commissioners have any questions in relation to the planning and technical matters addressed in this Memorandum, Mr Bligh and Mr Chilton could be made available to attend the hearing when it reconvenes on 4 April 2016.

Council’s proposed redrafting

5 Council’s proposed redrafting is set out in the Memorandum of Counsel for Council of 18 December 2015. In summary, Council proposes that:

5.1 the suite of policies managing industrial and large scale discharges into air (being Policies 6.19 to 6.24) is amended as set out in Appendix A to Council’s Memorandum; and

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\(^1\) Submitter ID 62784.
\(^2\) Further Submitter ID 1042012.

109561-5-46
5.2 Rules 7.17 and 7.18 be deleted and Rules 7.19 to 7.27 be relied on for managing discharges from large scale solid fuel burning devices.

6 In the absence of any accompanying commentary, it has been difficult for the CAPG and its consultants to fully understand the basis on which the revisions have been proposed and, in particular, how the revisions are intended to relate to the objective and rule framework of the pCARP. However, the range of revisions now proposed by Council appear to extend beyond revisions to the provisions specifically identified by the Hearing Commissioners’ directions in Minute 3 and/or what might reasonably be considered consequential to Council’s proposed deletion of Rules 7.17 and 7.18.

7 It is, however, accepted that the Hearings Commissioners will need to be satisfied that there is legal scope to make the Council’s proposed revisions (and/or any alternative proposal offered by qualifying submitters) and that the relevant RMA tests for regional planning provisions are satisfied.

CAPG’s Comments on Council’s proposed revisions

Rules 7.17 and 7.18

8 For the reasons outlined in the evidence in chief of Mr Bligh\(^3\) and Mr Chilton\(^4\) for the pCAPR hearing, the CAPG supports Council’s proposed deletion of Rules 7.17 and 7.18.

Policy 6.19

9 The CAPG supports the Council’s proposed minor amendments to Policy 6.19.

Policy 6.20

10 The CAPG supports the amendments proposed by Council to Policy 6.20, with the exception of the proposed inclusion of a new clause (2), which the CAPG submits should be deleted for the reasons now addressed.

11 The CAPG’s primary concern is that clause (2) fails to recognise the locational constraints facing activities such as quarries and incorrectly reverses the established presumption in relation to the management of reverse sensitivity effects. In doing so, the CAPG submits that clause (2) would be:

\(^3\) At paras 49 – 57.
\(^4\) At paras 20 – 23.
11.1 contrary to the higher level policy in the Canterbury Regional Policy Statement, as discussed in the evidence in chief of Mr Bligh.\textsuperscript{5}

11.2 inconsistent with the Reporting Officer’s recommended new Policy 6.11A, which states:\textsuperscript{5}

\begin{quote}
Locational constraints of discharging activities, including heavy industry and infrastructure, are recognised so that operational discharges into air are enabled where the best practicable option is applied.
\end{quote}

12 The legal and practical implications of similar shortfalls in policies 6.6, 6.7 and 6.8 of the pCARP (as notified) were addressed in legal submissions\textsuperscript{7} and evidence\textsuperscript{8} presented on behalf of the CAPG (and by various other submitters) at the pCARP hearing. The CAPG relies on those submissions and evidence to further support its position on clause (2).

13 It is further submitted that the wording proposed for clause (2) appears to import a new requirement for the total internalisation of effects associated with a discharge. It is submitted that such policy direction would not only be contrary to established caselaw principles,\textsuperscript{9} but would also be very difficult to administer in practice and create difficulties for decision makers trying to determine whether an ‘anticipated’ activity may be ‘constrained’. For this reason and those outlined earlier, the CAPG submits that clause (2) of Council’s redrafted Policy 6.20 should not be included in the pCARP.

\textit{Policy 6.21}

14 The CAPG does not oppose Council’s proposed revision of Policy 6.21. It is, however, noted that the Policy seems unnecessary as it simply duplicates requirements for resource consent applicants to consider and assess a proposed discharge against relevant documents under Schedule 4 of the Resource Management Act 1991 (RMA).

\textit{Policy 6.22}

15 The CAPG opposes the revised Policy for the reasons now addressed.

\begin{flushleft}
\textsuperscript{5} At para 42.
\textsuperscript{6} It is noted that the CAPG continues to seek an amendment to this new Policy. The amendment is set out in the Evidence in Chief of Mr Kevin Bligh (dated 18 September 2015), at [29], and seeks inclusion of a reference to “quarrying” after the term “heavy industry” and deletion of the reference to “Best Practicable Option”.
\textsuperscript{7} Legal Submissions on behalf of the CAPG (dated 12 November 2015), at paragraphs 8 – 24.
\textsuperscript{8} Evidence in Chief of Mr Bob Willis (CAPG representative) at paras 21 – 64; Evidence in Chief of Mr Kevin Bligh (planning) at paras 22 - 47.
\textsuperscript{9} Waikato Environmental Protection Society Inc v Waikato Regional Council (Environment Court, W06/2007, 23 July 2007), at [187] (copy attached).
\end{flushleft}
The CAPG understands that the revised Policy is intended to provide policy guidance for Rule 7.14, which aligns with Regulation 17 of the National Environmental Standards for Air Quality (NESAQ). Rule 7.14 (as recommended to be amended in the section 42A Report) provides:

7.14 Any discharge of PM$_{10}$ into air that would likely, at any time, to increase the concentration of PM$_{10}$ (calculated as a 24-hour mean) by more than 2.5 µg/m³ in any part of the airshed other than the site on which the discharge occurs, is a restricted discretionary activity provided the following is met:

1. 100% of the discharge will be off-set within the polluted airshed in accordance with Regulation 17 of the Resource Management (National Environmental Standards for Air Quality) Regulations 2004.

The exercise of the discretion is restricted to the following matters:

1. The proposal to off-set 100% of the emissions within the polluted airshed to ensure that there is no net increase of PM$_{10}$ emissions; and

2. The matters set out in Rule 7.2

As noted, Rule 7.14 addresses discharges of PM$_{10}$ within gazetted airsheds. However, Council’s revised Policy 6.22 seeks to address discharges of PM$_{10}$ within Clean Air Zones rather than airsheds. It is submitted that if Policy 6.22 is to be retained, it should be amended to reflect Rule 7.14 and Regulation 17 of the NESAQ.

It is noted that the same issue of consistency in the use of these terms in the notified versions of Policy 6.22 and Rule 7.14 was discussed at the pCARP hearing. The CAPG understands that in answer to questions posed by the Hearing Commissioners on that issue, Council officers accepted that their failure to correct Policy 6.22 (i.e. to replace the term Clean Air Zone with airshed) had been an oversight.

The second part of the revised Policy 6.22 comprises a list of criteria for identifying whether a discharge is “significant” for the purpose of the Policy. Mr Chilton has identified the following technical issues with this list of “criteria”:

19.1 The mechanism for determining whether a discharge is “significant” under the NESAQ is whether the discharge results in a 24-hour average PM$_{10}$ concentration that is greater than 2.5µg/m³. However, the revised Policy takes no account of this.

19.2 Clause (1) seeks to compare emissions with other large scale burning devices and industrial or trade premises. This would provide
an indication of the “significance” of the discharge relative to the other listed activities, but makes no allowance for comparing the discharge with all discharge sectors. This is important as the industrial sector is often responsible for a relatively small proportion of PM\textsubscript{10} emissions in airsheds, which are otherwise dominated by the domestic and vehicle emission sectors. Without a comparison against the total airshed PM\textsubscript{10} emission rate, a true gauge of the “significance” of the individual discharge source cannot readily be made.

19.3 Clause (3) relates to localised effects, including the location of sensitive receptors. The reference to “sensitive receptors” is unnecessary as any assessment of localised effects would by necessity consider the location of sensitive receptors.

19.4 Clause (4) relates to mitigation and emission control options, which relates more to the ability of an application to further reduce its emissions, but does not necessarily relate to the “significance” of the discharge.

19.5 Clause (5) may be reasonable if there are reductions over time from all other sectors such that the discharge that is the subject of the resource consent application becomes a significant proportion.

20 It is therefore submitted that should the Policy be retained, its focus should be limited to implementing Regulation 17 of the NESAQ. However, it is the CAPG’s preference that Policy 6.22 (in its notified or revised form) not be included in the pCARP to avoid duplication of matters addressed by the NESAQ.

Policy 6.22A

21 The CAPG opposes Council’s proposed new Policy 6.22A on the basis that it provides no guidance as to the circumstances when monitoring of “the cumulative or local effects of the discharge” (or ambient air quality monitoring) would be required.

22 In this regard, Mr Chilton advises that ambient monitoring should only be a consideration in circumstances where there is some potential risk that predicted cumulative off-site ground level concentrations from that activity may result in an exceedance of the guideline value or standard, e.g. where an assessment of potential effects on the environment of a new discharge activity (through dispersion modelling) shows concentrations getting very close to guideline values or the standard. In Mr Chilton’s opinion, ambient
monitoring might be reasonable in these circumstances to confirm the actual concentrations that occur in reality and below that determined by the assessment. However, for discharges where the concentrations are predicted to be comfortably below the relevant guideline or standards, it is Mr Chilton’s opinion that the requirement for ambient monitoring would be unjustified.

23 On the basis of Mr Chilton’s advice, it is the CAPG’s preference that Council’s new Policy 6.22A not be included in the pCARP. However, if the Hearing Commissioners consider there is merit in the new Policy 6.22A, the CAPG seeks that the Policy be substantially revised to address the specific matters raised by Mr Chilton (as outlined above). It is submitted, however, that if approved in its current form, the Policy would create considerable uncertainty for industry given the significant financial and logistical costs associated with ambient monitoring programmes.

24 Before moving from this topic, it is necessary to address one further matter arising from Council’s proposed new Policy 6.22A. Mr Chilton has advised that should the Policy be accepted (in some form) by the Hearing Commissioners, the term “cumulative” should be deleted. Mr Chilton advises that, in practice, ambient monitoring would always provide a measure of the cumulative contaminant concentrations at the point where it is being monitored. It is then a question of whether the monitoring is undertaken at a location that would be representative of the localised impacts of the discharge source. Given this, Mr Chilton considers it unnecessary to include the term “cumulative” as part of the Policy.

Policy 6.22B

25 The CAPG does not oppose Council’s proposed new Policy 6.22B. It is noted, however, that the Policy seems to be unnecessary on the basis that the matters addressed would ordinarily be assessed as part of any resource consent application for an industrial or large scale air discharge.

Dated: 12 December 2016

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D Caldwell / G Hamilton
Counsel for Canterbury Aggregate Producers Group
Decision No. W 060/2007

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of under of the Act

BETWEEN

WAIKATO ENVIRONMENTAL PROTECTION SOCIETY INC
(ENV-2006-WLG-000356 / ENV-2006-WLG-000344)

AND

AR & JM GRAY
(ENV-2006-WLG-000347 / ENV-2006-WLG-000351)

Appellants

AND

WAIKATO REGIONAL COUNCIL
Respondent

AND

MATAMATA PIAKO DISTRICT COUNCIL
Respondent

AND

NEW ZEALAND MUSHROOMS LIMITED
Applicant

BEFORE THE ENVIRONMENT COURT
Environment Judge B P Dwyer (Presiding)
Commissioner P A Catchpole
Commissioner J D Rowan

At Hamilton on 26 February – 2 March 2007,
5 March – 8 March 2007
INTERIM DECISION – NEW ZEALAND MUSHROOMS LTD

Introduction

[1] These are appeals against decisions of the Waikato Regional Council (the Regional Council) and Matamata Piako District Council (the District Council) granting a series of resource consents to New Zealand Mushrooms Ltd (NZ Mushrooms/the applicant) in respect of its mushroom compost production site situated at 206 Taukoro Road, Morrinsville (the site).

[2] NZ Mushrooms already operates a mushroom composting facility on the site. The consents which are subject to these appeals include a series of new consents from the Regional Council replacing previous regional consents which have now expired and a land use consent from the District Council authorising an expansion of the existing facilities. The particular consents in question are:

- From the Regional Council – a discharge consent authorising the discharge of contaminants into air from the composting facility, a discharge consent authorising the discharge of compost leachate, yard wash down water and storm water to land, and a water permit authorising the take of up to 90 cubic metres of groundwater per day.

- From the District Council – a land use consent for construction, use and maintenance of up to four additional compost production bunkers, pasteurisation and spore running facilities and associated activities at the site.
The Regional and District Councils conducted a joint hearing of the applications but issued separate decisions, in each case granting the consents applied for subject to a range of conditions.

Appeals against the grants of consent (other than the grant of the water permit which was not appealed) were filed by Waikato Environmental Protection Society Inc (WEPSI) and Anthony Robert Gray and Janet Margaret Gray (Mr and Mrs Gray). Both parties were submitters in opposition to NZ Mushrooms' application.

Although the notices of appeal raised a range of issues, concerns about many of these had been resolved by the time the matter came to hearing. The issues which were in dispute before the Court were the odour effects of the proposal and the planning/resource management issues arising from those odour effects.

The consent to discharge contaminants (odour) to air is controlled by the proposed Waikato Regional Plan. Under that Plan the discharge constitutes a discretionary activity requiring resource consent. We were advised that although the Regional Plan itself is not yet operative, the relevant section of the Plan (The Air Module) might be regarded as operative pursuant to s19 RMA.

The site is in the Rural Zone of the operative Matamata Piako District Plan but further is a Scheduled Site pursuant to Schedule 5 of that Plan which identifies Sites Subject to a Development Concept Plan. The Development Concept Plan for the site forms part of the District Plan. It shows the site and details various existing activities and future development areas. The effect of the scheduling is that the present composting operation is a permitted activity but expansion of that operation beyond its present limits is a restricted discretionary activity.

There is a certain crossover between the provisions of the Regional and District Plans in that although the discharge to air is a regional matter, the District Council has reserved discretion regarding odour effects for this particular scheduled site. We understand however that the District Council was largely guided by the position of the Regional Council in respect of the odour issue.
The positions of the parties in respect of the appeals might be summarised as follows:

- **WEPSI and Mr and Mrs Gray**
  The appellants sought that the consents granted by the Regional and District Councils be overturned or, in the alternative, that the activities at the site be fully enclosed so as to contain all odours that can be reasonably contained and that significant monitoring conditions be imposed.

- **NZ Mushrooms**
  The applicant sought that the appeals be dismissed and that the consents granted by the Regional and District Councils be upheld.

- **Regional Council**
  The Regional Council did not seek to uphold its consent on appeal as it now considers that the conditions attached to that consent are inadequate. It sought to impose further mitigation measures which went beyond those contained in the consent as granted. The Regional Council did not resile from the grant of consent per se.

- **District Council**
  The District Council continued to support the grant of land use consent to the expanded operation proposed by the applicant. Insofar as the discharge consent was concerned the District Council supported the changed position of the Regional Council seeking the imposition of further controls.

**The site and its vicinity**

[10] The site is situated approximately 2km to the north of Morrinsville. The surrounding area is zoned Rural (as is the site). The certificate of title to the site shows that it contains a total of 26.4057 hectares. It is bounded on its western side by Taukoro Road and on its eastern side by the Piako River. Its northern boundary adjoins a farm property owned by Mr and Mrs Gray and its southern boundary adjoins a dairy farm owned by Mr and Mrs B D Cameron.

