ODOUR NUISANCE CONTROL

IN NEW ZEALAND

SUMMARY

Office of the
PARLIAMENTARY COMMISSIONER FOR THE ENVIRONMENT
Te Kaitiaki Taiao a Te Whare Pāremata

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This is a summary of the main report titled "Odour Nuisance Control in New Zealand" tabled in the House of Representatives on 3 October 1991. Full copies of this report are available from this office.

PREFACE

Although bad smells are often treated as a joke by many individuals, unpleasant odours can be nauseating, pervasive in that they persist in clothing and household furnishings, and are particularly intractable when controls are sought. I consider that the quality of life for several residential communities in New Zealand has been significantly impaired by such odours. In some cases this has persisted for as long as sixteen years.

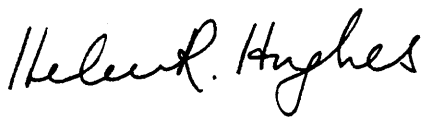
The reasons for these intolerable situations are found in the inability of the government system to either control or provide relief. This report expands on advice already given to the Select Committee considering the Resource Management Bill and advice to the Selwyn District Council considering a planning application for an industry that has had a long history of odour problems. The findings of this investigation are relevant to every Regional and District Council.

Deficiencies in the legislation have led to less than adequate performance by public authorities trying to protect their ratepayers' environment. Odour is also a subject where scientific understanding is far from complete. Methods for assessing, if not measuring, odours and odour nuisance have still to be refined.

Air is a public good and should be managed in a similar fashion to other public goods, such as water. Therefore as local government implements its responsibilities under the Resource Management Act it will become even more necessary to refine techniques so that standards for odour and emission limits can be set.

For activities where odour cannot yet be effectively controlled the only proven way of protecting the public from unacceptable odour nuisance is to ensure there is an adequate separation distance between the activity causing the smell and residential areas. The long intolerable history of the Prebbleton area should not be allowed to continue or be repeated in other communities.

As with many environmental management problems, good practice over and above what the legislation provides, is often the key to successful solutions. With goodwill on the part of all parties it should be possible to ensure pollution-free air for all.



Helen R Hughes
Parliamentary Commissioner for the Environment

1.0 INTRODUCTION

1.1 Background to investigation

Odour nuisance complaints comprise a large proportion of public complaints received by air pollution control officers both in New Zealand and overseas.[1] From time to time since 1987 the Parliamentary Commissioner for the Environment has been made aware of odour nuisance complaints by members of the public, but in 1990 there was a significant increase in the number received.

The Commissioner views public complaints as one potential indicator of flaws in the environmental management system, and decided to carry out a generic investigation of odour nuisance control.

As an environmental issue, odour nuisance is very human-oriented, causing social impacts. Intensely unpleasant odours from adjacent land uses over which there is no control are a serious issue for the people whose lives are disrupted.

The six principal complaints concerning odour nuisance which were received by the Commissioner in 1990 are all highlighted in the case studies section of this report. Only two of the six are addressed in detail. These are Meadow Mushrooms in Prebbleton, a large-scale mushroom farming operation, and the Alliance Group Kaiapoi Plant, a meatworks in Kaiapoi.

The other cases were a proposal for a beeflot in Ashburton by Five Star Beef Ltd, a proposal for a skin processing plant by Te Poi Skin Processors Ltd, an intensive piggery operation at Whenuapai (Papanui Farm) and the Manukau Sewage Purification Works (MSPW) at Mangere, Auckland.

Statutory control of odour nuisance in New Zealand has been effected through the Health Act 1956, The Clean Air Act, 1972 (administered by the Department of Health) and the Town and Country Planning Act, 1977. There are also provisions available through the common law.

A particular focus of the investigation was to advise on any changes needed in the legislative structure, with the timing of this advice such that necessary changes could be made to the Resource Management Bill. Such advice was given to the Select Committee in June 1991, but for the most part was not accepted and instead referred back to officials for consideration in drafting transitional regulations or future amendments to the Act. The Commissioner will monitor the progress of these changes.

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1 K Rolfe, D Pullen, R Pilgrim, pers. comm.; Van Harreveld, 1989.

