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Decision No. 386

Determination pursuant to the Commerce Act 1986 in the matter of an application for clearance of a business acquisition involving:

Medical Waste Group Limited

and

San-I-Pak (NZ) Limited

The Commission: E C A Harrison
M N Berry
K M Brown

Summary of Proposed Acquisition: The acquisition by Medical Waste Group Limited of the business of San-I-Pak (NZ) Limited.

Determination: Pursuant to section 66(3)(b) of the Commerce Act 1986, the Commission determines to decline to give clearance for the proposed acquisition.

Date of Determination: 16 March 2000

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THE PROPOSAL

1. On 8 February 2000, the Commission registered a notice pursuant to section 66(1) of the Commerce Act 1986 (the Act), in which clearance was sought by Medical Waste Group Limited (Medical Waste) to acquire the business of San-I-Pak (NZ) Limited (San-I-Pak) carried on in the South Island. Following discussions between the applicant's lawyer and Commission staff, a revised application was submitted on 14 February 2000 in which clearance was sought for the acquisition of the entire business of San-I-Pak.
2. The current application is the second lodged by Medical Waste for the business of San-I-Pak. The original application was registered on 7 December 1999. Following investigation of that application, the Commission concluded that it was not satisfied that implementation of the proposed acquisition would not result, or would not be likely to result, in Medical Waste or any other person acquiring or strengthening dominance in the South Island market for the collection and treatment of medical and quarantine waste. Accordingly, the Commission declined clearance to the proposal on 19 January 2000 (Decision 381).

THE PROCEDURES

3. Section 66(3) of the Act requires the Commission either to clear, or to decline to clear, a notice given under section 66(1) within 10 working days, unless the Commission and the person who gave the notice agree to a longer period. By agreement between the Commission and the applicant, the date for the Commission's determination on the application was extended on two occasions: to 3 March 2000, and to 17 March 2000.
4. Medical Waste sought confidentiality for certain information contained in the application, and a confidentiality order was made in respect of that information for a period of 20 working days from the Commission's determination of the application. When the confidentiality order expires, the provisions of the Official Information Act 1982 will apply to the information.
5. The Commission's determination is based on an investigation conducted by its staff and on information provided by them to the Commission. Enquiries carried out during the second investigation have revealed additional information which is incorporated in this report.
6. The Commission notes that for the most part the applicant has not sought to challenge the information and conclusions in Decision 381. The only significant information provided in the second application relates to two entry strategies, which are intended to show that the merged entity would be constrained by

potential competition. These are considered below in the appropriate sections of the Decision.

7. In the course of their investigation of the proposed acquisition, Commission staff have discussed the application with a number of parties. These parties included companies involved in the collection, treatment and disposal of medical and quarantine waste as well as the users of those services.

THE PARTIES

Medical Waste Group Limited

8. Medical Waste is engaged in the collection and treatment of quarantine and medical wastes, and the destruction of confidential documents. The company, either itself or through its subsidiary or related companies, currently operates incineration plants in Auckland, Wellington (50%-owned) and Christchurch. Until recently, Medical Waste operated an incinerator at Dunedin, but the Commission has been told that the plant was damaged by fire, and is currently out of action¹. Medical Waste also operates a transfer station in Hamilton which is used to collect waste material.
9. Medical Waste is a wholly-owned subsidiary of Nuplex Industries Limited (Nuplex), a company which is listed on the New Zealand Stock Exchange. Nuplex is also a 50% shareholder in Medical Waste (Wellington) Limited, which operates a waste treatment plant in Wellington. The other shareholder in that company is Centreport Limited, which operates the Port of Wellington.

San-I-Pak (NZ) Limited

9. San-I-Pak, which was established in 1992, is also involved in the collection and treatment of quarantine and medical waste. The company has two autoclave (steam sterilisation) plants, one each in Auckland and Lyttelton (Christchurch). The Auckland plant commenced operations in 1994, while the Lyttelton plant opened in 1998.
10. San-I-Pak is owned as to 50% by Wastecare Limited (which in turn is 100% owned by Waste Management (NZ) Limited (Waste Management)), and as to 50% by Zenith Technologies Corporation Limited (Zenith).
11. Waste Management and its subsidiaries operate in the waste industry, providing a range of waste collection, recycling, treatment and disposal services in a variety of localities around New Zealand. One of its divisions, Medisafe, is involved in the

¹ A decision on whether or not the plant will be replaced has yet to be made.

collection of medical waste, and sub-contracts the treatment of that waste to Waste Resources AIAL (see paras 13 and 14).

12. Zenith, a privately-owned company based in Dunedin, is engaged primarily in biotechnology activities.

OTHER MAJOR PARTIES

Waste Resources AIAL

13. Waste Resources (Waste Resources AIAL), a division of Auckland International Airport Limited (AIAL), is involved primarily in the treatment of quarantine waste. The company operates an incineration plant at Auckland Airport.
14. Apart from treating quarantine waste, Waste Resources AIAL incinerates medical waste and animal carcasses on behalf of companies involved in the collection of such waste (see paras 11, 18 and 19).

Onyx Group Limited (Onyx)

15. Onyx operates in the general waste industry, providing waste collection and recycling services throughout New Zealand. Onyx is ultimately owned by the French company, Compagnie Generale des Eaux.
16. Onyx began operating in New Zealand in 1995. Currently, the company is engaged in the collection and recycling of general waste in Whangarei, Auckland, New Plymouth, Wellington, Christchurch, and Dunedin. Onyx has no current involvement in the collection and treatment of medical and quarantine waste in New Zealand, []

The Daniels Corporation (NZ) Limited (Daniels)

17. Daniels, an Australian-based company, entered the New Zealand market in 1996. In 1997, the company secured contracts to collect and dispose of medical waste for several hospitals and two community laboratories in the North Island. The waste was incinerated at Waste Resources AIAL's facility. In 1998, Daniels withdrew from those activities to concentrate on the supply of re-usable bins ('sharps' bins) used in the containment and transportation of needles, syringes and related material.

Medi-Chem Waste Services Limited (Medi-Chem)

18. Medi-Chem, a privately owned company, provides waste collection and related services in the North Island. The company is primarily involved in the collection

and disposal of chemical wastes on behalf of various customers. Medi-Chem also carries out the collection of medical waste and arranges for its treatment through Waste Resources AIAL's incinerator.

HiTech Security Disposal Services Limited (HiTech)

19. HiTech is a privately owned company based in Auckland. It is involved in the collection and disposal of medical and veterinary waste and pharmaceuticals, and arranges for the treatment of that material at Waste Resources AIAL's incinerator. The company also has a small incineration plant, which it uses for pet cremation and document destruction.

Dental & Medical Equipment Limited (Dental & Medical Equipment)

20. Dental & Medical Equipment is engaged in the collection of medical waste from doctors' and dental surgeries in the Otago and Southland regions, and arranges for the treatment of the material by Medical Waste.

BACKGROUND

Overview

21. Waste materials fall broadly into two categories: non-hazardous and hazardous. Medical and quarantine wastes, which are the subject of the proposed acquisition, are classified as hazardous waste material. As such, they are subject to strict regulatory and other requirements governing their containment, transportation, storage, treatment and disposal (see paras 24-36).
22. Medical waste includes a wide range of clinical and related waste generated by public and private hospitals, rest homes, private medical laboratories, universities, GP surgeries and other medical practitioners. Typically, it includes anatomical waste, such as body parts, blood, and infected animal carcasses; disposables, including hypodermic needles and syringes ('sharps'); soiled dressings and swabs; laboratory waste; and pharmaceutical and chemical waste.
23. Quarantine waste comprises the refuse originating from overseas flights landing at New Zealand airports, and from ships arriving in this country from overseas ports. This includes food, food wrappings, and related material. Such waste must be handled and disposed of in accordance with standards specified by the Ministry of Agriculture and Forestry (MAF) (see paras 30-33).

Regulatory Requirements

24. As noted above, medical and quarantine waste is subject to various regulatory requirements and standards which govern the collection, containment, transportation and disposal of such material. The main requirements are outlined below.

Resource Management Act 1991

25. A facility established to treat medical and/or quarantine waste, either by incineration or by autoclaving, requires resource consents in terms of the Resource Management Act 1991 (the RMA). The specific requirements vary depending on the location of the plant, and on the stance of the territorial authority covering that location.
26. For an incineration plant, there are two major types of consent required under the RMA: a land use consent, and an air discharge consent.
27. The procedure for obtaining resource consents involves lodging an application with the appropriate consent authority, which may be a regional council, a territorial or municipal authority, or in some instances a combination of those agencies. The RMA provides for the public notification of some types of application, and for the lodging of objections to any proposed developments, including changes to or extensions of existing consents. Proposals to install an incinerator are likely to involve public notification, and to be contentious given the increased sensitivity of environmental matters. For example, Waste Resources AIAL's 1992 application took seven years to gain approval.
28. Resource consents for incinerators, or the renewal of expiring consents, are becoming increasingly difficult and more costly to obtain because of the imposition of more stringent emission standards. (Such plants involve the air discharge of contaminants such as dioxins.) As a consequence, Medical Waste is proposing to close its incinerator in Auckland, and to replace it with a rotary autoclave unit. The company advises that the cost associated with upgrading the plant to comply with emission standards is likely to make its continued operation no longer viable. Several incinerators have been closed in recent years at various locations because they failed to comply with the stringent air emission standards (eg Canterbury Health, South Auckland Health, Port of Lyttelton and Port Gisborne), and other plants will be forced to close in future as they reach the end of their economic life.
29. The RMA requirements applying to autoclaves are much less stringent than those applying to incinerators. It is necessary to obtain a consent to operate a boiler, and a consent to discharge liquid waste into the nearest trade sewer. In addition,

although it is not mandatory, San-I-Pak has received an air discharge permit for its Lyttelton site. There is no requirement for public notification for such a permit, and the requisite approvals are likely to be obtained relatively quickly.

Biosecurity Act 1993

30. The provisions of the Biosecurity Act 1993 govern the treatment and disposal of quarantine waste. Section 22 of this Act empowers the Director-General of the Ministry of Agriculture and Forestry (MAF) to issue health standards specifying the requirements to be met for the management of 'risk goods'.
31. Section 37 of the Biosecurity Act requires the Director-General of MAF to be satisfied with arrangements, facilities and systems at every port /airport approved as a place of first arrival for craft arriving in New Zealand. This includes suitable arrangements for the disposal of refuse from ships or aircraft. Ports/airports must have adequate transitional facilities for holding, inspecting, treating, and if necessary, disposing of refuse and imported goods that cannot be given biosecurity clearance.
32. MAF has produced a series of standards covering the requirements for the carriage, storage and disposal of quarantine waste. The standards provide for the treatment of quarantine waste either by incineration or sterilisation facilities. Facilities must be approved by MAF, and are subject to periodic inspection by MAF officers. The standards also specify that when incinerated, quarantine waste must be reduced to ash, while for steam sterilisation the material must be subjected to a core temperature of 100° Celsius for 30 minutes.
33. In addition, there are standards (presently in draft form) which specify the quarantine requirements which must be met by aircraft and vessels entering New Zealand.²

Health Care Waste Management

34. The management of medical waste, including the containment, transporting, treatment and disposal of the material, is governed by the procedures outlined in the Standards New Zealand document: "Health Care Waste Management" (NZS 4304:1990). This is a voluntary code, but the health sector recognises it as providing "best practice" guidelines. The Ministry of Health recommends that public health services use NZS 4304:1990, even though a new joint Australian/New Zealand Standard AS/NZS 3816:1998 has been drafted to supersede it.
35. NZS 4304:1990 states that autoclaving or steam sterilisation of special medical waste must be carried out in accordance with the *Code of practice for steam sterilization* issued by the National Health Institute. Once such waste has been

² The standards are entitled "the approval of ports" and "the approval of airports".

rendered completely innocuous, it may be disposed of in a landfill. This is generally achieved by subjecting the waste to a temperature of 138-140° Celsius for a 30-minute period. The standard also sets out the requirements for incineration of medical wastes, including site facilities, storage, operation of the facility, and the disposal of the residue. NZS 4304:1990 specifies that a contingency procedure should be established for disposal at other sites, or by other means, in the event of the incinerator being closed for two or more days. The standard also specifies that the incinerator must be capable of incinerating the wastes at a temperature in the final combustion chamber of not less than 1000° Celsius for at least one second.

Other Statutory Requirements

36. In addition to the requirements detailed above, it is necessary to satisfy various dangerous goods requirements as well as occupational health and safety legislation. The former include requirements covering the safe transport of dangerous goods on land, which are contained in the *Land Transport Rules: Dangerous Goods 1999*, with NZS 5433 (“Code of Practice for the Transportation of Hazardous Substances on Land), providing the means of compliance for those rules. In addition, the vehicles and drivers must comply with the requirements of the Transport Amendment Act 1989, No 77 for the transportation of hazardous substances. This includes ensuring drivers are properly trained, and are provided with protective clothing and other safety equipment.

