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Report of the

Minister of Commerce and  
Minister for the Environment  
on the operation of the

# OZONE LAYER PROTECTION ACT 1996

for the period ended  
31 December 2008

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*Presented to the House of Representatives Pursuant to  
Subsection (2) of Section 30, of the Ozone Layer Protection Act 1996*

## CONTENTS

1	PURPOSE .....	3
2	HIGHLIGHTS OF ACCOMPLISHMENTS TO DATE.....	3
3	OPERATION OF THE ACT.....	3
3.1	Administration .....	3
3.2	Enforcement.....	4
4.	CONTROLLED SUBSTANCES .....	4
4.1	Hydrochlorofluorocarbons .....	4
4.1.1	Domestic Consumption .....	4
4.1.2	Domestic Wholesaler Permits .....	5
4.1.3	Comparison with International Obligations .....	6
4.1.4	Ongoing trend for HCFCs .....	7
4.2	Methyl Bromide .....	7
4.2.1	Non-Quarantine and Pre-Shipment Use .....	8
4.2.2	Ongoing trend for QPS Methyl Bromide.....	8
5	PROHIBITED SUBSTANCES .....	8
6	EXPORTS OF CONTROLLED SUBSTANCES .....	9
	APPENDIX I: EXEMPTIONS .....	10

## LIST OF TABLES

<b>Table 1</b>	<i>HCFC Consumption: ODP tonnes .....</i>	<i>4</i>
<b>Table 2</b>	<i>HCFC Consumption: metric tonnes .....</i>	<i>5</i>
<b>Table 3</b>	<i>HCFC Wholesaler permits .....</i>	<i>5</i>
<b>Table 4</b>	<i>HCFC Phase-out Schedules.....</i>	<i>6</i>
<b>Table 5</b>	<i>Methyl Bromide Imports and Exports.....</i>	<i>8</i>
<b>Table 6</b>	<i>Import Exemption Summary .....</i>	<i>9</i>

## LIST OF FIGURES

<b>Figure 1</b>	<i>Montreal Protocol vs New Zealand Phase-out Schedules .....</i>	<i>7</i>
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## ABBREVIATIONS

CFC chlorofluorocarbon

HCFC hydrochlorofluorocarbon

ODP ozone-depleting potential

QPS quarantine and pre-shipment

# **1 PURPOSE**

This report is provided to meet the requirement of section 30 of the Ozone Layer Protection Act 1996 (the Act). The Act requires that the Minister of Commerce and the Minister for the Environment prepare and lay before the House of Representatives a report describing the operation of the Act during that year. This report covers the full calendar year from 1 January 2008 to 31 December 2008.

The purpose of the Act is to:

- Help protect human health and the environment from adverse effects resulting from, or likely to result from, human activities which modify or are likely to modify the ozone layer;
- Phase-out ozone-depleting substances as soon as possible, except for essential uses;
- Give effect to New Zealand's obligations under the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer.

## **2 HIGHLIGHTS OF ACCOMPLISHMENTS TO DATE**

New Zealand has phased out the import of all required ozone-depleting substances and is in compliance with its obligations under the Vienna Convention, and the subsequent Montreal Protocol on Substances that Deplete the Ozone Layer (the Protocol).

The import of halons was phased out by 1994, and chlorofluorocarbons (CFCs), other fully halogenated CFCs, carbon tetrachloride, methyl chloroform and hydrobromofluorocarbons by 1996. The import of methyl bromide for non-quarantine and pre-shipment purposes ended in 2007.

New Zealand does not manufacture any of the substances controlled under the Protocol. Domestic controls set out in the Ozone Layer Protection Regulations 1996 (the Regulations) progressively restrict volumes that are imported.

The remaining controlled substances are the hydrochlorofluorocarbons (HCFCs) which will be phased out by 2015. While imports of methyl bromide for quarantine and pre-shipment purposes require permits under the Regulations to meet reporting obligations under the Protocol, they are not required to be phased out.

