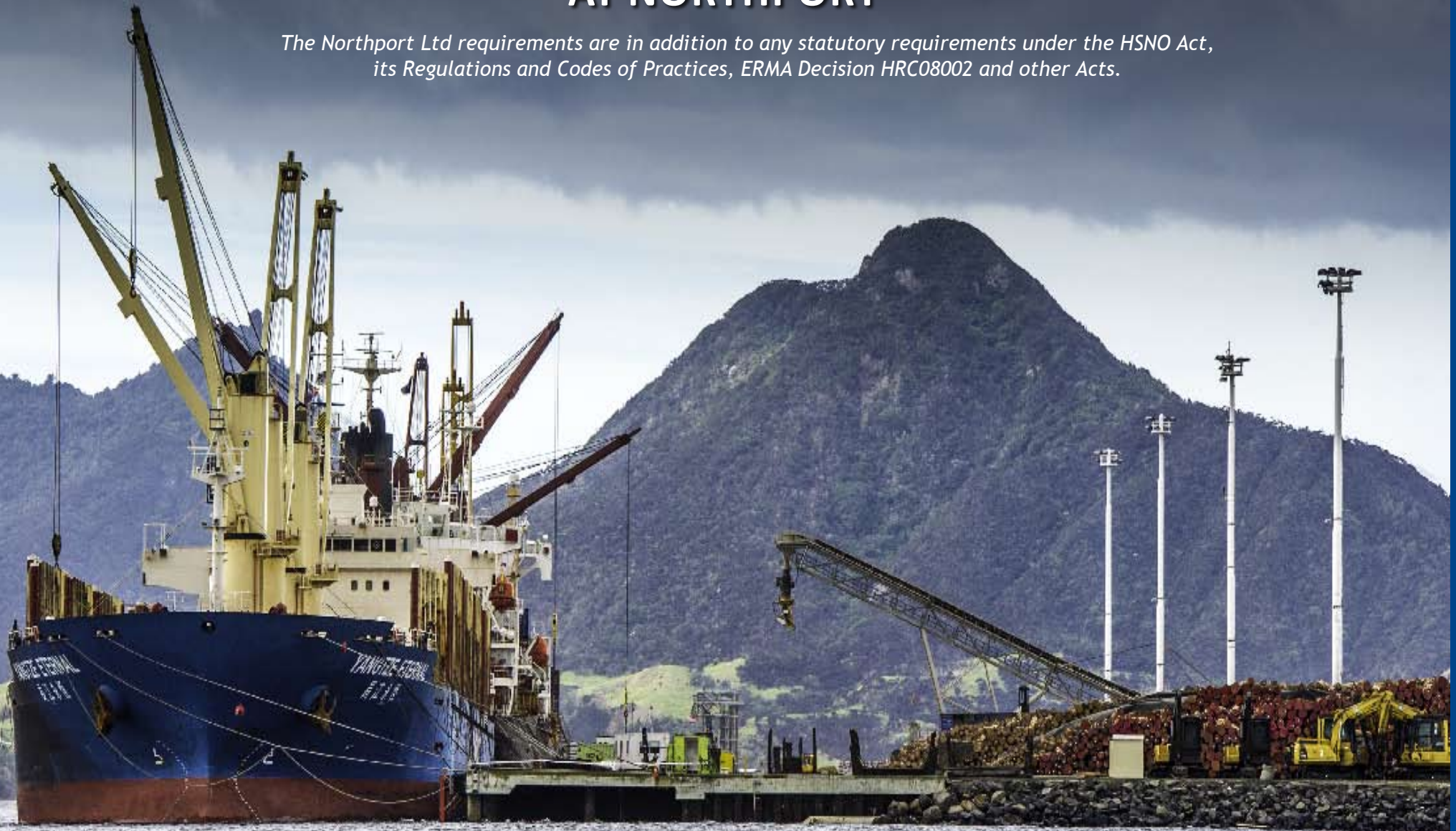


MINIMUM REQUIREMENTS FOR FUMIGATION OPERATIONS AT NORTHPORT

The Northport Ltd requirements are in addition to any statutory requirements under the HSNO Act, its Regulations and Codes of Practices, ERMA Decision HRC08002 and other Acts.



Executive Summary

Northport Limited as the owner of the Northport facility is committed to ensuring any operation within the Port is safe and meets all required legislative standards and controls.

To support this, Northport Limited has produced a number of documents specifying general minimum requirements and standards that apply at the Northport facility. This document focuses on fumigation operations. All fumigation operations must meet the minimum standards described within this document. Additional safety controls may also be required due to the specific hazardous substances being brought onto the facility. Northport documents specifying the general facility health and safety requirements and hazardous substance storage and cargo handling requirements should also be read in conjunction with this document.



Ships Berthed at Northport

Contents

Fumigation Related Terms

Overview

SECTION

1.0	General Requirements	5
2.0	Methyl Bromide - Technical Data	7
3.0	Management of the Risk of Fumigation	9
4.0	Monitoring	11
5.0	Notification of Fumigation	12
6.0	Signage	13
7.0	Ventilation and Clearance	14
8.0	Storage of Fumigants within Northport	14
9.0	Fumigation of Logs and Timber Stacks	16
10.0	Fumigation of Logs in ships' holds	18
11.0	Fumigation in Sheds and Containers	19
Appendix 1	Fumigation at Northport (Marsden Point) Approved Code of Practice	20
Appendix 2	ERMA Decision HRC08002	21
12.0	Contact Details	23

Document Revision History

Revision Number	Revision Date	Author	Reviewed By	Revision type	Pages Reviewed
Issue 1	January 2014	N Dobbs	J Moore	First issue	All
Issue 2	July 2015	D Finchett	J Moore	Minor Update	Exec Summary & PSC Terminology

Aluminium Phosphide

Hazardous Substance Class 4.3A, 6.1A, 6.3B, 6.4A, 6.9A, 9.1A, 9.3A.

Approved Handler

Means a person who has been issued with a Test Certificate after meeting HSNO (Personal Qualification) Regulations requirements by a Test Certifier.

Buffer Zone

Means an area extending outwards in all directions from the perimeter of each space where fumigation is being carried out, to a distance at which the TEL will not be exceeded.

Buffer Zone Period

The time from starting to apply a fumigant until fumigation ceases and (for Methyl Bromide) until air quality monitoring shows that the concentration is below detectable levels.

Control Substances Licence Holder

Is a person which is aged 17 years or older, requires the fumigant for their work, be a fit and proper person and be adequately trained to use the fumigant (ie be an Approved Handler of the fumigant) and has been issued with a licence under the HSNO Act.

LEL - Lower Explosive Limit

A measure of a gas or vapour in air, given an ignition source, capable of producing a flash of fire. Levels lower than LEL concentrations are unable to burn in air.

Methyl Bromide

Hazardous Substance Class 2.1.1B, 6.1B, 6.6B, 6.8B, 6.9A, 9.1A, 9.2A, 9.3B, 9.4A.

Monitored Safety Zone

A restricted area of no less than 15 m surrounding the Risk Area which will be monitored to ensure it is safe for other port users to enter as required.

Notification of Fumigation

Required documented notification under ERMA HRCO8002 by Approved Handler to the Northport Port Services Local Fire Service and other identified relevant parties, 24 hours prior to fumigation occurring.

Fumigation Area Signage

Signs identifying the extent of fumigation, Approved Handler in control, warnings of the type of fumigation and that it is toxic to humans.

Northport

The commercial port facility at Marsden Point New Zealand.

NPL - Northport Ltd

Owner and operator of Northport facilities, also referred to as the Company.