Industry Background

The Collection, Treatment and Disposal of Medical and Quarantine Waste

37. The processes used in the collection, treatment and disposal of medical and quarantine waste are broadly similar (see Appendix A). There are three stages:
- Collection and delivery: this involves the collection of waste material in bins, plastic bags and other containers from the point of production and its delivery by appropriate vehicles to a treatment facility. Since medical and quarantine waste is light and bulky, and has to be appropriately contained, it is relatively expensive to freight.
 - Treatment: this involves the processing of the waste into a form suitable for disposal. Two methods are currently employed in New Zealand: incineration, which reduces the waste material to ash; and autoclave treatment by a steam sterilisation process, which can also involve shredding and/or compaction of the waste.
 - Disposal: this involves the disposal of the treated solid waste in a landfill. Liquid waste which has been treated by an autoclave is disposed of into the sewers, while some by-products of the incineration process may require

further treatment before they can be disposed of (eg acids arising from the incineration of plastics).

38. The applicant has stated in its notice that sanitary and incontinent wastes are commonly disposed of in landfills in an untreated form. However, Medical Waste's view is that the present uncertainty surrounding the rules on the disposal of such waste will be resolved, and that in the future the wastes are likely to require treatment prior to disposal. The applicant claims that this will provide scope for waste collection and treatment companies to develop additional business.
39. The overall size of the medical and quarantine waste industry is relatively small and geographically dispersed. There are seven incinerators in the North Island capable of treating medical and/or quarantine waste, and five in the South Island.³ Currently there are only two autoclave plants, one in each Island. All of the major plants are city- or port-based. Attached as Appendix B is a map of New Zealand showing the location of plants currently treating medical and/or quarantine waste.
40. A feature of the quarantine and medical waste industry is the presence of substantial excess capacity, both in percentage and in tonnage terms, in the operations of major suppliers of treatment services. The amount of excess capacity will fluctuate during a 12 month period. For instance, the amount of quarantine waste which is produced by a number of ports increases substantially during the cruise ship season (December-March). In addition, [

]
41. Some estimates of notional capacity utilisation for suppliers of treatment services in the North and South Islands are shown in Table 1. "Full" capacity is assumed to involve continuous operation at 24 hours per day, 7 days per week and 365 days per year, which exaggerates the estimate as some down-time will be needed for maintenance, and there may be some seasonal variations in demand. In addition, older incinerators cannot treat waste continuously, but go through processing cycles which involve cooling periods between firings.

³ One of the South Island plants is currently out of action.

TABLE 1
Estimates of Unused Capacity at Different Treatment Sites

Site	Unused Capacity	
	Tonnage	% Approx
North Island		
Medical Waste	[]	[]
San-I-Pak	[]	[]
Waste Resources AIAL	[]	[]
South Island		
Medical Waste	[]	[]
San-I-Pak	[]	[]
Wairau Public Hospital	[]	[]
Coast Health Care Limited	[]	[]

Note : The figures for Waste Resources AIAL and San-I-Pak provided in Decision 381 have been adjusted following the receipt of new information.

42. Historically, all major port companies and public hospitals operated their own incineration plants. However, many of those facilities have been forced to close, due largely to the increasing costs of meeting air discharge standards, and the services have been outsourced. Others are likely to be closed in the near- to medium-terms for the same reasons. Medical Waste has already announced that it will close its incinerator in Auckland, and replace it with an autoclave. It is expected that the trend in future will be towards the establishment of autoclaves. This is consistent with overseas experience, especially in the USA and Australia, where environmental concerns have forced the closure of incinerators.
43. The collection of medical and quarantine waste is widespread and the treatment is centralised. The pattern of the flows of such waste in the North and South Islands are as follows:
- apart from the limited amount of quarantine waste from the Ohakea airforce base, medical and quarantine waste generated in the Wellington, Manawatu, Wanganui and Wairarapa regions is treated in Wellington;
 - aside from quarantine waste generated at the ports of Tauranga and Napier and the Whenuapai airforce base, all other waste in the North Island is treated in Auckland;

- apart from waste generated at Wairau Public Hospital and Coast Health Care Limited (Coast Health), medical and quarantine waste generated in the upper South Island is transported to Christchurch for disposal; and
 - with the exception of Medlab South Limited, which has its pathology waste treated in Christchurch by San-I-Pak, and quarantine waste generated by the Port of Bluff, all waste generated in the lower South Island has been transported to Dunedin for disposal. (As noted above, the Dunedin incinerator has been forced to close, and it is not yet clear whether it will be replaced. In the meantime, the waste is being transported to Christchurch for treatment.)
44. Medical Waste has stated that waste generated in the Hawkes Bay and Nelson/Marlborough areas is transported to Auckland and Christchurch respectively rather than to Wellington. The incinerator in Wellington is operated as a joint venture between Medical Waste and Port Wellington Limited, and Medical Waste prefers to receive the full benefit of treating that waste at its other, wholly-owned plants. The Commission believes that waste from Nelson/Marlborough would not be taken to Wellington because the transport costs are too high.

Industry Participants

45. Medical Waste operates an integrated collection and treatment operation for the greater part. That is, it collects the waste material using its own fleet of trucks or contractors, and delivers the waste to its treatment facilities. San-I-Pak handles the collection of quarantine waste from vessels at the Port of Lyttelton and transports the waste to its treatment plant at the Port. San-I-Pak also employs an independent contractor to transport medical waste from its sole Auckland customer, South Auckland Health Limited, to its plant in Auckland, and medical waste from Medlab South in Invercargill to its plant in Lyttelton. San-I-Pak uses its own drivers, or those from Wastecare, to collect medical waste from Medlab South and other smaller customers in the Christchurch area, and to deliver the material to its plant in Lyttelton.
46. The following parties are also involved in the collection and/or treatment of medical and/or quarantine waste:
- Waste Resources AIAL operates an incineration plant at Auckland Airport, treating predominantly the airport's quarantine waste [];
 - Port of Tauranga Limited, Port Napier Limited and Southport Limited (Bluff) operate incineration plants to treat quarantine waste at their respective ports;
 - Coast Health, the operator of public hospitals on the West Coast, and the Wairau Public Hospital (Blenheim), which is run by Nelson Marlborough Health Services Limited, both have incinerators which treat medical waste generated at their respective sites;

- the airforce bases at Whenuapai and Ohakea operate incinerators, which are approved by MAF to treat quarantine waste; and
- Medisafe, Medi-Chem and HiTech are engaged in the collection of medical waste material from customers in the North Island, and arrange for the treatment of the material at Waste Resources AIAL's incinerator. Dental & Medical Equipment operates a similar business in the Otago/Southland region, and has been using Medical Waste to treat its waste.

Producers of Medical and Quarantine Waste Services

47. Hospitals, port companies and airport companies that do not treat their own waste are the major users of medical and quarantine waste treatment services. They generate relatively large volumes of waste from their major sites, supplemented in the case of hospitals by smaller volumes from secondary sites. Various smaller entities, including GPs and dental surgeries, community laboratories, research institutes, and universities, generate the balance of medical and quarantine waste. The quantities of waste produced by these parties is generally very small. In the case of doctors' and dentists' surgeries, very small quantities of waste are generated from multiple sites. All establishments, such as hospitals, surgeries or laboratories, which generate or handle medical waste are responsible under the relevant regulations for ensuring that the waste is disposed of safely.
48. A number of hospitals consulted by the Commission have implemented programmes designed to reduce the volume of medical waste. This has been achieved by improving the practices for the segregation of medical waste from general waste. As a result, significant reductions have occurred in the amount of medical waste available for collection and treatment.
49. The disposal of medical waste and quarantine waste generally accounts for a very minor proportion of the operating costs for the producers of waste. Nevertheless, the disposal of such waste represents an activity which producers are responsible for ensuring is provided in a manner which complies with all regulatory and related requirements.
50. Some users of waste treatment services spoken to by the Commission expressed a preference for incineration over autoclaving. They consider incineration to provide the most comprehensive and thorough method of disposal of medical waste, largely because all material is reduced to ash. However, South Auckland Health (San-I-Pak's Auckland customer) has told the Commission that it switched to autoclaving treatment because it was less expensive and more environmentally friendly than incineration. Some other parties have stated that they have no specific preference for either method as long as the waste is disposed of in accordance with practices which render the material sufficiently sterilised, and safe for disposal in a landfill.

Contracting Arrangements

51. The collection and treatment of medical and quarantine waste for most customers, both major, such as Hospital and Health Service (HHS) providers and port companies, and some smaller customers, such as Dental & Medical Equipment and Medlab South, are governed by term contracts. The length of these contracts is generally for periods of between one and five years, and some contracts are rolled over rather than being re-tendered. The standard length for most public and major private hospital contracts is three years (See Appendix C for details). These contracts are generally awarded in accordance with a public or selective tendering process. The length of port company contracts is typically three to five years.
52. HHS contracts are awarded on the basis of a combination of factors, including price, the bidder's track record and experience, ability to comply with regulatory requirements, and the methodology of disposal (including contingency plans). Price is not necessarily the most important factor, as quality of service, compliance with all relevant regulatory requirements and standards, reputation and an established track record carry considerable weight in the awarding of tenders. []].
53. Several HHSs appear very price insensitive in relation to medical waste tenders. Also, the Commission has been told that many hospitals adopt a cautious approach towards the disposal of medical waste and are unlikely to switch suppliers, unless of course the price were to rise substantially, or service levels were to deteriorate. Some hospitals have told the Commission that they are reluctant to switch suppliers because of the disruption caused by changes to practices and processes in introducing the new arrangements.
54. At present, Medical Waste holds the HHS contracts to collect and treat all hospital medical waste, with the exceptions of South Auckland Health (which is contracted to San-I-Pak), and of Coast Health and the Wairau Public Hospital at Blenheim (both of which incinerate their own waste).
55. Medical Waste holds the contracts for the collection and treatment of quarantine waste at all port and airport companies with the exception of AIAL, which treats its own waste through Waste Resources AIAL, and Lyttelton Port Company Limited, which contracts San-I-Pak to treat its waste. In addition, three port companies (Port of Tauranga, Port Napier and Southport) undertake the incineration of quarantine waste at their own (on-port) facilities.
56. Some medium-sized producers of medical waste have entered into long-term contracts for the collection and treatment of waste (eg []]. Also, the Commission is aware that [] has a

contract for the treatment of such waste. Typically, larger and medium-sized producers of medical waste have contracts for terms of three to five years. Neither party to the contract is able to terminate the contract early without reasonable cause.

THE RELEVANT MARKETS

Introduction

57. The purpose of defining a market is to provide a framework within which the competition implications of a business acquisition can be analysed. The relevant markets are those in which competition may be affected by the acquisition being considered. Identification of the relevant markets enables the Commission to examine whether the acquisition would result, or would be likely to result, in the acquisition or strengthening of a dominant position in any market in terms of section 47(1) of the Act.
58. Section 3(1A) of the Act provides that:
- “the term ‘market’ is a reference to a market in New Zealand for goods and services as well as other goods and services that, as a matter of fact and commercial common sense, are substitutable for them.”
59. Relevant principles relating to market definition are set out in *Telecom Corporation of New Zealand Ltd v Commerce Commission*,⁴ and in the Commission’s *Business Acquisition Guidelines* (“the Guidelines”).⁵ A brief outline of these principles follows.
60. Markets are defined in relation to three dimensions, namely product type, geographical extent, and functional level. A market encompasses products which are close substitutes in the eyes of buyers, and excludes all other products. The boundaries of the product and geographical markets are identified by considering the extent to which buyers are able to substitute other products, or the same product across geographical regions, when they are given the incentive to do so by a change in the relative prices of the products concerned. A market is the smallest area of product and geographic space in which all such substitution possibilities are encompassed. It is in this space that a hypothetical, profit-maximising, monopoly supplier of the defined product could exert market power, because buyers, facing a rise in price, would have no close substitutes to which to turn.
61. A properly defined market thus includes products which are regarded by buyers as being not too different (‘product’ dimension), and not too far away (‘geographical’ dimension), and are therefore products over which the hypothetical monopolist

⁴[1991] 4 TCLR 473.

⁵Commerce Commission, *Business Acquisition Guidelines*, 1999, pp. 11-16.

would need to exercise control in order for it to be able to exert market power. A market defined in these terms is one within which a hypothetical monopolist would be in a position to impose, at the least, a “small yet significant and non-transitory increase in price” (a “*ssnip*”), other terms of sale remaining unchanged. It will also include those suppliers currently in production who are likely, in the event of such a *ssnip*, to shift promptly to offer a suitable alternative product even though they do not do so currently. These have been referred to by the Commission as “near entrants”.

62. Markets are also defined in relation to functional level. Typically, the production, distribution, and sale of products takes place through a series of stages, which may be conceived of as being arranged vertically, with markets intervening between suppliers at one vertical stage and buyers at the next. Hence, the functional market level affected by the application has to be determined as part of the market definition. For example, that between manufacturers and wholesalers might be called the “manufacturing market”, while that between wholesalers and retailers is usually known as the “wholesaling market”.
63. The applicant has claimed that the relevant market is that for the treatment of medical and quarantine waste in New Zealand, and the transport of quarantine waste in Lyttelton, on the basis, broadly speaking, that medical and quarantine wastes are treated by similar processes and are often transported substantial distances from the production sites to the processing sites.
64. The Commission has found it difficult to define precise boundaries for the relevant markets in this case for a number of reasons, including:
 - the difficulty of obtaining comprehensive information in what is a relatively small and fragmented industry;
 - the current trend to a change in technology used from incineration to steam sterilisation (ie autoclave);
 - the lack of precision over what constitutes medical waste;
 - the specialisation of some facilities in treating quarantine waste treatment only; and
 - the long distances that some waste is transported despite relatively high transport costs.
65. Hence, the intention is to adopt a pragmatic approach using the information available (collected from several industry participants), and largely to restrict the analysis to those markets where the proposed acquisition would lead to an aggregation of market share.