[11] The site presently contains the following facilities:
  - A manager’s house situated near Taukoro Road.
  - The composting yard which incorporates various administration buildings (offices, smoko room, etc), four large concrete bunkers (35m long x 6m wide x 6m high), a hayshed-like structure for the storage of chicken.
manure, a large converted container used for the dunking of straw bales, a bale break line (a purpose-built machine used to mix the compost ingredients), a biofilter (an open structure 7.6m wide x 31.2m long x 2m high filled with bark and bark nuggets), and a general working, manoeuvring, parking and open storage area. These facilities occupy approximately 4,500m² of the property.

- A reservoir/storm water retention pond (1000m³).
- The balance of the property is presently leased out for grazing purposes and additionally is used for the irrigation of excess wastewater from the storage reservoir.

[12] There are a number of houses in the vicinity of the site. For the purposes of these proceedings, the significant houses are owned/occupied by the following persons:

- Mr and Mrs A Long, sharemilkers employed by the Camerons. They reside in the sharemilkers' house on the Cameron farm. The house is situated approximately 350m S/SW of the composting yard. They are members of WEPSI.
- Mr and Mrs Gray reside in a house on their farm property. The house is situated approximately 630m N/NE of the composting yard. They are members of WEPSI as well as being appellants in their own right.
- Mr and Mrs N K Olesen reside in a house on their dairy farm which is on the west side of Taukoro Road. The house is situated approximately 660m S/SW of the composting yard. They are members of WEPSI.
- Mr and Mrs Cameron reside in a house on their farm property. The house is situated approximately 860m S/SW of the composting yard. They are members of WEPSI.

The boundaries of the Gray, Olesen, and Cameron properties are considerably closer to the composting yard than are the house sites and in the cases of Mr and Mrs Oleson and Mr and Mrs Cameron they have facilities such as cow sheds and workshops which are situated closer than the houses to the composting yard.
Mushroom Production

Mushroom production as undertaken by NZ Mushrooms has four phases. The phases were described to us in some detail and additionally we had the benefit of site visits where we viewed these processes being undertaken. The four phases may briefly be described as follows:

- **Phase One – Composting.** This is the process currently undertaken at the site. It involves the production of mushroom compost. This is achieved by the mixing of straw, chicken manure, water, and gypsum. It is the phase of mushroom production which has the most potential for the creation of adverse odour effects and for this reason will be described in more detail later in the following section of this decision.

- **Phase Two – Pasteurisation.** Pasteurisation is a process undertaken to convert high levels of ammonium compounds found in the compost to more usable forms of nitrogen. This process is undertaken in heat rooms in which the air is controlled and filtered. This phase takes place over seven days.

- **Phase Three – Spore Running.** Once the compost has been pasteurised it is inoculated with mushroom spore (seed) which is mixed through the compost. This process occurs in fully enclosed, climate-controlled buildings.

- **Phase Four – Mushroom Growing.** The final phase of the process involves the placement of casing soil (a mixture of peat and limestone) over the inoculated compost causing the mushrooms to grow. This also takes place in a controlled building. There are usually three flushes of mushrooms commencing after 17 days and finishing 40 days after commencement of the process.

At present NZ Mushrooms undertakes only phase 1 at Taukoro Road. Phases 2, 3, and 4 are undertaken at another facility owned by the company at Avenue Road, Morrinsville. If the applications before the Court are approved, phases 2 and 3 will be transferred from Avenue Road with Avenue Road being used solely for mushroom growing.
Phase One Detail

[14] The phase one operation itself has a number of components. There has been a substantial refinement of the phase one process and its components over the time that NZ Mushrooms has operated from the site. It would be fair to describe those refinements as having accelerated over recent years and as having been ongoing since the date of filing the resource consent applications (July 2004).

[15] The raw material used for producing the compost (straw, chicken manure, gypsum and water) is held on site in bulk. From the point of view of odour generation, the most difficult material is the chicken manure which is kept under cover to avoid wetting. There seems to be general agreement that the present covering facilities are inadequate.

[16] The first stage of the composting process involves wetting the straw bales to increase their moisture content. Since August 2006 this has been undertaken by dunking the bales in a tank filled with processed water (recycled wastewater) after which they are stacked and left to stand for a period of time.

[17] One to four days after wetting the bales are broken open and blended with chicken manure, gypsum and water on the bale break line. This process mixes the ingredients together and deposits the mixture onto a concrete pad.

[18] The mixture is then taken into the composting bunkers. This is done by way of front-end loader which puts the mixture into the hopper of a machine called a Hoving bunker filler. The bunker filler distributes the compost mix evenly across the bunker to a pre-determined height and fills the bunker with the appropriate amount of mixture. The four bunkers are each roofed and enclosed on three sides. The ends of the bunkers are fitted with a Structureflex door to allow access. Structureflex appears to be a very heavy plastic/vinyl type material.

[19] Once in the bunkers, air is forced through the compost mixture so that biological and chemical processes break the material down. These processes generate considerable heat and the temperature in the compost is typically 70°-80° Centigrade.
The bunker air supply system draws outside air in and forces it through the compost pile at intervals. This air is then extracted and passed through the bark biofilter which is designed to strip odour from the air before releasing it.

Once the initial mixing process has been undertaken the material is left to decompose into compost over a 17 or 19 day cycle. During this cycle the mixture requires turning and mixing from time to time. This is achieved by moving the compost from one bunker to the other again using the front-end loader and the bunker filler. This process, called bunker to bunker transfer, takes place every 3 to 4 days over the 17 or 19 day cycle at the completion of which the end product is compost ready for the next phases of mushroom growing.

Bunker to bunker transfer usually takes place on Mondays, Tuesdays, and Thursdays although this routine is occasionally changed. The process takes several hours on each occasion. At the end of the process the compost is transported to Avenue Rd.

Site History

The composting facility was initially established at Taukoro Road in about 1984 when the Piako County Council granted an approval under the Town and Country Planning Act 1977 for the establishment of composting facilities on this site. The consent required as a condition that the best practicable methods be used to ensure that there was no nuisance to adjoining properties from offensive odours, flies, and noise.

The operator of the facility was a locally owned company called New Zealand Mushroom Industries Ltd.

We understand that composting was originally undertaken outdoors on a concrete pad. Mr Gray gave evidence as to unsatisfactory operation of the composting facility. In 1994 a renewal of the consent was applied for. Mr Gray advises that he declined to give written approval to the renewal as did other neighbours. However, a new resource consent was granted in early February 1995, notwithstanding the refusal of neighbours to agree. Similar to the original 1984 consent, the 1995 consent required as a condition that no objectionable odour occur at or beyond the boundary. It is (in part) the replacement of this 1995 consent by the present which is the subject of these proceedings.
In 1995 Meadow Mushrooms Ltd purchased the business of New Zealand Mushroom Industries Ltd and changed the name of that company to New Zealand Mushrooms Ltd which is now a wholly owned subsidiary of Meadow Mushrooms Ltd.

Since 1995 NZ Mushrooms has undertaken a series of improvements to its composting processes to improve environmental performance. Those improvements are detailed in the company’s resource consent application and in the evidence of various witnesses to the appeal hearing. Notwithstanding the improvements which the company has made to its operations, there have continued to be complaints about the odour effects of the composting operation and to some extent those complaints are reflected in the degree of opposition to the present applications.

**Expansion Proposals**

The reasons for the company seeking to transfer phases 2 and 3 of the mushroom growing process to Taukoro Road and to expand the composting aspect of that facility are set out in the evidence of Mr R B Young, CEO of Meadow Mushrooms.

- Presently two thirds of Meadow Mushrooms’ production capacity is at its Canterbury mushroom farm. The NZ Mushrooms’ facility at Morrinsville produces one third.

- Although two thirds of the company’s production is in Canterbury, two thirds of its market is in the upper North Island. This means that the company must transport large volumes (approx 35 metric tonnes per week) of mushrooms from Canterbury to the North Island with consequent expense, inefficiency, reduction of shelf life and loss of competitiveness.

- The company proposes to establish a Portobello mushroom growing facility in the North Island at its Morrinsville site which is well suited to brown mushroom production.

- Because Portobello mushrooms release spore into the atmosphere they potentially contaminate compost and therefore must be established in situations where there is no compost production, pasteurisation, or spore running (mushroom growing phases 1, 2 and 3) on or near the growing site. It is accordingly proposed to transfer the present phase 2 and 3 operations from Avenue Road to Taukoro Road where they will be carried out in
conjunction with the existing phase 1 composting operation. Avenue Road will be dedicated to Portobello mushroom growing.

It was Mr Young's evidence that there is a range of efficiencies and operational benefits which will accrue to the company as a result of this change. The proposed production changes will require an increase in the volume of compost produced, that compost being an essential component of the mushroom growing process.

[29] In physical terms, the expansion on the Taukoro Road site which is planned to take place in a staged manner over a 10 year period will require:

- The construction of four additional phase 1 compost production bunkers
- The construction of a new building (up to 12.5m high, 120m long and 60m wide) for undertaking of phases 2 and 3 of the mushroom production process
- An increase in associated facilities such as storage buildings, office space, staff facilities, etc.

During the course of the hearing Mr Young produced an additional brief of evidence detailing the operational changes which would take place at Taukoro Road as a result of the increase in compost production on that site.

**Odour Effects/Issues**

[30] All parties to these proceedings agree that the Court's considerations are limited to determination of the odour effects of the applicant's proposals and planning/resource management issues which arise from consideration of those odour effects. There are other effects arising from the application which must necessarily be the subject of conditions if consent is granted. However, those matters were not the subject of debate before us and are capable of satisfactory resolution. Whether or not consent is granted will depend on our findings on the matter of odour effects subject to the obvious reservation that the promotion of sustainable management requires the Court to have consideration to a wider range of considerations than just odour effects.

The debate before us was largely framed in terms of assessing whether or not the Phase 2 mushroom composting operation generated offensive and objectionable odours which
were detectable beyond the site. The now expired consent held by the applicant contained a condition precluding the generation of such odours as does the new consent granted by the Regional Council which is the subject of these appeals. It was accepted by NZ Mushrooms that its operation generates odours which are detectable beyond the site boundaries. It was the applicant’s case that such odours are not offensive or objectionable.

[32] To some extent the appraisal which we must undertake in that regard is assisted by the fact that there is a long history of the activity on site. It is not seriously disputed that much of that history is unsatisfactory insofar as odour effects are concerned. That is noted in the resource consent application documents which (inter alia) state\(^1\) that the company become aware of *significant odour issues associated with composting at Taukoro Road* as long ago as 1997. NZ Mushrooms has undertaken considerable improvements and upgrading of the facility since then right up until the present time although the extent to which the *significant odour issues* have been resolved is the subject of heated dispute.

[33] We accept, as the applicant submits, that the Court must determine this application on the basis of the evidence before it as to the *current* state of the facility and its operations and subject to the range of mitigation measures which may be achieved by the imposition of conditions imposed by the Court and the consent authorities\(^2\). Counsel for NZ Mushrooms (Mr E D Wylie QC) indicated in opening his case that the applicant was prepared to accept further mitigation measures and gave two specific instances in that regard. Additionally, during the hearing, experts advising the various parties met and identified further possible mitigation measures although there was not universal agreement between them as to the success which those measures might have.

**Odour Assessment**

[34] There are inherent difficulties in undertaking odour assessments. Put briefly, the difficulty lies in the fact that there is no equipment or mathematical formula which can determine whether or not any given odour has an offensive or objectionable effect. Ultimately, assessment of offensiveness or objectionability is a subjective assessment made by persons detecting the odour and may vary from person to person. Notwithstanding the subjective
element involved, the assessment as to whether an odour is offensive or objectionable must be done in an objective manner. It is not enough (in this case) that NZ Mushrooms’ neighbours might think that the odours generated by it are offensive or objectionable nor that the Court might think the same on the basis of its own assessment of the odours. The test is whether or not an ordinary reasonable person would find the odour offensive or objectionable. That is not to say that the assessment of neighbours (or even the Court) cannot be the assessment of ordinary reasonable people. The Court might well determine that neighbours reactions to any particular odour are in fact those of ordinary reasonable people exposed to such odour. The significance of Zdralal and Minhimnik is to identify that it is not sufficient for the Court merely to find that neighbours consider a smell offensive or objectionable. It must determine that is a response which ordinary reasonable people exposed to such odours in similar circumstances might have.

[35] In undertaking our considerations we have (inter alia) had regard to the Good Practice Guide for Assessing and Managing Odour in NZ (Good Practice Guide) prepared by the Ministry for the Environment and published in June 2003. The Good Practice Guide was referred to by a number of the expert witnesses and was produced in evidence as an exhibit (Exhibit 5). It is a guideline and not a binding policy or regulatory document. Although there was some debate as to its interpretation and application in specific instances we considered it to be a document to which the Court might appropriately have regard in determining these appeals.

[36] In defining what odour is, the Good Practice Guide says Odour is perceived by our brains in response to chemicals present in the air we breathe. Odour is the effect that those chemicals can have upon us.

[37] The Good Practice Guide identifies a number of factors to be applied in assessing odours. Those factors as known as FIDOL factors. They are described thus in the Good Practice Guide:
Frequency – how often an individual is exposed to odour
Intensity – the strength of the odour
Duration – the length of a particular odour event
Offensiveness/Character – the character relates to the 'hedonic tone' of the odour, which may be pleasant, neutral or unpleasant
Location – the type of land use and nature of human activities in the vicinity of an odour source

We note that the Air Module of the Regional Plan incorporates the FIDOL factors into its assessment process for odour complaints.

[38] The Good Practice Guide contains a classification of odour effects. The classification states as follows:

Objectionable and offensive effects from odour can occur from low intensity, moderately unpleasant odours occurring frequently over a long period, or from high-intensity, highly unpleasant odours occurring infrequently. These effects relate to different combinations of the FIDOL factors and can be termed, “chronic” and “acute” effects respectively. It is useful to know what type of effect predominates, although odour effects will often result from a combination of acute and chronic odours.

[39] The distinction between chronic and acute odour effects was one which was recognised by the various experts who appeared and gave evidence, although it is apparent that the boundary between the two types of effect is not clear at times. A central issue of the hearing was whether or not chronic odour effects could be regarded as offensive or objectionable. The Good Practice Guide clearly states that they can be.

The Evidence

[40] There were a number of sources of evidence about odour which was presented by the various parties. Those sources might be categorised as:

- The Experts
- The Regional Council
The Residents
• The Applicant
• The Court Site Visit

The Experts

[41] Expert evidence was given to the Court by a number of witnesses:

• Professor D N Beyer is Associate Professor/Extension Specialist in Plant Pathology at Pennsylvania State University. He holds a range of qualifications including a PhD in Plant Pathology. He has 30 years experience in the mushroom industry and has worked at Pennsylvania State University for the past 15 years as director of the Mushroom Extension program for the U.S. commercial mushroom industry. Prof Beyer was called by NZ Mushrooms and gave evidence by videolink.