1.2 Terms of reference

The purpose of this investigation is to determine whether legislative and administrative measures available for odour nuisance control in New Zealand:

(a) have been adequately exercised by authorities in the case of complaints of odour nuisance received by the Commissioner, and;
(b) are adequate to protect the quality of the environment;

and, if not, to provide advice on preventive measures or remedial action to Parliament and authorities as appropriate.

Terms of Reference

1. To identify existing and proposed legislation dealing with odour nuisance prevention and control, and cases relating to odour nuisance brought to the courts.

2. To investigate complaints of odour nuisance received by the Commissioner and other case studies as appropriate, with particular attention to factors contributing to ongoing problems, any difficulties experienced by public authorities in implementing the relevant statutes, and approaches which have successfully minimised or prevented odour-related conflicts.

3. To formulate appropriate preventive and/or remedial advice, if any.

Legal authority for the investigation is derived from sections 16(1)(a), 16(1)(b), and 16(1)(c) of the Environment Act 1986.

1.3 Defining odour nuisance

The human sense of smell is a very sensitive, real and physical reaction to the presence of odour molecules in the air. Some compounds can be detected by the nose at concentrations in the parts per trillion - below the accuracy level of many analytical instruments. The identity of some significant odorous air pollutants is given in Appendix I.

One characteristic of the sense of smell is that the physical ability of individuals to detect odour in the environment varies; factors such as age, sex and desensitivity of the smell receptors contribute to individual variation in odour perception.

A further characteristic that contributes to variation in the perception of 'odour nuisance', is the individual's reaction to the odour. State of health, culture, life style and degree of familiarity with the odour and the odour-forming process all contribute to the subjective assessment of odour as a "nuisance".

There are some odours, however, about which there will be little argument. Odours characteristic of rotting flesh or decomposing excrement would be described by few people as pleasant or acceptable in concentrated form in residential areas. These organic based odours are the kinds of odours at issue in the case studies.

Odour nuisance sufficient to disrupt a person's daily life will prompt complaint and expectation of public authority action. The strong smell of a piggery or fellmongery in one's living room has a serious adverse environmental impact on the person involved.

> *" The reality of living with this stench is as follows; firstly imagine the worst smell you have ever encountered, perhaps raw sewage or dog faeces or a rotting animal carcase, now imagine living with that smell for hours or even days on end. Imagine eating a meal, doing the gardening, entertaining guests, endeavouring to sleep, in fact any activity which takes place in your average household. It's an insidious thing which invades every part of your house and from which there is no escape other than to leave the area for a few hours respite."*[2]

A common response of public authorities is that odour cannot be easily measured, so nuisance is hard to 'prove'. While it is true that odour cannot be measured with relatively simple machines as noise can be, odour can be assessed with panels of people backed up by chemical analysis (*see section 3.2).* Public complaints are a simple and cheap assessment of odour nuisance. 'Acceptable' levels for noise in the community have been arrived at based on subjective human response, and so too could the acceptable level for odour.

It is also a common theme that people's tolerance of odours has changed, and their expectations of environmental quality have increased. This may indeed be generally true, but does not mean that community complaints about odour are not valid and actionable. It does mean that public authorities and industry will need to continue to reduce the level of contaminants released into the environment.

Despite these variables, in the cases studied, there was in general little disagreement between residents and public authorities that an odour nuisance exists. Where the disagreement arose was as to whether the nuisance was *legally actionable*. The public authorities tend to weigh up the concerns of residents against other demands on time and resources and real or perceived obligations to local industry.

Certain industries are inherently odorous, and are important components of our local and national economy. Such industries need to go into 'someone's backyard', but statutory controls exist which can be used to keep such industries away from residential areas, improve plant operation and control equipment so as to minimise odour emission, and ensure the scale of operation is such that the environment can assimilate and dilute the odorous compounds released.

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2 Letter of 26 February 1991 from C R Paterson resident of Kaiapoi to D Pullen Department of Health.

2.0 CONCLUSIONS AND RECOMMENDATIONS

This investigation has identified provisions in environmental legislation which make it difficult for public authorities to ensure their communities are protected from an odour nuisance. These difficulties have resulted in long histories of severe odour problems and frustration for both public authorities and the affected residents in some areas. It is not surprising, given the historical record, that in some cases the frustration has resulted in a less than adequate performance by officials in both Central and Local Government.