Product Market

66. The proposed acquisition involves two categories of hazardous waste: medical waste and quarantine waste. Both types of waste must be disposed of under

tightly controlled and regulated conditions. Historically, medical and quarantine waste has been incinerated, and indeed, today the bulk of the processing plant is incineration plant, and the great bulk of the waste is still incinerated. However, the increasing cost of obtaining resource consents for incinerator plants has resulted in the two most recently built plants being autoclaves, because they raise much less of an environmental issue, and so resource consents pose fewer difficulties and involve lower costs. The expectation in the industry is that as older incinerators are not replaced, and resource consents on existing incinerators must be renewed if the plants are to continue to operate, there will be a gradual switch to the use of autoclaves.

67. The Commission understands that incinerators and autoclaves are largely interchangeable from a technical perspective, in the sense that either can, for the most part, process both quarantine and medical waste. There are limited exceptions to this, in that one or two port incinerators (such as the one at Bluff), being old and designed solely for treating quarantine waste, are not able to reach the temperatures required in the final combustion chamber to be acceptable for the treatment of medical waste. Also, the incinerator operated by Waste Resources AIAL at Auckland airport [

], this does not restrict its potential ability to treat medical waste. Internationally, the choice between the two appears to be influenced partly by landfill availability, with a preference being expressed for incinerators where landfill capacity is limited. Environmental factors are also important, with more rigorous standards being introduced in respect of the air discharge of contaminants by incinerators.

68. From a demand-side perspective, some hospitals, as waste producers, have expressed a preference for medical waste to be incinerated, rather than autoclaved. Incineration is seen by some as the more thorough and comprehensive method of treating medical waste, as the waste is reduced to unrecognisable ash. With autoclaving the waste is sterilised, but otherwise remains in its original form (although it is possible to add an additional shredding stage, albeit at additional cost). Also, incineration provides the only acceptable method to dispose of body parts and related material, but the quantities involved are very small (less than 1% according to the applicant), and with autoclaving, these can be disposed of by arrangement with crematoria. On the other hand, South Auckland Health has expressed a strong preference for autoclaving on cost and environmental grounds. Hence, while there may be some resistance by some users to having their medical waste disposed of by autoclave, incinerators may not be available in the long term.
69. The preceding discussion with respect to demand-side and supply-side considerations suggests broadly that waste producers in general do not have strong preferences as to the treatment process, and that intending suppliers can generally employ either process to treat quarantine or medical waste. Any doubts on the

demand-side with respect to some users are largely allayed over the medium-term perspective used by the Commission.

70. As noted previously, the applicant has stated in its notice that sanitary and incontinent waste is being conveyed directly to landfills in an untreated form, but it believes that such waste should be treated under the current standards. The Commission understands that the relevant standards are in the process of being reviewed. In the meantime, the Commission has no option but to treat this waste as not constituting part of the defined market.
71. The Commission concludes that for the purpose of assessing the competition implications of the proposed acquisition the relevant product market is that for quarantine and medical wastes.

Functional Markets

72. As discussed earlier, medical and quarantine waste passes through various stages, or functional levels, from the point of production at a hospital, port, health or similar centre to the point of final disposal at a landfill. The functional levels of the market are collection, treatment, transport to a landfill, and disposal.
73. Medical Waste is vertically integrated across the collection and treatment functional levels. San-I-Pak is involved primarily in medical and quarantine waste treatment. It is also involved in the collection of quarantine waste at the Port of Lyttelton, and the delivery of that waste to its autoclave at the Port. It treats medical waste collected either by San-I-Pak's own drivers or by Wastecare drivers from Medlab South in Christchurch, and from some GPs and dentists' surgeries in Christchurch. An independent contractor of San-I-Pak collects waste from South Auckland Health and delivers it to San-I-Pak's Auckland plant. Similarly, waste from Medlab South in Invercargill is also collected by an independent contractor and delivered to San-I-Pak's Lyttelton plant.
74. Other operators are not vertically integrated across all functional levels. For example, some smaller parties (eg., HiTech, Waste Management's Medisafe division and Medi-Chem) are engaged in the collection of waste materials, and then arrange for the treatment at an incinerator owned by a third party. Daniels, when it was involved in the collection of medical waste, operated in this fashion, and sub-contracted treatment to Waste Resources AIAL. The latter's incinerator at Auckland Airport both processes the Airport's quarantine waste, and is available for the contract processing of medical and other waste delivered by other operators and producers [].
75. Operators like Waste Resources AIAL, and some of the port companies, are involved in the treatment of quarantine waste generated from vessels or aircraft

using the nearby port or airport. [

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76. In Decision 381, the Commission concluded that, in view of the degree of vertical integration among the two major participants in the industry, the collection and treatment stages would be treated as one functional market for the purposes of discussion. However, as other industry participants are not vertically integrated and because the aggregation arises primarily in the treatment market, the Commission proposes to treat the collection and treatment stages as separate functional markets in order to clarify the competition issues involved.

Geographic Markets

77. The applicant has put forward a number of arguments in support of its view that the geographic market extends to the whole of the country. It submits that medical waste can be, and is, transported long distances across the country, from the point of production to potentially any treatment plant in the country.

78. The Commission notes, however, that in a submission prepared in respect of the review of resource consent conditions on its Wellington incinerator, Medical Waste (Wellington) Limited has stated the following in response to a suggestion from some submitters that waste be transported to Auckland for disposal:

“This is an impracticable option as the new Auckland (rotoclave) facility has a throughput designed to cope with Auckland wastes and limited short term emergencies (sic)... In addition the transport cost associated with transport over an extended period would render the service economically unviable.”

79. This statement is clearly inconsistent with the applicant’s submissions regarding the geographic extent of the market in this and its previous applications.
80. During its investigations, the Commission has come across a number of instances where medical waste is commonly transported long distances, including from Invercargill to Christchurch, from Nelson to Christchurch, and from Napier to Auckland. This seems especially surprising given the relatively high costs of transporting such waste. For example, the parties to the acquisition have provided the Commission with transport and containment costs of [] for Invercargill-Christchurch, [] for Nelson-Christchurch, [] for Buller-Christchurch, and [] for Picton-Christchurch. This compares with treatment costs in the range of []. The high per unit transport costs of medical and quarantine waste stems partly from its various characteristics: its very light and bulky nature makes it expensive to transport relative to its processing “value”; its hazardous nature often precludes a cost-offsetting back-haul cargo; and the waste has to be adequately “contained” during transport, which often requires the use of special containers (which may be incinerated), the cost of which is built into the price.

81. Relatively high per unit transport costs of the sort described above would normally tend to narrow the extent of the geographic markets, because a supplier in one area could not, by virtue of the transport costs, compete on price with a supplier in an adjacent area. However, there are substantial throughput and scale economies associated with the waste treatment process (see below). Hence, there is a trade-off between securing sufficient volumes of waste to build a plant of optimal size, and the transport costs of assembling those volumes at a centralised site.
82. Although the Commission has not seen any calculations on the balance of this trade-off, the actual plant locations and waste flows in the industry suggest the balance favours building treatment plants in the main centres where most waste is generated, and transporting in waste from outlying centres where volumes are insufficient to sustain a waste treatment operation of an economic size. For example, in the North Island, the main treatment plants are in Auckland and Wellington, with waste generated in other provincial centres being transported north or south, generally according to transport cost, although plant ownership considerations play a part. In the South Island the main processing centres are in Christchurch/Lyttelton and Dunedin.⁶ As indicated, waste is transported from both ends of the South Island to Christchurch.
83. The applicant has argued that the market is a nationwide one, supporting its view by providing costing details to show that it is economic to transport medical waste to Auckland from both Dunedin and Christchurch. For example, the applicant has received quotations for shipping/transporting containers of medical waste of [] from Dunedin to Auckland, and around [] from Christchurch to Auckland. This compares with treatment costs in the range of []. These quotations, however, are based on the compaction of the waste, and the weight of waste per container of 6.5 tonnes, which is a high tonnage. In addition, extra costs would be incurred for collection of the waste, and those costs are relatively high. For these reasons, the Commission considers that the applicant's argument is not sustainable.
84. The applicant has also cited the case of the transporting of its waste from Wellington to its Christchurch plant at times when its Wellington plant has been temporarily out of action. However, the company would obviously undertake such movements of waste only when it is forced to do so, as it would be very costly. [] contended that the cost of transporting waste between the North and South Islands was prohibitive. The Commission has found no evidence that medical waste is transported across the Cook Strait on a regular basis. This suggests that, at the least, the geographic market is divided into North Island and South Island markets.
85. In the light of the preceding discussion, the Commission has also considered the possibility that the North Island might be divided further into "upper" and "lower"

⁶ As noted above the Dunedin plant is currently closed.

geographic markets. The issue could be put in the following way: could a treatment plant located in Wellington compete for business in Auckland with a plant based in Auckland, given the high transport costs that would be incurred in transporting the waste from Auckland to Wellington? And likewise for an Auckland plant competing for business in Wellington with a Wellington plant?

86. However, the Commission has not found it necessary to resolve the issue, because the aggregation occurs only in Auckland, and there are no competing plants in Wellington. The possible division of the South Island into two geographic markets is less likely, in the Commission's view, because the major centres of production (and hence the location of treatment plants) are all in the mid- to lower-South Island, so that medical and quarantine waste is transported from Nelson to Christchurch, and some medical waste is transported from Invercargill to Christchurch.
87. A further argument put forward by the applicant is that (according to information it had received) when Canterbury Health recently tendered for its medical waste treatment contract, the HHS received bids from two North Island companies which did not have plants in the South Island. Canterbury Health has told Commission staff that in fact it received only one bid from a company in that category during its last tender round. That bid was from [
-]
88. The applicant has also contended in respect of quarantine waste at ports, and airports (excepting long-haul aircraft flights where weight and storage would present a problem), that those needing to use a treatment service can choose any place that the ship or aircraft visits. The Commission has raised this issue with the relevant authorities. For aircraft, MAF standards require all refuse be removed at the first approved airport unless the aircraft is intending to depart from New Zealand within three hours of arrival, or is travelling on within three hours to a second New Zealand airport. While MAF quarantine regulations do not oblige vessels to have their waste treated at the first port of entry, several port companies have told the Commission that some waste is usually discharged at the first port of call. Whether or not a vessel discharges waste at a port is dependent largely on MAF as well as other factors, such as the length of stay of the vessel at the port and the availability of an onboard incinerator.
89. Having regard to the above factors, and for the purposes of this decision, the Commission has determined to treat the North Island and South Islands as separate geographic markets. It is possible that the geographic markets could be broken down further, for example, into upper and lower North Island markets. However, the conclusions in respect of the current application would remain the same regardless of whether the geographic markets were further narrowed, since the proposed merger does not involve, or have any effect, on any activities in the lower North Island.

Conclusion on the Relevant Markets

90. The Commission concludes that, for the purpose of analysing this application, the relevant markets are as follows:
- the market for the collection of medical and quarantine waste in the South Island;
 - the market for the treatment of medical and quarantine waste in the South Island;
 - the market for the collection of medical and quarantine waste in the North Island; and
 - the market for the treatment of medical and quarantine waste in the North Island.

ASSESSMENT OF DOMINANCE

Dominance Analysis Overview

91. Section 66(3) of the Act, when read in conjunction with section 47(1) of the Act, requires the Commission to give clearance for a proposed acquisition if it is satisfied that the proposed acquisition would not result, and would not be likely to result, in a person acquiring or strengthening a dominant position in a market. If the Commission is not so satisfied, clearance must be declined.
92. Section 3(9) of the Act states that a person is in a “dominant position” if:
- “... a person as a supplier or an acquirer of goods or services either alone or together with an interconnected or associated person is in a position to exercise a dominant influence over the production, acquisition, supply, or price of goods or services in that market . . .”
93. That section also states that a determination of dominance shall have regard to:
- market share, technical knowledge and access to materials or capital;
 - the constraint exercised by competitors or potential competitors; and
 - the constraint exercised by suppliers or acquirers.
94. In *Port Nelson Ltd v Commerce Commission*, the Court of Appeal approved the following dominance standard, adopted by McGechan J in the High Court:⁷

⁷ [1996] 3 NZLR 554.

“. . . dominance involves more than ‘high’ market power; more than mere ability to behave ‘largely’ independently of competitors; and more than power to effect ‘appreciable’ changes in terms of trading. It involves a high degree of market control.”