## **3 OPERATION OF THE ACT**

### **3.1 Administration**

The Act and the Regulations are administered by the Ministry for the Environment. The Regulations are implemented by the Ministry of Economic Development. The New Zealand Customs Service enforces the import and export controls at New Zealand's borders.

## 3.2 Enforcement

In 2008, the Ministry of Economic Development successfully prosecuted two refrigeration engineers under section 13(f) of the Act for reckless discharge of an ozone-depleting substance. Each was fined \$750 plus court costs.

## 4. CONTROLLED SUBSTANCES

The Protocol measures ozone-depleting substances in ozone-depleting potential (ODP) tonnes as listed in Annexes to the Protocol. ODP tonnes are metric tonnes multiplied by the relevant ODP factor, and are a measure of relative environmental damage, not physical quantity. The standard measurement of ODP is CFC-11 where one metric tonne is equal to one ODP tonne.

### 4.1 Hydrochlorofluorocarbons

Hydrochlorofluorocarbons (HCFCs) are refrigerant gases that are used in refrigeration and air conditioning units, heat pumps and other heat transfer equipment. HCFCs are also used in foam products such as building insulation. HCFCs largely replaced the more ozone-depleting CFCs.

#### 4.1.1 Domestic Consumption

An entitlement to import HCFCs allows import up to a specified maximum ODP value. There are many different types of HCFCs but the ones that have been imported into New Zealand, either singly or in blends, are listed in Tables 1 (ODP tonnes) and Table 2 (metric tonnes).

**Table 1** HCFC Consumption: ODP tonnes

Substance	HCFC-22	HCFC-123	HCFC-124	HCFC-141b	HCFC142b	Total
ODP	0.055	0.02	0.022	0.11	0.065	ODP tonnes
1995	36.25	0.02	0.17	3.16	0.00	39.60
1996	30.38	0.07	0.08	9.36	0.04	39.93
1997	19.67	0.02	0.06	2.20	0.29	22.24
1998	22.00	0.03	0.06	5.82	0.56	28.47
1999	23.47	0.00	0.06	4.52	0.54	28.59
2000	21.78	0.13	0.01	3.04	0.39	25.35
2001	19.94	0.00	0.02	3.49	0.15	23.60
2002	19.71	0.00	0.04	3.28	0.70	23.73
2003	19.54	0.00	0.02	5.95	0.41	25.92
2004	19.97	0.00	0.06	6.87	0.34	27.24
2005	21.22	0.00	0.01	2.90	0.31	24.44
2006	15.82	0.01	0.00	5.26	0.22	21.31
2007	18.60	0.01	0.06	4.34	0.07	23.08
2008	13.66	0.02	0.00	5.24	0.13	19.05

**Table 2** *HCFC Consumption: metric tonnes*

<b>Year</b>	<b>HCFC-22</b>	<b>HCFC-123</b>	<b>HCFC-124</b>	<b>HCFC-141b</b>	<b>HCFC142b</b>	<b>Total (metric tonnes)</b>
1995	659.10	3.70	7.60	56.00	0.00	726.40
1996	552.30	1.10	3.70	85.10	0.60	642.80
1997	357.80	1.10	3.00	20.00	4.60	386.50
1998	400.00	1.50	2.90	52.90	8.60	465.90
1999	426.70	0.00	2.40	41.10	8.30	478.50
2000	396.10	6.80	0.50	27.70	6.10	437.20
2001	362.60	0.00	0.80	31.70	2.30	397.40
2002	358.40	0.00	1.80	29.80	10.80	400.80
2003	355.40	0.00	0.80	54.10	6.20	416.50
2004	363.00	0.00	2.60	62.40	5.20	433.20
2005	385.80	0.00	0.40	26.40	4.70	417.30
2006	294.00	0.40	0.20	47.80	3.40	345.80
2007	338.20	0.10	2.70	39.50	1.10	381.60
2008	248.40	0.18	0.00	47.66	2.04	298.28

The table above shows that the total import of HCFCs has been reduced from 1995 from 726.4 metric tonnes to 298.28 metric tonnes in 2008. This is a reduction of 41 per cent over that time.