Non Occupational Bystander

Any person that is not employed to work at Northport where fumigation is occurring or is likely to occur (ie general public).

Occupational Bystander

Any person that is to undertake work at Northport where fumigation is occurring or likely to occur.

Port User

An operator which has received approval to operate at Northport by Northport Ltd.

Port User Rules

Are the "Port User Company Operating Rules" issued by Northport Ltd.

RPE - Respiratory Protection Equipment

Suitable protection against hazardous substances used during fumigation.

Risk Area

Means an area of no less than 5m in all directions adjacent to all spaces where fumigant concentrations may exceed the relevant WES level. No person except fumigation staff are permitted within this area whilst goods are being fumigated.

SDS - Safety Data Sheet

Specific information required to be made available by the manufacture/importer/exporter of all hazardous substances.

TEL - Tolerable Exposure Limit

A maximum concentration of a toxic substance in an environment that will present a low level of risk to people exposed to that substance.

WES - Workplace Exposure Standard

Means an airborne concentration of a particular substance in a persons breathing zone, set within Regulation 29 & 30 of the Hazardous Substance (Classes 6, 8 & 9 Controls) Regulations 2001.

24 hour Exposure Level

The average level of exposure for each 24 hour time period from the start of ventilation until the end of the buffer zone period.

Overview

The use of broad spectrum fumigants is required by New Zealand importing countries and the associated exporters and is closely regulated to protect employees, residents and the environment from harm.

Northport Ltd strongly supports controls established within the Hazardous Substances and New Organism Act 1996 and Codes of Practices relating to fumigation which are designed to ensure the gas poses no health risks to work places, port users and community.

In addition to the Northport Limited minimum requirements, a site specific Approved Code of Practice No. HSNOCOP 52 version 1.0, issued pursuant to Sections 78 and 79 of the Hazardous Substances and New Organisms Act has been issued relating to Northport.

The process of fumigation of export cargoes is to primarily protect the environments of overseas countries from three potentially harmful NZ forest beetles, hylastes and hylurgus bark beetles, and the burnt pine beetle (*Arhopalus ferus*).

Based on the needs of export countries the fumigant selected for log and wood fumigation is either methyl bromide or aluminium phosphide.

In order to protect our economy and environment, the New Zealand Government insists on methyl bromide fumigation of selected imported goods from other countries, including some food products.

Northport site requirements are principally focused on methyl bromide fumigation and all references to monitoring of buffer zone boundaries apply only to methyl bromide. The basic principles of ensuring the safety of all who work or enter the port apply to all fumigants.

Aluminium phosphide is a slow release fumigant installed within cargo holds while in port of a vessel bound for China and is released on passage.

The use of fumigants requires the fumigator to hold a current Controlled Substances Licence and an Approved Handler Certificate. All fumigation operations must comply with Bio-security regulations and meet the HSNO Act, regulations, transfer notices and codes of practice approved by the Environmental Protection Authority (EPA).



1.0 General Requirements

- 1.1 The requirements of these site procedures are in addition to the statutory requirements for fumigation under the HSNO Act, the ERMA Decision HRC08002 and the Acts, Regulations and Approved Codes of Practice.
- 1.2 Northport Ltd will ensure monitoring of fumigation activities meet the Northport and HSNO Act requirements.
- 1.3 These procedures apply to all fumigation completed inside the Northport facility including logs under sheets, ship holds and timber in general yards, sheds and containers.
- 1.4 The site procedures are principally focused on methyl bromide fumigation and all references to monitoring of buffer zone boundaries apply only to methyl bromide.
- 1.5 The basic principles of ensuring the safety of all who work or enter the port area apply to all fumigants.
- 1.6 These site procedures must be read in conjunction with the;
 - Hazardous Substances And New Organisms Act 1996 (“the HSNO Act”) and Regulations and the Approved Code of Practice under the HSNO Act 1996.
 - The Control and Safe use of Fumigation prepared by the Pest Management Association of NZ which meets the requirements of the HSNO Act and HSE Act.
 - The Resource Management Act 1991.
 - Environmental Risk Management Authority Decision HRC08002.
 - HSNO COP 52 - Approved Code of Practise – Fumigation at Northport (Marsden Point).
 - Other related Industry Codes of Practice relating to the safe handling of timber products.
 - Northport Hazardous Substances Consent.
 - Australian/New Zealand Standards which relate to Flammable and Toxic Substances.



Fumigators working within the log yard

- 1.7 NPL provides safety inductions to all Port Users entering the Port facility.
- 1.8 Each Port User undertaking fumigation must provide NPL with a detailed risk assessment and its health and safety procedures relating to all proposed fumigation operations within Northport. These procedures shall be provided to the NPL HSE Manager prior to any such fumigation operation commencing.
- 1.9 NPL may as part of Port User Company Induction requirements establish additional requirements on Port Users that undertake fumigation to ensure their staff have been sufficiently trained and are experienced in fumigation, or supervised by such trained and experienced person.
- 1.10 Fumigation Emergency Plans are required by each Port User that undertakes fumigation and shall be submitted to the NPL HSE Manager for review annually. NPL are to be advised of any change to emergency plans as they are made. Any emergency or incident that occurs involving any part of the fumigation operations must be reported to NPL immediately.
- 1.11 Fumigants shall only be handled and used while under direct control of a person that holds a Controlled Substance Licence and is an Approved Handler relating specifically to the fumigant being used.
- 1.12 All fumigation shall be documented and the records made available to NPL and any Regulatory Authorities upon request. Documentation relating to all fumigation operations in progress is to be immediately available and all other documentation within reasonable time during work hours. Information is to include but is not limited to:
 - Notification of Intended Fumigation
 - Fumigant Safety Data Sheet
 - Notification of Completion of Fumigation
 - Risk and Monitored Safety Zone Results
 - All fumigant storage requires Northport Ltd consent



24 Hour Northport Port Services Centre



Northport Security Vehicle

1.13 All product being fumigated shall be arranged and managed so that minimum buffer zones for occupational and non-occupational bystanders are complied with as detailed in the ERMA Decision HRC08002, with the exception of holds being ventilated in accordance with the Approved Code of Practice - Fumigation at Northport (Marsden Point) HSNOCOP 52.

Despite minimum distances described within this document and that of legislation, fumigation should be carried out as far away from areas occupied by personnel, buildings, parking and toilet areas as possible.

Fumigators can use a smaller buffer zone only if described specifically within an Approved Code of Practice approved by the EPA.

2.0 Methyl Bromide - Technical Data/Safety Information

2.1 Methyl Bromide Hazardous Substances Classification:

- 2.1.1B - Flammable Gas
- 6.1B, 6.6B, 6.8B, 6.9A - Toxic
- 8.2C, 8.3A - Corrosive
- 9.1 A, 9.2 A, 9.3 B, 9.4 A - Eco-toxic

The current New Zealand Workplace Exposure Standard (WES) for Methyl Bromide is 5 ppm WES = Workplace Exposure Standard

TELS = Tolerable Exposure Limits

- Annual = 0.0013 ppm (outside the buffer zone)
- 24 hours = 0.333 ppm
- 1 hour = 1 ppm

Note: The WES relates to workplace exposure levels and the TEL relate to both the workplace and wider community. Level of Methyl Bromide below these levels are considered to have no harmful effects and are safe.

Methyl Bromide at normal temperature is a colourless gas 3.27 times heavier than air which boils at 4 degrees Celsius. In air Methyl Bromide can produce a faint, sweet smell and is considered to be non-flammable.