• Dr D R Black is currently a senior lecturer in Occupational Medicine at the University of Auckland School of Medicine. He holds a range of medical qualifications and is a registered specialist in occupational medicine. He has worked in the field of occupational and environmental medicine since 1986. Dr Black was called by NZ Mushrooms.

• Dr T J Brady is an air quality consultant who specialises (inter alia) in air pollution control and other air quality matters. He has over 25 years experience in these fields. Dr Brady holds the qualifications BSc (Hons) and Doctor of Philosophy in Chemistry from University of Canterbury, NZ. Dr Brady was called by the appellants.

• Mr R S Cudmore is an air quality management consultant. He holds an Honours Degree in Chemical Engineering from the University of Canterbury. He has been involved with the assessment of mushroom compost odours for over a decade. He is a member of a number of professional bodies and is the immediate past president of the NZ branch of the Clean Air Society of Australia and NZ. Mr Cudmore was called by NZ Mushrooms.

Mrs T J Freeman is a senior environmental engineer employed by Beca Infrastructure Ltd. She has a Master’s Degree in Chemical Engineering from the National University of Singapore and a first class Honours Degree in Chemical and Process Engineering from University of Canterbury. She
has 14 years experience in air quality consulting. Mrs Freeman was called by the Regional Council.

- Professor R N Noble is employed by Warwick University, England, as a Principal Scientific Investigator. He holds a PhD in Agricultural Engineering from Cranfield University, England. He has been involved in research into the measurement and reduction of odours from mushroom composting for the last 15 years. Prof Noble was called by NZ Mushrooms and gave evidence by videolink.

We propose to undertake a brief analysis of the evidence of some of the witnesses detailed above. In terms of the effects of any odour discharge from the composting plant the principal expert witnesses were Mr Cudmore for the applicant, Mrs Freeman for the Regional Council and Dr Brady for the appellants. We turn to their evidence accordingly.

**Mr Cudmore’s Evidence**

Both Mrs Freeman and Dr Brady acknowledged Mr Cudmore’s expertise in odour matters. Similarly he acknowledged theirs. Mr Cudmore detailed his extensive experience in odour matters including matters related to compost manufacturing. He was engaged by NZ Mushrooms in 2003 to undertake an investigation of the site and prepare the assessment of environmental effects which accompanied the resource consent application. We understand that he has visited the site somewhere in the order of 10 times.

Mr Cudmore identified various improvements which have been undertaken in site operations over the years. In particular he gave evidence as to a series of major changes which were implemented and made operational by mid-March 2006. At the heart of these improvements was the purchase of the bunker filler previously mentioned and a substantial upgrade of the air extraction system together with operational improvements. Mr Cudmore described the new system as having few parallels at other composting sites in NZ.

Additionally Mr Cudmore gave evidence as to the improvements which were made to the wastewater management system which in his view had been, up until then, the dominant source of off-site odour effects. We did not understand there to be any argument
amongst the experts that the current wastewater management system has largely eliminated earlier problems from that part of the operation.

[46] Notwithstanding those improvements Mr Cudmore stated\(^{10}\) *I do not envisage that the current or future operation will produce zero odour beyond the site boundary* and acknowledged that it was important to keep up with odour mitigation measures.

[47] Mr Cudmore discussed the concept of chronic and acute odour effects and assessed the key odour issue as being the potential for the NZ Mushroom site to cause chronic odour effects. He took issue with the opinion expressed by Mrs Freeman that there were occasional acute odour effects emanating from the plant. He expressed the view that the hedonic tone of compost odour (i.e. its relative unpleasantness) was not significantly different from other odours commonly associated with rural areas. This view was fundamental to NZ Mushrooms’ position in these proceedings, namely that this is a rural area, and that the plant is producing odours similar to other odours which will arise in such areas and should be acceptable in that context.

[48] Mr Cudmore gave evidence as to a monitoring programme which has been undertaken at the site by Trident Monitoring Services Ltd (Trident) since January 2006. We understood that Mr Cudmore designed the programme which was based on a German standard known as VDI 3940. In granting consent to NZ Mushrooms’ application, the Regional Council had imposed a condition requiring monitoring in accordance with the German standard. Mr Cudmore accordingly developed a field odour monitoring programme based on that standard but with some differences. The Good Practice Guide recommends\(^{11}\) the use of VDI 3940 for the logging of field observations.

[49] The monitoring programme involved independent assessors undertaking downwind odour assessments from the site on a daily basis. The assessments were done at various times during the day from all directions around the site and at varying distances from the site. In each case observations were undertaken over a 30-minute period where odour intensities were
observed and recorded every 10 seconds. Accordingly 180 observations or assessments were recorded during each 30-minute observation session.

[50] The assessment undertaken was a measurement of odour intensity which was assessed using another German standard, VDI 3882. VDI 3882 is a scale which gives a rating to various odour intensities, a rating of 0, where no odour is perceptible up to a rating of 6 where extremely strong odour could be perceived. The assessors recorded the peak odour intensity which they observed during each 10-second period on the record sheets for each observation.

[51] The observations were used by Mr Cudmore to estimate the number of odour hours that might occur each year in any given location. We were told that an odour hour is defined as an observation period where recognisable odour occurred for 10 percent or more of the time. Mr Cudmore advised that the German standard has specified ambient limits for odour hour frequency for residential/mixed zones at 10 percent. We understood this to mean that under the German standard properties in such zones might acceptably be exposed to an odour hour for up to 10 percent of the time over any given period. Mr Cudmore then went on to undertake a calculation of the likely exposure of the various neighbours of the NZ Mushrooms site to an odour hour based on the Trident monitoring data, site operations, meteorological data and distance from the site. In summary, his conclusion was that Mr and Mrs Long might experience the highest frequency of odour hours, 1.1 percent of the time based on the current operation and 2 percent of the time should the composting plant be allowed to expand.

[52] Mr Cudmore concluded:

The analysis of Odour Hour frequency based upon the Trident data is considered to provide a reliable indication of the actual potential for chronic odour effects beyond the NZM site boundary. These results indicate that the potential for chronic odour effects due to repeated and ongoing impacts of low to moderate intensity compost odours is minor.

Mr Cudmore undertook a detailed critique of investigations carried out by Regional Council staff, diary records of neighbours and complaints made by neighbours. He
highlighted inconsistencies (and some consistencies) between the various information sources. He concluded (inter alia)\textsuperscript{13}

\textit{Now that mitigation measures at the site are mostly in place, I conclude that the neighbours of the NZM site will experience recognisable odours from the NZM site on some occasions when the wind blows in their direction. However, the accumulated exposure to those odours and their character and intensity is not unreasonable for a rural area.}

\textbf{Mrs Freeman’s Evidence}

[54] Mrs Freeman was instructed by the Regional Council in August 2006. She commenced her evidence with a discussion as to the differences between chronic and acute odour effects. In respect of chronic odour effects she had this to say\textsuperscript{14}

2.4 Conversely, key features of chronic adverse odour effects include:

(a) The type of effect caused by chronic odour is a slowly accumulated stress which can make people subjected to the recurring odour more sensitive to it, and also more likely to interpret any one episode as being more objectionable than would an investigating officer.

(b) Chronic odour exposures can cause significant adverse effects irrespective of the fact that no individual odour event may be considered to be objectionable by an investigating officer. Instead, it is the repeated nature and the accumulated effect of the odour impacts that are of primary concern.

(c) A longer-term assessment is required to determine whether the pattern and character of odour impacts are like to be causing adverse effects (i.e. whether the long term exposure pattern can be considered to be objectionable).

[55] No witness contradicted this evidence nor was it seriously challenged in cross-examination. Mrs Freeman’s view appears consistent with the Good Practice Guide, which comments\textsuperscript{15}: 

\hspace{1cm}
Cumulatively, the low-level odour may have an adverse effect even though no single odour event considered in isolation could reasonably be assessed as objectionable of offensive. For chronic odour effects a longer-term assessment of the frequency and character of odour impacts is required.

Dr Black specifically agreed\textsuperscript{16} with Mrs Freeman’s para 2.4.

[56] Mr Wylie put to Mrs Freeman the proposition\textsuperscript{17} that chronic odour effects have the potential to be objectionable effects (presumably as opposed to being objectionable per se). Mrs Freeman responded by defining a chronic effect as an adverse effect occurring from long term lower intensity impacts from odour. However we accept that Mr Wylie’s description must be correct in that whether or not any particular chronic odour effect is objectionable or offensive in fact is a matter of assessment in any given case. That is what Mrs Freeman seems to say in her para 2.4.(c).

[57] Mrs Freeman gave evidence as to a visit to Taukoro Road made by herself and a Regional Council staff member on 3 August 2006 where they both carried out an appraisal of an odour from the NZ Mushrooms site. The staff member interpreted the odour effect as being acute whereas Mrs Freeman did not. In terms of intensity the staff member gave the odour a highest rating on the VDI scale of 4 (strong) whereas Mrs Freeman did not note any reading of 4 in her record. Accordingly two impartial and objective observers smelling the same odour in the same place at the same time disagreed as to the intensity of the odour and whether it fell into the chronic or acute effect category.

[58] Mrs Freeman’s evidence highlighted the difficulties for regional councils in verifying complaints about odour. Those difficulties arise out of the time it takes for monitoring officers to respond to complaints and travel to the scene and the fact that odour concentrations fluctuate from time to time due to variations in odour emissions and meteorology. She advised that she had encountered this problem time and time again around NZ. She analysed the findings of complaint investigations which had been undertaken by the Regional Council and agreed with the Regional Council’s conclusion that the odour from the site is having an adverse cumulative effect on neighbours living on Taukoro Road.
[59] Mrs Freeman expressed concerns about the robustness of the Trident odour monitoring data and specifically whether or not it was appropriate to apply the German odour hour guidelines in NZ. She said that there is debate between odour professionals in NZ as to the applicability of the odour hour calculation in this country. Mrs Freeman’s evidence highlighted the lack of any published material about the German guidelines. That was a matter of particular concern to the Court also. We had no meaningful information before us about the German odour hour guideline. Annexure H to Mrs Freeman’s evidence was an Internet translation of part of the guideline which could at best be described as frequently incomprehensible. We will return to that matter further. Mrs Freeman considered that the odour hour assessment may be an appropriate tool to assess potential for chronic adverse effects but was of the view that more information and debate was required before that could be accepted.

[60] Mrs Freeman analysed diary records which some of the neighbours of the site had kept. Having done so she concluded:\(^{18}\)

\textit{My assessment of information on adverse effects is based on site operation for at least eight months since the last mitigation measures were commissioned. I have concluded that it is likely that a chronic adverse effect exacerbated by occasional acute effects, has continued to occur throughout 2006 due to neighbours being repeatedly exposed to odour beyond the NZM property boundary.}

[61] Mrs Freeman then went on to discuss mitigation measures currently undertaken by NZ Mushrooms, the sources of odour at the site and further mitigation measures which might be available. She broke the composting operation down into a number of odour sources and ranked them in order of significance for potential to contribute to adverse effects. As the hearing developed and as a result of discussions between Mr Cudmore, Mrs Freeman and Dr Brady it transpired that the most problematic contributor to odour effects was the bunker to bunker transfer process. We will discuss possible solutions to the problems created by that process elsewhere. We think it was generally agreed by the experts that most of the other odour sources identified by Mrs Freeman could be adequately controlled and mitigated.
Insofar as the increased size of operation was concerned, Mrs Freeman’s evidence was that an increase in production would increase the frequency and duration of odours from the site and would exacerbate the existing chronic odour effect.

**Dr Brady’s Evidence**

Dr Brady was called by the appellants. He is a highly experienced practitioner and, of particular relevance to these proceedings, has considerable experience in the design and supervision of air extraction and ventilation systems. Dr Brady addressed what he assessed as being the principal odour sources on site, their potential to cause nuisance and the ability to control the odours. From the outset his evidence identified the bunker to bunker transfer process as being the most significant potential source of odour effects off-site. As we have already noted there now seems to be general agreement that is the case.

Dr Brady was of the view that when the bunkers are closed the air extraction system works adequately and there is very little in the way of odour discharge from the bunkers. Although there may be some leaks during times of high winds they would be small and well dispersed. However he stated that the air extraction system presently in the bunkers simply does not have the capacity to adequately capture odours which escape when bunker to bunker transfer is taking place.

Dr Brady prepared a diagram (Exhibit 24) depicting the mechanisms for odour loss from bunkers during the bunker to bunker transfer process. There were four mechanisms depicted:

- Firstly, a thermal effect where a river of steam ran along the roof of the bunker pulling odour out along the top of the bunker.
- Secondly, a piston effect of the loader moving in and out of the bunker which pushed air out as it moved in and sucked it out as it backed out.
- Thirdly, outside air currents dragging odour out.
- Fourthly, the large amounts of hot compost on the loader had a thermalling effect which dragged more gases out of the bunker.

Dr Brady referred to a DVD recording made by Mr Gray which was taken during bunker transfer operations. It shows a massive steam plume emanating from the open bunkers and rising into the sky above the composting plant. The plume appears to be some tens of
metres (suggestions of 40 to 50 metres were made) high. Additionally Exhibit 23 (a – n) was a series of photographs taken by Mr Olesen on 15th of February 2007 showing the steam plume. We understand that the steam and the odour are quite separate however the steam is a marker for odour which will be given buoyancy by the steam and transported by it. The visible steam plume is a common feature of the operation in certain weather and atmospheric conditions.

Finally, in connection with the bunker to bunker transfer operation, Dr Brady observed that as well as the odour which is sucked out of the bunkers by the mechanisms we have described previously, there is a discharge of odour from the loads of compost in the loader bucket while it is outside transferring the compost from one bunker to the other. At that point in time the compost and its associated steam and odour simply cannot be controlled by the air extraction system within the bunkers.

Dr Brady made two further relevant observations regarding the escape of odour during the bunker to bunker transfer operation, namely that:

- In his opinion it would never be possible to effectively capture all of the odour from the bunkers when transfer is taking place with the present extraction system19, and
- Bunker transfer normally takes about six hours to complete and usually begins in the morning at about 7am when calm conditions generally prevail and the ability of the atmosphere to disperse the odours is at its worst20.

Dr Brady went on to address a number of other areas of the composting process and to identify their potential to cause odour discharges. These included the chicken manure storage area, bale breaking process, wastewater sumps, the concrete pad and the biofilter. Again we note that by the end of the hearing there appeared to be unanimity among the experts that all of these matters were controllable to the extent which they had not already in fact been remedied by NZ Mushrooms.
Dr Brady considered Mr Cudmore’s evidence and more particularly the results of the Trident odour monitoring programme. He expressed what he saw were shortcomings in the programme. His concerns in that regard were similar to Mrs Freeman’s in a number of respects. As a result of discussions with Mr Cudmore, Dr Brady withdrew some of the criticisms which he had of Mr Cudmore’s calculations. He did not however resile from his underlying position that the Trident monitoring itself did not accurately disclose the true odour impacts which the composting plant had on its neighbours. Dr Brady stated that he had no faith in Mr Cudmore’s statistical analysis of the Trident data as a tool to represent the present or predicted future level of exposure to odour in the vicinity of the site.