There is a 59 per cent reduction in HCFC imports between 2007 and 2008. This reduction is attributed to transition to the widely known and available technically and economically feasible alternatives, reduced HCFC servicing requirements as equipment is required and progressive cancellation of unused entitlements.

#### 4.1.2 Domestic Wholesaler Permits

As required by clause 11(3) of the Regulations, the names of the persons to whom wholesaler permits were granted in 2008 and the ODP amount permitted are set out in Table 3.

**Table 3** *HCFC Wholesaler permits*

<b>Name</b>	<b>Amount (ODP tonnes)</b>
BOC NZ Ltd	0.625
Heatcraft New Zealand Ltd	0.625
Patton Refrigeration Ltd	0.625
Refrigerated Engineering Co Ltd	0.625
<b>TOTAL</b>	<b>2.500</b>

#### 4.1.3 Comparison with International Obligations

New Zealand is accelerating the phase out of HCFCs to that required by the Protocol. A comparison of phase-out schedules is in Table 4. This is graphically represented in Figure 1, with the addition of actual import amounts to assess progress.

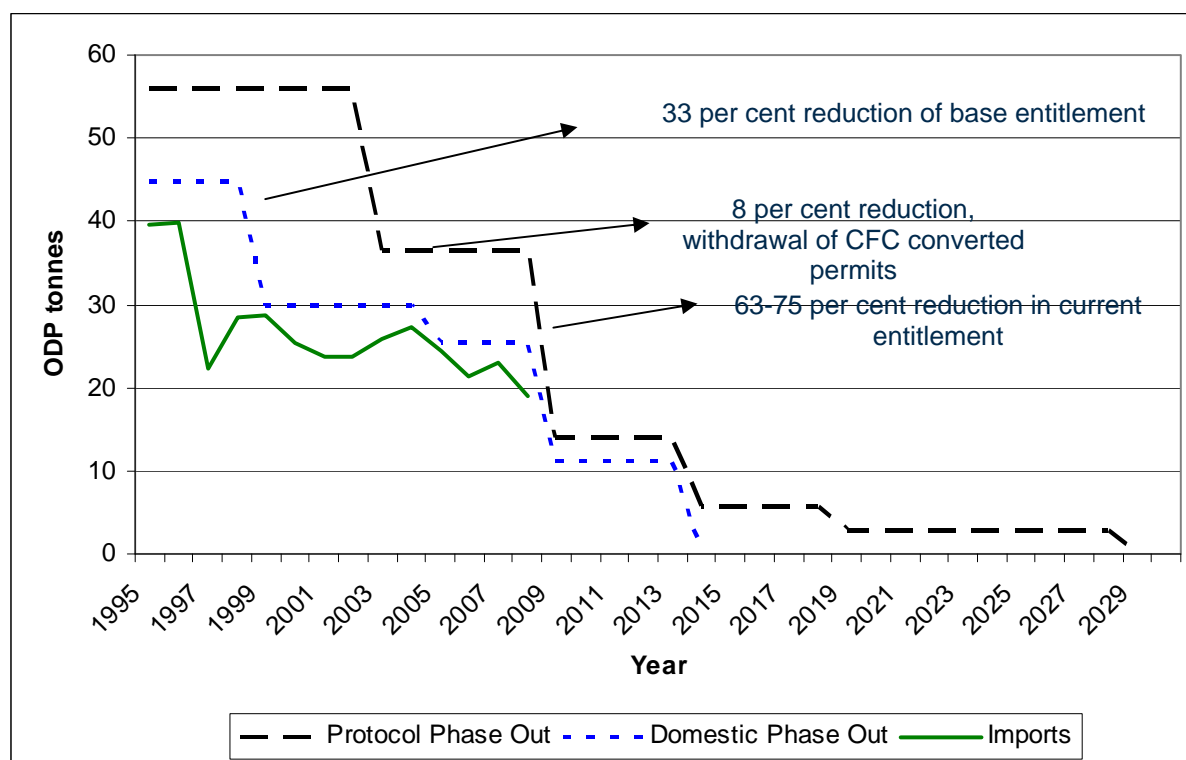
**Table 4** *HCFC Phase-out Schedules*

Year	New Zealand Schedule	Montreal Protocol Schedule
1996	Base quota established from the users' nominated year, 1991, 1992 or 1993.  CFC import permits 'converted' to allow a percentage import of replacement HCFCs.  Reduction of base quota by 25 per cent.	Net imports capped at 1989 levels plus 2.8 per cent of 1989 CFC imports.
2000	Reduction of original reduced quota by 33 per cent.	
2001	Special Permits issued. <sup>1</sup>	
2004		35 per cent reduction of base net imports <sup>2</sup>
2006	Complete withdrawal of converted CFC permits.	
2010	Reduction of original reduced quota and Special Permits by 75 per cent.	75 per cent reduction of base net imports.
2015	100 per cent reduction – imports prohibited.	90 per cent reduction of base net imports.
2020		99.5 per cent reduction of base net imports. Remainder for servicing of existing equipment only.
2030		100 per cent reduction – net imports prohibited.

<sup>1</sup> In 2001, a quantity of unused entitlement was cancelled under the Regulations and, along with entitlement previously unallocated, was reissued as 'special' permits. The allocation was mainly to the foams sector. These permits, which total 3.5 ODP tonnes, have been incorporated into the general phase-out timetable.

<sup>2</sup> "Net imports" refers to the Protocol definition of production plus imports minus exports.

