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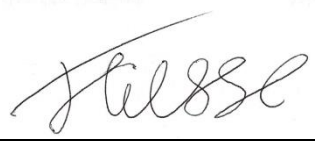
Chalmers Properties

Asbestos Assessment

54 Fryatt Street, Port Chalmers, Dunedin

Site Assessment Date	**13/02/2018**
Sample Team	**James Piesse (BSc)**
Report Author	**James Piesse (BSc)**
Report Checked by	**Ben Potter (BSc, IP402) and Ben Dodd (BA)**
Key Technical Person	**Stuart Keer-Keer (MSc,IP402)**

Author Signature	KTP Signature
	

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1 EXECUTIVE SUMMARY

- Air sample results were below the detection limit
- Asbestos containing dust was detected in all internal areas and in the soil outside

2 ACTIONS

2.1 Interior

2.1.1 Immediate Actions

- The results of the monitoring should be made available to the building occupants and any workers who require access to them
- Access to the wharf sheds used for storage should be prohibited
- Signage indicating the hazard should be installed
- Any access should be by persons who are trained in asbestos awareness and have suitable PPE.

2.1.2 Short Term Actions

- The following PPE (Personal Protective Equipment) must be worn when entering the storage sheds:
    - Fit tested respirator with P2/P3 particulate filters
    - Disposable overalls and boot covers. These must be disposed of as asbestos contaminated waste
- Critical equipment will need to be cleaned prior to removal. It is most likely this is class A asbestos removal work.

2.1.3 Long Term Actions

- Removal of the super six roof is recommended
- If removal is not practical the roof and soil should be encapsulated with a semi-permanent solution that should be regularly inspected
- Following removal or encapsulation the interior of the buildings will need to be decontaminated

2.2 Exterior

2.2.1 Immediate Actions

- The area below and around the building need to be treated as contaminated soil.
- The results of the monitoring should be made available to the building's immediate neighbours
- Access to the wharf should be restricted
- Signage indicating the hazard should be installed
- Parking on the street next to the buildings should not be allowed. This may require consultation with the local council

2.2.2 Short Term Actions

- Gutters with down pipes should be installed on the street side of the buildings under the roof. Care must be taken to ensure the roof is not damaged during this process
- The gutters and down pipes on the sea side should be cleared and inspected to ensure they do not leak
- The roof and soil should be sealed with an adhesive if the long-term actions below cannot be completed within 3 months

2.2.3 Long Term Actions

- Removal of the super six roof and contaminated soil is recommended
- If removal is not practical the roof and soil should be encapsulated with a semi-permanent solution as the adhesive is a short-term solution which is prone to weathering
- Following removal or encapsulation the interior of the buildings will need to be decontaminated

2.3 Actions Documentation – Short term

An asbestos management plan needs to be prepared for the

- Outside area
- Inside area

This is more detail into how the hazard needs to be managed.

2.4 Actions Other Properties

If there are other properties that do not have an asbestos management plan and were built prior to 2000 suggest getting an asbestos survey.

3 BACKGROUND INFORMATION

- The wharf sheds located at 54 Fryatt Street, Port Chalmers, Dunedin are a series of three buildings which have super six roofs
- Recently a complaint has been made by a member of the public whose car was covered in white dust after parking it next to the buildings. The dust was analysed and found to contain asbestos.
- The wharf sheds are used by several different companies. Most are used for storage however there is also a plastic recycler and a fertiliser store

4 SAMPLING PERFORMED

- Monitoring was performed on the 13th of February 2018 by James Piesse (asbestos assessor AA16100166)
- Not all areas were able to be monitored, it is recommended that all areas be treated as contaminated.
    - Monitoring was performed in the Px, Qa and R Sheds. These are used for storage.
    - Monitoring was not performed in the Q or S sheds as these are occupied by industrial processes.
    - Monitoring was not performed in the Navy shed as this was noted to be cleaner than the other areas and only a limited number of samples were to be taken.
- Air samples were taken to determine if there was an immediate risk to human health.
    - A positive sample would have shown airborne asbestos and meant the area should be immediately evacuated.
    - A negative sample indicates that the asbestos present in the dust is not airborne. It should still be treated with caution and care should be made to ensure it does not become airborne. However, it is not an immediate hazard.
- Dust samples were taken to determine the extent of the contamination.
    - A positive sample indicates that the dust is contaminated and should not be disturbed. Disturbing the dust would give rise to airborne fibres.
    - A negative sample indicates that the dust in the areas sampled does not contain asbestos. Due to the limitations of the sampling and the presence of positive samples elsewhere the dust should not be disturbed as a precaution.