95. In its *Business Acquisition* Guidelines, the Commission has expressed the view that a dominant position in a market is generally unlikely to be created or strengthened where, after the proposed acquisition, either of the following situations exist:

- the merged entity (including any interconnected or associated persons) has less than in the order of a 40% share of the relevant market; or
- the merged entity (including any interconnected or associated persons) has less than in the order of a 60% share of the relevant market and faces competition from at least one other market participant having no less than in the order of a 15% market share.⁸

96. However, as Tipping J stated in the High Court decision of *New Zealand Magic Millions*:⁹

“(M)arket share is not the sole determinant of the presence or absence of dominance or market power. The most that can be said is that dominance is frequently attended by substantial market share but all the other relevant factors must be brought to account. For example, a substantial market share without barriers to entry will seldom, if ever, be indicative of dominance.”

97. Accordingly, before a conclusion on dominance is reached, it is necessary to consider all factors listed in section 3(9) and any other relevant factors.

98. Where there is existing dominance, the Commission must also have regard to whether such dominance might be strengthened by a business acquisition. A “strengthening” must be more than merely *de minimis*.

99. In *Waikato Valley* the High Court (Wylie J. and Mr R. G. Blunt) stated:¹⁰

“If by *de minimis* is meant a change so slight and insignificant as not to justify the intervention of the law we agree with that concept . . . As an ordinary word in common use ‘strengthening’ does not need elaboration. The degree of strengthening of dominance once there is a strengthening worthy of the Commission’s (or the Court’s) attention, will be reflected in the extent of the detriment, if any, which will, or will be likely to, result therefrom.”

⁸ *Supra*, note 5, p. 17.

⁹ *New Zealand Magic Millions Limited & Anor v Wrightson Bloodstock Limited* [1990] 3 NZBLC 99-175.

¹⁰ *NZ Co-operative Dairy Co v Commerce Commission* [1992] 1 NZLR 620.

The Market for the Treatment of Medical and Quarantine Waste in the South Island

Market Shares

100. The applicant has provided estimates of market shares in the treatment of medical and quarantine wastes in each of the major regions. The Commission has also received market share information from each of the treatment operators. However, the Commission has found it difficult to estimate overall market shares. One difficulty lay in obtaining precise information on the market shares of individual operators, particularly the smaller ones who either dispose of the waste themselves or who arrange for third party disposal.
101. Additional difficulties have arisen from the apparently differing views about what constitutes medical waste, and what can be treated as 'general' waste, and by the fact that sometimes waste is measured by the bag or container rather than by weight. These informational problems have made it difficult to determine the overall size of the market, and hence the shares of individual operators.
102. In its new application, the applicant has provided revised market share figures for the South Island. However, the Commission believes that these understate Medical Waste's market share, in part because sanitary waste is included.¹¹ Moreover, Medical Waste does not have access to the confidential information provided to the Commission by other industry parties.
103. On the basis of the information provided by each of the market participants, the Commission has made the estimates shown in Table 2 of the market shares for the treatment of medical and quarantine waste in the South Island.

TABLE 2
Estimated Market Shares for the Treatment of Medical and Quarantine Waste in the South Island

Operator	South Island	
	Tonnes	%
Medical Waste	[]	[]
San-I-Pak	[]	[]
Sub-total	[]	[]
Southport	[]	[]
Wairau Public Hospital	[]	[]
Coast Health	[]	[]
Total	[]	[]

¹¹ For the reasons outlined in para 70, the Commission does not consider that sanitary waste constitutes part of the defined product market.

Note: Rounding of percentages means that the column does not total to 100. As noted above, there are some operators in both Islands that are engaged in collection of medical waste, but subcontract out the treatment of such waste to the major companies such as Medical Waste and San-I-Pak. Accordingly, such waste has been included in the market shares for these major companies.

104. A previous analysis of a different part of the waste industry by the Commission (*Waste Management NZ Limited/Waste Care Limited*, Decision No 355) found that waste treatment operators considered it important for strategic reasons to gain control of waste flows, which could then be directed to their own landfills. A market share in treatment could thus be a misleading indicator of market power to the extent that part of the waste flow, being controlled by other parties such as waste collectors, could be switched to other treatment operators. However, in the present case it is estimated that less than [] percentage points of Medical Waste’s market share falls in that category. This issue is discussed further below under “Vertical Integration”.
105. The market share estimates in Table 2 indicate currently that Medical Waste has a share of about [], San-I-Pak has a share of about [], and that there are no other substantial operators. These figures place Medical Waste well outside of the Commission’s “safe harbours” even before the acquisition, raising the possibility that the company might already be dominant.
106. The proposed business acquisition would increase Medical Wastes’ market share from about [] to around []. This significant increase to a very large market share may indicate that the acquisition could lead to Medical Waste becoming dominant, or—if Medical Waste were already dominant—to Medical Waste strengthening an already dominant position. However, the Commission reiterates that market share is only the starting point for dominance analysis, and that other relevant factors, including actual competition, entry barriers and the potential for competition, have also to be considered.

Vertical Integration

107. A further issue in the interpretation of market shares—which is discussed here, although it is of greater significance in connection with the North Island market—is the vertical integration of some medical waste treatment operators with the waste producers. It used to be the case that most ports and hospitals ran their own incinerators to treat their own waste on site, and so were vertically integrated in the sense just defined. The issue then is whether—given that this “tied” waste may not be available to other treatment suppliers, nor to potential entrants—the market should be limited to include only “free” sales.
108. The Commission has considered this issue in some previous decisions in other markets, including *Ancor/NZ Forest Products* (Decision No. 208, para. 16) and

Fletcher Challenge/NZ Forest Products (Decision No. 213, para. 17). In the most recent instance, *Goodman Fielder/Defiance Mills* (Decision No. 289, paras. 57-64), it was found that a feature of the flour industry is the presence of vertical integration between the main flour millers and the main plant bread bakeries, with the bakeries buying their flour exclusively from the flour miller with whom they are vertically linked. Here, Commission staff, after citing the previous cases, “reached the view that it is appropriate to ignore the distinction between tied and free flour in defining the market, and to consider whether vertical integration with respect to tied flour is an impediment to competition in the market.”

109. The Commission concludes that it will follow the same approach in the present case, and treat vertical integration as a competition issue rather than a market definition issue. It notes that in the South Island market, the amount of tied waste is only about [], being that processed by the three small incinerators at Southport, Wairau Public Hospital and Coast Health. However, that proportion is much larger in the North Island market.

Constraint from Existing Competitors

110. As indicated in Table 2, aside from Medical Waste, the only other firm with a significant share of the market in the South Island is San-I-Pak. The company entered the market in 1998 (having previously established itself in the North Island) when it was awarded the contract with Lyttelton Port Company to treat the port’s quarantine waste. That contract continues to account for the bulk of San-I-Pak’s market share, since it has managed subsequently to acquire only one other substantial customer (Medlab South).
111. The Commission has sought to discover why San-I-Pak has not managed to increase its market share in the South Island. The firm has an established presence, and one large contract. It also has substantial excess processing capacity. The Commission has been told that one reason why San-I-Pak has not been very active in seeking out additional contracts is because of the preoccupation of one of its shareholders (Wastecare) with internal changes arising from two changes to its ownership in recent times. San-I-Pak claims that it went into limbo when Waste Management took over Waste Care, with marketing efforts ceasing while the former pondered what to do with the operation. However, the company was not completely inactive, []].
112. San-I-Pak’s expansion also appears to have been hindered by resistance among buyers to the unfamiliar autoclave technology used only by San-I-Pak. Some have expressed concerns that complete sterilisation may not be achieved, and that the waste is not treated so as to become “unrecognisable”. Some competitors regard the San-I-Pak technology as being outdated and not environmentally friendly,

because the waste is not shredded or ground, and because it is not substantially compacted prior to disposal at landfills.

113. Nonetheless, it appears likely that San-I-Pak's presence has had some moderating influence on prices in the market, although this has been discounted both by that company and by Medical Waste. An example is provided by one of the larger contracts [
- Other examples have been provided to the Commission where waste producers have been able to negotiate improved terms because of the presence of San-I-Pak. For the medium or smaller contracts, the presence of San-I-Pak as an alternative provider to Medical Waste probably has given waste producers some negotiating leverage, even when they have had no intention of switching away from Medical Waste.
114. Apart from the parties to the acquisition, there are only three other entities currently participating in the relevant market. These are the following:
- Southport, which has an incinerator at the Port of Bluff to treat its own quarantine waste;
 - Coast Health, which operates an incinerator to treat its own hospital waste on the West Coast; and
 - Wairau Public Hospital, which likewise operates an incinerator at Blenheim to treat its own hospital waste.
115. All are vertically integrated suppliers, but as their combined throughput is proportionately small, the impact of vertical integration on competition is slight. Moreover, as none of these facilities treat outside waste, they do not compete directly with Medical Waste or San-I-Pak.
116. Although Southport's facility operates with considerable excess capacity, it has advised the Commission that the incinerator's operating temperature is probably not high enough to meet regulatory standards for the treatment of medical waste. In any case, the facility is operated purely for the purpose of treating the quarantine waste generated at the port. The company has also expressed an intention not to become involved with treating waste for outside parties, such as a hospital.
117. The two hospital-based incinerators at Blenheim and Greymouth appear to be remnants from the time when each hospital had its own medical waste treatment facility. Other hospitals in the South Island have since contracted-out this function. The two remaining incinerators are understood to be relatively old and inefficient, have very small throughputs relative to capacity, and are located in relatively remote provincial areas to which the cost of trucking waste for treatment would be high. Further, these hospitals are not seeking outside business. This is consistent with the Commission's understanding that hospitals generally do not believe it to be appropriate to bring outside waste onto the hospital site for health

reasons. In addition, [
]

118. In addition to these three, medical waste is collected and aggregated by Dental & Medical Equipment. This company's primary focus is the supply of consumables and equipment to doctors' and dental surgeries. During the course of delivering these supplies, it collects the small amounts of medical waste generated by each of those surgeries, and assumes responsibility for its treatment and disposal. The company appears to be taking advantage of a transport economy of scope. However, the company is not involved in the treatment of medical waste. As a collector and aggregator, it has to negotiate a treatment supply arrangement with a treatment supplier.
119. The applicant has stated that there are two incinerators sited at the Invermay Agricultural Centre near Dunedin, one of which has recently been leased to a private pet cremation company. The Invermay facility does not have the necessary air discharge consents for treating medical or quarantine waste, and onsite waste has been taken off-site for treatment. Invermay has told the Commission that its resource consent permits it to incinerate around 40–50 tonnes of waste per year in total, which suggests that it could not cope with the waste generated by a hospital of even moderate size (Invercargill generates approximately []). [
]
120. Specialist Incineration Services Limited (SIS) has installed a second-hand incineration plant (purchased from Christchurch Hospital) near Invercargill. The two incinerators, formerly used by Canterbury Health to process its medical waste, have a large capacity. Its resource consent application has been declined by the Southland Regional Council, but SIS is in the process of appealing the decision. (The Commission understands that Medical Waste was one of the parties that opposed the SIS application.) It is unclear at this stage if and when this facility may receive resource consent. The Environment Court is expected to hear the appeal later this year.

Pricing Behaviour

121. The Commission has collected the prices per kilogram for a range of contracts for the collection and treatment of medical waste in both Islands (see Appendix C). These indicate that prices vary enormously between contracts, with a tendency for those involving small volumes and long transport collection distances to be the most expensive, although there are some significant anomalies. Another feature is that prices appear to exhibit a greater dispersion in the South Island than in the North Island, with San-I-Pak's prices for its two main contracts in the former being in the competitive range. Despite such apparently competitive pricing, and

its apparent influence in lowering prices somewhat, San-I-Pak has not greatly expanded its range of business in the South Island beyond its initial contract with Lyttelton Port Company.

122. As a consequence, San-I-Pak appears to have provided only a limited pricing constraint on Medical Waste over a substantial range of contracts. This in turn suggests that Medical Waste has been able to price flexibly, keeping prices low for the few larger contracts where competition is to be expected and costs are relatively low, and otherwise exploiting its market power by raising prices to those customers having few if any other options. This view, which was expressed in Decision No. 381, has not been contested by Medical Waste in its second application.
123. The Commission's inquiries have revealed that customers in general are not price-sensitive. This makes it difficult for an existing firm to expand its business, and for a new one to enter, using the normal competitive ploy of undercutting the incumbent(s). It would also facilitate the earning of excessive profits by a dominant incumbent.
124. Lack of price sensitivity seems to reflect two factors. Firstly, waste removal and treatment constitutes a very small proportion of waste producers' overall costs (typically less than one per cent), and so it does not receive much attention, even by the cost conscious. Businesses want the waste to be removed and treated in a timely and efficient fashion, and in an appropriate way that will not expose waste producers to risk. Secondly, non-price considerations are of paramount importance. Hospitals are responsible for ensuring that their waste is treated and disposed of according to the regulations, even after it has been removed from their premises. A mistake by the transport operator rebounds on the hospital, which is held responsible by the regulations. Moreover, infection control staff, who typically play a role in choice of operator, also tend to be conservative for obvious reasons. Hence, hospitals are wary of using untested operators or treatment methods, even if they offer the prospect of lower prices, preferring to stay with their incumbent supplier unless there is a good reason to change. Many waste producers spoken to by the Commission consider that Medical Waste provides an excellent service, although the Commission notes that their ability to monitor that service is limited.
125. In some cases, customers are not aware of the prices being charged to others in the market, and so have little ability to judge whether they are paying a relatively low or high price, other than from comparing the current price with prices they individually have paid in the past. However, public hospitals are able to, and do, exchange information for benchmarking purposes.
126. This apparent ability of Medical Waste to price discriminate is an indicator of possible dominance. In its second application it has noted that there are "high

margin customers” amongst the smaller waste producers. However, the role of potential entry has to be considered before a conclusion can be reached.