Ultimately, Dr Brady’s conclusion was that odours from the compost plant were causing nuisance and that as long as the bunker system was retained with large open ends, odour would continue to be discharged during bunker to bunker transfer. Dr Brady’s opinion was that full enclosure of the composting operation was the only way to ensure that odour was collected and treated.

Regional Council Evidence

Seven Regional Council staff members gave evidence as to visits to the Taukoro Road area which they had undertaken. Some of the visits were made in response to complaints by neighbours of the site and some were undertaken as part of a proactive monitoring programme undertaken by the Regional Council. For the purposes of these proceedings, we have concentrated on the evidence of visits which were undertaken after March 2006 when NZ Mushrooms had completed most of its major site improvements.

We were advised that as a result of its investigations the Regional Council has commenced prosecutions against NZ Mushrooms. In his closing submissions Mr Wylie indicated that the prosecutions relate to three allegedly acute odour events detected by Regional Council staff. It was submitted that the Court should be slow to conclude that acute odour events had occurred given the pending prosecutions. We do not believe that our investigation should be constrained in any way by the prosecution proceedings. We say that for a number of reasons.
- The first and most fundamental reason is that our enquiry is entirely different in nature to the prosecution proceedings where the Regional Council will have to establish the elements of the offences with which it has charged NZ Mushrooms beyond reasonable doubt. Our considerations are much broader based and more inquisitorial than that. Evidence which satisfies us that a certain situation is likely to be the case may not reach the standard required to successfully found a prosecution.
- We cannot ignore the evidence of the Regional Council officers which has been given to the Court.
- We understand that only one of the three odour events which has given rise to charges is alleged to have occurred after March 2006.

In any event, we intend to take a broad-based approach to the evidence of the Regional Council officers rather than concentrate on individual odour episodes which they investigated.

[74] The first Regional Council witness was Mr D K Affleck who has been the Regional Council's Compliance Monitoring Officer for the site since October 2005. Mr Affleck replaced Mr D Stagg in that position. Mr Stagg gave evidence about some visits which he undertook but they all predated the period with which we are concerned. Mr Affleck gave evidence as to eight visits to the site and its surrounds post March 2006 (23/5/2006 – 29/8/2006) in response to complaints received. On most occasions (but not always) he was accompanied by another Regional Council staff member. Mr Affleck produced copies of the detailed notes which he made shortly after these visits. The evidence and notes showed the following:

- Frequently (but not invariably) the complainants would advise that the smell had left their house by the time Mr Affleck arrived.
- On every one of the eight occasions Mr Affleck located odour outside the boundaries of NZ Mushrooms site.
- The intensity of the odours varied during the course of the assessments and disappeared intermittently. The range of odour intensities recorded over the eight visits varied from 1 (very weak) to 4 (strong) on the VDI scale.
- The character of the odours varied from assessment to assessment and sometimes during assessments. Regular descriptors of character included
musty compost odour, ammonia, sickly-sweet, bark/ammonia odour, chicken manure.

- Different officers frequently gave varying assessments of odour strength and sometimes one officer could detect odour when another could not.
- Assessments were undertaken over varying periods of time.
- There were two occasions when smells were located only briefly and no assessment was undertaken.

As well as monitoring the site in response to complaints, the Regional Council undertook a proactive monitoring programme. Post March 2006 Mr Affleck undertook seven proactive inspections (2/5/2006 – 22/08/2006). Odours from NZ Mushrooms were detected on four of those occasions. The features of the odours that were detected were not dissimilar to those on the reactive monitoring occasions:

- The strength of the odours varied from weak to distinct.
- The nature of the odours changed and came and went.
- The character of the odours was described as musty or musty compost, chicken manure, ammonia or sewage.
- None of the odours was considered offensive in itself.

Mr Affleck concluded:

Apart from those three acutely objectionable odour events, each of the odour events described in paragraphs 22.1 to 23.6 above, the odour was generally described at a moderate to low intensity. However, these odour events have been occurring beyond the site boundary on a reasonably frequent basis over a long period of time.

Ms Amanda McCabe is a Monitoring Officer employed by the Regional Council. She gave evidence as to the methodology used in the monitoring at the site, training which she had undertaken to be able to do the work and the methodology of ensuring consistency of odour intensity ratings. She gave evidence of two visits which she made to Taukoro Road in June 2006. The second of these was in the company of Mr Affleck and the findings are included in the earlier summation of his evidence. Ms McCabe also gave evidence of an independent on 5 June 2006 where she responded to a complaint from Mr Gray. On that
occasion Ms McCabe identified the position of the odour plume and carried out a 15-minute odour assessment. Odour was present for slightly less than 10 minutes of that 15-minute assessment and only intermittently during that 10 minutes. Ms McCabe assessed the intensity of the odour as at 2 or 3 on the VDI scale but commented that although she did not think the odour was particularly strong she found it to be offensive in character. She was satisfied that the odour came from the site and had checked other potential odour sources in the vicinity to cancel them out.

[78] Mr B A Campbell, Mr R G Allen and Ms K J Sullivan all gave evidence of monitoring visits in the company of Mr Affleck and their findings are summarised in our comments on his evidence.

[79] The final Regional Council officer to give evidence about the site visits was Ms J A Leeder who is employed as a Resource Officer by the Council. Again the majority of Ms Leeder's post March 2006 visits to the site were in the company of Mr Affleck and are summarised in his evidence. The exception to that was a proactive monitoring visit which Ms Leeder undertook on 3 August 2006 in company with Mrs Freeman and which was referred to in Mrs Freeman's evidence. Her evidence regarding this visit was interesting for a number of reasons. It happened while bunker to bunker transfer was taking place. Ms Leeder noted vapour puffs of steam emissions associated with loader movement from one bunker to the other which is consistent with Dr Brady's view of this being one of the sources of odour from the site. Ms Leeder and Mrs Freeman located the odour plume in a paddock downwind of the Long residence. Ms Leeder describes the odour thus23:

The odour was a mix of chicken manure, piggery, wet hay and musty wet compost. I found the odour quite unpleasant. The plume was quite wide 30+ metres. The odour strength ranged from a fairly constant very weak (2) to distinct (3) level with intermittent strong (4) periods. I was unsure if the strong periods were because the strength of the odour had increased or because the chicken manure/piggery tones were more noticeable and that was why I found it more intense.
On this occasion Ms Leeder and Mrs Freeman walked across the farm property to a paddock where silage had just been fed out. Both noted that the silage smell was quite different to the mushroom compost odour.

Consistent with observations of other witnesses Ms Leeder noted that on this occasion the odour was intermittent and varied in intensity and character although she categorised it as being constant during the first 20 minutes of the visit.

Residents' Evidence

Mr Gray has resided on his farm property immediately to the north of the site for over 50 years. He gave evidence as to the initial establishment of the mushroom composting operation on the site in 1984. Mr Gray and his father agreed to the mushroom composting operation starting up subject to a number of conditions including one that all effects (odour and noise) would be kept on the property. Mr Gray gave evidence as to significant non-compliance with the odour requirements of resource consent over a long period of years involving both the previous owner and NZ Mushrooms. He gave evidence as to ongoing experiences of odour from the site, including social gatherings, weddings, birthday celebrations, Christmas parties, barbecues and other functions in the neighbourhood which he said had been affected by smell from the site over the years. Unfortunately Mr Gray did not differentiate between events which took place since March 2006 and those which preceded it, however we have no doubt that he and his family have been subject to adverse odour events from the Taukoro Road site over a long period of years.

Mr Gray produced a DVD showing the massive cloud of steam which frequently emanates from the site during bunker to bunker transfer operations.

Mr and Mrs Olesen both gave evidence about different aspects of the odour as it affects them. Their farm property contains 80 hectares and they milk 240 cows. The farm is across Taukoro Road to the west of the site. Their house is approximately 660 metres away from the composting yard and their dairy shed which is situated to the north of the house appears to be a similar distance away from the composting yard. The Olesens have two children who still reside at home with them. They moved into the area in June 2001.
[85] Mrs Olesen's evidence was principally directed at odour effects in and around the house. She spoke of the impact which wind had on the odour. When winds are from the west or south-west odour might not be detected at all. She said that there could be a swirling wind effect about their house due to the contour of the land which causes any odour effect to be intermittent. She said that in periods of little or no wind the odour seemed to hang around a lot longer. She gave evidence of odour permeating the house, clothing and washing on the clothesline. Mrs Freeman commented on the lingering effect which that might have. Mrs Olesen advised that there would be some weeks when odour could be detected every day of the week and other weeks when there was none.

[86] Mrs Olesen gave evidence as to a number of odour events since March 2006. She acknowledged a change in the nature of the odour over the last year and describes it as akin to a piggery type odour, dirty, strong ammonia and still as offensive. Mrs Olesen had kept a diary detailing odour events.

[87] Mr Olesen confirmed his wife's evidence but directed his own evidence to odour effects across the farm property. Mr Olesen said that he frequently experienced the odour when working in various locations on the farm. Consistent with nearly all of the other witnesses Mr Olesen identified the intermittent nature of the odour and variations in its duration and intensity. He described the odour as being ammonia, piggery, composty type odour. Mr Olesen was of the view that the odours could be detected on average once or twice a week. He described himself as being a person who had experienced various odours over the years but notwithstanding this, the composting odour was not comfortable to be in and if possible he would remove himself from it.

[88] Mr and Mrs Cameron farm a property to the south of the site. Mr Cameron has lived on that property all his life apart from when he was away at university. The Cameron farm is 118 hectares in area and they milk 370 cows. They have three pre-school children.

25 Para 4.4 EiC
As with the other resident witnesses the Camerons gave evidence as to their experiences with the odour. They both described it in these terms:

3.3 The odour we experience has many characteristics, it smells like sewerage, ammonia, or a chicken poo, compost, musty smell. Many times it is a combination of these. The odour is unpleasant and annoying. The odour has varying degrees of intensity depending on the weather conditions. All these odours have varying degrees of intensity depending on activities on site and weather conditions.

3.4 The duration of the odour depends on the wind speed, direction and general weather conditions. Sometimes we experience the odour for periods of minutes and other times for hours. It can be very constant or very intermittent, travelling in big wide bands or waves. There is no set day or time when these odour events occur.

Both Mr and Mrs Cameron gave evidence as to odour events which they had recorded on odour diary sheets which they had kept since 15 June 2006. The Camerons' odour diaries recorded 13 odour incidents from 15 June to 3 October 2006—a period of about 16 weeks. They generally did not record the duration of the odours but on the two occasions they did they noted a duration of one hour. Like Mr Olesen, Mr Cameron gave evidence as to the impact of the odour when he was working around the farm or in the farm workshop which would drive him to go and work elsewhere.

The Camerons had a particular degree of familiarity with the operation of the NZ Mushrooms plant because for some time they leased the pastoral portion of the site for grazing purposes so were often working in close proximity to the composting area. They also gave evidence as to an odour event which happened on the second Monday of the hearing (5th March 2007). At approximately 8pm the Camerons had gone down to their workshop to pick up a vehicle and detected a very distinct chicken poo odour coming from NZ Mushrooms' site. They walked along the boundary of the site to confirm that the odour was coming from NZ Mushrooms. By the time they got back to the workshop the odour had gone. Mrs Cameron was then awoken at 2:07am in the morning by the smell which had come in through an open bedroom window and which was of sufficient unpleasantness to keep her awake for over an hour. This was at a time when no work activity was taking place on the site.
which makes us wonder if there is some unidentified odour generating factor at play or if the performance of the biofilter may be less than adequate from time to time. The chicken manure pile may have been the source. We do not know the answer to those questions.

[92] The final resident to give evidence was Mrs Long. She and her husband are sharemilkers at the Cameron farm and the sharemilkers’ house is the closest residence to the site (other than the site manager’s house). Mr and Mrs Long have lived at Taukoro Road since June 2005.

[93] Mrs Long described the smell as ranging from dead animal, piggery, musty to a blood and bone fertiliser type smell. The Longs usually receive odour if there is a northerly wind but Mrs Long observed that the odour can be worse if there is no wind at all. Mrs Long recorded 8 odour events from 1 April to 28 September 2006 in her odour diary.

[94] Mrs Long also gave evidence regarding the odour event of the evening of 5th March about which the Camerons had given evidence. She first noticed the odour at about 7pm that evening and said that it stopped about 8pm but then returned again at about 8:20pm. It continued until 9:05pm. At 9:10pm Mrs Long was rung by the Regional Council Duty Officer at which time the smell had stopped. It recommenced at 9:15pm. At 10pm Mrs Cameron rang the Regional Council. The Duty Officer eventually arrived at the property just after 11pm and could not locate any smell.

NZ Mushrooms

[95] Evidence as to the company's improvements and upgrade of the facility together with its current operating processes was given by the CEO Mr Young, and Mr A J Gordon, the General Manager of NZ Mushrooms. There was no challenge to their evidence that the company has expended substantial effort and money in improving environmental performance.

Site Visit

The Court undertook a site visit on Tuesday 27 February 2007. The site visit commenced at 7:00am and we returned on two further occasions during the course of the day.
Additionally the Court went to the properties of the various residents, NZ Mushrooms' Avenue Road growing facility and the Wallace Corp rendering plant situated at Waitoa about 8-10km (as the crow flies) from the site. The applicant's co-operation enabled us to go into and onto all parts of the site which we wanted to see and to observe a number of aspects of operation of the composting facility including what transpired to be the most controversial aspect of the operation, bunker to bunker transfer.

[97] During the course of the hearing the Court passed some comment as to its observations during the site visit. The Court expressed the view that the odour which its members experienced in the immediate proximity of the bunkers at the time of bunker to bunker transfer was strong and objectionable. Both Mr Cudmore and Mrs Freeman cautioned us against drawing any conclusions from that observation as to how such odour might be experienced off-site. We note that the Good Practice Guide contains similar warnings and goes so far as to state 29: for example, mushroom-composting odour has been observed to have a distinctly different odour character at source than when diluted downwind. We did not observe the odour off-site. The real importance of the site visit was that it gave the Court a good understanding of the relationship between the site and its surrounding environment and also an insight into how the facility operated at a practical level. In an evidential sense the site visit confirmed the evidence subsequently given by Mrs Freeman 30 and Dr Brady 31 as to the nature of the odour at the bunkers and as to the potential for there to be discharge of odour during the bunker to bunker transfer operation. Other than that we draw no conclusions from our site visit.

Summary of Evidence

[98] We have endeavoured to identify and concisely summarise the streams of evidence described above. There was no disagreement that the composting operation produces odours off-site. NZ Mushrooms’ position was that any odours from their site are not offensive and objectionable primarily because they are rural in nature and because their intensity is (generally) at the lower end of the VDI intensity scale and occurs only a limited percentage of the time. That view is inconsistent with the evidence of the residents. The evidence of
Regional Council staff appears to support the residents’ position, at least in part, although there are inconsistencies particularly relating to residents’ assessments of odour intensity compared to Council officers (and Trident assessors). We will endeavour to identify the outstanding issues of fact which emerge from the evidence and resolve those issues in the succeeding section of this decision.