Methyl Bromide Injection



Monitoring Safety Zone

- 2.2 Health Effects - Direct contact with methyl bromide can cause blistering and localised redness and swelling of the skin. It may enter the body by inhalation (causing reparatory irritation/pulmonary oedema) and absorption via the skin with direct contact with liquid Methyl Bromide.
- **Early Symptoms**
 - Dizziness, headache, tingling of the lips nausea and vomiting, weakness and collapse.
 - **Delayed Symptoms**
 - Lung edema may develop 2 - 48 hours after exposure; if accompanied by cardiac irregularities, can lead to death.
 - **Repeated Overexposure**
 - Blurred vision, staggering gait, and mental imbalance
 - Recovery is probable after periods of non-exposure.
- 2.3 Immediate First Aid - The general first aid measures for all fumigants are similar and need to start by taking any affected person into fresh air and keep them quiet and warm. Seek medical attention promptly (dial 111) and provide the Safety Data Sheet to the doctor. If breathing stops administer artificial respiration using oxygen and a suitable mechanical device such as a bag and mask (Do Not use month-to-month resuscitation).
- 2.4 Direct Contact/Contamination - If contaminated with liquid Methyl Bromide remove clothing and flood the contaminated part of the skin with water. Seek medical advice and if reddening of the skin or blistering occurs before this is possible, cover the affected parts loosely with sterile dressings. The affects of Methyl Bromide can be delayed, if symptoms of poisoning are observed, take the person to hospital immediately.

IN THE EVENT OF AN UNCONTROLLED RELEASE.

- **Move upwind**
- **Notify Northport Port Services and the Fumigator immediately**
- **Stay out of the area, especially directly down wind**
- **Only after gas monitoring has confirm the gas has dispersed should normal access return to those affected areas.**



Northport Log Yard

3.0 Management of the Risk of Fumigation

- 3.1 **Fumigation Area** - The goods under fumigation must always be covered and made gas-tight. No one should enter this area during the fumigation period except in a serious emergency (fire) and then only with the agreement of the Approved Handler in charge of the fumigation. In such circumstances, suitable personal protective equipment, including RPE, must be worn.
- 3.2 **Risk Area** - A 5 metre risk area will be placed around the fumigation area; only fumigation staff are permitted within this area whilst goods are under fumigation.
- 3.3 **Monitored Safety Zone** - 15 metres from the edge of the risk area shall be in place throughout the fumigation. This area will be monitored using gas detection equipment by a person trained and approved to use such equipment.



Fumigation Preparations

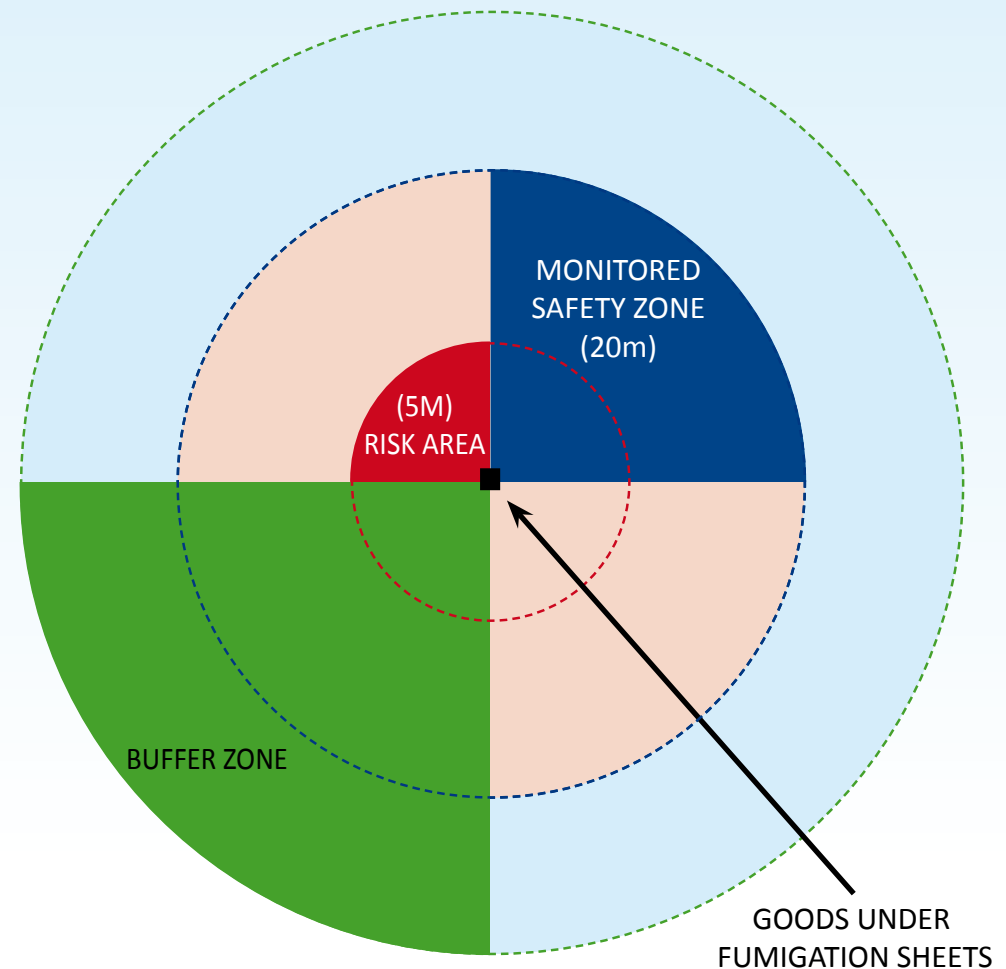
3.4 Wherever possible work within the buffer zone should be avoided.

Buffer Zone Distances

USE	MINIMUM BUFFER ZONE
Ships' holds with more than 1,000kg methyl bromide	100-metres
Ships' holds with less than 1,000kg methyl bromide	50-metres
Fumigation under sheets	50-metres
Containers total volume over 77m ³ in any 60-minute period	25-metres
Containers total volume less than 77m ³ in any 60-minute period	10-metres

3.5 Working within Buffer Zone

- Only when the buffer zone has been gas tested to ensure that it is safe to enter are port users permitted entry.
- Log loader and truck drivers and other port users are not permitted within 5 m of the end of any log row under fumigation.
- Log handling must keep at least two log rows clear of any log row under fumigation.
- During ventilation the buffer zone will be monitored and confirmed safe before port users are permitted access.
- Any port user, including Northport Ltd staff, asked to leave a buffer zone by the Approved Handler undertaking a fumigation operation must do so immediately.



Minimum Risk, Safety & Buffer Zone

- 3.6 The Approved Handler in control of fumigation operations may be required to extend the distance to which the buffer zone applies, given wind speed and direction.
- 3.7 Fumigation is only permitted to proceed when all required risk/safety controls and buffer zones are established and can be maintained during the fumigation process, this includes road ways and over water.
- 3.8 Fumigation Traffic Management Plan - If any fumigation area or buffer zone extends into a roadway, the area is to be restricted using the NPL Traffic Management Procedures throughout the fumigation process.
- 3.9 If a buffer zone extends over water, monitoring is to be from the closest point of land.



- 3.10 Unless under the direct control of a person designated as the Approved Handler, all fumigants are to be secured under lock and key. All port users should be aware of the general risk and controls associated with fumigants.
- 3.11 During transportation within the Port, cylinders and containers holding fumigants (including empty containers) are to be firmly secured within vehicles and trailers and have appropriate warning signs displayed as to their hazard.

- 3.12 Equipment used in relation to any fumigation process must be used in accordance with recognised industry safe work practices, safety regulations and any appropriate New Zealand Safety Standard that may apply. This includes activities relating to the use of forklift trucks, working at height and entry into confined spaces.