Conclusion on Constraint from Existing Competitors

127. As already noted, Medical Waste has a market share of about [] which, together with that of its nearest rival and takeover target, San-I-Pak [], puts it outside the Commission’s “safe harbours”. The remaining [] of the market is accounted for by vertically-operated entities which do not seek outside business. Post-acquisition, there will be no competing facility for the treatment of medical waste. The entry of SIS remains uncertain because of resource consent problems.
128. San-I-Pak is currently the only competitor of any significance to Medical Waste in the South Island. Medical Waste may have faced some limited competition from San-I-Pak, in respect of at least one of the larger contracts. , On the other hand, the Commission believes that the view could be reached that Medical Waste currently faces no real effective constraint from any of its existing competitors, including San-I-Pak.

Constraint by Potential Competitors

Conditions of Entry

Introduction

129. Entry conditions into the market, including the nature and height of any entry barriers, must be determined before the threat of new entry can properly be evaluated.
130. The two markets in question are quite small, geographically dispersed, and may also be reducing in size. In quarantine waste, while the number of visiting cruise liners is rising, modern ships increasingly treat their own waste using on-board incineration facilities. Moreover, MAF now recognises that visiting ships (e.g. trawlers) which operate for a period from a New Zealand port (and do not visit a foreign port) are not required to treat as quarantine waste the waste food items and wrappers generated from food loaded at domestic ports.
131. In regard to medical waste, at least one major hospital used to have all of its waste—both medical and general—treated as medical waste. The two types of waste are now treated separately, with consequent savings to the hospital. There is also an on-going evaluation of what types of medical waste can be treated as general waste. In Canterbury this process, which has involved the territorial authorities, has led to reduced volumes of waste being treated as medical waste over the last few years.

132. A market which is small, and possibly diminishing, may create entry difficulties in circumstances where there are economies of scale in production, and where existing operators have considerable excess capacity tied up in plants in which costs are sunk. An assessment of the relevant entry conditions is now considered. In the interests of brevity, these will be assessed only once since the general principles discussed will be relevant to both the North and South Island markets.

Access to Waste

133. Most business is gained by bidding or negotiating successfully for treatment contracts tendered periodically by the large- and medium-sized waste producers (some of the small ones do not have term contracts). Some contracts are rolled over rather than being re-tendered, and others involve direct negotiations with a chosen supplier or suppliers. All of the large contracts, which are relatively few, are from three to five years' duration. As it happens, none of the large contracts in the South Island are due for re-tendering within the next two years (see Appendix C). Occasionally, a waste producer may encourage a new entrant (eg., Lyttelton Port Company in the case of San-I-Pak). Some waste producers see no alternative to contracting with Medical Waste, and had not heard of San-I-Pak.
134. In its Decision 381 on the first application, the Commission reached the conclusion that to compete effectively, any prospective entrant would have to secure the business of larger hospitals or port companies in order to gain the volume of waste needed to operate efficiently (see "Economic Volumes" below). The Commission believed that for entry to succeed in the South Island market, the prospective entrant would need as a minimum either to win one of the three "large" contracts available (those of Canterbury Health, Lyttelton Port Company and Otago Health), or three or more medium-sized contracts. San-I-Pak noted that a single large contract might allow the entrant to recoup its overhead costs, allowing it to compete for further business by pricing at marginal operating cost. However, some potential entrants have expressed the view that because Medical Waste post-merger would hold all of the major hospital and port company contracts, it would be very difficult for them to bid successfully for those contracts. They claim that the market would, effectively, be "locked up" in the hands of the incumbent.
135. In its second application, Medical Waste has not sought to rebut these views, but has set out two alternative entry strategies. The first is based on gaining the business of a large number of relatively small customers, amongst whom are found doctors' and dentists' surgeries, vets and rest homes. Medical Waste claims that there are [] such sites in the South Island generating some [] tonnes of waste per annum. Its strategy assumes that the entrant would win over [] of these customers, including some of the larger ones and some with high margins, such that a waste flow of [] tonnes per annum, or 52% of the total, would be amassed.

136. The Commission is not in a position to evaluate in detail the business costings put forward because they are confidential to the applicant, and so could not be tested by being put to other industry participants for their comments. However, the costings seem likely to have understated the marketing and management costs, have not allowed for a back-up autoclave (which appears to be necessary in view of regulatory requirements),¹² and have excluded altogether the costs of obtaining resource consents. Apart from those deficiencies, it clearly would be an extremely difficult undertaking for an entrant to gather as many as [] customers from incumbent operators in the very short space of time specified by the business plan. The plan states that high margin customers could be “cherry picked”, but that would presumably imply price discounting, and as already noted, customers are not price sensitive. The tonnage is also rather less than the minimum which others have considered to be necessary to make entry economic. Finally, it is questionable whether such an operation would offer much of a constraint on the behaviour of the merged entity with respect to the larger contracts.
137. The second new entry strategy proposed by Medical Waste in its second application involved channelling waste flows from Dunedin and Christchurch to Auckland for treatment at the Waste Resources AIAL incinerator. Although not stated, this presumably is designed to increase the area over which volumes of waste could be accumulated. However, this option has been already considered, and discounted, above in relation to geographic market definition. In particular, the Commission considers that the relatively high transport costs are likely to preclude the movement of medical waste across the Cook Strait, and it has found no evidence that such waste is being transported across the Cook Strait on a regular basis.
138. The Commission sees no reason to change its earlier conclusion that the most likely mode of entry would be through winning a large waste contract or several medium-sized ones. The Commission concludes on balance that gaining access to contracts over the longer term may not be a significant entry barrier, although the position is likely to be different in the shorter term.

Switching Costs

139. It has been put to the Commission that for a waste producer, a change of supplier leads to the incurring of “switching costs”. Firstly, there are the costs incurred in checking the credibility of the potential entrant, and of ensuring that it is capable of providing a satisfactory and reliable service. This is important given that the waste material producer carries the responsibility for the appropriate disposal of its waste. Consequently, contracts are awarded on the basis of service quality over a range of criteria, as well as on price.

¹² San-I-Pak has a back-up autoclave at both its Auckland and Christchurch sites.

140. Secondly, the actual change to a new contractor can cause some disruption to the smooth running of the producer's business, particularly if the change is from incinerator- to autoclave-based treatment, necessitating a possible change in the method of waste storage and collection, which might incur extra staff costs. For example, it is likely to be necessary to separate autoclavable waste from waste that cannot be autoclaved [

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change to a new waste treatment supplier would probably also require an initial period of more intensive monitoring to ensure compliance with pledged quality standards.

141. In economic terms, the resistance of customers to incurring switching costs in changing to an autoclave-based waste treatment supplier may pose both a limited entry barrier, and a mobility barrier for firms wishing to gain additional business after they have succeeded in entering the market. However, the Commission believes that these costs are not particularly significant.

Supplier Reputation

142. Waste producers have told the Commission that Medical Waste has a good track record, and speak highly of the quality of its service. As already noted, the scope for customers to monitor the service after the waste has left the premises is limited or non-existent, so presumably long experience with an absence of any problems has led customers to trust the company. Medical Waste is ISO 9002 accredited. The company accordingly enjoys a strong reputation amongst users, probably helped by being a first mover in the market.
143. Entrants, which necessarily lack a track record in New Zealand (although possibly not overseas), clearly find themselves at a disadvantage when seeking to win contracts by competing against the established incumbent. San-I-Pak noted that the chances of success when bidding on the first contract were virtually nil. Buyers are generally very conservative, both as to operational methods and to technology employed. Daniels considered that waste producers wish others to be the first to trial a new technology. As noted earlier, hospitals in particular tend to be reluctant to switch to a new and untested supplier, particularly one that has no plant or collection systems that can be inspected. Waste removal and treatment costs are a very small proportion of a business's costs, which means that they tend to receive relatively little attention. For these reasons, there is a marked tendency for buyers to stay with their existing contractor as long as a reasonable standard of price and service is maintained.
144. Given the sensitive nature of waste treatment, the responsibilities of the waste generators, and the insignificant nature of the costs, it seems likely that the reputation of the incumbent will act as an entry barrier to new entrants. Such entrants both lack reputation, and are likely to find it more difficult to build up a

reputation than did the incumbent when it entered. Nonetheless, the Commission considers that this is unlikely to constitute a significant entry barrier.

Regulatory Requirements

145. As noted above under 'Background', the transport, treatment and disposal of medical and quarantine waste is heavily regulated. A facility established to treat such waste, either by incinerator or by autoclave, would have to comply with various regulatory requirements. In particular, resource consents would be necessary in terms of the Resource Management Act 1991 (the RMA). The specific requirements will vary depending on the location in which it is proposed to install the plant, and on the stance of the territorial authority covering that location. In addition, ongoing monitoring is the responsibility of the site operator.
146. The Commission considers that the RMA requirements in relation to the air discharge of contaminants will make it increasingly difficult for existing operators to continue to use, and new entrants to establish, incinerator units, especially in the major metropolitan areas. However, resource consents for autoclaves are more straightforward, and may not involve any major delays or expenditure in terms of the consent procedures, although one resource management consultant estimated that the delay could take up to six months or longer. Delay will add to the cost of building new plants and of upgrading existing plants. The Act also provides an incentive for existing operators to raise objections to such developments. This has been a characteristic of both medical waste, and of the waste industry generally.
147. As the regulatory requirements apply to both incumbents and entrants alike, it is doubtful in general that they can be construed as an entry barrier. However, during a period like the present when the standards required of incinerators are being tightened, operators having consents with some time to run would be at an advantage over newcomers who would need to satisfy the more stringent new standards for incinerators. On the other hand, entrants could mitigate that difficulty by installing autoclaves, which involve lesser regulatory costs, albeit that these face some resistance from some customers.

Capital Cost of Plant

148. The capital cost of a facility to treat medical or quarantine waste would vary depending on the nature and capacity of the plant. For example, the capital cost of a smaller-scale incineration unit is likely to involve an outlay of around \$0.5 million. A larger-scale unit is likely to cost up to \$5 million, with a large component of that cost being for equipment to ensure compliance with air emission standards.
149. The cost of establishing an autoclave plant would vary depending on the nature and level of sophistication of the plant. The Commission has received information

from industry sources which show that the cost of a standard unit imported from the USA would range from about \$100,000 to \$300,000. However, [] advises that the capital cost could be lower either if the equipment were purchased second-hand, or sourced from a manufacturer of stainless steel products in New Zealand, although it is understood that autoclaves are not currently manufactured domestically.

150. In practice, the costs could be higher than this for two reasons. Firstly, in order to provide a back-up in the case of breakdown, it is likely that two autoclaves would need to be installed. For this reason, San-I-Pak operates two autoclaves at both its Lyttelton and Auckland sites. Secondly, the capital costs would include the costs of the boiler, a bin and compacter, a building, and various site works. In the case of San-I-Pak's Lyttelton operation, these costs alone totalled over []. In addition, there would have been planning and contract negotiation costs. However, San-I-Pak claims that these relatively high costs were incurred to build a plant which would act as a "showpiece" for the autoclave technology, and hence improve its acceptability. In practice, the plant has a lot of excess capacity, and second-hand autoclaves could have been used at a much lower cost.
151. The capital cost of a rotary autoclave is substantially higher. The applicant advises that the capital cost of the autoclave unit that it is intending to install in Auckland is []. A claimed advantage of a rotary autoclave is that the waste is broken down into smaller fragments, thereby allowing the steam to permeate the material more completely. Some parties have also claimed that this process has the advantage of rendering the waste unrecognisable. These parties thought that the approach and technology used by San-I-Pak was inadequate.
152. Other technologies are also available. For example, [] Daniels also planned to install a chemical treatment plant in the North Island costing [].
153. While the level of sophistication required by an autoclave (and hence the cost) to meet regulatory standards is not clear, the size of the capital costs of equipment quoted above are not large in absolute terms, although they are relatively large in the context of the two small New Zealand markets, the sunk nature of part of the costs, and the excess capacities of the existing operators.
154. Once regulatory consents are obtained, autoclave equipment can be installed quickly. It is understood that San-I-Pak's plant in Lyttelton Port was installed in four months, although additional time was required to locate an appropriate site and to ensure that MAF was satisfied with the technology. This opens the possibility, particularly for autoclaves for which consents are easier to obtain, that a potential entrant could bid for tendered contracts and only build a facility in the event that a contract is actually won. However, the absence of a plant, and the

lack of a resource consent, may count against a firm attempting to enter in this way. Based on what the Commission has ascertained in its inquiries, such entrants are likely to be “marked down” in evaluation exercises by the waste producer because they are untested operations.