Evidential Issues

[99] We identified the principal evidential issues to be resolved as follows:

- It is the odour from the composting process a rural odour which persons might reasonably expect to encounter in a rural area?
- Does the Trident data accurately capture the impact of odour on nearby residents?
- Applicability of the odour hour concept.
- The adequacy and accuracy of Regional Council’s monitoring programme.
- Reliability of neighbours evidence.

Most of the above raise a series of sub-issues.

Rural Odour

[100] NZ Mushrooms’ position can probably best be summed up from the submission made in Mr Wylie’s opening.

Applying these authorities to the present case, it is submitted: -

(c) that there must be a measure of robustness. This is a rural area, where the predominant farming activity is dairy farming. The Plan permits farming activities, and the use of land for effluent disposal of non-human waste from agricultural activities. Silage and composting are a normal rural activity.

Mr Cudmore’s evidence reflected that view.

[101] We did not understand the appellants to challenge the proposition that persons living in rural areas must accept rural odours. Mrs Freeman noted that people living in rural areas
generally have a high tolerance for rural type odours such as from silage or decomposing cow manure which might be described as a rural odour in a rural area. She went on to state however that some types of odour are quite different to the normally expected rural odours due to their strength, character, unpleasantness, frequency or duration. Mrs Freeman identified what she said were two characteristics of rural odours.

(a) These odours tend to occur only at some times of year and for short periods and have a low potential to cause a long term accumulated stress.
(b) The farmers also have control to some extent over when and where the odours occur, and can minimise the odour impact upon dwellings.

[102] We consider that there is some validity in Mrs Freeman's characterisation, particularly in the fact that the mushroom composting process is not a seasonal or rotational one. It is in effect a year round, ongoing industrial process albeit one involving the use of rural materials. More significant however than the nature of the process giving rise to the odour, is the nature of the odour itself. All of the residents who gave evidence testified about the distinctive nature of the mushroom composting odour.

[103] The odour discharge from the site is a discharge from industrial premises being any premises...used for composting organic materials. We do not consider that would matter particularly if, notwithstanding the source of the odour, the odour itself might be described as similar in character to the other rural odours which one might reasonably expect to encounter in this rural area. We find as a matter of fact that is not the case. Resident witnesses advised that the odour from the site was substantially different and distinguishable from the odours which might normally be generated from farming practises and they are all persons with farming backgrounds. By way of example we refer to the evidence of Mrs Olesen who states:

Being on a dairy farm there are rural based odours such as silage, dairy effluent and the like. I find these to be earthy odours that on occasion can be strong however not
offensive. The smells that emanate from NZM are rotten, decomposing, ammonia smells that are very offensive and are not rural odours.

That view was confirmed by Regional Council witnesses (Mrs Freeman and Ms Leeder) who are familiar with rural odours.

[104] Mr Cudmore’s evidence and NZ Mushrooms’ submissions as to the composting odour being akin to a rural odour which one might necessarily expect in such a rural area is in effect a baseline argument, however we find the assertion is not supported by the facts. Mr Cudmore contended that the odour from mushroom compost production was not dissimilar to odour from other rural sources and that the hedonic tone of aerobic compost odour could be comparable to that of silage. Dr Black accepted that proposition as the basis for his evidence. Every other witness who addressed the issue of similarity of the composting odour with other odours in the vicinity had a different view and we accept that different view.

**Trident Data**

[105] Mr Cudmore’s conclusion that the odours generated from the composting yard were not offensive or objectionable was largely driven by reliance on, analysis and interpretation of the Trident data. It was Mr Cudmore’s position and reflected in the submissions of Counsel for NZ Mushrooms that the evidence from Trident Monitoring was *the best available evidence*.

[106] The Trident data was certainly voluminous. As at the date Mr Cudmore prepared his evidence the data comprised 220 daily records which had produced 39,820 individual assessments of odour intensity (being the number of 10-second periods assessed). We accept that the data was collected by Trident in an objective fashion. Some queries were raised about Trident observers regularly entering the site prior to undertaking their assessments which might potentially desensitise them to off-site odours. However we make no particular findings in that regard.
[107] We note that the monitoring programme undertaken by Trident mirrored a requirement in the resource consent granted by the Regional Council.

[108] Copies of the Trident monitoring notes were provided to the Court by Ms K A Young (the principal of Trident) as an exhibit. The Court did not endeavour to analyse the field notes intensively as had Mr Cudmore. We did however peruse the field notes concentrating on the period post March 2006. We noted that there was the odd double-up, some of the notes included had been completed by Council staff and that there had been a change in the form of the notes over time with the more recent notes tending to provide a wider range of matters for the assessors to take into account in terms of character, experience of the odours, etc.

[109] The sheets make interesting reading. From 20 May 2006 there appears to have been a change in terminology on the sheets for the assessors to record;

Experience/Effect of the Odour

Pleasant Neutral Mildly Unpleasant Unpleasant Very Unpleasant

From that date up to 24 August 2006 there were approximately 27 occasions where the assessors described the odour as being mildly unpleasant or unpleasant. On many occasions there were no odours at all or odours were recorded as pleasant or neutral. Regular descriptors of the smell used by the assessors included musty, dank, ammonia. The assessments appear to have been done at random times with the earliest commencing at 5:52am and the latest at 7:40pm.

[110] The range of odour intensities recorded over the period which we have identified varies from 0 (not perceptible) to 3 (distinct) with the overwhelming majority of recordings being in the 0 range followed numerically by 1 (very weak) and 2 (weak).

[111] As we have already indicated, we did not attempt a detailed analysis of the results. However the fact that the Trident assessors identified odours at a mildly unpleasant or unpleasant level on approximately one quarter of the occasions during the random times when they undertook testing in this particular period confirms that odour effects at a chronic level are being regularly generated by NZ Mushrooms' activities and being experienced offsite.
[112] In her evidence-in-chief Mrs Freeman identifies a number of inconsistencies in the Trident data. Those inconsistencies lay principally in the difference between the odour intensities identified by the assessors and their description of the odour characteristics. However those apparent inconsistencies simply highlight for us the inherent uncertainties in odour assessment. To the extent that the Trident odour assessment as to intensity vary from the assessments made by neighbours we note Mrs Freeman’s view that any difference is probably explained by the fact that the assessments of those exposed to chronic odours on a recurring basis will often differ from those who encounter such odours on a random or occasional basis. We address that matter in more detail in our assessment of the residents’ evidence.

[113] Dr Brady also had reservations regarding the reliability of the Trident data as being determinative of the effects which the odour discharge from NZ Mushrooms site was having on the neighbours of the site. Although Dr Brady withdrew his criticism of Mr Cudmore’s statistics analysis he clearly continued to have reservations as to whether or not the Trident data accurately represented the odour nuisance experienced by neighbours who were regularly subjected to it.

[114] We have similar reservations to Mrs Freeman and Dr Brady. We certainly accept that the Trident data is a significant component of the evidential picture to which we must have regard. However in our view it is only part of the picture and of itself is not determinative in assessing the effect which odour has on neighbours of the site. Regard must be had to the evidence of Regional Council staff and the neighbours in making that assessment.

**The Odour Hour**

[115] Mr Cudmore analysed the Trident monitoring figures over the full monitoring period to calculate the odour hours to which each of the identified neighbours might be subject. We commented previously as to the lack of information available to us to evaluate use of the
odour hour calculation as providing either an appropriate assessment standard in itself or as a measure of comparison with what may be the accepted situation in Germany. As a matter of principle it appears to us that the odour hour calculation which endeavours to provide a numerical standard for the assessment of odour effects is a method which is worthy of consideration. Whether or not it provides the full answer was a matter of debate between the odour professionals who gave evidence in these proceedings. Even if there was agreement on use of the method we imagine that there would be considerable debate over whether or not the applicable odour hour figure should be the 10 percent which is apparently acceptable for residential areas in Germany or some other figure. Accordingly in terms of the odour hour calculation used by Mr Cudmore and the Trident monitoring data upon which it is based is concerned we had a number of reservations after duly considering all of the evidence.

[116] It appears from Mrs Freeman’s evidence that Mr Cudmore may have undertaken his odour hour calculations on a different basis to that used in Germany. According to Mrs Freeman the German odour hour calculation includes any recognisable odour including very weak odours which might only be rated as a 1 on the VDI scale. In undertaking his odour hour calculations using the Trident data Mr Cudmore has included odours of intensity 2 and above. If Mrs Freeman is correct and very weak odours were added to the odour hour equation as she contends would be the case in Germany, then clearly that has the potential to considerably increase the odour hour percentage figure.

[117] The second issue which we have with the odour hour method is that it does not make any allowance for the unpleasantness of the odour. Mr Cudmore discussed that in some detail in his rebuttal evidence. It was his evidence that:

The key point here is that the current scientific understanding is that the level of population annoyance or odour nuisance (due to chronic odour exposure) is most strongly linked to the level of “recognisable odour” exposure time in a year (% time). The character and intensity of specific odour events provide transparent and relatively objective information for assessment of the
significance of “one-off” odour events (i.e. acute odour effects.) By comparison, the rating of a subjective term such as “unpleasantness” often results in highly variable and conflicting results that are difficult to evaluate. Therefore when setting of ambient criterion that limits the level of environmental odour exposure (such as % odour time, percentile odour concentrations, or odour hours) then some variation in the appropriate limit is typically made for different zones, or land use sensitivity. However it is not current practice to make adjustments of such criterion to account for subjective terms such as relative “unpleasantness”.

[118] It was accordingly Mr Cudmore’s view that the inclusion of criteria such as unpleasantness into odour assessment derogates from the scientific accuracy of the assessment. There appeared to us to be three difficulties with that approach.

- One of the measurements used in Mr Cudmore’s assessment was whether or not a particular odour fell into the category very weak (1) or weak (2) which is itself a subjective assessment in the same way as is an assessment whether or not the smell is mildly unpleasant or unpleasant. Very weak odours were excluded from the calculation and weak were included. We are unsure as to why one subjective assessment should be acceptable and the other not. The answer to that question may of course simply illustrate the inherent difficulties in odour assessment.

- Secondly, we note that excluding consideration as to the hedonic tone or offensiveness of any given odour appears contrary to the approach set out in the Good Practice Guide and in the Air Module of the Regional Plan. If the German approach using the odour hour assessment is in fact the better way to go, that may be of no particular moment. As we have already commented, we simply do not have enough information in front of us to comment on the appropriateness of the German approach, nor (on the basis of the evidence which we have heard) is there agreement amongst professionals as to its appropriateness in NZ. In this case the chicken poo, ammonia, piggery characteristics identified by residents and Council witnesses seems to us to be a very significant factor in determining whether the odour is offensive or objectionable.
Thirdly, in his rebuttal evidence, Mr Cudmore compares the odour hour assessment method with noise limits where he says the appropriate scientific means of measurement is a numeric limit. That is correct. It is however the case that in assessing noise limits, loading factors are frequently taken into account having regard to the special audible characteristics of any particular noise. It seems to us that the issue of unpleasantness or hedonic tone of any particular odour might well fall into the same category as special audible characteristics which must be subjectively assessed.

In his rebuttal evidence Mr Cudmore gives a detailed commentary on both the VDI monitoring methods and the odour hour calculations in which he rejects the criticisms which have been made of them. He makes the point

Furthermore, it is not necessary to rely on the German odour hour criteria to assess the likely frequency and intensity of odour impacts beyond the NZM site boundaries. The results strongly indicate a low frequency of weak to distinct compost related odours occurring at residential houses beyond the site boundary.

And further

The Trident results can be used to simply confirm that for the small fraction of the time that odours are directed towards neighbours, the potential for an objectionable odour impact is very low.

We do not accept Mr Cudmore's conclusions in that regard. We have already expressed our reservations as to whether or not the Trident data has been used to accurately capture the percentage of time that recognisable odour from the site is experienced. We have further reservations about Mr Cudmore's apparent exclusion of consideration of the hedonic tones or unpleasant nature of the odour and finally we do not consider that he has sufficiently
factored in the recurring impact of chronic odour effects identified by Mrs Freeman in her para 2.4.

**Adequacy of Regional Council Monitoring**

[121] The evidence given on behalf of the Regional Council officers was subject to a high level of scrutiny in cross-examination. The Regional Council had established a procedure to be used by its officers in undertaking odour investigations. The investigation procedure was (inter alia) based on the Good Practice Guide and the VDI standards previously referred to. Much of the cross-examination of Regional Council witnesses centred around the extent to which they had or had not complied with the Council procedure.

[122] Cross-examination revealed many departures from the recommended procedure. In our view some of the departures were of little moment (eg failure to notify NZ Mushrooms that Council staff were coming out to investigate). There was considerable debate as to the duration of the observations which were frequently in the 10 minute range as opposed to the 30 minutes used by Trident observers. The Council odour investigation procedure requires observations over a minimum 10 minute period but recognises that 30 minutes is the ideal observation period. The Good Practice Guide seems to contemplate that 30 minute observations would be the norm unless odours are extremely intense in which case a shorter period of observation may be adequate. In any event none of the Regional Council assessments were made over a full 30-minute period.

[123] A departure from procedure by Regional Council staff which emerged from cross-examination was their frequent failure to remain in one spot whilst undertaking odour assessments. Mr Affleck explained that the reason why that was done was that if he (in particular) had formed the view that the odour had moved elsewhere an attempt would be made to locate where the odour plume might be at that time. Mr Wylie referred to this practice as *chasing the plume*. We understand the reason why it would be desirable for an assessor to remain in one place once an odour has been located. We also note however that the Good Practice Guide states that where there has been an obvious shift in wind direction it may be more appropriate to go to the current position of the odour plume, a practice which the Trident assessors did not adopt.
[124] Mr Affleck was then cross-examined in some detail as to the procedure which he commonly adopted for assessment whereby he would firstly endeavour to locate an odour plume and then after that go upwind to eliminate other potential sources of odour. The Regional Council’s complaint investigation procedure requires that these two steps be done the other way round. In re-examination Mr Affleck described the practical difficulties in always following that recommended procedure. We note from the Good Practice Guide that there is some discretion for investigating officers who may use an element of judgment as to what procedure is appropriate in any given circumstances.

[125] It is clearly unfortunate that Regional Council officers frequently failed to follow the guidelines set out in their own protocol. If there were practical reasons for not doing so then the protocol ought to be amended to reflect those practicalities. We also accept however that may be difficult when the guidelines are themselves based on outside documents such as the Guide Practice Guide and VDI standards.

[126] A further ground of attack on the Regional Council evidence was whether or not Council officers monitoring the site had adequately eliminated the potential for there to be sources of odour other than the NZ Mushrooms site in any particular instance. We gave some consideration as to whether or not there was any credible evidence pointing towards there being some other source of odour which might explain the persistent experience of odour and the odour complaints received in the vicinity of the site.

[127] Exhibit 9 was a District Council document which had been used to identify potential odour sources such as pig farms, poultry farms and the like in the vicinity of the site. The only recognised potential source of odour within a radius of 5 kilometres of the site was the Morrinsville sewage ponds which are situated approximately 4 or so kilometres away and which, we were told, have not been the source of any odour complaints.