The provisions of the Clean Air Act have generally led to a notable reduction in air pollution problems, of which odour is a major component. Where an industry has been willing to listen to community concern and advice from Regional Air Pollution Control Officers (RAPCO) of the Department of Health, progress has been made in alleviating the problems. Where there is a lack of financial resources or where an industry has preferred to safeguard its own interests at the expense of the local community, little progress has been made. In some instances, companies have made genuine attempts to research new methods and initiate new processes which have not always been successful. The human nose is extremely sensitive and in these instances separation of the smell from the community is the only realistic solution.

2.1 Capability of the System

The previous regime for odour nuisance control relied on a combination of planning controls for appropriate siting of industries and land uses, and a licensing system to impose specific odour controls, either process controls or control equipment. The Resource Management Act also combines land use planning and discharge controls but puts an emphasis on prevention of adverse effects by including "avoiding, remedying or mitigating" adverse effects in the purpose statement. The conclusions that can be made, as a result of this investigation, have dealt with the capability of the earlier system to maintain environmental quality and the performance of public authorities. Recommendations on remedial actions are made in relationship to the new resource management regime.

The partnership between the previous town planning and clean air legislation has usually been put into effect by the use of planning as the primary control as to whether the industry is allowed to establish. This assumption that planning can prevent odour problems was in fact diluted by the number of issues Councils consider when making planning decisions. Odour is, and should be, only one of the considerations of a land use consent. In addition, land uses and industrial technology change over time, and this investigation has identified many instances where planning mechanisms could not adequately deal with these changes and maintain environmental quality.

These conclusions emphasise the importance of other methods of odour control such as regulations and permits. In this respect there are some fundamental provisions of the Resource Management Act which are of concern.

The presumption of the Resource Management Act in relation to land is permissive rather than restrictive, and likewise the only restriction on discharges of contaminants to air is a requirement for discharge permits from a limited range of industries. Air, like water, is a common good and a medium within which contaminants are dispersed - unlike land where private property rights and duties are assumed. Discharges into air should be treated in a similar way to discharges into water.

A consequence of the different treatment of air and water is that there is no guidance given to authorities as to effects in air that should be considered before allowing activities as "permitted activities" in regional plans (s.70) or before granting discharge permits (s.107).

Given the greater reliance on regional and district plans with clearly identified objectives, criteria and rules to control adverse effects on the environment, and the permissive presumption of land use, this lack of guidance is of concern. This concern is heightened by the absence of any mention of odour (except in relation to discharges to water) in the Act and lack of well-defined standards and emission limits available for use by Councils. Therefore Regional and District Councils would benefit from some national guidance. (Section references below refer to the main report.)

Recommendation

1. That Regional Councils should include a provision in their regional plan for the control of discharges of contaminants to air. The objective would be to limit, after reasonable mixing, the following effects:

   (a) any dense smoke or other particulate matter;
   (b) any emission of objectionable odour or fumes;
   (c) any adverse effects arising from photochemical effects (i.e. photochemical smog);
   (d) any adverse effects on the health of persons living or working in the vicinity;
   (e) any adverse effects on ecosystems;
   (f) damage to any property (not being property owned by those controlling the activity);
   (g) contravention of any regional or national environmental standards. *(section 3.1)*

Technical standards and emission limits for condition on consents are needed by Councils so that they can fulfil their resource management responsibilities. There are methods and procedures available for the assessment of odours and their adverse effects on the environment, but these require further development before they can be used in plans and discharge permits.

It is clearly a Central Government responsibility to develop these standards and limits, as has already occurred for water quality and water discharges. There is also a need to develop methods and procedures to verify whether odour control objectives and standards are being met and discharge conditions complied with.

To undertake this development requires expertise which is in danger of being lost, with the dissolution of the Air Pollution Control Unit of the Department of Health. This expertise should be retained in some way in the Crown resource, such as in one of the Crown Research Institutes (CRI).

Recommendation

2. That the Minister for the Environment undertakes to develop the methodology that will establish workable technical standards and emission limits and procedures to verify compliance.