155. Many of the costs of entry would be sunk. Sunk costs would include the following: the cost of meeting the regulatory requirements; a substantial proportion of the investment costs, given the specialised nature of the equipment and the small size of the market likely to be accessible to an entrant; and the market appraisal, marketing and tendering costs. As contract lengths for major customers are typically for three years in the North Island, and three to five years in the South Island, this could expose the entrant to two risks: that it would not recoup its investment should it not be successful in the re-tender of the contract (although some contracts are rolled over without a re-tender); and that it would be vulnerable to strategic behaviour by the incumbent designed to harm its profitability, particularly at the end of the first term of the contract. Two potential buyers of San-I-Pak told the Commission that the company was not an attractive proposition in the North Island because its South Auckland Health contract had only about 14 months to run, and there was no certainty that the new owner of the company would retain that contract. One regarded a five year period as the minimum required to justify entry.
156. The establishment costs for a large-scale incineration plant would represent a significant cost for a prospective entrant in the relatively small market. The total costs would be greater, and a larger proportion of them would be sunk. It would be less likely that an intending entrant could delay building until a contract was won. Entry using an incinerator therefore appears to be unlikely, whereas entry using an autoclave may be feasible.
157. Medical Waste has the advantage of being a multi-plant operator in that it currently operates two plants in the North Island (in Auckland and Wellington) and, until very recently, two in the South Island (Christchurch and Dunedin).¹³ This advantage stems from it being able to assure a client of continued service in the event of a plant failure. For example, it has sent waste from Wellington to Christchurch when its Wellington plant has failed, and would have used the Dunedin plant if its Christchurch plant had to be shut temporarily. Medical and quarantine waste is generally not stored for long, although there have been instances where storage of up to seven days (or even longer) has occurred. A single-plant entrant may not be able to provide the same assurance for such contingencies, unless it can come to a “mutual backup” arrangement with another facility provider. That might be difficult given the limited number of facilities in operation that are able to treat medical waste as well as quarantine waste.

¹³ As noted earlier, Medical Waste’s Dunedin plant was damaged by fire in late February 2000.

158. The Commission concludes that the sunk nature of a substantial proportion of the investment required to enter the market, in the context of the small size of that market, is likely to constitute a limited entry barrier.

Economic Volumes

159. Incinerators and autoclaves appear to share two similar cost characteristics: both types of equipment benefit from economies of scale as the size of the unit is scaled up, and both experience substantial throughput economies with a given size of unit. The first means that at full-capacity working, the costs in cents per kilogram of treated waste falls sharply as the size of the unit is scaled up. For example, Medical Waste states that its Auckland facility is more than twice the size and throughput of the other plants, “giving considerable savings in running costs.” This scale argument is also supported by Health South Canterbury Limited (the HHS which operates the public hospital at Timaru) and other HHSs and smaller ports, which regard themselves as being too small to be able to run their own waste disposal facilities.
160. The throughput economies arise because of the large proportion of the operating costs that are fixed. Fixed costs are cost elements for which the total does not change as the throughput of waste is increased or decreased. As throughput is increased, the fixed cost is spread progressively more thinly, resulting in average cost falling significantly.
161. These two cost characteristics are likely to impose an entry barrier for the would-be entrant. To be competitive, it must gain sufficient volumes of waste to allow it both to build a plant of an economic size, and to operate it with a high throughput. This would require it to gain contracts against the competition of an incumbent which, through its large market share, is able to benefit from economies of scale and of high throughput. Moreover, no opportunity appears to be provided by market growth, as any growth would be likely to find expression in an expansion of the sizes of existing contracts, rather than in new contracts coming to the market. In fact, the market could be shrinking.
162. The minimum economic volume to sustain a new treatment facility depends in part upon the nature of entry. For a large incineration plant, with the associated cost of complying with air discharge standards, it would be necessary to secure the business of several large customers, such as HHSs and port companies. Given that almost all the contracts of HHSs and port companies are currently tied up with Medical Waste, and the staggered nature of contract tenders over time, it is unlikely that the entrant using an incinerator would be able to win sufficient business within a time frame that would make entry in that manner feasible.
163. Similar considerations would apply to entry by autoclave, except that the costs, and therefore the economic volumes required, would be less. San-I-Pak has shown that it is possible to enter the market on the basis of a “cornerstone” major

customer (South Auckland Health for its Auckland plant, and Lyttelton Port Company for its Lyttelton plant), subsequently augmented by some much smaller customers in the South Island. [

] [

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164. The Commission considers that economies of scale and of throughput for the treatment of medical and quarantine waste are such that an entrant using an autoclave would require access to a substantial volume of waste to make entry viable. It is difficult to determine precisely what the minimum economic volume might be, but various estimates provided by different parties suggest that it is likely to fall within the range of approximately 150-300 tonnes per annum. A figure of 200 tonnes equates to almost [] of the market. Only three contracts in the South Island market fall roughly within the range specified, and those are, in descending order: Canterbury Health, Lyttelton Port Company and Healthcare Otago. Alternatively, a similar volume might be accumulated by combining three or more medium-sized contracts, although that would involve the likely low probabilities of winning sufficient volume over a reasonable timeframe as discussed elsewhere in this determination.
165. An alternative entry strategy might be for two or more lesser waste generators to join forces to build their own treatment facility, or to contract an entrant to do so. [

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166. The Commission concludes that the economies of scale and of throughput combined with the small size of the relevant market, together with the fact that the great bulk of the market is currently in the hands of the main incumbent who is therefore able to gain such economies, constitutes a barrier to entry.

Incumbent Response

167. It is likely that any new player entering the market for the treatment of medical and quarantine waste would expect to face the prospect of strategic behaviour by the incumbent operator. This seems particularly likely where the entrant would need to gain one of the few major waste contracts available to make entry viable, and where it would need to retain that contract in order to supply over a sufficiently long period to recoup its investment in the sunk costs of entry. Knowing that the entrant is likely to focus its efforts on winning one of the few, larger contracts, the incumbent could respond by bidding competitively for those

contracts, while offering higher prices for the smaller contracts of less interest to the entrant. The prospect of incumbent response in this situation may have a deterring effect on entry.

168. The incumbent response could also take the form of appeals under the RMA designed to delay the granting of resource consents and to increase the cost of achieving compliance.¹⁴ However, such a response would be less significant if the new entrant were proposing to establish an autoclave.
169. The Commission considers that the prospect of strategic behaviour by the incumbent may constitute an entry barrier.

Entry Experience

170. San-I-Pak is the only recent entrant into either the North or South Island markets, entering the former in 1994 and the latter in 1998. In both cases it obtained a “cornerstone” contract with an entity which wished to outsource because its own facility was old-fashioned and suffering from emission problems. In neither case, therefore, was Medical Waste the incumbent supplier. In both cases it appears that influential people were supportive of the new autoclave technology, the CEO in the case of the South Auckland Health contract in the North Island, and the senior staff in the case of Lyttelton Port in the South Island. This favourable combination of circumstances is unlikely to be repeated in the future, as there are no other major waste producers which still treat their own medical or quarantine waste, and which could, therefore, switch to out-sourcing in the future.
171. San-I-Pak’s entry into the South Island market also may have been eased to some degree by its already having a presence in the North Island market, since its site in Auckland could be inspected by potential customers, as happened with Lyttelton Port Company. The Port Company entered into negotiations with Medical Waste and San-I-Pak. The latter was eventually chosen, apparently largely on environmental grounds []. Once the market had been entered, San-I-Pak also secured a medium-sized contract from Medlab South, which was formerly a Medical Waste customer. It has no other significant contracts in the North or South Islands.
172. The Commission understands that no other party has entered the medical and quarantine waste treatment market in recent times. However, Daniels entered in the North Island at the collection level and sub-contracted the treatment work to Waste Resources (see below). Some parties have claimed that Daniels attempted

¹⁴ The Commission notes, for example, that Medical Waste opposed the SIS application for a resource consent-see para 120 above.

to gain business by cutting prices sharply, and that prices have recently started to recover. [

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173. The Commission considers that of these various entry barriers, the most important is access to sufficient volumes of waste in a timely fashion. When the other entry barriers are added, the cumulative impact is for the overall barrier to entry to be high within the relevant timeframe. This timing issue with regard to entry is elaborated in the following section.

Conclusions on Conditions of Entry

174. The foregoing discussion of entry conditions into the market for the treatment of medical and quarantine waste in the South Island has brought to light the following entry barriers: access to waste treatment contracts over the shorter term; switching costs for waste producers; the reputational advantage of the incumbent; the difficulty of accessing sufficient volumes of waste to make an economic operation feasible in the context of a small market; the sunk costs of entry; and the susceptibility of an entrant to strategic behaviour designed to increase its costs or reduce its profits.

Assessment of Constraint from Potential Competitors

175. The Commission recognises that potential competition can act as a constraint on the exercise of market power. Hence, the assessment of the nature and extent of that constraint represents an important element in the evaluation of whether, in a business acquisition, the combined entity will acquire or strengthen a dominant position.¹⁵
176. In the present application, the issue is whether Medical Waste would acquire or strengthen a dominant position in the market for the treatment of medical and quarantine waste in the South Island through its acquisition of San-I-Pak. This depends upon whether the merged entity would be constrained by the likelihood of entry such that, combined with other relevant considerations, dominance is not likely to be acquired or strengthened.
177. The Commission's approach to the evaluation of the potential threat of market entry as a constraint on the exercise of market power is based on the "lets" test, in

¹⁵ *Supra*, note 5, p.19

conjunction with the preceding assessment of entry conditions. Under this test, to constitute a sufficient constraint such that the acquisition or strengthening of dominance would be unlikely, entry must satisfy all four of the following criteria: it must be *likely*, sufficient in *extent*, *timely* and *sustainable*.¹⁶ Each of these criteria is now assessed in turn.

Likelihood of Entry

178. In order to be a constraint on the exercise of market power, entry must be likely in commercial terms. In other words, there has to be a “reasonable prospect of achieving a satisfactory return on . . . investment.”
179. On the basis of enquiries made since Decision 381, the Commission considers that entry through the establishment of an incineration plant is unlikely to be feasible in commercial terms. The cost of installing a modern incinerator which meets the environmental standards and the cost associated with obtaining resource consent approvals are high, and a new entrant seems unlikely to be able to secure a sufficient number of large contracts within a time-frame that would justify this level of investment. The entrant would be unlikely to seek resource consents without first gaining contracts, but waste generators would be unlikely to give contracts to an entrant which lacked the necessary consents for an incinerator.
180. Based on the enquiries made since the earlier application, it has become apparent to the Commission that entry based on the autoclave technology would appear more feasible. While such entry may not involve a large investment in equipment (possibly up to \$300,000, and more for a rotary autoclave, and probably doubled to allow for other costs), that outlay has to be seen in the context of the small market, the sunk nature of some costs, and the excess capacity of incumbents. Sunk costs include not only some of the capital costs, but also the costs of market survey, contract tendering and meeting regulatory requirements. Entry might be feasible if a prospective entrant could gain a sufficient waste volume, either a single large contract, or three or more medium-sized contracts, so as to make entry on a viable scale possible. However, there are only three large contracts available in the South Island market, and only one of those has been won by an entrant—Lyttelton Port Company, by San-I-Pak—when the Port decided to out-source for the first time. Moreover, waste producers typically are reluctant to switch suppliers because of the costs and the risks involved. The alternative of entry by gaining three or more medium-sized contracts seems unlikely, because of difficulties in securing multiple contracts within a reasonable timeframe, and doubts as to whether they would provide a sufficient volume on a continuing basis.
181. The Commission concludes that entry is likely to be delayed by the infrequency with which the large and medium-sized contracts are tendered, and by the fact that

¹⁶ *Ibid.*, pp. 19-20.

the probability of an entrant being successful on its first bid is likely to be low. However, it is considered that entry may occur in the longer term, especially in the situation where either Medical Waste or the merged entity were to attempt to raise prices significantly. Hence, while the “likelihood” criterion for entry in the “lets” test may be satisfied over the longer term, within the relevant timeframe entry is not likely.

Extent of Entry

182. If it is to constrain market participants, then the threat of entry must be at such a level and spread of sales that it is likely to cause market participants to react in a significant manner.
183. The Commission has found that entry, if it is to occur at all, is only possible on a relatively large scale through the gaining of a large contract, or several medium-sized contracts. Entry would not be financially viable for small quantities only. Such entry, once it had occurred, might satisfy the “extent” criterion in that it could be sufficient to provide an effective constraint on the combined entity. Once a firm has entered the market, its credibility would be enhanced, and it would be likely to have excess capacity available at a relatively low incremental cost on which to base its bids for other contracts. The decision to undertake the associated sunk investments would have been taken. The Commission considers that the “extent” criterion is satisfied.

Timeliness of Entry

184. To constrain effectively the exercise of market power to the extent necessary to alleviate concerns about market dominance, entry must be likely to occur before consumers or users in the relevant market are detrimentally affected to a significant extent.¹⁷ The Commission has said that the relevant time period has to be considered on a case-by-case basis, but that “for most markets, entry which cannot be achieved within two years from initial planning is unlikely to be sufficiently timely to alleviate concerns about market dominance.”
185. The Commission considers timeliness on a case-by-case basis. In *Carter Holt Harvey Limited* (1990) 2 NZBLC 104,549 the Commission said, at p 104,555:

“An assessment of the likelihood of the acquisition or strengthening of dominance necessarily involves a forecasting of the future. This is quite appropriate, since competition is a dynamic process. However, it also necessarily places some limit on the future period which it is sensible to consider. That limit is not found by reference to specific time frames, but rather by considering on a case by case basis, the period during which there can be a tendency or real probability (ref *Howard Smith Industries* (1977) ATPR 40-1023) of a particular state of competition occurring.”