[128] It transpired from Mr Cudmore’s evidence and from Mr Wylie’s cross-examination of Regional Council witnesses that the alternative potential source of odour suggested on
behalf of NZ Mushrooms was the practice of spreading chicken manure on paddocks as a fertiliser. The proposition was advanced that there are a large number of broiler farms in the Waikato and that it is common practice in the region to spread chicken manure from these operations onto paddocks. Exhibit 9 indicates the presence of quite a large number of broiler farms in a radius of up to 20 kilometres from the site, the closest being situated approximately 7 or 8 kilometres away.

[129] There was however, very little evidence to support the proposition that odour from poultry manure spreading may be the explanation for the odour complaints in and around Taukoro Road. The only confirmed evidence of chicken manure spreading in the vicinity was an incident on 2 February 2006 when Ms Leeder received complaints from people living in Morrinsville about odour being experienced in the township. On investigating that complaint she found the cause to be chicken manure spreading which had apparently taken place at Allen Road to the northeast of Morrinsville. That activity generated complaints from Morrinsville rather than from the residents of Taukoro Road.

[130] Mr Cudmore who advanced the possibility of chicken manure spreading as a possible odour source had not himself undertaken any research into the matter such as questioning surrounding property owners or local contractors as to the frequency with which such spreading might take place. A number of the residents gave evidence that chicken manure spreading was not common practice on farms in the vicinity of the site. Mr Gray advised that he was only aware of one instance of chicken manure spreading in the vicinity. That was by a lessee of his own farm property and he banned the practice subsequently. Mr Cameron who has a contracting business as well as his farming operation was aware of one local farmer who might spread chicken manure once or twice a year but testified that otherwise chicken manure was not commonly spread in the area. Mr Olesen said that he had never seen chicken manure spreading in the vicinity. He is a keen cyclist who regularly cycles for long distances around the district and advised that he had never come across chicken manure spreading whilst cycling. In any event we understood from Regional Council witnesses that as long as chicken manure is spread under appropriate conditions it does not present a problem.

The Court cannot discount the possibility that from time to time there may have been infrequent spreading undertaken in the vicinity of Taukoro Road. The only time when that has been proven to have taken place and caused an odour nuisance was the incident of
2 February 2006 which happened some considerable distance away and which generated complaints from Morrinsville township rather than Taukoro Road. The Council officer investigating (Ms Leeder) did not attribute this smell as coming from NZ Mushrooms site although she did visit the site to eliminate it as a possible source of the odour.

[132] Therefore, although we cannot eliminate the possibility of chicken manure spreading as having taken place near Taukoro Road on occasions, we find that there is no credible evidence to suggest that such activity might be the source of ongoing chronic odour effects in that vicinity.

[133] It is apparent that the monitoring undertaken by Regional Council officers was frequently not in accordance with the Council’s own investigation procedures. However when the evidence of the Regional Council witnesses is looked at on a broad basis it indicates that for the period post March 2006 Council officers regularly identified odours of varying intensity and character from the site outside the boundary.

[134] As with the Trident data we consider that the Regional Council’s evidence is a component of the evidential picture to which we must have regard.

Reliability of Neighbours Evidence

[135] It will be apparent from our brief summary of the residents’ evidence that if their evidence is accepted it establishes that there are offensive and objectionable odours emanating from the site. That is certainly the unanimous view of the neighbours. The neighbours’ evidence was subject to quite detailed analysis and criticism in the submissions for the applicant and in the evidence of Mr Cudmore. Mr Cudmore went so far as to observe that it would be a major miscarriage of justice to conclude that the site was causing a problem based on the neighbours’ evidence. Although Mr Cudmore subsequently accepted that such a decision was for the Court to make, his statement concerned us as it clearly ventured into the realm of advocacy rather than that of an expert witness.
In general terms the applicant’s approach to the resident witnesses is found in the opening submissions for NZ Mushrooms:

It is clear that a small group of neighbours are strongly opposed to the business, and that they consider its overall effects on the environment to be adverse. Whether or not their complaints in relation to odour are reasonable, or the concerns of a hyper-sensitive minority determined to stop the applicant’s compost producing facility at any cost, is a matter for the Court.

The criticisms which NZ Mushrooms levelled at the residents’ evidence falls into the following categories:

- Hypersensitivity
- A collective lather
- Self interest
- No evidence of wider community concern
- Alternative Odour Sources

We deal with each of those matters.

Hypersensitivity

Hypersensitivity is defined thus in Black’s Medical Dictionary:

The abnormal immunological reaction produced in certain individuals when re-exposed to antigens that are innocuous to normal individuals.

We understood from Dr Black that the reaction of hypersensitised individuals to a stimulus (in this case odour) will not be the reaction of ordinary reasonable people exposed to such a stimulus. Individuals who have become hypersensitised to odour will find even the mildest manifestation of such odour to be offensive and objectionable when the ordinary reasonable person would not do so. If the Court was to accept the proposition that the various resident witnesses were hypersensitised then clearly their views about the odour effects from the site could not be regarded as views of the ordinary reasonable person.

Dr Black considered that it was likely that Mr Gray had become hypersensitive.

Apparently that assessment was arrived at having regard to the fairly extreme descriptions
which Mr Gray applied to the odours and to the fact that a medical report provided by Mr Gray as part of the evidence exchange process indicated that he was hypersensitive to noise. Dr Black explained that persons who have developed hypersensitivity to one form of stimulus may develop a similar hypersensitivity to other stimuli.

[140] We accept Dr Black's evidence that there is a reasonable possibility that Mr Gray is in fact hypersensitised. The evidence as to his hypersensitivity to noise appears to provide some backing to Dr Black's views in this regard. We do not however accept that there is any evidence at all to support the view that the remaining resident witnesses are hypersensitive. Dr Black acknowledged that he had not seen any medical reports in relation to other residents nor had he ever spoken to any of them.

[141] It was Dr Black's evidence that exposure to moderately unpleasant smells when combined with another factor such as a sense of powerlessness in having the smell issue resolved could lead to hypersensitivity in some people. Mr Wylie questioned all of the resident witnesses as to whether they experienced such a sense of powerlessness in their dealing with NZ Mushrooms or the Regional Council. A number of them expressed a sense of frustration or powerlessness in their dealings.

[142] In our view however it is a very long bow to draw to conclude from that acknowledgment that all of the residents have become hypersensitised as is submitted for NZ Mushrooms. It is understandable that residents would be frustrated by the lack of resolution of acknowledged odour problems from the NZ Mushrooms site over a long period of years. Other than that frustration, which Dr Black advised was one potential driver for hypersensitivity, we saw no evidence of that displayed in the resident witnesses (Mr Gray excepted) nor would we consider ourselves qualified to make what is in essence a medical diagnosis in any event. Dr Black acknowledged that he did not have the information to make the judgement that the neighbours were all hypersensitive which seemed to be what NZ Mushrooms suggested in para 135 of its opening (a hypersensitive minority) and repeated in its closing submission.
With regard to the hypersensitivity issue we were interested in a response of Mr Cameron during cross-examination. Mr Cameron has lived on his farm property adjoining the NZ Mushrooms site all his life. He gave evidence as to a long history of problems with the site. When it was put to him by Mr Wylie that the reason for lodging complaints about the odours was to try and build up a record for the Court hearing he responded:

For this hearing, regarding the resource consent application. I'm concerned about, yeah, when I was single I could put up with a fair bit. I'm married now, I've got children now and much more concern about the community, about my loved ones. And, yeah, I don't put up with so much now. And I think that they shouldn't have to put up with it either, and that's why I've been complaining.

This did not seem to us to be the response of a hypersensitive person. Mr Cameron indicated that when he was young he was prepared to put up with the smell but did not believe that his family should now have to do so.

We find that there is no substantive evidence supporting the suggestion made on behalf of NZ Mushrooms that the appellants (or even a large proportion of them) have become hypersensitised and that therefore their reactions to the odours from the site are not the reactions of ordinary reasonable people. We accept that Mr Gray may possibly be an exception to that comment.

Having said that we also accept that it is likely that the neighbours who are regularly exposed to odours from the NZ Mushrooms site may possibly have a higher degree of sensitivity to such odours than persons who are not subject to the odours on a recurring basis such as the Trident assessors or Regional Council officers. That is one of the effects of exposure to chronic odour on a recurring basis. Mrs Freeman and Dr Black agreed on that. Mrs Freeman was quite clear\(^{62}\) that this heightened sensitivity to chronic odour as a result of recurring exposure to it is different from the hypersensitivity to which Dr Black was referring. Hypersensitivity is an abnormal reaction. Heightened sensitivity to an odour is one of the potential effects of recurring exposure to it. That is a normal reaction to such exposure.
Collective Lather

[146] An extension of the hypersensitivity argument arose out of Dr Black's evidence that people in an area can collectively talk about an issue and as a result can become agitated by it. Such a response could be driven by hypersensitive members of the community. It was suggested that the neighbours had worked themselves into a collective lather.\(^{63}\)

[147] In support of that proposition Mr Wylie made the point in his closing submissions that the NZ Mushrooms operation had been a topic of conversation between the neighbours. It seems entirely natural that neighbours of the site would from time to time discuss issues relating to the odours which emanate from it. That fact must be viewed in light of the evidence that there has been an acknowledged problem from the site for a long number of years. It would be a strange community which never discussed such an issue. It seemed to the Court that the real issue was whether or not such discussions caused neighbours to become unduly concerned about the odour, induced them to exaggerate their experiences or mislead the Regional Council and/or the Court as to such experiences.

[148] A number of the neighbours who gave evidence were cross-examined on the extent to which they discuss odour issues. Their responses were interesting. Mr Olesen for example said that the neighbours tried not to talk about it as they did not want the odour to control their lives. Mrs Cameron said that the neighbours talked about all sorts of things including the odour when they met but did not tend to go on about it for too long.

[149] We saw nothing in the evidence which established that the communal reaction of the neighbours to the composting odour is anything other than what might be expected in response to what is an acknowledged longstanding problem in the area.

Self-Interest

[150] It was suggested in NZ Mushrooms closing submissions and in Counsel's cross-examination of resident witnesses that residents were motivated by self-interest in their
opposition to the N Z Mushrooms application. The alleged self-interest arose in the following ways:

- It was suggested that there was a possibility of re-zoning of some of the residents’ land which (by inference) might be enhanced if the NZ Mushrooms operation was not in the area. We are surprised to see that this suggestion, which was put in particular to Mr Cameron and Mr and Mrs Olesen, made its way into the closing submission. Mr Cameron denied ever having considered applying to have his land re-zoned for residential development. He acknowledged the potential for that to happen in the long term but that was not something he had planned to do. When a similar proposition was put to both Mr and Mrs Olesen they acknowledged that there was potential for some form of rural residential development but denied that they had any plans to do so. Mrs Olesen said that they wanted to live out the rest of their days on their farm and in the long term put a manager on so that they could retire on the property. We find no basis for the suggestion that the possibility of future subdivision might in some way be motivating the neighbours’ opposition. The suggestion was emphatically denied by the witnesses and was based on pure speculation.

- The second potential self-interest identified was a desire on the part of the neighbours to continue their dairy farm operations. Again we find no evidential basis for that suggestion. Although Mr Cameron and Mr Olesen both gave evidence as to unpleasantness at times in working in their dairy sheds and encountering odours on other parts of their farms which they tried to avoid, neither suggested that the odours from NZ Mushrooms prevented them from actually carrying out their dairy farm operations.

- Finally under this head was the suggestion in cross-examination that Mr Cameron may have been motivated in his opposition in NZ Mushrooms operation by the fact that NZ Mushrooms had not renewed a lease in which he previously held over the grazing part of the site. Mr Cameron’s
response to that suggestion was that he accepted NZ Mushrooms decision which was the company’s to make. Again we saw no substance in this suggestion.

Wider Community Concern

[151] It was further submitted on behalf of NZ Mushrooms that there was no evidence of any wider community concern about the NZ Mushrooms operations. The submission seems to ignore the fact that the Longs, Grays, Olesens and Camerons are the closest neighbours of the site and therefore the most likely to be affected by it. There were from time to time in the evidence hints that there had earlier been a wider circle of concern about NZ Mushrooms operation which apparently extended to the local school situated some distance away. It does not seem an unusual proposition to the Court that such a wider circle of concern may have diminished as a result of the applicant’s acknowledged on-site and operational improvements but that the immediate neighbours continue to have concerns.

Alternative Odour Sources

[152] The final issue arising out of the residents’ evidence was the possibility of there being alternative sources of the odour which they had described. We have already discussed the issue of potential for odour to be caused by chicken manure spreading operations in the vicinity in connection with the Regional Council witnesses. A further alternative source of odour which was suggested was the Wallace Corp rendering plant situated at Waitoa approximately 8-10 kilometres away from the site. That suggestion was made by Mr Cudmore on the basis that some of the neighbours from time to time in their descriptions of the odours which they received, described a *rendering type odour*. It seemed to the Court that if Wallace Corp was in fact the source of such odours, it was reasonable to expect that there would have been complaints about the odour from other persons living in the area between Wallace Corp and Taukoro Road. There was no evidence of any such complaints. It seemed to us highly unlikely that odour would regularly travel from Wallace Corp to Taukoro Road and descend on that area without affecting residents and generating complaints in the intervening neighbourhoods or in Morrinsville itself.
[153] Dr Brady testified that although such transmission of odours from Wallace Corp could happen in theory it would occur only first thing in the morning and would last for only five to ten minutes, generally when there was a cold and frosty morning. Dr Brady and Mrs Freeman both queried the remote likelihood of such odour events from Wallace Corp not attracting complaints from other parts of the district. Dr Brady was highly sceptical as to odours from Wallace Corp providing an explanation for any recurring odours near Taukoro Road or the description which neighbours applied to those odours.

[154] We are similarly sceptical. In our view the comparison which residents made between odours experienced at Taukoro Road and rendering type odours simply lies in the explanation that the descriptions are those of lay persons and not odour professionals. That was the opinion of Dr Brady and Mrs Freeman. Dr Brady went so far as to express the view that some of the odours which could be generated by the rendering process were not dissimilar to odours which come from aerobic composting so that the residents’ descriptions might well be accurate in any event.

[155] We appreciate that the assessment of reliability of witnesses’ evidence is not an easy matter. Matters such as appearance, demeanour, apparent sincerity and manner can be deceptive. We appreciate that there are some inconsistencies between the evidence of neighbours and those of Trident and Regional Council witnesses, particularly relating to the intensity of odours experienced and their character. Conversely there is a considerable degree of support of the residents evidence in the evidence given on behalf of the Regional Council. There are inconsistencies between the views of the neighbours as to duration of odour and Mr Cudmore’s odour hour calculations. Some of those inconsistencies are explainable by the fact that the neighbours assessments and descriptions are those of the people who are being subjected to the odours in their homes and work places on a recurring basis. However, taking all those things into account, at the end of the day, we believed the evidence which the local residents gave to us. That evidence similarly forms part of the evidential picture to which we have had regard.
Evidential Summary

[156] We have endeavoured to identify the strengths and weaknesses of the various streams of evidence regarding the odour which is acknowledged to be discharged from the NZ Mushrooms site. We consider that in reaching any conclusion as to the effects of the odour is necessary to take a broad view of all of the evidence. Having done so we have concluded that (regrettably), notwithstanding the very substantial expenditure and efforts of NZ Mushrooms, operation of the composting process at the Taukoro Road site continues to have significant adverse odour effects at a chronic level on the neighbours of the site.