5 SITE MAP

The following is a map indicating where samples were collected from.

Note: This map is not to scale and is to be used as an indication only.

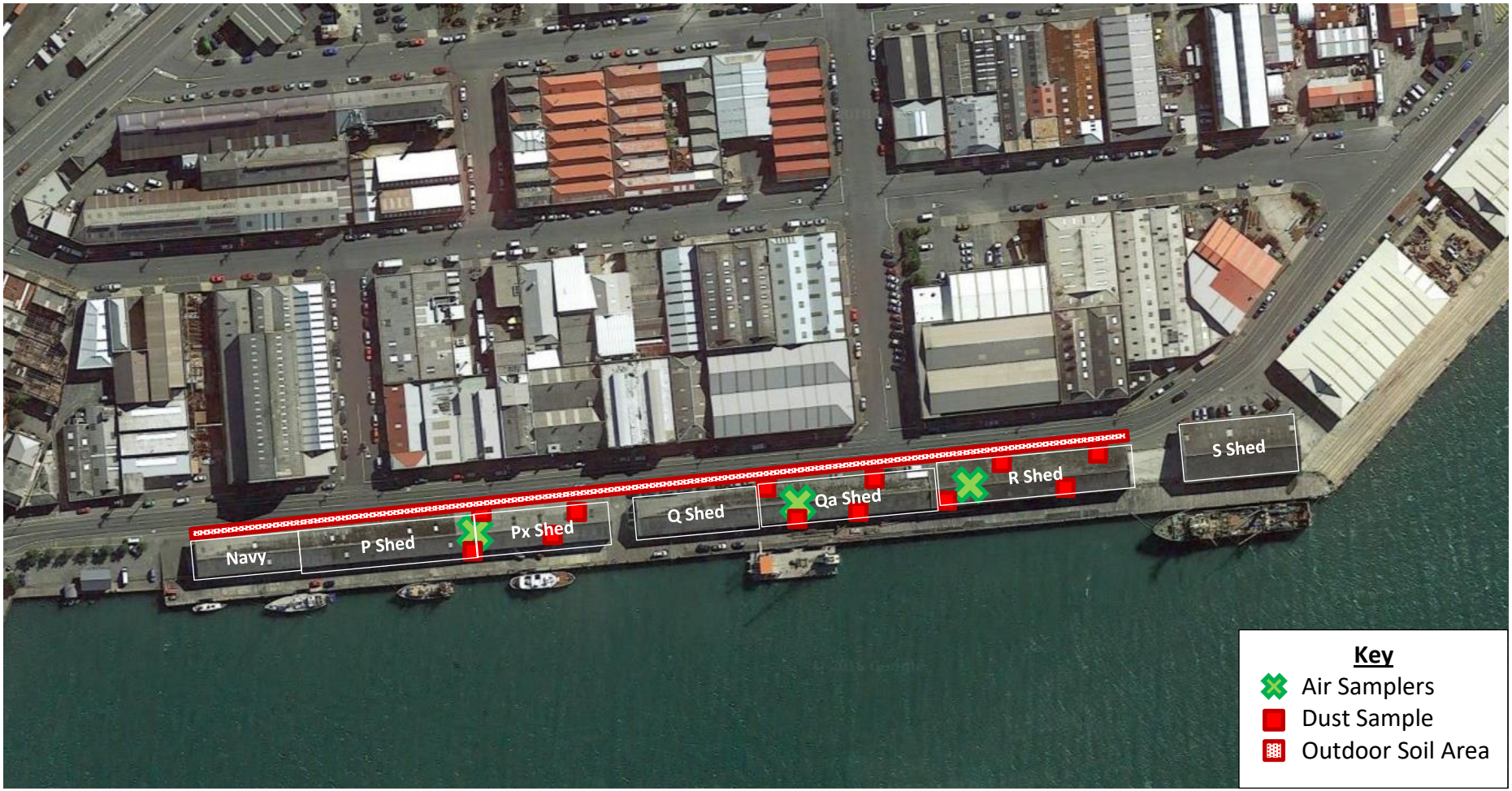

Figure 1 Site Map

6 PHOTOS

Interior of Qa Shed

Interior of R Shed

Dust on internal door ledges

Dust on internal wall ledges

Exterior of R Shed
Cars parked under the roof overhang

Exterior of Px Shed
Cars parked under the roof overhang

Super six roof overhang seen from below Water marks, holes and damaged edges are easily visible