Recommendation

3. That the Minister for the Environment recommends national environmental standards for odour as a contaminant.

Recommendation

4. That the Minister of Science Research and Technology include provision in the CRI structure for retaining and developing existing expertise in air pollution control methodology. *(sections 3.2, 3.4)*

My advice to the Select Committee on the last draft of the Resource Management Bill noted that there were premises that had definitely given rise to odour problems in the past, such as composting operations or intensive farming (piggeries in particular), or new industries that potentially could cause odours such as the Five Star Beef feedlot proposal, that did not require a discharge permit unless specified in a plan. My recommendation that the definition of "industrial and trade premises" should be expanded to include these activities was accepted. However, a subsequent change to a transitional provision (s.418) means that a number of industries that previously were licensed are now exempt from any discharge permit requirements for a period of three years, unless a rule in a regional plan provides otherwise. This should be remedied, as it would not seem to be the intention of the Act to remove existing rights and obligations.

Recommendation

5. That the Minister for the Environment take action either by way of an amendment or a regulation using s.360 (1)(g) of the Act to ensure that any use of a process involving waste materials, composting of organic materials, and factory farming which was being carried on at 1 October 1991 under a Clean Air Act licence is required to continue to comply with the conditions of that licence. *(section 3.1)*

A major problem identified in the present legislation was the inability of the different authorities to formally address cross media effects between air and water. In the Resource Management Act, the same authority is responsible for both air and water quality. As these are under the same statute there will be a common set of policies in the authority and integrated management of environmental quality is possible.

There is still a potential for problems to arise as applicants need not necessarily apply for all consents at the same time. This is particularly so between land use consents under territorial authorities and discharge permits under regional authorities as in the Five Star Beef feedlot and the Te Poi Skin Processors plant cases. The requirement for joint hearings will act to prevent these problems, as will the ability granted in s.91 for deferral pending application for additional consents..

Recommendation

6. That Regional and District Councils exercise their ability not to proceed with an application if it requires other consents with some bearing on the proposal. *(section 3.5)*

Accompanying the increasing awareness of environmental issues in the community is an increased desire for participation in decision making procedures. The licensing procedure under the Clean Air Act excluded the public and led to criticism of the regulators and attempts to address concerns about odour in other inappropriate consent hearings. This desire to be involved extends to interest in ongoing monitoring and compliance. There has been criticism of authorities in the case studies for not involving the affected communities and keeping them informed.

Public participation is most effective when the public is adequately informed and procedures are clear. All procedures under the Resource Management Act allow for public input and Councils should encourage involvement at an early stage. Pre-hearing meetings are allowed for in the Act. These and working groups allow debate in an informal setting.

Recommendation

7. That the Canterbury Regional Council and Selwyn District Council in particular, and all other Regional and District Councils where there are activities with odour problems, encourage formal and informal involvement of the community by facilitating the establishment of working groups, pre-hearing meetings and ongoing consultative groups. *(sections 2.1, 3.8)*

In a situation where planning controls and consents have failed to prevent or resolve an odour problem, there is a need for enforcement action of some type. The investigation has noted a reluctance on the part of regulators to take legal action for a number of reasons, most of which are not markedly changed by the Resource Management Act.

The Act does, however, provide mechanisms in addition to offence proceedings to enforce compliance with conditions on consents and prevent or mitigate adverse effects. These are abatement notices, issued by the regulator, and enforcement orders which are issued by the Planning Tribunal. The latter can be applied for by any person, which may help to get redress where the authority is reluctant to act. The ability to use these mechanisms may be constrained in the case of odour nuisance by a lack of information on methods of mitigation.

The best practicable means concept of the Clean Air Act achieved a progressive improvement of air pollution control and odour control in most instances. This concept has been replaced by "best practicable option" in the Resource Management Act, but is not a general duty. The difficulty in obtaining access to confidential information could limit use of the best practicable option.

For these reasons every endeavour should be made by public authorities to keep up to date on latest techniques and to encourage industry to use the best practicable option and to seek research assistance from the appropriate Crown Research Institute.