Legal Issues

[157] We now turn to consider the various legal issues which need be addressed in the light of the above factual finding. In this section of the decision we address the following issues:

- The ordinary reasonable person test.
- Can chronic odour be objectionable and offensive.
- Baseline Issues.

Ordinary Reasonable Person Test

[158] We noted earlier in this decision that the parties to these proceedings (particularly NZ Mushrooms and the appellants) framed the odour issue before us on the basis of the Court determining whether odours generated by the composting process were (or were not) offensive and objectionable. Although the question may have been framed in some other way e.g. whether the discharge of odours was having an adverse effect and whether or not that adverse effect was a minor or a significant adverse effect, we have proceeded on the basis of the case as argued namely, to determine whether or not the odour effects are offensive and objectionable.

[159] We also noted previously that the test of whether or not the odour was offensive and objectionable was whether or not ordinary reasonable people would find it so. We understood that the argument about hypersensitivity of the residents was advanced on the basis that if the various residents were hypersensitive, as contended by the applicant, then their response to the odours currently being generated by the composting plant could not be regarded as the
responses of ordinary reasonable people. We have found that with the possible exception of Mr Gray there is no substantive evidence to establish NZ Mushrooms’ contention that the residents are hypersensitive.

[160] We have however found that as the result of recurring exposure to odours from the composting plant it is likely that the residents responses are different, in terms of describing intensity and objectionable characteristics, to those of persons who might be exposed to such odours on a purely brief and occasional basis such as the Trident odour assessors or Regional Council staff. Does that take the residents’ responses out of the category of those of ordinary reasonable people? We believe not. In our view the test is, how would the odours be perceived by an ordinary reasonable person exposed to them on a recurring basis in their home or place of work as are the residents in this case? We return again to Mrs Freeman’s evidence\(^7\) that the type of effect caused by chronic odour is a slowly accumulated stress which can make people subjected to the recurring odour more sensitive to it. In other words the increase in sensitivity of some persons is a direct effect of the recurring nature of the odour and ordinary reasonable persons may be subject to that effect.

**Can Chronic Odour be Offensive and Objectionable**

[161] The words offensive and objectionable are not defined in RMA. In the absence of a definition in the Act we propose to adopt the approach to definition of the term used by the Court in *Donnelly v Gisborne District Council*\(^7\), namely to refer to the dictionary definitions as the Court did in paragraphs 61 and 62 of that decision using the Oxford Shorter English dictionary.

- The term offensive is defined as meaning
  1. Of or pertaining to attack; attacking; aggressive; serving or intended for attack; having the function of or/and attacking an opponent
  2. Hurtful, harmful, injurious.
  3. Causing offence, giving or liable to give offence; displeasing; annoying; insulting; disgusting, noxious.

- Objectionable is defined as:
  - Open to objection; undesirable, unpleasant, offensive, disapproved of.
It can be seen that there is a certain interchangeability between the two definitions. We do not think there is any need in this instance to apply any meaning to the words other than their normal meaning. As did the Court in Donnelly\textsuperscript{73} we regard the words in this context as meaning undesirable, displeasing, annoying or open to objection.

[162] NZ Mushrooms submits that the concept of chronic odour being considered an adverse effect at all has not been recognised in case law to date. It went on to submit as follows:\textsuperscript{74}

\textit{NZ Mushrooms Limited submits that the concept of chronic odour being considered an adverse effect is not recognised by the Resource Management Act 1991. Rather in terms of the Act (and the consent under which NZ Mushrooms Limited has been operating) each individual odour event has to be examined, to see whether or not offensive or objectionable odour was generated from the site on that occasion. There is nothing in the definition of the word “effect” in section 3 of the Act which suggests that repeated low level effects can be agglomerated and jointly treated as creating an adverse effect. It is submitted that chronic odour – as alleged by the appellants – is not a cumulative effect which arises over time, or in combination with other effects. There are no other adverse effects attributable to NZ Mushrooms Limited which odour can be combined with; further any odour events are temporary and they do not continue. It is submitted that they cannot be considered cumulatively with other temporary odour effects. Repetition of odour events not objectionable or offensive in themselves does not thereby become offensive or objectionable.}

We have set the submission out in full as it goes to the heart of the matter before the Court.

[163] No authority is cited for this proposition which was advanced in NZ Mushrooms’ closing submission and had not previously been signalled to other parties in the applicant’s opening submission nor in cross-examination of any witnesses. We considered allowing other
parties to respond to the submission – however, because we disagree with it, at the end of the
day we did not determine that to be necessary.

[164] Section 3 RMA purports to contain the meaning of the word effect. On examination
Section 3 is in reality a series of examples of different types of effect. It provides as follows:

Meaning of “Effect”
In this Act, unless the context requires, the term effect... includes –

a) Any positive or adverse effect; and
b) Any temporary or permanent effect; and
c) Any past, present, or future effect; and
d) Any cumulative effect which arises over time or in combination with
other effects –
regardless of the scale, intensity, duration, or frequency of the effect ...
(balance not relevant).

[165] We do not think that it can be contended that chronic odour effects are not effects of
the kind described in Section 3. Nor do we understand Counsel to contend that the discharges
in this case are so insignificant that they may be disregarded under the de minimis principle
(assuming that it was accepted that the principle was applicable). Although an individual
discharge of a mildly intensive and mildly unpleasant odour may be regarded as having only a
minor adverse effect because of its limited scale, intensity and duration it is nevertheless an
effect as identified in Section 3. Whether or not any such effect is in fact adverse and the
extent to which it is adverse is something for the Court or a consent authority to assess having
regard to the evidence before it. In terms of that assessment, in this case we note:

• Mrs Freeman’s evidence that the effect caused by chronic odour is a slowly
accumulated stress which can make people subjected to the recurring odour
more sensitive to it and that it is the repeated nature and accumulated effect
of the odour impacts that is of primary concern75;
• The provisions of Para’s 6.4.1.3 and 6.4.1.4 of the Air Module of the Regional Plan both of which record that an adverse odour effect may occur from frequent incidents of lesser intensity or offensiveness;
• The Good Practice Guide which notes that low level odour may have an adverse effect even though no single odour event considered in isolation could reasonably be assessed as objectionable or offensive.  

Although individual odour events may be regarded as temporary in the sense that they happen and then terminate, they are also intermittent and recur regularly and frequently throughout the compost plant’s operating cycle. It is submitted by the applicant that such effects may not be viewed as cumulative. The term cumulative means increasing or increased by successive additions. Whether or not a series of individual odour discharges can have a cumulative effect so that each new odour event increases the overall effect of the discharges is, in our view, to be determined by the Court as a matter of fact. It is undisputed that the odour discharges have continued over a period of time and will continue to do so. We are of the view that the impact of each effect may be assessed in combination with other similar effects (i.e. other preceding odour discharges). The rationale for NZ Mushrooms’ submission would apply to any ongoing intermittent event. If the effects of such events must be measured in isolation from each other, with no regard to their frequency and ongoing component, as the applicant contends, the concept of cumulative effect would become largely meaningless.

For all of these reasons we reject the submission.

Baseline Issues

In addition to the underlying baseline argument as to whether or not the odours from the mushroom composting process are rural odours, NZ Mushrooms has raised a further baseline issue in its closing submissions. The applicant contends that both the Matamata Piako District Plan and the Regional Council’s Air Module accept that odour can be generated on the site and simply require that it is not offensive or objectionable at the boundary. NZ Mushrooms submits that it must follow that odour which is not offensive or objectionable
can go past beyond the boundary and that low-level mushroom composting odour constitutes part of the permitted baseline.

[168] Insofar as the District Plan is concerned, that Plan does not authorise the discharge of odours. That is a Regional function. It is correct that the District Plan authorises the land use components of the applicant’s activity to the extent of the existing operation through the Development Concept Plan. Notwithstanding the apparently unsatisfactory manner in which the DCP was incorporated into the District Plan we accept that it provides a baseline for the land use components of the applicant’s activities but not for discharges of contaminants which are outside the scope of the Plan.

[169] Insofar as the Regional Plan is concerned we are at something of a disadvantage in that the only part of the Regional Plan which we have been given is Part 6, the Air Module, which we are told is effectively operative pursuant to Section 19 RMA. We were told by counsel for both the Regional Council and the applicant that because the composting activities at the site do not comply with the provisions of Rules 5.2.8.1, 5.2.8.2 or 5.2.8.3 for the composting of organic waste they require consent as a discretionary activity. If that is the case we do not see how the discharge of even low level mushroom composting odour from the site can be part of the permitted baseline in terms of the Regional Plan. We were given no evidence to compare the character of odour generated by a permitted organic composting activity with that generated by the mushroom composting activity. We do not know if permitted organic composting may involve the use of chicken manure which is a significant component of the mushroom composting process.

[170] We were not given copies of Rules 5.2.8.1, 5.2.8.2 or 5.2.8.3. Counsel for the applicant had advised us that we could confine our considerations to Part 6 of the Regional Plan which does not include those rules. In any event it appeared from the cross-examination of Mr Stagg that although the Regional Plan did not require that there be no odours discharged, it contained a standard that any odours discharged were not offensive or objectionable at the boundary. It follows that once a finding is made that the odours are offensive or objectionable they do not form part of the baseline.
Complaints For Activities That Hold a Resource Consent) of the Air Module are relevant. In each case those provisions make it clear that determination of whether or not odours are objectionable to the extent that they are causing an adverse effect is to be undertaken by applying (inter alia) the FIDOL factors and further that adverse effects may be deemed to be occurring from frequent incidents of lesser intensity or offensiveness i.e. from chronic odour effects.

[172] Accordingly we reject the proposition that chronic odour effects from the site form part of the permitted baseline.

The FIDOL Factors

[173] As a checklist for our considerations we propose to briefly measure our findings against the FIDOL factors and the provisions of Paras 6.4.3.1 and 6.4.1.4 of the Air Module which incorporate those factors as an assessment tool.

- Frequency – Receipt of odour at any given time is driven to a large extent by wind factors but the odour recurs on an ongoing basis and is frequently experienced by all of the neighbours although not all at the same time. At certain times neighbours may experience the odours at least weekly and possibly more often although there will be periods when no odours are experienced.
- Intensity – Descriptions of intensity varied with the neighbours’ estimates and descriptions tending to the higher end of the scale.
- Duration – Again descriptions varied. It seems that there is a come and go factor with the odour which may appear, disappear and return. Occurrences of an hour in length and longer were identified by some witnesses. The odour may attach itself to furniture and clothing, creating a lingering effect.
- Offensiveness/character – The chicken poo, ammonia, piggery characteristics of the odour on occasions are very significant factors in assessing its offensiveness and objectionability.

Location – The neighbours experience the odours inside their houses, around their gardens and curtilages and in places such as workshops and cowsheds where they regularly work. The odours accordingly extend well beyond the boundaries of the site into these sensitive locations and their
effect at these locations (particularly in and around the neighbours’ houses) is a significant factor in our assessment.

Conclusions

[174] Having regard to all the foregoing we have reached the following conclusions.

- The composting operation presently undertaken at the site discharges unpleasant odours which have an adverse effect at a chronic level on its neighbours.
- Odour produced by the composting process is discernibly different from other rural odours generated in this area.
- The odour is experienced by neighbours in their homes and regular working areas, well away from the site boundary.
- The chronic odour has a cumulative effect due to its frequent and recurring nature.
- That effect is offensive and objectionable when assessed from the standpoint of ordinary reasonable persons exposed to it in those circumstances.
- Even if the effect did not fall into the offensive and objectionable category, in our view it is adverse to a significant degree.

Resolution

[175] We turn now to the matter of resolution of the appeal in the light of the above findings. During the course of the hearing we indicated to the parties that it was likely that we would issue an interim decision. This decision is issued on an interim basis to record our findings on the factual and legal issues which the Court sees as being central to the dispute between the parties. We do not propose in this interim submission to undertake a detailed analysis of the kind required pursuant to Sections 104 or 104 C. To the extent necessary that exercise may be undertaken in any final determination that we make.

[176] It will be evident from the preceding sections of this decision that there was no argument put to us against transfer of the phase 2 and 3 mushroom growing operations to Taukoro Road. Nor did we understand there to be any argument about the discharge consent authorising the discharge of water and stormwater to land. The consents relating to those operations of the proposal might appropriately be granted. We appreciate however that may be largely academic depending on the outcome of the applications to discharge contaminants to
air and to establish four additional compost production bunkers which were the matters of contention before us.

Section 5 RMA

[177] The provisions of s5 RMA are well known to all resource management practitioners. For the sake of completeness the provisions of that section are set out here under.

5 Purpose

1) The purpose of this Act is to promote the sustainable management of natural and physical resources.

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

The Court’s considerations in these proceedings must be undertaken with a view to achieving sustainable management.

[178] In his opening submission for the applicant, Mr Wylie included (in part) the commentary on s5 contained in Salmon. We repeat that commentary here.

The application of s5 involves an overall broad judgment of whether a proposal will promote the sustainable management of natural and physical resources. That approach recognises that the RMA has a single purpose and such a judgment allows for comparison of conflicting considerations and the scale or degree of them and their relative significance or proportion in the final outcome.
The outcome of this case is very much bound up with a comparison of conflicting considerations. On the one hand the substantial benefits generated by NZ Mushrooms' Morrinsville operations and on the other hand the adverse odour effects on the immediate environment of the Taukoro Road composting plan. Section 104 RMA contemplates consideration of both beneficial and adverse effects.

[179] We will refer to the benefits only briefly. The reason for that is not that they are of little weight. Quite the opposite is true. The appellants did not query the benefits identified in the applicant's evidence in any way. They are a given in these proceedings. Although the focus in the appeal is on the mushroom composting which takes place at Taukoro Road, that process is an integral part of the overall mushroom growing operation which cannot carry on without the compost produced at the site. Accordingly the benefits which are identified are the benefits of the overall operation including both Taukoro Road and Avenue Road. They may be identified as follows.

- Firstly there are the benefits which accrue from the process. Those benefits arise out of the conversion of what might otherwise be by-products or waste products (e.g., straw and chicken manure) into compost which is used for the production of a valuable and highly nutritious food. At the end of the mushroom growing process the remnant compost is recycled into the horticultural and agricultural industries where it is used for potting mixes, soil conditioners and ground mulches. The process represents a highly efficient and sustainable use of the resources involved.