4.0 Monitoring

- 4.1 Fumigators are to have in place a monitoring protocol that describes their ambient air monitoring methods. Including the selection of monitoring locations at the boundary of buffer zones.
- 4.2 All monitoring shall be undertaken with equipment recommended, and calibrated, for the fumigant being used. The Approved Handler must ensure that all those who use monitoring equipment are fully trained in its correct use.

TELS for Methyl Bromide in Air

Averaging Period	Parts per Million (ppm)	Miligramme per metre cubed (mg/m ³)
TEL _{air} (annual):	0.0013	0.005
TEL _{air} (24 hour):	0.333	1.3
TEL _{air} (1 hour):	1	3.9

- 4.3 The Approved Handler must ensure that the fumigation space is monitored for a sufficient period after the introduction of the fumigant to ensure that there is no leakage of fumigant.
- 4.4 The Approved Handler will, and Northport may, monitor fumigant levels at the outer edge of the monitored safety zone to ensure that the levels are not above the WES and present no risk to Port Users who may enter or work in the buffer zone.

- 4.5 The Approved Handler is responsible for monitoring the boundary of the buffer zone and reporting the results to the NPL HSE Manager.
- 4.6 Meteorological data should be considered and reviewed to assess such issues as the current and forecasted wind direction and speed.
- 4.7 NPL may monitor the buffer zone to confirm the safety of the environment for port users and its own staff to work within the buffer zone safely.
- 4.8 Port Users may request NPL to monitor buffer zones/work sites if they are concerned as to the safety of staff.
- 4.9 The person in charge of each fumigation operation that uses in excess of 500 kg of methyl bromide each year must provide an annual monitoring report to NPL. NPL will submit it to the District Health Officer, Worksafe NZ and the EPA by the 30 June of the following year.

5.0 Notification of Fumigation

- 5.1 The Approved Handler shall notify Northport Port Services by email 24-hours prior to fumigation occurring (fumigation@northport.co.nz.). This email is a block e-mail to all identified relevant parties operating within the Port, and includes the local Fire Service, as required under ERMA HRC08002.
- 5.2 The period of notification may be less if as a result of an isolated event, or the fumigation is urgent due to revised shipping schedules, or for a reason(s) relating to public health or bio-security.
- 5.3 It is the Approved Handlers responsibility to ensure information has been provided to Northport Port Services to assist in advising other port users as to the fumigation location, access restrictions and changes to traffic management associated with the fumigation operation.
- 5.4 Accidental releases of any fumigant within the Port is to be notified to Northport Port Services immediately by the Approved Handler controlling that fumigant. They are to advise of the amount of the release, location, potential risk and actions required by Port Users relating to maintaining their safety. A written notification which includes an investigation into the release is to be provided to Northport Ltd within 7 days of the release.
- 5.5 NPL is to be notified by the fumigation port user of any complaint, written notice, or warning regarding noncompliance received by the public, another port user or any enforcement or monitoring agency.



Logs during fumigation period

6.0 Signage

- 6.1 Prior to applying methyl bromide the Approved Handler must ensure that the specific signage required to fumigate is available, in place, and able to be clearly read from an appropriate distance (10m).
- 6.2 The Approved Handler shall ensure that no other port user enters the monitored safety zone until it is deemed safe to do so. Signage must be provided to clearly denote the safety status of the monitored safety area and when it is safe for port users to enter.



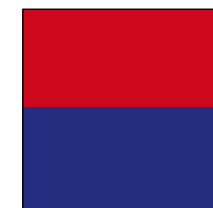
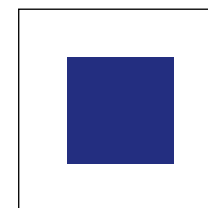
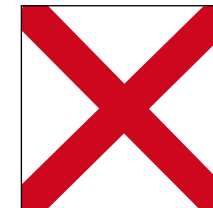
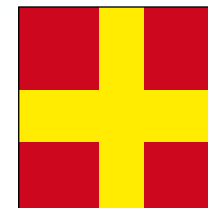
Vessel under fumigation



- 6.3 The Approved Handler must ensure warning notices are in place at the boundary of the risk area that state:
 - that the product is under fumigation
 - the fumigant used
 - the fumigant hazard classifications
 - the person in charge of the fumigation
 - contact telephone number for person in charge
 - the date fumigant applied
 - emergency services telephone number.
- 6.4 Once fumigation is completed and monitoring confirms the fact no fumigants remains at that location a notice is required to be affixed to the cargo stating the date fumigation was completed and that the cargo is now safe to handle.
- 6.5 When undertaking fumigation of ships holds, a buffer zone of 100m is to be created over the water using safety signs, with a flashing white light and yellow reflective material warning to keep clear.
- 6.6 The vessel under fumigation is required to fly the following flags from their:

Starboard inner flag halliard
Romeo - Sierra
No one is allowed aboard

Starboard outer flag halliard
Victor - Echo
I am fumigating my vessel



7.0 Ventilation and Clearance

- 7.1 As far as practicable venting of gas shall be done at times when there are fewer port users at the facility.
- 7.2 Similar Buffer Zones created for the application of fumigants are to be reinstated during the venting process.
- 7.3 In areas that could potentially have occupational bystanders entering buffer zones restrictions are to be in place to restrict entry until such times as monitoring confirms workplace exposure standards are not being exceeded after the fumigant release process.
- 7.4 All port users will be sent a “Notice of Completion” via the block email: (fumigation@northport.co.nz) to advise completion of fumigation and venting.



8.0 Storage of Fumigants within Northport

- 8.1 Fumigant storage within NPL requires specific approval by Northport Ltd as part of the Port User application process.
- 8.2 NPL will require evidence that the proposed operation meets Location Test Certification requirements and a current Location Test Certificate has been issued by a Test Certifier prior to usage.
- 8.3 A copy of all required Location Test Certificates held by Port Users are to be supplied to NPL.



Aluminium Phosphide Storage



Methyl Bromide Storage Shed

8.4 Details relating to the following aspects of storage are to be developed and maintained by any Port User holding fumigants within the Port:

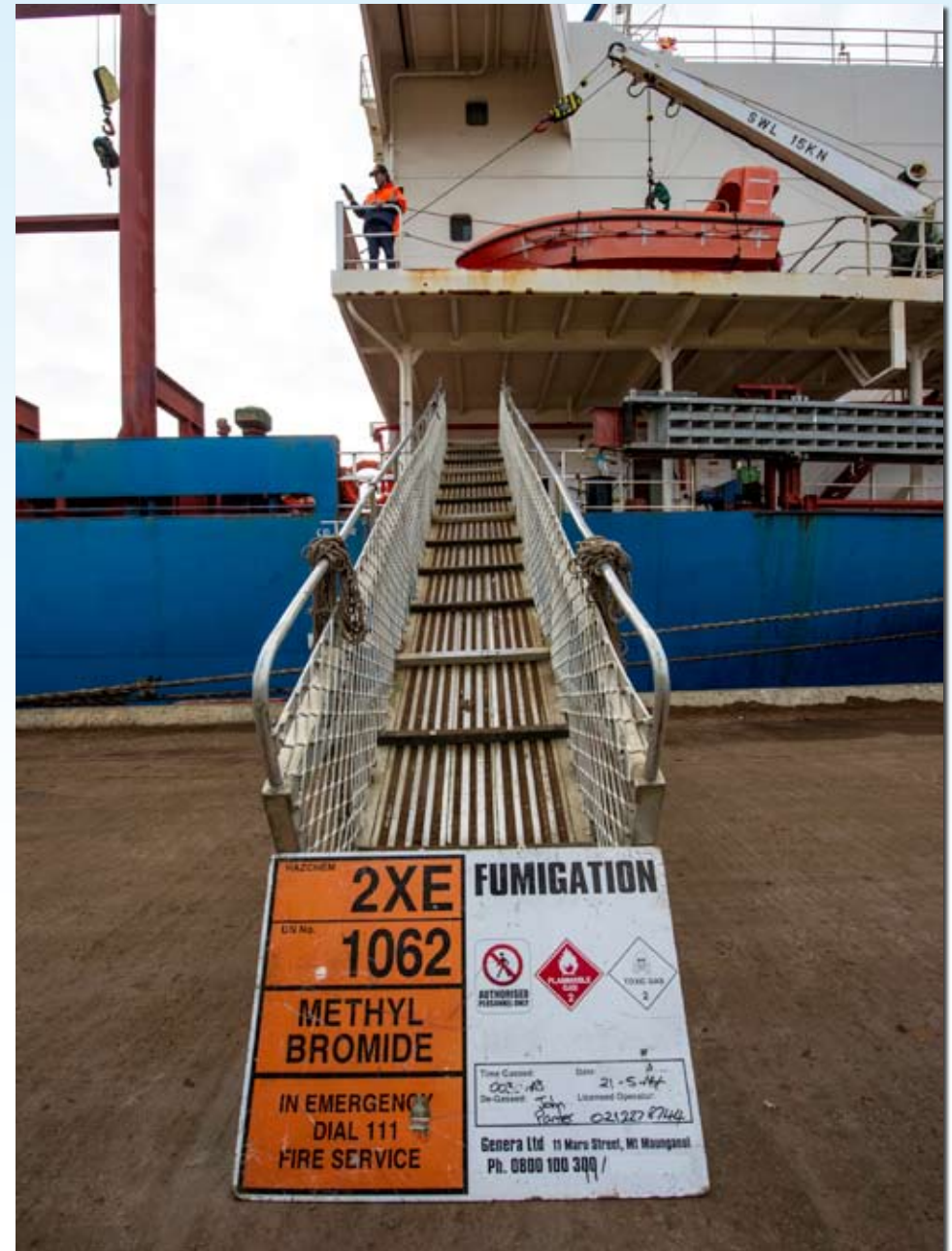
- Detailed site storage design plans which are to scale
- A list of Approved Handlers
- Detailed emergency plans are present within the location
- At least one drill per year is being undertaken
- Confirmation that sufficient fire extinguishers are present
- Segregation requirements held with other potentially hazardous substances
- The facility meets required Building Type and Design Standards
- Control & Hazardous Zones are clearly defined in site drawings and within the location
- Hold Safety Data Sheets on all hazardous substances

8.5 Each location is to be clearly identified as a Hazardous Storage Area with access to that area restricted to authorised port users only.

8.6 Every location is to be kept secure and maintain Tracking Procedures that account for all fumigants brought into and used at Northport.

8.7 The following minimum emergency information is to be readily available to NPL:

- Cover likely situations and be site specific
- Provide evidence of training and when drills have occurred (min. once per year)
- Emergency phone numbers
- List people with emergency responsibilities
- Fire, injury and evacuation procedures
- Spill response actions and Incident reporting
- Emergency first aid and emergency equipment



Fumigation Signage At Shipline Gangway Access

9.0 Fumigation of Logs and Timber Stacks

- 9.1 Rows to be fumigated shall not exceed acceptable safety parameters so as to ensure;
- the safety of the fumigators
 - that the covers can be secured to prevent uncontrolled discharge of fumigant
 - the amount of fumigant is such that a controlled release can be achieved.
- 9.2 There must be a gap of at least 1 metre around each row to be fumigated to ensure;
- the safety of the fumigators
 - that the covers can be secured to contain and prevent an uncontrolled discharge of fumigant
- 9.3 For the protection of the covering team, when a row is being covered two rows either side of the row being covered are out of bounds to log loaders.



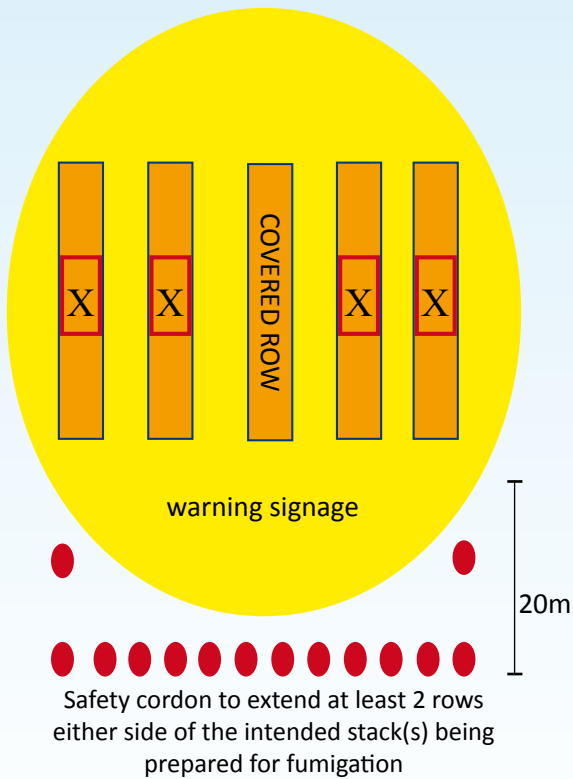
Placing Tarpaulins over log rows



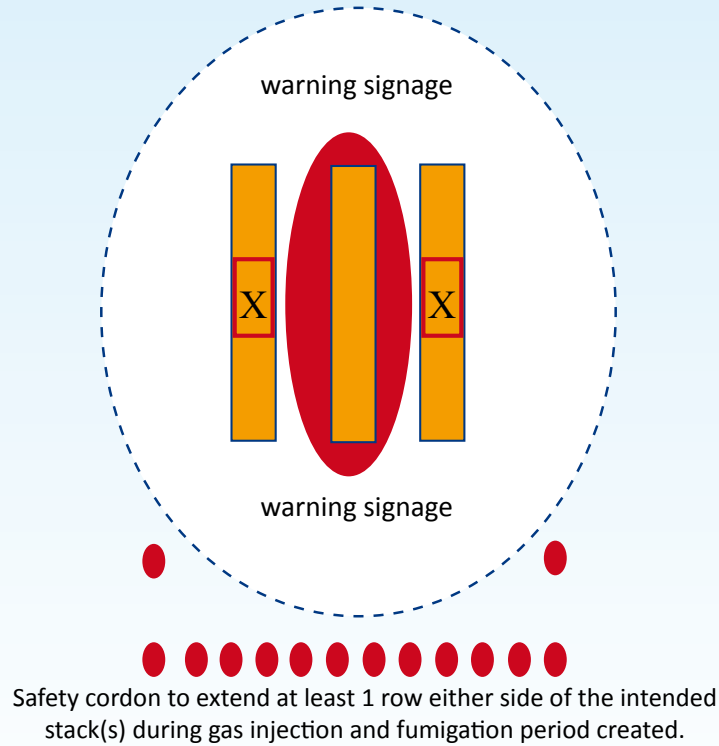
Preparing logs for fumigation

- 9.4 Covering and/or uncovering should not take place if the wind speed is hazardous. However it is the responsibility of the Approved Trained Person to ensure all safety measures are adhered to when managing this process including wind speed.
- 9.5 During the application of the fumigant, whilst the row is under cover, and during ventilation, the risk area and monitored safety zone to be managed and monitored as per these procedures.
- 9.6 Wind direction is to be ascertained and adjustments made to the safety area and buffer zones to ensure the safety of occupational and non-operational bystanders.
- 9.7 Once the row has been fully vented it is marked as being “available” with candy striped tape stapled down the side of the logs and the front of the row is either spray marked with the word “FUMOD” or a candy striped tape cross affixed.
- 9.8 At the completion of fumigation under sheets, Northport Port Services and the marshalling company will be advised that the area is safe to enter.