**Figure 1** Montreal Protocol vs New Zealand Phase-out Schedules



#### 4.1.4 Ongoing trend for HCFCs

The next phase-down of HCFCs is 1 January 2010 when a 63 per cent reduction is required for base year permits, and a 75 per cent decrease is required for Special Permits. Indications from industry at this point are that the refrigeration and air-conditioning servicing sector will be able to manage the phase-down but that the insulation foams manufacturing sector may have some difficulties overcoming the technical and economic challenges to move to the alternative gases (hydrofluorocarbons or hydrocarbons). This will however, not impact the phase down schedule.

## 4.2 Methyl Bromide

Methyl bromide is used in New Zealand to kill biosecurity risk organisms, either within New Zealand or to fumigate goods prior to export because of requirements of the trading partner country. The most common goods fumigated with methyl bromide are log and timber products, vehicles, scrap metals and fruits and vegetables.

There are two uses of methyl bromide under the Protocol. Table 5 shows imports, exports and net consumption both in metric tonnes and ODP tonnes:

1. Non-quarantine and pre-shipment (non-QPS) use (controlled and imports ended in 2007).
2. Quarantine and pre-shipment use (QPS) (not controlled, and there is no phase-out schedule).

**Table 5** *Methyl Bromide Imports and Exports*

Year	Non-QPS Imports	QPS Imports	Total Imports	Exports	Net Consumption (metric tonnes)	Net Consumption (ODP tonnes)
1991	150.0	15.0	165.0	0.0	165.0	99.0
1994	147.5	38.5	186.0	0.0	186.0	111.6
1995	128.5	55.9	185.5	1.0	184.5	110.7
1996	102.9	50.7	160.1	6.5	153.6	92.2
1997	96.1	56.4	158.1	5.7	152.4	91.4
1998	35.0	97.2	136.3	4.1	132.2	79.3
1999	66.3	59.8	131.0	4.9	126.1	75.7
2000	66.7	58.1	131.0	6.3	124.7	74.8
2001	26.3	51.2	85.8	8.3	77.5	46.5
2002	43.8	100.1	156.2	12.3	143.9	86.3
2003	20.9	176.8	212.6	14.9	197.7	118.6
2004	27.50	204.8	242.8	10.5	232.3	139.4
2005	40.50	151.4	191.9	10.8	181.1	108.7
2006	30.50	214.7	245.2	7.3	237.9	142.7
2007	16.80	170.2	187.0	9.8	177.2	106.3
2008	0.00	289.0	289.0	0.6	288.4	173.0

#### 4.2.1 Non-Quarantine and Pre-Shipment Use

Methyl bromide for non-QPS use was required to be phased out by 1 January 2005. New Zealand was permitted critical use exemptions by the Parties to the Protocol from 2005-07 to import methyl bromide for specified uses in the horticultural industry (strawberry fruiting beds and strawberry runner beds). No critical use exemptions were applied for in 2008. Stocks of methyl bromide imported prior to 31 December 2007 are still able to be used.