Dust gathered on an exterior wall

Super six fragments dumped in a pile

Super six fragments along the ground

6.1 Managing ACM's

The following recommendations can be found in the document *Health and Safety at Work (Asbestos) Regulations 2016* and any best practice guidelines associated with it.

1. **Avoid Damage to ACM's**[1]
   These materials must not be drilled, cut or sanded. No power tools should be used on this material.
2. **Labelling of Asbestos**
   Presence and location of ACM must be clearly indicated.
3. **Determine the Risk**
   The risk to staff needs to be determined. If asbestos is present, an Asbestos Management Plan needs to be in place.
4. **Work Under Supervision**
   Any work involving cleaning, removing, damaging or working on asbestos containing materials must be carried out under the supervision of someone who has a Certificate of Competence in Asbestos Removal.
5. **Requirements for Mask Use**
   Any person using a mask as a method of risk management must:
   - Have a mask fit certificate less than one year old
   - Have a protection factor that exceeds 200
   - Be clean shaven
   - Use a mask that is P2/P3 rated
6. **Preventing Exposure**
   Ensure contractors who work near ACM know about it and have attended Asbestos Awareness Training[2]
   - This includes painters, persons who service alarms, cameras and electrical contractors
   - Any person on site who engages in or is accountable for contractors' work
   - Must be renewed after two years
   - Must include the following:
     - Basic identification of asbestos material
     - Health risk of asbestos
     - Properties of asbestos and how high risks can be generated
     - How to prevent exposure – understanding of PPE use and management
7. **Correct Disposal**
   Material that has been removed needs to be contained in asbestos hazardous waste bags for correct disposal.

Figure 2 Asbestos Label

[1] ACM – Asbestos Containing Material

[2] K2 Environmental have the capacity to carry out Asbestos Awareness Training, contact us for more information

6.2 Remediation Work

Any demolition or refurbishment work conducted on properties built prior to 1 January 2000 must first identify whether asbestos containing material is present. Below is direct text from the regulations:

> **"19. Application of this subpart**
> (1) This subpart applies to the demolition or refurbishment of a structure or plant –
> (a) that was constructed or installed before 1 January 2000; or
> (b) in which asbestos has been identified; or
> (c) in which asbestos is likely to be present from time to time.
> (2) For the purposes of this subpart, **demolition or refurbishment** does not include minor or routine maintenance work, or other minor work.
> *Compare: Model Work Health and Safety Regulations 2011 (Aust) r 447*
>
> **20. Determining presence of asbestos or ACM**
> (1) This regulation applies if demolition or refurbishment of a structure or plant is to be carried out at a workplace.
> (2) The PCBU who intends to carry out the demolition or refurbishment must not carry out the demolition or refurbishment until the structure or plant has been inspected to determine whether asbestos or ACM is fixed to or installed in the structure or plant.
> (3) The PCBU who intends to carry out the demolition or refurbishment must ensure that the determination is undertaken by a competent person."[3]

6.3 Requirement to Have an Asbestos Management Plan

The regulations require sites to have a management plan. A management plan details what the risks are and what steps are to be taken to ensure the risks are low or zero. Items that will be required in a management plan are:

- Survey report
- Decisions and reasons for decisions on managing risk
- How incidents and emergencies are managed
- Training, roles, health survey of workers

> **"13. Duty to prepare asbestos management plan**
> (1) This regulation applies if asbestos or asbestos containing material is:
> a. Identified at a workplace under regulation 10; or
> b. Likely to be present at a workplace from time to time.
> (2) A PCBU with management or control of the workplace must ensure that a written plan (an asbestos management plan) for the workplace is prepared.
> (3) A PCBU with management or control of the workplace must ensure that the information in the management plan is kept up to date." [4]

[3] Health and Safety at Work (Asbestos) Regulations 2016

[4] Health and Safety at Work (Asbestos) Regulations 2016

APPENDIX A Corrugated Cement Sheet

Corrugated cement sheet roofing is known to slowly release asbestos fibres. Often corrugated cement sheet roofing has been in place for over 40 years. There are a number of factors that affect the release of asbestos from corrugated cement sheet roofing.