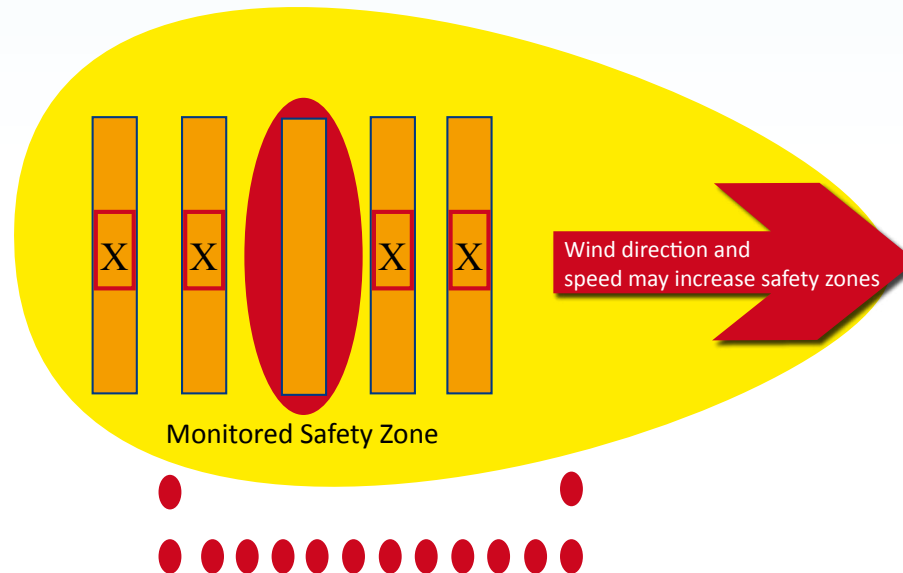
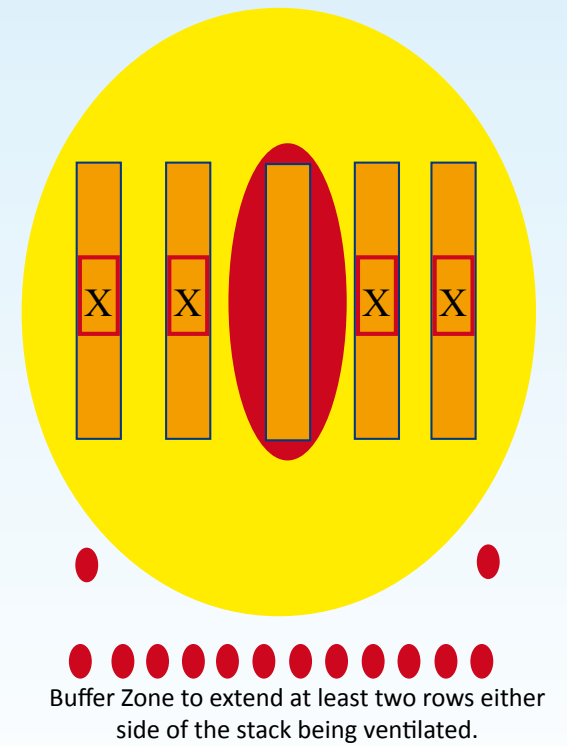
Fumigation Staff Safety Zone



Fumigation and Injection Zone



Ventilation Zone



10.0 Fumigation of Logs in ships' holds



Vessel Under Fumigation

- 10.1 Sufficient numbers of ship's crew, necessary to maintain the ship in a safe condition, are to remain on board during the fumigation process.
- 10.2 The Approved Handler shall ensure that, prior to applying fumigant to the holds, the ship's crew have run two additional mooring lines (1 forward and 1 aft) that are secured on the ships bitts. Three ship safety signs (see 6.5) must be placed on the seaward side of the vessel, evenly spaced along the length of the vessel. The vessel must be flying the required signal flags indicating fumigation (see 6.6).
- 10.3 Where any vessel is berthed ahead or astern of a ship being fumigated, the Approved Handler shall ensure the master(s) of the vessel(s) and the stevedoring/marshalling company(s) working that vessel(s) are notified that an adjacent ship is to undergo fumigation. This may be done either directly, or via the ships agent, and must provide all relevant information regarding fumigation safety.
- 10.4 The Approved Handler shall also ensure that the local agent and master, of the ship undergoing fumigation, are aware of these site procedures by providing a "Statement of Pre-Fumigation Notice of Compliance".
- 10.5 The fumigation watchman shall remain within the immediate area of the ship's gangway at all times to ensure that there is no unauthorised access to the ship.
- 10.6 Where the buffer zone extends over water the Approved Handler and NPL must take all practicable steps to ensure that non-occupational bystanders do not enter the buffer zone or are moved out of the buffer zone as soon as practicable.
- 10.7 Before venting operations commence, the Approved Handler shall ensure all unauthorised people are clear of the surrounding area (including seaward sides) and notify Stevedores and Marshalls working adjacent vessels of the intent to ventilate.
- 10.8 Where a vessel on Berth MP 1 may have a hold that is located within 100 metres of a landside public access area then the EPA Approved Code Of Practice – Fumigation at Northport (Marsden Point) HSNOCOP 52 must be followed.
- 10.9 At the completion of the hold fumigation, the Approved Handler will advise NPL, the ship's master, and the Stevedoring company by supplying a copy of the "Certificate of Gas Clearance"; a copy of which is to be posted at the bottom of the ship's gangway.
- 10.10 Where any vessel is berthed ahead or astern of a ship being fumigated, the Approved Handler shall ensure the master(s) of the vessel(s) and the stevedoring/marshalling company(s) working that vessel(s) are notified that an adjacent ship is to undergo fumigation. This may be done either directly, or via the ships agent, and must provide all relevant information regarding fumigation safety.

11.0 Fumigation in Sheds and Containers

- 11.1 During fumigation within sheds or containers the Approved Handler in control of fumigation must (in addition to any other duties) have in place, confined space entry procedures that prevent un-authorised access to any person entering that confined space.
- 11.2 A permit system is require to manage each confined space used for fumigation. The following elements must be established:
- An assessment of the risks associated with the proposed fumigation. A copy of which is required by the NPL HSE Manager for approval prior to fumigation commencing.
 - Clearly describe the shed or designated secure area for containers to be fumigated.
 - A “Lock Out System” is required to prevent unauthorised personnel from being able to release the fumigant or entering the shed or container during fumigation.
 - Details of the required testing of Risk and Buffer Zones during the fumigation.
 - Procedures describing the method of ventilation after fumigation including the method of “Gas Free Testing” to be used.
 - Describes the location and content of signage required to warn Occupational Bystanders of any potential hazards.
 - Describes any requested changes to the Port Traffic Management Plan.
 - Detail emergency readiness procedures and any additional precautions that are required as a result of the operation.
 - Establishment of safe work practices that will be applied to the overall fumigation operation.

- 11.3 The shed and containers are to be out of bounds to all Port Users except fumigation staff during the fumigation process.
- 11.4 A Buffer Zone is to be established and maintained during fumigation and monitored to ensure the safety of occupational and non-occupational bystanders.