Recommendation

8. That Regional Council staff maintain a close liaison with the appropriate Crown Research Institute and ensure new technology is adopted. (*section 3.6)*

Recommendation

9. That Regional Councils, when issuing discharge permits, allow for changes in circumstances both in the industry and the surrounding land uses by including a review clause in the conditions of the permit. (*section 3.5*)

2.2 Performance of Public Authorities

The investigation also found that the performance of public authorities was constrained in relation to odour control. Where staff were unable to resolve problems in situations of ongoing nuisance, this lead to frustration and less than effective performance.

The inability to resolve problems was variously due to statutory deficiencies, lack of industry commitment and lack of political will to protect local community interests. The capability of staff was sometimes reflected in the inability to reach innovative solutions.

The performance in the Department of Health Head Office between 1983 and 1988, in failing to finalise and enforce the Clean Air Act licence issued to Meadow Mushrooms, was markedly deficient. Deferral of action, which continues a situation where communities are seriously disadvantaged, should not be allowed to occur.

The Clean Air Act and best practicable means philosophy relied on a close working relationship between the industry and the RAPCOs. Although this was effective to improve odour control in many instances, the RAPCO was essentially in a consultant role and this created difficulties for a supposedly regulatory body. This was compounded by the lack of public involvement in the licence setting procedure.

The Resource Management Act imposes a much more independent role on the regulator and may provide the community with the independent assessment which they see as needed to maintain environmental quality. The regulator must of course have or have access to expertise in order to fulfil their role. It is of concern that the expertise of the RAPCOs is not being retained. The Councils have convened a working group to consider how best to meet their responsibilities and the extent to which these, if at all, can be transferred to District Councils.

Recommendation

10. That Regional Councils seek and maintain expertise in air pollution control and odour control. *(sections 3.3, 3.5)*

Recommendation

11. That Regional and District Councils implement research and industry standards and guidelines for odour control and monitor their appropriateness for their community. *(sections 3.3, 3.4)*

Recommendation

12. That Regional Councils urgently determine the appropriate extent of air and odour pollution control that can be transferred to District Councils. *(section 3.5)*

The District Councils, with responsibility for part B scheduled premises under the Clean Air Act, never really implemented best practicable means because in general they had very little expertise in air pollution matters. They too will need access to expertise and advice in the new regime, as they will have responsibility for the control of adverse effects arising from the use of land through district plans and land use consents.

Recommendation

13. That District Councils obtain expert advice on air pollution control and odour control when drawing up plans and hearing consents. (*sections 3.3, 3.4*)

The previous legislation made use of zones to combine appropriate land uses and buffers to separate inappropriate ones. Although erosion of buffer zones occurred, and therefore this is only one tool to avoid nuisance, the lack of any or an appropriate buffer was seen to be an important factor in many ongoing odour problems. Four of the investigation case studies involved this factor, the Manukau Sewage Purification Works (MSPW), Papanui piggeries case, Meadow Mushrooms and Alliance Group Kaiapoi Plant.

The new Act can allow for assessment of the suitability of establishing different activities, through use of objectives and standards in the plans. Where control of odour is likely to be difficult, separation of activities should still be promoted, and information on appropriate buffer distances used.

Recommendation

14. That Regional Council and District Councils use existing information on appropriate separation distances between different activities to avoid odour problems. *(section 3.3)*

The problems that have been identified in the case studies such as Te Poi Skin Processors in relation to consents being applied for and considered at different points in time, and the potential for public confusion have been alleviated by the new legislation, but Councils should note and implement Recommendation 6.

In the Papanui piggeries case, the new requirement for a permit for a discharge to air in three year's time will allow a full assessment of the factors and practicality of odour control.

Likewise, the problems with lack of public participation in processes have been met by the new statutory provisions, but the success of these provisions will depend on Councils actively encouraging participation and advising communities of the new procedures. This will also be useful for companies such as Alliance Group Kaiapoi and Meadow Mushrooms, who did not realise the potential significance of planning changes such as subdivisions to their operations.

Recommendation

15. That Regional and District Councils take an active role in advising their communities of the requirements and provisions of the new legislation.

The difficulty of measuring odour and assessing nuisance has led to a perceived difficulty in dealing with odour problems, especially by local authorities. They consider that gathering documentation for nuisance court cases is time-consuming and costly, and the outcome uncertain because of the subjective nature of the problem. Providing documentation by way of complaints does have some problems, but overall is an effective method. There are also techniques available to verify complaints if bias is suspected.