#### 4.2.2 Ongoing trend for QPS Methyl Bromide

The amount of QPS methyl bromide used in any one year reflects trade figures and therefore levels of biosecurity treatments. Imports of methyl bromide increased in 2008 by 70 per cent from the preceding year. This can be largely accounted for by a 98 per cent increase in 2008 of log exports to China. (Source: Statistics New Zealand)

## **5 PROHIBITED SUBSTANCES**

The import of ozone-depleting substances already phased out is prohibited. The import of certain goods containing some of these substances is also prohibited.

Under clause 28 of the Regulations certain prohibited controlled substances and goods may be imported if the Minister of Commerce grants an exemption.

As required by Section 30(3) (a) of the Act, details of all exemptions to import prohibited substances or products, are listed in Appendix I pursuant to clause 36 of the Regulations.

In summary, there were 51 exemptions granted in 2008 as shown in Table 6:



**Table 6** *Import Exemption Summary*

<b>Purpose of Exemption</b>	<b>Number</b>
Essential or critical use	1
Aerosol or fire extinguisher necessary for human health or safety	44
Transshipment	6

## **6 EXPORTS OF CONTROLLED SUBSTANCES**

New Zealand does not manufacture any controlled substances but does periodically export quantities of substances that have previously been imported. A quantity of 7.7 tonnes of HCFC was exported to the Pacific region in 2008 while 2.5 tonnes were exported to Australia. Exports of methyl bromide to the Pacific region totalled 0.6 tonnes in 2008.

# APPENDIX I: EXEMPTIONS

## Import Exemption Reasons

Note	Shorthand	Reason
1	Necessary aerosol/extinguisher	This exemption is granted under Regulation 31(1) in respect of the importation of any aerosol or fire extinguisher that is to be used only for a use that is necessary for human health or safety.
2	Replacement of export	This exemption is granted under Regulation 32 in respect of any substance or goods that are imported into New Zealand only for the purpose of replacing any substance or goods already transhipped into another ship or aircraft for carriage to a destination that was outside the territorial limits of New Zealand.
3	Necessary HCFC aerosol	This exemption is granted under Regulation 29(c) for HCFC that is to be used in the manufacture of aerosols that are to be used only for a use that is necessary for human health or safety.
4	Transhipment	This exemption is granted under Regulation 32 in respect of any substance or goods that are imported into New Zealand only for the purpose of being transhipped into another ship or aircraft for carriage to a destination that is outside the territorial limits of New Zealand.
5	ODS fire extinguisher	This exemption is granted under Regulation 29(d) for any bulk recycled substance, or any bulk controlled substance that is not a halon, that is to be used only in the servicing of fire extinguishers in circumstances where the substance cannot be obtained from supplies in New Zealand and where the servicing is required either because the fire extinguisher was used in a fire or as a result of a loss of halon that was outside the control of the applicant.
6	Halon for refrigeration	This exemption is granted under Regulation 29(a) for bulk recycled halon-1301 that is to be used only for refrigeration purposes and only in circumstances where the use of halon-1301 for refrigeration purposes is necessary for human health or safety and halon-1301 cannot be obtained from supplies in New Zealand.
7	Essential aerosol/extinguisher	This exemption is granted under Regulation 29(b) for bulk CFC, halon, carbon tetrachloride, methyl chloroform, or HBFC that is to be used in the manufacture of aerosols or fire extinguishers for a use determined by the Parties to the Montreal Protocol to be an essential use and that use is necessary for human health or safety.
8	Essential or Critical Use	This exemption is granted under Regulation 29(e) for any bulk controlled substance that is to be used only for a use determined by the Parties to the Montreal Protocol to be an essential use or a critical use.