Containers at Northport

1. Purpose

- 1.1 The purpose of this approved code of practice is to provide a means of compliance with the the buffer zone for the fumigation of methyl bromide.

2. Scope of this Code of Practice

- 2.1 The code of practice applies to the fumigation of ships at the Marsden Point wharf of Northport.
- 2.2 This code of practice is a means of compliance with clause 6(4) of the controls for methyl bromide as reassessed HRC08002 28 October 2010.
- 2.3 Compliance with this code of practice does not obviate the requirement to comply with other sections of the Hazardous Substances and New Organisms Act 1996 as well as the regulations, transfer notices and group standards made under that act.
- 2.4 The requirements of this code of practice are in addition to the statutory requirements for fumigation under the HSNO Act, the reassessment decision HRC08002 and regulations which are now being met by the Approved Handler.

3. The HSNO Act and the Place of Codes of Practice

- 3.1 The HSNO regulations are largely performance based, that is, they specify a desired outcome without necessarily prescribing how to achieve it. They do not require that a single specific means be used to comply with any regulation and this allows for variation in method used for compliance.
- 3.2 The HSNO Act provides for codes of practice approved by the Environmental Protection Authority (the Authority) to identify acceptable solutions to comply with specified regulatory requirements. An approved code of practice provides users with a method of meeting the control requirements with a degree of prescription and assistance.
- 3.3 In addition, specific provisions of the HSNO Regulations and Gazetted transfer notices permit codes of practice to be approved by the Authority as alternatives to other specified requirements provided they can be shown to provide an equivalent level of safe management.
- 3.4 The table C2 Clause 6(4), Appendix C: Controls of decision HRC08002 made 2010 for Methyl Bromide and formulated substances containing methyl bromide enables the Environmental Protection Authority to approve a code of practice as a means of complying with the buffer zone requirements.

4. Application of this Code

- 4.1 This code of practice applies to the methyl bromide fumigation of logs in ships holds inside the Northport Marsden Wharf Security Area.
- 4.2 This code of practice applies when the quantity of fumigant in each hold is less than 1000kg.
- 4.3 This code of practice must be read in conjunction with the;
- Hazardous Substances And New Organisms Act 1996 (“the HSNO Act”) and Regulations and the Approved Code of Practice under the Hazardous Substances And New Organisms Act 1996.
 - The Control and Safe use of Fumigations prepared by the Pest Management Association of NZ which meets the requirements of the HSNO Act and Health and Safety in Employment Act 1992 (the HSE Act).
 - The Resource Management Act 1991.
 - Environmental Risk Management Authority Decision HRC08002
 - And any other related industry codes of practice relating to the safe handling of timber products.
 - Northport Hazardous Substances Storage Consent.
 - The Northport minimum requirements for Fumigation at Northport.

5. Fumigation Process:

- 5.1 A vessel berthed on Berth MP1 may have a hold that is located within 100 metres of a landside public access area. In these circumstances the following are to be undertaken.
- 5.2.1 Each hold on the ship must be located at least 50 meters from the landside public access area.
- 5.2.2 Each hold that is positioned less than 100 meters from the public access area is to be vented sequentially, that is, one at a time.
- 5.2.3 No other holds on the ship are to be vented concurrently with the holds that are less than 100 metres from the public access area.
- 5.2.4 Monitoring at the boundary of the 50 metre buffer zone is to be undertaken in accordance with the Environmental Risk Management Decision HRC08002.
- 5.2.5 The quantity of methyl bromide applied to each of the holds that are within 100 metres of the landside public access area must be less than 1000 kg.

APPENDIX C:

Copy of Table C2 from ERMA Decision HRC08002

Table:C2 Additional Controls for the QPS (other than soil fumigation) of methyl bromide

Clause	Control Description
1.	<p>Restriction on fumigation</p> <p>A person may only apply methyl bromide into an enclosed space.</p>
2.	<p>Collecting data</p> <p>(1) A person who uses methyl bromide must ensure that accurate records are kept of the data specified in clauses 2(2) to 2(4) for each application.</p> <p>(2) Where recapture technology is used, the:</p> <ul style="list-style-type: none"> (a) Date and time of each application and recapture; (b) Location where the methyl bromide was applied and recaptured; (c) Amount of methyl bromide applied and recaptured; (d) Type of enclosed space to which the methyl bromide was applied; (e) Capacity of the enclosed space; (f) Name of the person using the methyl bromide and the physical address of their place of work. <p>(3) Where recapture technology is not used, the:</p> <ul style="list-style-type: none"> (a) Date and time of each application and ventilation; (b) Amount of methyl bromide applied; (c) Location where the methyl bromide was applied and ventilated; (d) Wind speed and direction every three minutes at the location during ventilation; (e) Type of enclosed space to which the methyl bromide was applied; (f) Capacity of the enclosed space; (g) Name of the person using methyl bromide and the physical address of their place of work; (h) For each monitoring location, exposure levels; and (i) For each monitoring location, the type and location of the monitoring equipment used to record the exposure levels. <p>(4) For each discharge of methyl bromide, the:</p> <ul style="list-style-type: none"> (a) Date and time of each discharge; (b) Approximate amount of methyl bromide discharged; (c) Location where the methyl bromide was discharged; (d) Approximate wind speed and direction at the location where the discharge occurred; (e) Where the discharge occurred from; (f) The reason why the discharge occurred; (g) Capacity of the enclosed space; and (h) Name of the person using methyl bromide and the physical address of their place of work. <p>(5) The data required to be recorded by clause 2, must be recorded every 3 minutes from the start of the ventilation until the exposure level is below 0.05 ppm for at least:</p> <ul style="list-style-type: none"> (a) 15 minutes, where 7kg or more of methyl bromide is applied in a one hour period; or (b) 3 minutes where less than 7kg of methyl bromide is applied in a one hour period.

3.	<p>1 hour and 24 hour exposure levels</p> <p>(1) The person in charge of the site must, for each monitoring location, keep a record of the following information for every ventilation:</p> <ul style="list-style-type: none"> 1 hour exposure level; and 24 hour exposure level. <p>(2) The person in charge of the site must notify the Department of Labour and the relevant Medical Officer of Health as soon as practical, but within 5 working days, if either the:</p> <ul style="list-style-type: none"> (a) 1 hour exposure level exceeds the 1 Hour TEL_{air} value for methyl bromide; or (b) 24 hour exposure level exceeds the 24 hour TEL_{air} value for methyl bromide.
4.	<p>Record keeping</p> <p>The records required by clauses 2 and 3 must be kept for not less than 7 years after the date that the fumigations to which they relate occurred and be available for inspection.</p>
5.	<p>Annual monitoring report</p> <p>(1) The person in charge of a site where more than the reporting threshold set out in clause 5(2) is applied must produce an annual monitoring report.</p> <p>(2) The reporting threshold is 500 kg or more of methyl bromide in one calendar year at a site.</p> <p>(3) Methyl bromide that is recaptured using recapture technology does not count towards the threshold set out in clause 5(2).</p> <p>(4) The annual monitoring report shall contain the following information in respect of the calendar year:</p> <ul style="list-style-type: none"> (a) The number of fumigations using methyl bromide carried out on the site; (b) The total amount of methyl bromide applied at the site; (c) The types of enclosed spaces to which methyl bromide has been applied; (d) The types of equipment used to carry out the monitoring of methyl bromide; (e) The annual exposure level; (f) Approximate amount of total methyl bromide discharged; (g) Number of notification made in accordance with clause 3(2) identified by each monitoring location; (h) How many times the exposure levels exceeded the TEL_{air} value; (i) If a breach of the TEL_{air} value has occurred, an outline of what risk mitigation measures have been or are being put in place; and (j) Any accidents or other issues related to non-compliance with any of the controls under this approval. <p>(5) The person in charge of the site must provide the annual monitoring report to EPA New Zealand, Department of Labour, and the relevant Medical Officer of Health by 30 June the following year.</p>