¹⁷ *Ibid.*, p. 20.

186. In the present case, the Commission considers that the most likely entry strategy is for the prospective entrant to bid for and win one of the three large contracts in the South Island. The dates for the next tenders of these contracts are as follows:

- Canterbury Health [];
- Healthcare Otago []; and
- Lyttelton Port Company [].

187. As can be seen, the first of these contracts does not become available for more than two years. This means that the earliest possible time of entry for a newcomer would be slightly outside the Commission's normal timeframe for the satisfaction of timeliness. More importantly, the probability of the intending entrant winning the first of those contracts is assessed as low, and even the second, as being relatively low. Moreover, should that firm be unsuccessful in this first round of tenders in the period 2002-03, its entry would be delayed for a significant additional period (from 15/2/03 to 1/5/05), given that the three larger contracts are for three years, or longer.

188. The Commission concludes that the "timeliness" criterion of the "lets" test is not met.

Sustainability of Entry

189. Entry has to be sustainable in the sense that it is likely to be profitable in the long-term, for otherwise there will not be a lasting economic incentive to enter the market.

190. As noted previously, the supply of medical and quarantine waste services is awarded on a competitive tendering basis. However, for entry to be sustainable, it is necessary for the new entrant to continue to secure a return on its original investment, which may take several years, and may be longer than the term of the contract won. The entrant may also be vulnerable to strategic behaviour by the incumbent.

191. There has been a very limited history of entry into the South Island market. San-I-Pak secured the large contract for quarantine waste from Lyttelton Port Company (1998), and subsequently secured smaller contracts for medical waste. [

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192. The Commission's view is that the limited history of entry over the last several years is not necessarily determinative of the sustainability of entry in the future. The future dynamics of the market are difficult to predict. If, for example, a potential entrant could secure a large cornerstone contract, then such entry may be

sustainable, as further business opportunities would come within its reach. Having regard to all the relevant factors, the Commission considers that in the event of entry occurring in this way, the “sustainability” criterion of the “lets” test would be likely to be satisfied.

Conclusion on Constraints from Potential Competitors

193. The Commission concludes that entry into the market in question would satisfy the “extent” and “sustainability” criteria, but not the “likelihood” and “timeliness” criteria. This means that the threat of potential competition from new entry is considered not to significantly constrain an otherwise dominant firm or combined entity.

Constraint by Producers of Waste

194. The large HHSs and ports may have countervailing power by virtue of their positions as large-scale users of medical and quarantine waste treatment services. These would appear to produce volumes of waste sufficient to support either a new entrant into the market—with San-I-Pak being an example—or the installation of their own autoclave to treat their own waste, although no large waste producer has moved in this direction. It might also be possible for smaller waste producers to pool their waste, and so collectively to act in this way. The Commission is aware of one instance where this possibility was evaluated, but did not proceed because waste volumes were insufficient. Most waste producers prefer to contract-out, seeing waste treatment as being outside of their core businesses. However, they are not averse to taking advantage of having two operators in the market to try to secure a better deal.
195. Many hospitals in the USA and some hospitals in Australia have switched from out-sourcing to own-supply in recent years. Sometimes this has involved contracting with an outside operator to build and operate their plant. It would appear that this option is not currently being considered by the major waste producers in New Zealand.
196. An incumbent would recognise the ability of certain buyers to build their own facility, or potentially to switch to another operator, and thus would offer lower prices to those producers to retain their business, whilst charging higher prices to the others whose options are more limited. There is some evidence of such behaviour in Medical Waste’s bid for the Canterbury Health contract.

Conclusion on Constraint by Producers of Waste

197. The Commission concludes that the countervailing power of the few major hospitals and Lyttelton Port Company in the South Island would provide little constraint on the combined entity in the medium to longer term, and even less in the next two to three years. Most other producers would have no countervailing power at all in the foreseeable future.

Conclusion on Actual and Potential Constraint

198. The Commission has reached the view that the factors which would determine whether the applicant is dominant in the South Island market for the treatment of medical and quarantine waste are finely balanced. On the one hand, the Commission notes that while San-I-Pak has not aggressively marketed its services, that company possesses the only significant excess treatment capacity other than Medical Waste. Evidence also suggests that San-I-Pak may have provided some constraint on Medical Waste by competing for some waste flows, including for larger contracts, as they became contestable. On this basis, Medical Waste may arguably not currently be dominant. Implementation of the acquisition would then lead to the removal of the only constraint that Medical Waste otherwise faces, given the Commission's finding that potential entry would not constrain the combined entity within a reasonable time frame. On this line of reasoning, the Commission would not be satisfied that the acquisition would not result, or would not be likely to result, in Medical Waste acquiring a dominant position in the relevant market.
199. On the other hand, the Commission considers that because of the finely balanced nature of the factors, the view could be reached that Medical Waste currently is not effectively constrained by any of its existing competitors, including San-I-Pak, nor by any countervailing power exercised by its customers. The inability of San-I-Pak to significantly increase its market share, despite having a cornerstone contract, would support such a view. Combined with the Commission's finding on potential competition, this would tend to suggest that Medical Waste may currently be dominant in the relevant market. If that is the position, implementation of the acquisition would lead to the removal of the only significant excess treatment capacity other than that of Medical Waste, and the transfer of the Lyttelton Port contract to Medical Waste. On this line of reasoning, the Commission would not be satisfied that the acquisition would not result, or would not be likely to result, in Medical Waste strengthening a dominant position in the relevant market.

Conclusion on Dominance in the Market for the Treatment of Medical and Quarantine Waste in the South Island

200. For these reasons, the Commission is not satisfied that the acquisition would not result, or would not be likely to result, in the applicant acquiring or strengthening a dominant position in the market for the collection and treatment of medical and quarantine waste in the South Island.

The Markets for the Collection of Medical and Quarantine Waste in the North and South Islands

201. As these two markets are very similar, and as the degree of aggregation resulting from the proposed acquisition is very small, they will be considered together here to avoid repetition.
202. As indicated earlier, waste is conveyed from the point of production to treatment site by truck. Treatment plant operators usually undertake their own collection, either using their own trucks or independent contractors. In addition, there are a few small waste collectors and aggregators which undertake the collection function themselves, and sub-contract out the treatment function to an independent operator.
203. While regulations require that trucks be specially fitted out to carry waste designated as “hazardous”, and that the drivers receive special training, this also applies to a range of other non-medical or quarantine wastes which are classified as hazardous. Even in this relatively specialised area of transport, there are a number of independent transport companies which are active in the transport of these other hazardous wastes, and which would be able to provide similar services for medical and quarantine waste.
204. In addition, there appear to be no significant barriers to entry into these markets. Trucks by their nature are multi-purpose, and the specialised fit-outs required in this case are limited and do not appear to be costly. The waste is usually carried in plastic bags and bins, with only “sharps” requiring more specialised containers. An exception occurs where quarantine waste is transported off-port for treatment, where large, purpose-built, sealed metal crates are used for containment purposes. In general, this suggests that potential competition in the collection market is likely to be strong.
205. The Commission concludes that the amount of aggregation resulting from the proposed acquisition in the two markets is very small. Moreover, the existing and potential competition is such that competition is effective. Hence, the Commission is satisfied that the proposal would not result, or would not be likely to result, in Medical Waste or any other person acquiring or strengthening a dominant position in the markets for the collection of medical and quarantine waste in the North Island or in the South Island.

The Market for the Treatment of Medical and Quarantine Waste in the North Island

Market Shares

206. On the basis of information provided to the Commission, and subject to the same caveats as apply to the South Island market, estimates of market shares for the treatment of medical and quarantine waste in the North Island are shown in Table 3.

TABLE 3
Estimated Market Shares for the Treatment of Medical and Quarantine Waste in the North Island

Operator	North Island	
	Tonnage	%
Medical Waste	[]	[]
San-I-Pak	[]	[]
Sub-Total	[]	[]
Waste Resources AIAL	[]	[]
Port of Tauranga	[]	[]
Port Napier	[]	[]
Total	[]	[]

207. The market share estimates contained in Table 3 indicate that in the North Island, Medical Waste currently has a market share of around [], and San-I-Pak has a share of about []. Waste Resources AIAL, with a market share of around [], Port of Tauranga about [] and Port Napier about [] account for the balance. In addition, the airforce bases at Ohakea and Whenuapai treat quarantine waste, but the quantities are believed to be very small (less than 1% of the total market).
208. Following implementation of the proposed acquisition, Medical Waste would increase its market share from around [] to about []. Those figures fall within the Commission's "safe harbours" set out in the Business Acquisition Guidelines.
209. However, the Commission's view is that the estimated market share for the combined entity is likely to understate the actual competitive position because of the presence of substantial vertical integration between waste production and treatment. The major example is Waste Resources AIAL, the largest individual participant, whose market share is derived largely from "tied" quarantine waste generated by aircraft landings at Auckland International Airport. Similarly, the market share figures for Port of Tauranga and Port Napier must be discounted for

the same reason, because those parties are engaged in the treating of “tied” quarantine waste generated by vessels using their respective ports. “Tied” waste is not available to other treatment operators or to potential entrants, unless the tie were to be reviewed.

210. In addition, Waste Resources AIAL has told the Commission that [

].

211. When adjustments are made for this vertical integration, the Commission considers that the combined entity is likely to have a much larger market share in actual competition terms than is indicated by the figures outlined above. As an extreme illustration of this, if “tied” waste—which amounts to around half of all medical and quarantine waste treated in the North Island—were to be excluded from the market altogether, Medical Waste’s market share following the implementation of the proposal would rise from around [] to about []. Those figures would fall well outside the Commission’s “safe harbours”. However, the Commission is of the view that this extreme approach would considerably understate the actual and potential competitive impact of Waste Resources AIAL.

Constraint by Existing Competitors

212. San-I-Pak first began operations in New Zealand as a newly created joint venture company in 1992, with the agency for the autoclaves produced by San-I-Pak in the United States. It approached South Auckland Health (which has several sites, the biggest being Middlemore Hospital) with a proposal for the installation of an autoclave at the time when the hospital’s own incinerator was faced with being shut down because of emission problems. The hospital awarded its medical waste contract to San-I-Pak in 1994, which established its autoclave operation on the former incinerator site. Subsequently, it was forced to move off-site because the location was needed for hospital expansion. San-I-Pak has not been able to secure any further contracts in the North Island.

213. Apart from the parties to the acquisition, there are only three other participants of any significance currently operating in the North Island market (Waste Resources AIAL, Port of Tauranga and Port Napier), and two of lesser significance (Ohakea and Whenuapai airforce bases). In addition, there are three other companies (Medi-Chem, HiTech and Medisafe) involved in the collection of medical waste, which arrange for its treatment at Waste Resources AIAL’s incinerator.

214. Waste Resources AIAL is the largest individual company involved in the treatment of quarantine waste in the North Island. It is engaged predominantly in the destruction of waste on behalf of AIAL, of which it is a division. It is currently operating its incineration plant []. It has substantial spare capacity of up to [] in annual terms as it is currently operating at about [] of estimated capacity, which is a very large amount in relation to the size of the market. The resource consents applying to its incinerator are valid for another ten years. However, the amount of spare capacity available is subject to seasonal variations, []. For short periods of a few days it may have little or no excess capacity, which might make it difficult for large flows of outside waste to be treated promptly. In such situations the airport's quarantine waste would be given first priority.

215. []

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216. []

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217. The Commission's view is that while Waste Resources AIAL is not actively seeking outside business, the current spare capacity of its plant provides scope for existing parties without their own facilities, or possibly Waste Resources AIAL itself, to seek additional business should the market opportunity arise (if, for example, the combined entity were to increase prices substantially). To this extent, Waste Resources AIAL can be seen to compete in the market.

218. Port of Tauranga and Port Napier operate incineration plants at their respective ports, but the Commission has been told that these facilities are currently employed solely to treat the quarantine waste generated by vessels visiting those ports. The plants are also relatively old, and are not capable of meeting the operating temperature for the incineration of medical waste. []

]

The Commission therefore considers that Port of Tauranga and Port Napier would provide only a very limited constraint on the combined entity to the extent that they could toll process outside waste.

219. The only other incineration plants operating in the North Island are located at the airforce bases at Whenuapai and Ohakea. Both of these plants are MAF-approved. The Commission has been advised that Ohakea has spare capacity, and that its plant can incinerate medical and quarantine waste for outside parties. Currently, Ohakea operates only one afternoon a week. The Commission considers that the plants at Whenuapai and Ohakea may provide a potential limited constraint on the merged entity, albeit on a much smaller-scale.