#	Company Name	Product Name	Quantity (in Kgs)	Substance	Reason for exemption	Issue Date	Conditions
1	Airwork New Zealand	Fire extinguisher(s)	1.0	Halon 1301	Note 1	8-Jan-08	None
2	Field Air Engineering Ltd.	Fire extinguisher(s)	28.7	Halon 1301	Note 1	14-Jan-08	None
3	Helicopters New Zealand	Fire extinguisher(s)	1.0	Halon 1301	Note 1	24-Jan-08	None
4	Hawke's Bay Aviation	Fire extinguisher(s)	1.1	Halon 1301	Note 1	25-Jan-08	None
5	Pacific Blue Airlines	Fire extinguisher(s)	6.8	Halon 1211	Note 1	25-Jan-08	None
6	Air Nelson Ltd	Fire extinguisher(s)	5.0	Halon 1301	Note 1	25-Jan-08	None
7	Air National Corporate Ltd.	Fire extinguisher(s)	1.6	Halon 1211	Note 1	30-Jan-08	None
8	Hawke's Bay Aviation	Fire extinguisher(s)	1.0	Halon 1301	Note 1	7-Feb-08	None
9	Air New Zealand	Fire extinguisher(s)	22.4 4.5	Halon 1301 Halon 1211	Note 1	8-Feb-08	None
10	Air New Zealand	Fire extinguisher(s)	22.4 4.5	Halon 1301 Halon 1211	Note 1	8-Feb-08	None
11	Ascernus Aero	Fire extinguisher(s)	1.3	Halon 1211	Note 1	12-Feb-08	None
12	Hawker Pacific	Fire extinguisher(s)	1.0	Halon 1211	Note 1	13-Feb-08	None
13	Patton Refrigeration Ltd.	HCFC	2624.8 158.2	HCFC-R22 HCFC-R406a	Note 2	18-Feb-08	None
14	Hawke's Bay Aviation	Fire extinguisher(s)	1.0	Halon 1301	Note 1	20-Feb-08	None
15	Ascernus Aero	Fire extinguisher(s)	0.5	Halon 1301	Note 1	20-Feb-08	None

#	Company Name	Product Name	Quantity (in Kgs)	Substance	Reason for exemption	Issue Date	Conditions
16	Oceania Aviation	Fire extinguisher(s)	2.0	Halon 1301	Note 1	7-Mar-08	None
17	SGS New Zealand Ltd	Methyl Bromide	0.001	Methyl Bromide	Note 8	13-Mar-08	Yes, as detailed below  1. That the use is restricted to laboratory use and analytical purposes. 2. That the pure substance is certified as produced to a purity of 99.5 per cent. 3. That the pure substance is supplied only in re-closable containers or high pressure cylinders smaller than three litres or in 10 millilitre or smaller glass ampoules, marked clearly as substances that deplete the ozone layer. 4. That used or surplus substance should be collected and recycled, if practical or the material should be destroyed if recycling is not practical.
18	Air Nelson Ltd	Fire extinguisher(s)	9.9 9.0	Halon 1301 Halon 1211	Note 1	25-Mar-08	None
19	Field Air Engineering Ltd.	Fire extinguisher(s)	14.1	Halon 1301	Note 1	27-Mar-08	None
20	Andrew Jowlett of Air Data Ltd.	Fire extinguisher(s)	2.0	Halon 1211	Note 1	1-Apr-08	None
21	Agricultural Fumigations	HCFC	2624.8 158.2	HCFC-R22 HCFC-R406a	Note 2	14-Apr-08	None
22	Helicopter New Zealand Ltd	Fire extinguisher(s)	1.1	Halon 1211	Note 1	28-Apr-08	None
23	Air New Zealand Engineering	Fire extinguisher(s)	39.6 4.8	Halon 1301 Halon 1211	Note 1	30-Apr-08	None
24	Air Nelson Ltd	Fire extinguisher(s)	10.0	Halon 1301	Note 1	1-May-08	None