The 'Pollution Hot Line' idea used by some authorities is a useful method of public involvement and improving trust in the organisation.

Recommendation

16. That Regional and District Councils keep records of complaints received and attempt to answer such complaints. *(sections 3.2, 3.8)*

2.3 Actions of Industry in the Case Studies

One of the common themes identified in the case studies was the reluctance of industry to involve the affected public directly in discussions. This leads to poor relationships with the neighbouring community and scepticism as to the sincerity of company efforts to resolve problems. Liaison groups have been shown to be a successful method of meeting these concerns, as at MSPW at Mangere, and have also helped to facilitate consent progresses, as in the Five Star Beef case.

Recommendation

17. That Companies whose activities have caused or have the potential to cause a odour nuisance support the formation of a liaison committee in the area and actively participate by making relevant information freely available. *(section 3.8)*

The Alliance Group Kaiapoi Plant was an example where breakdown of trust between the Company and the residents had occurred. An important factor in this was the continuing odour nuisance despite the efforts of the Company to control the problem. It appears that control was eventually about to be achieved but was overtaken by the decision to close the major portion of the plant due to industry restructuring.

Given the history of odour problems and the uncertainties identified in the legislation, prudent environmental management is necessary to avoid problems in the future.

In the Meadow Mushrooms case, documented information on the ability of the proposed new technology to control odour has not been provided for inspection or assessment. No supporting information has been forthcoming from the Italian Government.

A prudent course of action to alleviate present problems would be to separate all composting processes from residential areas. Transfer of the existing composting process to another location has the potential to also transfer the existing problem.

In the event that the company is unable to relocate on a suitable site, and given that the technology is unproven in New Zealand and the extent of odour control unknown, odour control equipment such as wet scrubbers and biofilters should be installed on the tunnel houses.

Recommendation

18. That Meadow Mushrooms install the tunnel composting buildings on a rural site away from residential areas. *(section 2.1)*

The Company is innovative in purchasing a new process. Information on reactions taking place within the tunnel composting will be of considerable interest to air pollution control officers as well as the Company.

Recommendation

19. That the Company ensure adequate monitoring of emissions is carried out and the data made available to public authorities.

Recommendation

20. That odour control equipment such as wet scrubbers and biofilters are installed on the tunnel houses if odour control becomes necessary. *(section 2.1)*

If the Company chooses to stay on the Prebbleton site there is a need to improve relations with the local community. This would be greatly assisted by having a liaison committee which held regular meetings and in which information was supplied on the nature and extent of emissions and progress on odour control. Sharing the difficulties the Company has encountered in trying to solve the odour problem would assist the understanding of the community. Providing an avenue for complaints from the public would also lessen public distrust. Such liaison committees are best set up or facilitated by a public authority. However, their success is entirely dependent on the good will and the commitment of the Company to improve relations.

While Meadow Mushrooms is not required absolutely under current or likely future law to avoid imposing any odour nuisance on its neighbours, the principles of 'common decency' and 'being a good corporate neighbour' should be encouraged.

Recommendation

21. That Meadow Mushrooms support the formation of a liaison committee and actively participate by making relevant information freely available. *(section 2.1)*

This investigation has identified that New Zealand has some difficulty in protecting communities from nauseating odours. There are deficiencies in legislation such that enforcing odour control is difficult. This has led to less than adequate performance by public authorities. However, while the inadequacies due to legislation can be excused, actions taken in ignorance or without due thought cannot. There is plenty of evidence that despite documented odour problems, separation distances or buffer zones were

allowed to erode. In some instances the public perceived that the RAPCO was acting as an industry consultant rather than a regulator. The inevitable result was that the public felt abandoned by those who should have been protecting their environmental health.

Odour control technology and methods to assess odour are not well advanced for all industries. Until such time as progress is made in this area, prudent environmental management of industries causing odour problems should be the only course of action for local government. Given the heightened environmental awareness of the New Zealand public it is also good business sense for industry to adopt good environmental management principles. No community should be allowed to suffer from nauseating odours for years on end.