- Second is what might be regarded as social and economic benefits. Setting aside the benefits to the company itself, the benefits to the Morrinsville and Waikato communities are immense. NZ Mushrooms is the largest employer in Morrinsville. Approximately 180 people are employed in the Morrinsville operation although the Taukoro Road plant itself is run by only four or five people. The company's expansion plans at both Morrinsville and in the wider Waikato region will lead to the employment of an estimated 440 people. The regional and national economic benefits which accrue currently and may accrue in the future from NZ Mushrooms operations were detailed in the evidence of Mr PT Donnelly, an economist called by the applicant. As we have already said, those benefits are immense and the only reason that we do not go into greater detail here is
that they were undisputed. We do however include Mr Donnelly’s conclusion. The Taukoro Road site activities are essential to maintaining current and forecast activities, as without its production, it is unlikely that there will be any mushroom growing activities at Morrinsville or elsewhere in the region.

Accordingly the Court is required to take into account in this case the undoubted and substantial beneficial effects arising out of NZ Mushrooms activities at Morrinsville, of which the Taukoro Road plant is an integral and necessary component and balance that on the other hand with the offensive and objectionable odour effects of the composting operation, which are visited on the neighbours.

We have had regard to the various authorities cited to us by the parties in determining how we should resolve the tension between the need to enable ongoing operation of the composting plant on the one hand and to adequately mitigate its effects on neighbours, on the other. In that regard (for example) we refer to the decision of the (then) Planning Tribunal in Te Aroha Air Quality Protection Appeal Group v Waikato Regional Council (no 2) where the Tribunal determined,

For value to be given to promoting sustainable management, enabling people to provide for their wellbeing while avoiding adverse effects, there is no place for accepting objectionable odours even occasionally and when resulting from malfunctions or breakdowns.

TeAroha was a case of an application for non complying activity consent. The facts that the proposed rendering plant was to be located in a zone where such an odour generating activity was not to be expected and where there were sensitive uses in the vicinity were clearly factors which strongly influenced the Court’s decision to decline that application, even though the probability of odours was low.
At the other end of the spectrum we refer to the Court's decision in *Ravensdown Fertiliser Co-operative Limited v Smith* where the Court permitted the ongoing operation of a longstanding fertiliser works notwithstanding that it would continue to emit hydrogen sulphide odours. In that case the Court acknowledged that there will be a continuing situation of occasional odour detectable beyond the works but also found that the extent of such odour will not be so noticeable and unpleasant that a significant adverse effect could reasonably be said to exist as regards Ravensdown residents. That last finding is substantially different to the factual finding which we have made in this case. We also note that in the *Ravensdown* case the Court signalled that if its expectations about there being no significant adverse effects were shown to be wrong then the matter would have to be revisited insofar as the installation of expensive scrubber equipment was concerned.

It becomes apparent on reading the various decisions on odour that the outcomes of particular cases revolve very much around their own facts and the planning regime relevant in each case. However there are two decisions which identify some general principles.

The first of these is *Winstone Aggregates and Others v Matamata Piako District Council* where the Court identified the following principles which are relevant in this case.

- In every case activities should internalise their effects unless it is shown that they cannot do so.
- There is a greater expectation of internalisation of effects of newly established activities than of older activities.
- Having done all that is reasonably achievable, total internalisation of effects within the site boundary will not be feasible in all cases and there is no requirement in the RMA that that must be achieved.

The second decision is *Wilson and Rickerby v Selwyn District Council* where the Court derived the following principles from earlier authorities:
• That the test for odour is objective;
• That there is a duty to internalise adverse effects as much as reasonably possible;
• That it is accepted that in respect of odour the concern is to ensure that odour levels beyond the boundary are not unreasonable (being the same as offensive or objectionable or significant adverse effects);
• That in assessing what is reasonable one must look into the context of the environment into which the odour is being introduced as well as the planning and other provisions (location).

[187] Applying the principles identified in this case, we note the following:
• There is no absolute requirement for internalisation of odour effects although that is to be preferred.
• This is an older existing activity where it may not be feasible to achieve complete internalisation because of shortcomings with the site. Having said that however it must be borne in mind that the activity was granted consent to establish on the site in 1984 and was re-consented in 1995 subject on each occasion to a requirement that there be no offensive odours offsite. Accordingly one of the bases for the activity’s existence was a condition which has been persistently breached. Furthermore there is a new element to the activity due to the proposed expansion of the existing activities which will potentially increase the extent of the existing effect.
• In this particular case we consider that a most important consideration is the third principle identified in Wilson and Rickerby, namely that the concern must be to ensure that odour levels beyond the boundary are not to be unreasonable (being the same as offensive or objectionable or significant adverse effects).

In none of the cases to which we were referred was it suggested that particular activities might be permitted to discharge offensive or objectionable odours. We consider that the bottom line in this case is that the composting facility may not continue to discharge offensive or objectionable odours.
Enclosure

[188] It was the appellants’ contention that the only way to guarantee that there would not be an ongoing discharge of offensive and objectionable odours from the site was to require enclosure (i.e. covering) of the operation. NZ Mushrooms vigorously contested that it discharged offensive or objectionable odours at all but took the position that if the Court held that it did, enclosure of the facility was not the appropriate response.

[189] In his opening submissions for the appellants their counsel (Mr P T Cavanagh QC) made the following submission:

"As the case has been narrowed down to issues of planning and odour only, the essential issue is whether the odour being discharged from the composting facility (and likely to be discharged from any extension of the facility) can be avoided, remedied or mitigated and, if it cannot, whether the adverse effect created by the odour is sufficient to cause the Court to exercise its discretion not to grant consent, or to impose more stringent conditions than those that have been imposed by MPDC and Environment Waikato."

Mr Cavanagh then went outside his written brief to add "neither the society nor the residents are seeking to close the facility down."

[190] The proposition advanced by the appellants was that the only way of ensuring that adverse odour effects from the site were adequately controlled was to enclose the composting facilities. As with all other aspects of this case, the need for and efficacy of enclosure as a solution was hotly contested.

[191] The evidence of Professors Byer and Noble was advanced by NZ Mushrooms in support of the position that enclosure was not necessary. Both Professors Byer and Noble gave examples of composting plants overseas which were covered and which had failed for financial reasons. Both the Professors drew the implication from this that enclosure was not financially viable although no evidence of any kind was tendered by them to establish any linkages between the cost of covering and financial failure in the examples cited.
Professor Noble gave evidence about the operational improvements at Taukoro Rd which he had recommended and which (we understand) have largely been put in place. The Professor’s recommendations were designed to ensure that the composting process took place under aerobic conditions in the bunkers at all times. He was of the view that if this could be achieved there would be no odour nuisance. We understand that his recommendations have been implemented but, as we have found, these have not succeeded in eliminating significant adverse chronic odour effects, or offensive and objectionable effects.

[192] Mr Young gave a detailed explanation to the Court as to consideration which the company had given to enclosing the facility. We understood that (in summary) there were two problems as far as the company was concerned.

- The first might be described as a practical problem arising out of dispersal of the large plumes of steam generated in the bunkers which presently discharge to the air when the bunkers are opened. The effect of entrapment of the steam would be that there would be no visibility for those working in the enclosed facility. There would also be risk at another level arising out of potential harm to workers from the noxious components of the steam and odour compounds.

- Secondly there is the financial cost involved in building the enclosure facility and providing adequate extraction capacity to enable it to work effectively. Mr Young was aware of a covered operation in Europe but said that the economics of that operation, accommodating much greater production for a much larger market with consequent economies of scale, was totally different to the New Zealand situation.

Mr Young made the company’s position on enclosure very clear. A requirement that the Taukoro Road composting facility be enclosed would most likely lead to its closure as a facility, which in turn would lead to closure of the entire Morrinsville mushroom operation.

[193] Mr Cudmore similarly disputed the need for enclosure of the plant. He expressed the first was that enclosure could lead to a false sense of security in that it might not necessarily solve any problems. Secondly, he expressed the view that no matter what
Mrs Freeman identified a range of improvements which she felt could be made in overall operation of the plant. Additionally counsel for the Regional and District Councils made a series of suggestions about possible improvements (short of enclosure) which might assist in reducing odour emissions.

Dr Brady was the principal proponent of enclosure. He gave evidence of the operation of a very large enclosed green waste composting operation with which he was familiar in the Wellington region. He was of the view that if adverse odour effects from the plant are to be eliminated then enclosure of the composting was the only alternative which could satisfactorily achieve that. Dr Brady made the point (and we think quite correctly) that the present air extraction system used in the composting bunkers could not adequately capture odour during the bunker to bunker transfer process. Mr Cudmore had calculated that up to 80 percent of the odour was captured, a figure disputed by both Mrs Freeman and Dr Brady. Dr Brady was of the view that the capture rate might be as low as 50 percent although we understood that there are difficulties in accurately calculating that figure. In any event we do not think that there is any doubt that the present air extraction system does not adequately capture odour within the bunkers themselves whilst they are open during bunker to bunker transfer nor can it capture odour from the compost at all whilst the compost is outside the bunkers being transferred from one to the other.

A further witness for the appellants on the matter of enclosure of the facility was Mr D Crestanello who operates a mushroom growing plant and composting facility at Pukekawa. The facility operates as Cresta Mushrooms Ltd. The Cresta composting operation is undertaken in a fully enclosed facility. We understand the Cresta operation to be viable at both economic and practical levels. Ultimately we did not find Mr Crestanello's evidence helpful in enabling us to determine whether or not enclosure was a practical option for NZ Mushrooms. The Cresta operation is substantially smaller than NZ Mushrooms (about one third the production level) and operates on a completely different system for loading the bunkers. We do assume however that the enclosure system used by Cresta is successful in eliminating odour problems as we understand that Cresta recently renewed its resource consents and had sign off from all of its neighbours enabling that to happen.
During the course of the hearing we directed that Mr Cudmore, Dr Brady and Mrs Freeman met to see if agreement could be reached on appropriate mitigation measures. The outcome of that meeting was a Statement of Agreed Facts dated 7 March 2007. Much of the statement centred on mitigation options suggested in Mrs Freeman's supplementary evidence. At the heart of Mrs Freeman's recommendations were an increase in extraction capacity in the bunkers and an increase in the length of the bunkers.

Ultimately the witnesses were unable to reach agreement as to how adequate mitigation could be effected. The position is summed up thus in paragraphs 12 – 15 of the Statement of Agreed Facts.

12 Dr Brady and Mr Cudmore and Mrs Freeman agreed that the improved rate of extraction at the mouth of the bunker will result in some reduction in odour emissions. However, improving the rate of extraction in combination with increasing the effect of bunker length (ie Options (d)(e)) will further minimise the potential to release odour.

13 Mr Cudmore considered that improving the air extraction rate (para 11 above) would make a significant reduction to the potential for odour to be discharged from the site even without increasing the effective length of the bunker.

14 Dr Brady agrees in principle that increased ventilation rates and extending the effect of bunker length together will reduce some of the odour. However, he considers that the suggested increase in rates of extraction by Mr Cudmore will not guarantee a satisfactory reduction in odour release during bunker transfers. Dr Brady remains of the view that full enclosure is the only option that will achieve a guaranteed level of odour capture to the extent that there will be no odour nuisance beyond the boundary.

15 Mrs Freeman considers that with adequate engineering design, increased ventilation rates and extending the effect of bunker length together in combination will result in a significant reduction in odour emissions during bunker transfers, and that both measures are required. She also notes that no guarantee of the effectiveness of the odour reductions can be provided, and therefore agrees with Dr Brady that full enclosure would be the only option that will achieve complete certainty.
Paragraph 15 of the statement of agreed facts neatly encapsulates the problem for the Court. Should we insist on the full enclosure which Dr Brady and Mrs Freeman both consider will achieve a guaranteed level of odour capture? Ultimately we have come to the conclusion that it is necessary for there to be enclosure of the bunker to bunker transfer operation. We have reached that conclusion for a number of reasons.

- Our starting point has been that neighbours of the site should not be subject to offensive and objectionable odours from it. Even taking into account the substantial beneficial effects of NZ Mushrooms' operations and weighting those benefits as high as we can in our consideration we are of the view that the neighbours should not have to pay the environmental price in the form of offensive and objectionable odours which they presently do.

- We considered some form of staged mitigation with (for example) Mrs Freeman's suggested mitigation measures being implemented and only if those proved unsuccessful in reducing odours to a reasonable level would full enclosure be required. Ultimately we determined that would be unsatisfactory for both the company and residents. Firstly there would be a very high degree of uncertainty in determining whether adequate mitigation had in fact been achieved. None of the witnesses suggested a measurable standard which would enable the Court, the Regional Council or parties to assess that. Secondly such a process would involve NZ Mushrooms in a high level of expenditure with no guarantee of ultimate outcome. We think that Dr Brady made a good point when he commented that any improvements should be done effectively and efficiently in the first place to ensure that there was no odour.

- We considered the issue of what might be the best practicable option to ensure that offensive and objectionable odours did not escape the site. Although lesser mitigation measures would probably achieve some improvement and would certainly cost less than enclosure we were not satisfied that they would achieve the bottom line which we have identified
We have also considered whether or not it is necessary to *guarantee* that the mitigation measures which might be put in place ensure that there is no escape of offensive and objectionable odours from the site or whether some lesser form of mitigation which might or might not achieve that would be acceptable. We do not think that RMA requires that there be an absolute guarantee that mitigation measures are successful. Where there is doubt it may be appropriate to use techniques such as those available under s128 so that mitigation matters can be revisited. However, for similar reasons to those set out above (para 199) we do not think that is appropriate in this case. We consider that in this instance there needs to be a high degree of certainty for all parties. Mrs Freeman has identified that there remains an element of risk as to whether or not her proposed mitigation measures would be successful in eliminating odour nuisance from the site. In our view it is not appropriate for the neighbours to have to accept that risk.

For all of these reasons we have formed the view that if consent is to be granted to the various applications then it must be on the basis that the site is enclosed to the extent required to achieve a level of odour capture which ensures that there are no offensive or objectionable odours discharged beyond the boundary. We do not understand that to mean full enclosure of the whole operation. It is enclosure of the bunker to bunker transfer operation to the extent necessary which is required together with associated measures such as increasing the capacity of the air extraction system and probably the biofilter. We understood from Dr Brady's evidence that it was technically possible to achieve that.

We appreciate that our prescription may be somewhat vague. It is however our intention to convey to the applicant our view as to what is required and to leave it up to the applicant to determine if it is feasible to design a facility which achieves that. We appreciate that any building may require additional resource consent from the District Council.

We propose to give NZ Mushrooms until 31 October 2007 to report back to the Court and other parties as to whether or not it is agreeable to proceed on the basis of the required degree of enclosure. If the company has not concluded its investigations in that regard by 31 October we would be prepared to extend the period for a limited time. If the company has by then formed the view that enclosure (in whatever form) is not a viable
option for it then the appeals against grant of air discharge consent and bunker expansion would be allowed. If the company wishes to proceed on the basis of enclosure then it should submit appropriate plans and draft conditions of consent to the Court and other parties for consideration.

[204] Finally we can indicate to NZ Mushrooms that if it is prepared to enclose its facilities to the necessary extent, the Court accepts that it would be appropriate for the relevant consents to be granted on a longer term basis than is presently the case. We can also indicate that we accept that some form of staging might be appropriate to give the company time to implement these requirements.

DATED at WELLINGTON this 23rd day of July 2007

[Signature]

Environment Judge

23 JUL 2007

B P Dwyer
Environment Judge