#	Company Name	Product Name	Quantity (in Kgs)	Substance	Reason for exemption	Issue Date	Conditions
25	Air New Zealand Engineering	Fire extinguisher(s)	116.4 8.2	Halon 1301 Halon 1211	Note 1	6-May-08	None
26	Air New Zealand Engineering	Fire extinguisher(s)	6.0	Halon 1211	Note 1	19-May-08	None
27	Air National Ltd.	Fire extinguisher(s)	6.0	Halon 1301	Note 1	20-May-08	None
28	Hawker Pacific Ltd	Fire extinguisher(s)	1.22	Halon 1211	Note 1	6-Jun-08	None
29	Refrigeration Engineering Ltd.	HCFC	193.2	HCFC-R406a	Note 2	13-Jun-08	None
30	Hawke's Bay Aviation	Fire extinguisher(s)	1.9	Halon 1301	Note 1	20-Jun-08	None
31	Pacific Urethanes	HCFC	1586.0	HCFC R-141b	Note 2	1-Jul-08	None
32	Pacific Urethanes	HCFC	1634.0	HCFC R-141b	Note 2	1-Jul-08	None
33	Air New Zealand	Fire extinguisher(s)	17.66 1.24	Halon 1301 Halon 1211	Note 1	14-Jul-08	None
34	Agricultural Fumigations	Transshipment	6400.0	Methyl Bromide	Note 4	15-Jul-08	None
35	G H Whale	Fire extinguisher(s)	1.13	HCFC R-123	Note 5	15-Jul-08	None
36	Pacific Blue Airlines	Fire extinguisher(s)	76.6	Halon 1211	Note 1	21-Jul-08	None
37	Air New Zealand	Fire extinguisher(s)	44.79 4.8	Halon 1301 Halon 1211	Note 1	25-Jul-08	None
38	Hawker Pacific Ltd	Fire extinguisher(s)	1.2	Halon 1211	Note 1	6-Jun-08	None
39	Scott Finlayson	Fire extinguisher(s)	1.0	Halon 1211	Note 1	20-Aug-08	None

#	Company Name	Product Name	Quantity (in Kgs)	Substance	Reason for exemption	Issue Date	Conditions
40	Air New Zealand	Fire extinguisher(s)	11.4	Halon 1301	Note 1	4-Sep-08	None
41	Polynesian Airlines	Fire extinguisher(s)	2.0	Halon 1301	Note 1	3-Oct-08	None
42	Heliworks Queenstown Helicopters	Fire extinguisher(s)	2.0	Halon 1301	Note 1	13-Oct-08	None
43	Pacific Blue Airlines	Fire extinguisher(s)	22.9	Halon 1211	Note 1	13-Oct-08	None
44	Vause Trusts Partnerships	Fire extinguisher(s)	2.0	Halon 1301	Note 1	28-Oct-08	None
45	Aviation Technology	Fire extinguisher(s)	1.2	Halon 1301	Note 1	29-Oct-08	None
46	Airwork New Zealand	Fire extinguisher(s)	1.0	Halon 1301	Note 1	13-Nov-08	None
47	Air New Zealand	Fire extinguisher(s)	114.3 8.2	Halon 1301 Halon 1211	Note 1	18-Nov-08	None
48	Eagle Air Maintenance	Fire extinguisher(s)	4.52	Halon 1211	Note 1	24-Nov-08	None
49	Air New Zealand	Fire extinguisher(s)	114.0 16.4	Halon 1301 Halon 1211	Note 1	17-Dec-08	None
50	Lakeland Helicopters	Fire extinguisher(s)	3.0	Halon 1301	Note 1	18-Dec-08	None
51	Air New Zealand	Fire extinguisher(s)	91.0 4.8	Halon 1301 Halon 1211	Note 1	18-Dec-08	None