A.1. Where Does the Asbestos Come From?

The movement of the building cement sheeting rubbing against the structure below. Components such as:

- Purlins
- Batons
- Rafters

The components just below the roof usually have the highest amounts of asbestos-containing dust. These typically gather over a period of many years and are rarely, if ever, cleaned. Any activity that disturbs these releases asbestos-containing dust.

A.2. Effect of Acid Rain

Corrugated cement sheet is made from cement, which is basic (alkaline). Normal clean rain water can be expected to be slightly acidic. A pH of 5.6 is expected. The rain over a period of years dissolves the concrete. Asbestos fibres are released and found in high concentrations in the gutters or ground if the gutters are broken. Each drop of rain water runoff can be expected to contain thousands of asbestos fibres[5].

A.3. Settled Dust

The dust that has the highest risk is the dust that contains fibres less than 10µm in size. The smaller the fibre size the greater the risk to health. Fibres of this size typically remain airborne for long periods of time. They can remain airborne for months. Larger fibres have a greater mass and are more likely to settle out.

The dust found at lower levels is likely to be of the larger fibre size. They have sufficient mass to fall to the ground and settle out. The smaller fibres often remain airborne and when the air in a building is exchanged they are released to the outside.

A.4. Effect of Asbestos in Concrete

When fibres settle on the ground and the ground is a concrete surface these fibres can be retained inside concrete. Concrete is very porous and fibres can be trapped inside the pores of concrete. They are not readily released with normal activity.

It has been found that concrete surfaces that have been actively cleaned to remove asbestos will still give positive swab results.

Painting concrete is a method to ensure the asbestos trapped within the pores of the concrete is not released. It also provides a smooth surface to prevent further asbestos becoming trapped.

[5] A pilot study to determine if asbestos fibre is released into the environment from corrugated asbestos roofing using the medium of rainwater. Jim Bowler

APPENDIX B Lab Reports

Test Certificate

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Sample Number	Location	Type of Material	Asbestos Result
AS180274-4	P Shed	Internal Dust	Chrysotile & Amosite Asbestos detected
AS180274-5	Q Shed	Internal Dust	Chrysotile & Amosite Asbestos detected
AS180274-6	R Shed	Internal Dust	Chrysotile & Amosite Asbestos detected
AS180274-7	Exterior	Soil	Chrysotile & Amosite Asbestos detected

Sampling Details			
Client Details	Chalmers Properties		
Address	Fryatt Street, Port Chalmers		
Sample Date	13 February 2018		
Sample Team	James Piesse	**Assessors Number**	AA16100166
Analysis By	Stephanie Keer-Keer	**Purpose of Sampling**	Asbestos Identification
Accreditation Reg Number	911	**Report Version**	1
Method Used	Australian Standard: AS 4964-2004 *Method for the identification of asbestos in bulk samples*		

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Analyst	**Key Technical Person**

K2 Job Number: AS180274

Test Certificate

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Air Monitoring

Stage 2 - Background Checks						Date: 13 February 2018 Time: 9.20am
Sample Number	**Location**	**Sample Vol.** (Litres)	**Start Time**	**Total Mins**	**Result** (Fibres/Fields)	**Conc.** (Fibres/mL)
AS180274-1	P Shed	401	9.30	207	5.5/100	**<0.01**
AS180274-2	R shed	464	9.43	207	2/100	**<0.01**
AS180274-3	Q shed	397	9.40	206	2.5/100	**<0.01**

Sampling Details			
Client Details	Chalmers Properties		
Address	Port Chalmers		
Air Analyst	Jenny Thompson		
Sample Team and Assessors Number	James Piesse – AA1610066		
Air Disturbed	Yes	**Purpose of Sampling**	Background Testing
Accreditation Reg Num.	911	**Report Version**	1
Methods Used	NOHSC: 3003 (2005) – *Guidance Note on the membrane filter method for estimating airborne asbestos fibre.*		

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Analyst	**Key Technical Person** **Christchurch Office**