Conclusion on Constraints by Existing Competitors

220. As indicated above, the market shares of Medical Waste and San-I-Pak are [] and [] respectively, which puts the proposed acquisition within the Commission's "safe harbours". Other treatment providers are largely or completely vertically integrated, although Waste Resources AIAL does contract process waste for independent collectors and aggregators. The latter []
221. The Commission considers that both San-I-Pak and Waste Resources AIAL are currently competitors of Medical Waste. The former has competed only to a very limited degree. The latter has a large amount of excess capacity, and would have an economic incentive to seek extra business should prices rise.

Constraint by Potential Competitors

222. The review of entry conditions in respect of the South Island market, as contained in paras 129-174, is relevant to the consideration of the market for the treatment of medical and quarantine waste in the North Island. That analysis is not repeated here.
223. As explained above, a prospective entrant into the collection market is likely to be facilitated by the presence of Waste Resources AIAL's incinerator, which, by being prepared to quote a treatment price and to toll process the waste, would be drawn into competition with the other incumbent operators in the waste treatment market. Information provided to the Commission indicates that the prices charged by Waste Resources AIAL to treat waste for outside parties appear to be competitive. However, transport costs would also have to be taken into consideration. Also, as treatment costs are subject to negotiation, there might be some scope for those parties without their own waste treatment facilities to benefit from the countervailing power facilitated by the presence of Waste Resources AIAL. As waste aggregators, they may be able to introduce competition by playing one operator off against another. On the other hand, the large volumes of

waste tied up by Waste Resources AIAL reduce the amount of waste that is potentially available to entrants, and hence reduces the likelihood of new entry.

224. As noted previously, Daniels entered the North Island collection market by securing the contracts for several public and private hospitals together with some smaller customers, and then transporting the waste to Waste Resources AIAL's incinerator for treatment. However, the company failed to achieve the projected volumes at which it would have been economic to build its own chemical treatment plant [], and decided to withdraw from the collection business and to focus on its core "sharps" plastic bin business. Just prior to its exit, Daniels was servicing in the North Island two smaller public and two private hospitals, several Southern Cross hospitals, Medlab Hamilton and Gisborne community laboratory.
225. Entry in the form described above would rely on securing contracts for waste flows, probably from a hospital or port company. There are about five contracts of sufficient size to provide the "cornerstone" needed for a new treatment operator to gain entry to the market, and a greater range of medium-sized contracts than in the South Island, which could aid the entrant's expansion. Moreover, given the availability of Waste Resources AIAL's facility, and its substantial excess capacity, the Commission considers that entry or expansion could be facilitated in this manner. By this indirect means, it is possible that potential new entry could act as a constraint on the combined entity.
226. Alternatively, new entry might be achieved through the establishment of an autoclave. This in turn could be through installation of an on-site facility, say at a major hospital or port, or by an off-site facility, which could service several generators of waste. Such entry would depend on the same considerations as outlined in paras 129-174
227. On this basis, the Commission considers that the "lets" test is satisfied in full on the North Island. It considers that the "likelihood" criterion is met, in that entry would be likely in commercial terms in the event that the combined entity attempted to exert market power by raising prices. There are enough large- and medium-sized contracts available to facilitate entry. The "extent" of entry is also likely to be sufficient to act as a constraining influence on the merged entity. Its presence as an operator and bidder would keep prices down. Larger contracts in the North Island generally do not exceed three years duration, and are not synchronised in timing to any degree, so that there is not the same "timeliness" issue as is found in the South Island market. Finally, entry is likely to be "sustainable" by being sufficiently profitable, as []

Conclusion on Dominance in the Market for the Treatment of Medical and Quarantine Waste in the North Island

228. Implementation of the acquisition would result in some aggregation of market share in the market for the treatment of medical and quarantine waste in the North Island. Those market shares fall within the Commission’s “safe harbours” for the acquisition of dominance, although the Commission considers that the figures used provide a somewhat distorted view of the actual state of competition in this market.
229. While San-I-Pak has a relatively small presence in this market, the acquisition would result in the removal of the third largest competitor in the market. The company has not been able to expand beyond its initial contract with South Auckland Health.
230. The Commission notes that Waste Resources AIAL, the only other operator of a significant treatment facility in this market, is predominantly engaged in the destruction of quarantine waste for AIAL. However, Waste Resources AIAL’s incinerator has substantial spare capacity and satisfies all the relevant resource consents. Waste Resources AIAL could provide a facility for other potential new entrants without their own treatment facilities (HiTech, Medi-Chem, Medisafe and others) to compete against the combined entity for waste flows.
231. In addition, there is scope for entry through the installation of autoclaves. Accordingly, the Commission concludes that Medical Waste is not currently dominant, and that implementation of the proposed acquisition would not result in Medical Waste acquiring dominance in the market for the treatment of medical and quarantine waste in the North Island.

Conclusion on the Market for the Treatment of Medical and Quarantine Waste in the North Island

232. For the reasons given above, the Commission is satisfied that implementation of the proposed acquisition would not result, or would not be likely to result, in Medical Waste or any other person acquiring or strengthening dominance in the market for the treatment of medical and quarantine waste in the North Island.

OVERALL CONCLUSION

233. The Commission has considered the impact of the proposal in the markets for the treatment of medical and quarantine waste in the North Island and South Island, and the markets for the collection of such waste in both Islands.
234. Having regard to the factors set out in section 3(9) of the Commerce Act and all other relevant factors, the Commission is not satisfied that implementation of the

proposed acquisition would not result, or would not be likely to result, in Medical Waste acquiring or strengthening a dominant position in the South Island market for the treatment of medical and quarantine waste.

235. However, the Commission is satisfied that implementation of the proposed acquisition:
- would not result, or would not be likely to result, in Medical Waste, or any other person, acquiring or strengthening a dominant position in the market for the collection of medical and quarantine waste in the South Island;
 - would not result, or would not be likely to result, in Medical Waste, or any other person, acquiring or strengthening a dominant position in the market for the treatment of medical and quarantine waste in the North Island; and
 - would not result, or would not be likely to result, in Medical Waste, or any other person, acquiring or strengthening a dominant position in the market for the collection of medical and quarantine waste in the North Island.

DETERMINATION ON NOTICE OF CLEARANCE

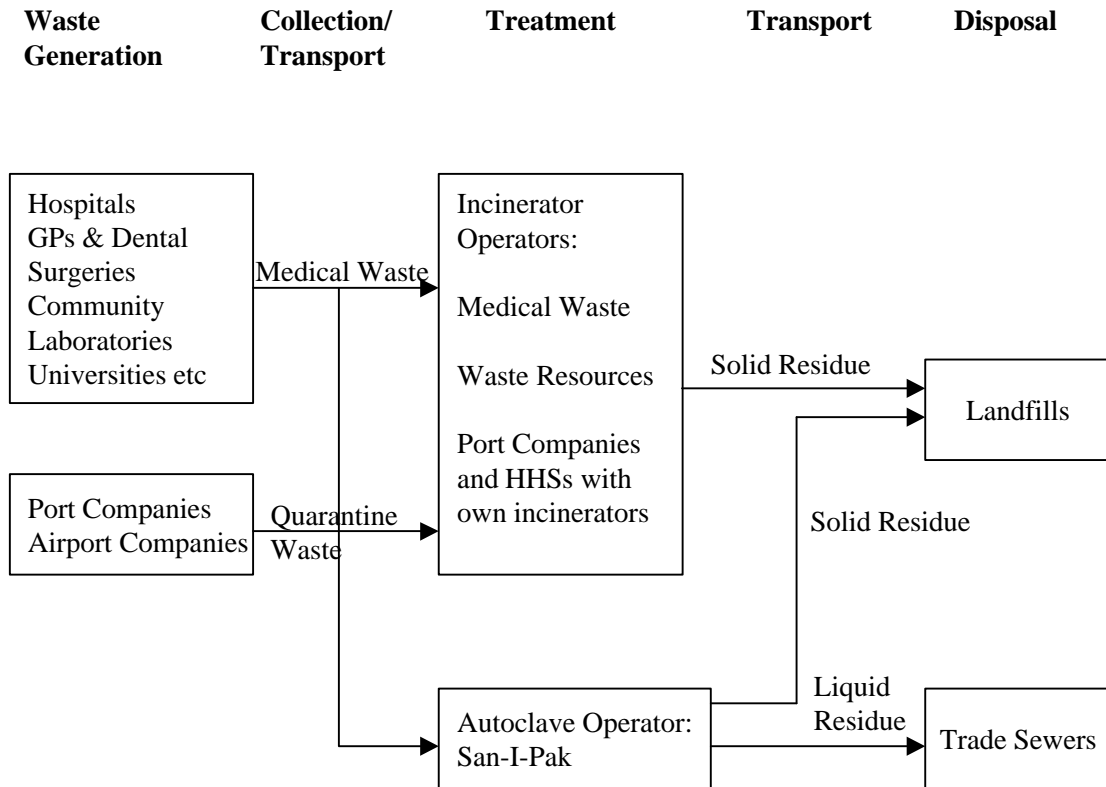
236. Accordingly, pursuant to section 66(3) of the Commerce Act 1986, the Commission determines to decline to give clearance for the acquisition by Medical Waste Group Limited of the business of San-I-Pak (NZ) Ltd.

Dated this day of March 2000

The Commission

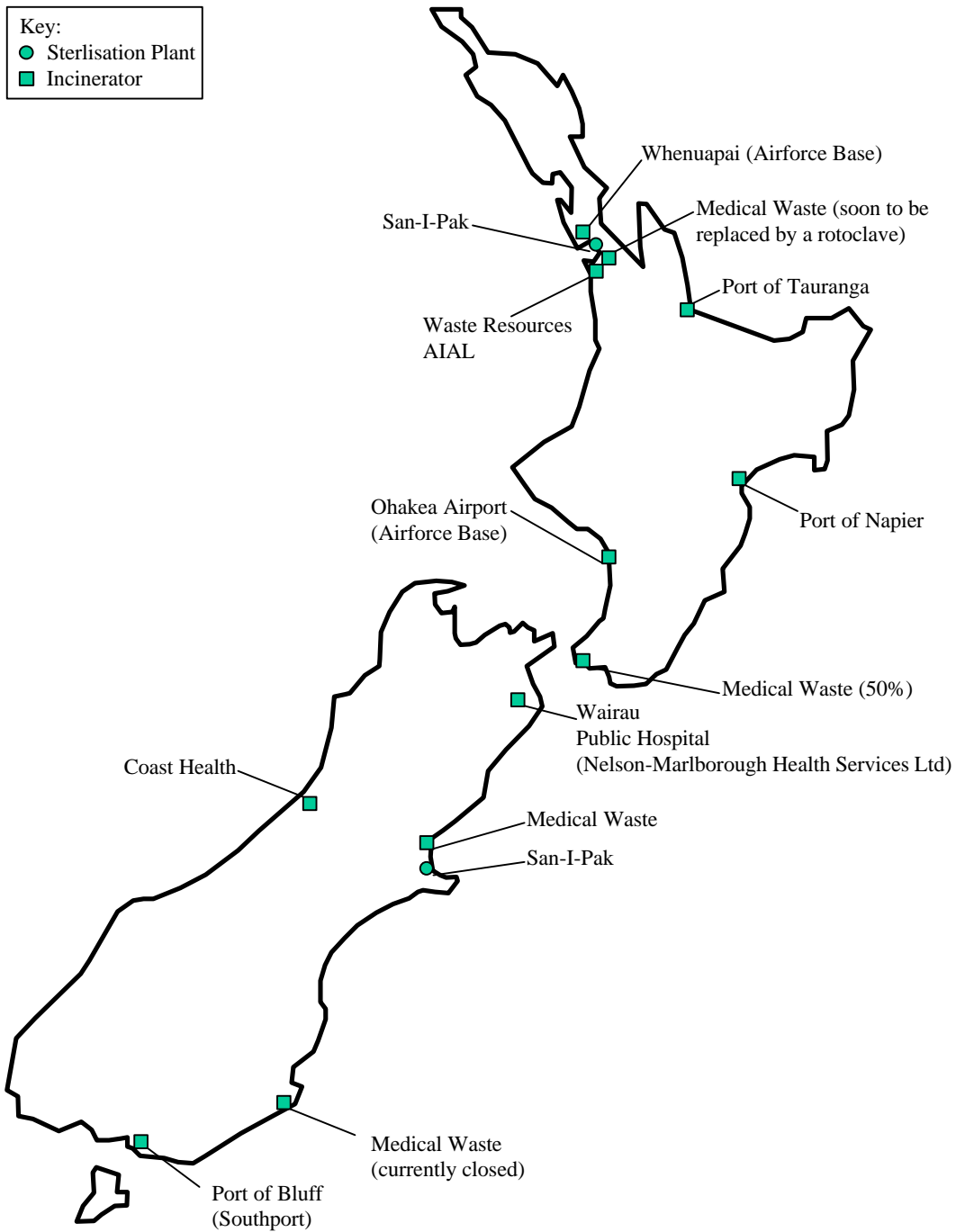
APPENDIX A

**THE PROCESS FOR THE
COLLECTION, TREATMENT AND
DISPOSAL OF MEDICAL AND QUARANTINE WASTE**



APPENDIX B

LOCATION OF MEDICAL AND QUARANTINE
WASTE TREATMENT PLANTS
IN NEW ZEALAND



APPENDIX C
CONFIDENTIAL