6.	<p>Minimum Buffer Zones</p> <p>(1) The person in charge of the site must set a buffer zone for each fumigation. The buffer zone must be equal to or greater than the following distances;</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">USE</th> <th style="text-align: center;">Minimum buffer zones in metres</th> </tr> </thead> <tbody> <tr> <td>Ships hold (1000kg or more of methyl bromide applied per site in any 24 hour period.</td> <td style="text-align: center;">100</td> </tr> <tr> <td>Ships hold (less than 1000kg of methyl bromide applied per site in any 24 hour period)</td> <td style="text-align: center;">50</td> </tr> <tr> <td>Fumigation under sheets</td> <td style="text-align: center;">50</td> </tr> <tr> <td>Containers (total volume of 77m³ or more in any 60 minute period)</td> <td style="text-align: center;">25</td> </tr> <tr> <td>Containers (total less than 77m³ in any 60 minute period)</td> <td style="text-align: center;">10</td> </tr> </tbody> </table> <p>(2) Subject to clause 6(3), the person in charge of the site, and any person who uses methyl bromide must ensure that non-occupational bystanders are not in the buffer zone during the buffer zone period.</p> <p>(3) Where a buffer zone extends over water, the person in charge of the site and any person who uses methyl bromide must take all practical steps to ensure that the water is monitored and, if a non-occupational bystander enters the buffer zone, that the bystander moves out of the buffer zone as soon as practicable.</p> <p>(4) The requirement to comply with the buffer zone distances required by clause 6(1) does not apply to a person in charge of a site who complies with a relevant code of practice approved under section 78 of the HSNO Act.</p> <p>(5) The requirement to comply with the buffer zone distances required by clause 6(1) does not apply to a fumigation where recapture technology is used.</p> <p>(6) A person must not apply methyl bromide within 25 metres of any sensitive site.</p>	USE	Minimum buffer zones in metres	Ships hold (1000kg or more of methyl bromide applied per site in any 24 hour period.	100	Ships hold (less than 1000kg of methyl bromide applied per site in any 24 hour period)	50	Fumigation under sheets	50	Containers (total volume of 77m ³ or more in any 60 minute period)	25	Containers (total less than 77m ³ in any 60 minute period)	10
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7.	<p>Site must be secured</p> <p>Fumigation may only be carried out in a place that is secured against ready access by unauthorized persons.</p>												
8.	<p>Container must not be moved during fumigation</p> <p>(1) A person must not move a container during fumigation.</p> <p>(2) However, a person may move a container during fumigation from a:</p> <ol style="list-style-type: none"> (a) Wharf to a ship that is berthed at that wharf; or (b) Ship to a wharf where that ship is berthed. 												
9.	<p>Container must be gas tight</p> <p>A person may not apply methyl bromide in a container unless:</p> <ol style="list-style-type: none"> (a) The container is in good repair and capable of being securely closed; and (b) The container does not leak at any of the temperatures and/or pressures to which the container will be made subject. 												
10.	<p>Requirements for sheets</p> <p>A person must not apply methyl bromide under sheets unless the sheet is:</p> <ol style="list-style-type: none"> (a) In good repair without tears, rips, or visible holes; and (b) Made secure against likely weather conditions at the site; and (c) Sealed with a border that is filled with a heavy material. 												

11.	<p>Notification of intended fumigation</p> <p>(1) A person who applies methyl bromide must notify in writing the relevant persons (specified in the table) of the intention to carry out fumigation at least 24 hours prior to applying the methyl bromide.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Type of Application</th> <th style="text-align: left;">Relevant persons to be notified</th> </tr> </thead> <tbody> <tr> <td>Ship's hold</td> <td>The nearest communications centre of the New Zealand Fire Service; and Person in charge of the site.</td> </tr> <tr> <td>Sheets</td> <td>The nearest communications centre of the New Zealand Fire Service; and Person in charge of the site.</td> </tr> <tr> <td>Container</td> <td>Person in charge of the site.</td> </tr> </tbody> </table> <p>(2) A person who applies methyl bromide must also notify the occupants of each property within 25 metres of the site to be fumigated at least 24 hours prior to applying the methyl bromide.</p> <p>(3) However notification of the clauses 11(1) and 11(2) may be less than 24 hours if the fumigation is urgent for a reason or reasons relating to public health or biosecurity.</p> <p>(4) A person who intends to apply more than 100 kg of methyl bromide in a 24 hour period must notify the occupants of each property, including moored boats, within 100 m of the site at least 24 hours prior to applying the methyl bromide.</p> <p>(5) At the end of the buffer zone period the person who applied the methyl bromide must notify every person required to be notified in clause 11(1) to 11(4) that the fumigation is complete.</p> <p>(6) The requirement to notify persons under clauses 11(1) to 11(5) is met if the:</p> <ol style="list-style-type: none"> (a) Fumigation is carried out on a weekly basis; and (b) The relevant persons are notified of the intention to carry out regular fumigations at the site initially and then again annually setting out: <ol style="list-style-type: none"> (i) where the fumigation occurs; (ii) the time at which ventilation normally occurs (if this can be specified); (iii) the expected frequency of fumigation; and (iv) any seasonal trends. <p>(7) Clauses 11(2), (4) and (5) do not apply to a fumigation where recapture technology is used.</p>	Type of Application	Relevant persons to be notified	Ship's hold	The nearest communications centre of the New Zealand Fire Service; and Person in charge of the site.	Sheets	The nearest communications centre of the New Zealand Fire Service; and Person in charge of the site.	Container	Person in charge of the site.
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Container	Person in charge of the site.								
12.	<p>Signage</p> <p>(1) A person who applies methyl bromide must ensure that are displayed at every point of access to the buffer zone.</p> <p>(2) The signs required by clause 12(1) must;</p> <ol style="list-style-type: none"> (a) State that fumigation is being carried out; and (b) State that methyl bromide is being used; and (c) State that methyl bromide is toxic to humans; and (d) Describe the general type of hazard associated with methyl bromide; and (e) Describe the precautions necessary to prevent unintended ignition of methyl bromide; and (f) Comply with regulation 34(1), (2), and (4) and regulation 35(1), (3) and (5) of the Hazardous Substances (Identification) Regulations 2001, but as if the distances referred to in regulation 35(3) were a distance of not less than 10 metres; and (g) Identify the person in charge of the site and the person using the methyl bromide and provide sufficient information to enable the persons to be contacted during normal business hours; and (h) State the date on which the fumigation commenced; and (i) Be illuminated during the hours of darkness; and 								

	<p>(j) Be able to be readily seen by a person approaching the buffer zone, including where applicable, persons approaching from a seaward direction.</p> <p>(3) The signs required by clause 12(1) must be removed at the end of the buffer zone period.</p>
13	<p>Requirement for recapture technology</p> <p>(1) Clause 13(2) takes effect 10 years after the date of this approval.</p> <p>(2) A person must not apply methyl bromide unless recapture technology is used.</p> <p>(3) A person who applied methyl bromide in the preceding calendar year must provide a report to EPA New Zealand by 30 June each year setting out that person's progress in introducing recapture technology.</p>

12.0 Contact Details

Northport	09 432 5010
Port Services Centre	09 432 5018
Duty Officer	09 432 5060
NRC Environmental	0800 504 639
EPA Hot Line	0800 376 234
Harbour Radio	CH19