SAFE WORK & ENVIRONMENTS

HAZARDOUS MATERIALS SURVEY & MANAGEMENT PLAN

Brisbane Waters (NSW) Legacy 51 Masons Parade POINT FREDERICK, NSW 2250



Author and Document Control

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S109616 - Alliance Geotechnical - Brisbane Water Legacy Village



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EXECUTIVE SUMMARY

Safe Work and Environments Pty Ltd (SWE) was commissioned by Alliance Geotechnical to carry out a Hazardous Materials Survey of the site located at 51 Masons Parage, Point Frederick NSW, 2250.

The survey was undertaken by Alexandar Mitevski (Senior Hazardous Materials Consultant) between Wednesday 17th March 2021 to Monday the 22nd of March 2021 over three days.

The purpose of the survey was to identify the following hazardous construction materials:

- asbestos containing materials (ACM);
- lead based paints;
- synthetic Mineral Fibre (SMF); and
- polychlorinated biphenyls (PCBs).

The scope of works involved the following:

- Development of a task specific Safe Work Method Statement (SWMS);
- Walkthrough inspection of the site building/s;
- Identification of all visible and accessible hazardous materials including asbestos, lead, SMF & PCBs;
- Sampling of suspect materials where necessary/possible;
- Laboratory analysis of the samples where the inspector suspected the presence of asbestos containing materials; and
- Preparation of a Hazardous Materials Register and Management Plan in accordance with all relevant legislative requirements.

The objectives of the Hazardous Materials Survey and Management Plan are to:

- Identify hazardous materials within the building(s);
- Detail the survey methodology;
- Provide a qualitative risk assessment of the identified hazardous materials and provide information regarding health risks;
- Provide recommendations for control measures and management strategies;
- Prepare a Hazardous Materials Register for the site to ensure legislative compliance;
- Outline the responsible persons and details those persons responsibilities in relation to managing on site Asbestos Containing Materials;
- Detail the principles of hazardous materials management;
- Detail management strategies for insitu asbestos and other hazardous materials;
- Provide information about Safe Working Practices for work involving asbestos and other hazardous materials;
- Detail the requirements for removal of Asbestos Containing Materials (ACM);
- Provide a template for Emergency Response Procedures; and
- Outline Asbestos Training and Awareness.

Site Assessment:

The majority ACM encountered on Site was in good condition and therefore are considered **Low Risk**. Friable linoleum paper backing was found in villas 57-64, however this material was generally in good condition, this was conserved **Medium Risk**. If disturbed, please follow the control measures presented in **Section 7.2**.

Synthetic Mineral Fibres identified on site were considered **Low Risk**. The material is in good condition, with limited accessibility, it is unlikely to present a risk to health unless damaged, tooled, cut, sanded or machined.

The Lead based paint systems identified on site varied in condition. It recommended that flaking and caulking sections of paint in high access area be removed and replaced with a lead-free substitute.

The settled dust containing elevated levels identified on flat surfaces was generally in low traffic areas. It is recommended that high traffic areas have the excess dust removed by a licensed contractor.

Polychlorinated biphenyls were assumed to be present in various light fixtures in occupation, confirm the status of these once power has been isolated.

A full listing of all hazardous items identified, including a risk assessment of these has been included in the Hazardous Materials Register section of this report. It is recommended that all hazardous materials should be removed prior to any demolition or refurbishment works that would disturb these materials. All asbestos removal works are to be carried out in accordance with the National Code of Practice for the Safe Removal of Asbestos [NOHSC:2002 (2005)].

This survey was limited to accessible areas of the building with limited intrusive sampling carried out. Hence further inspection of building materials that may be concealed behind other building materials may be required in conjunction with future demolition, or similar work.

1 INTRODUCTION

Safe Work and Environments Pty Ltd (SWE) was commissioned by Alliance Geotechnical to carry out a Hazardous Materials Survey of the site located at 51 Masons Parage, Pointy Frederick NSW, 2250.

The survey was undertaken by Alexandar Mitevski (Senior Hazardous Materials Consultant) between Wednesday 17th March 2021 to Monday the 22nd of March 2021 over a timeframe of three days.

The purpose of the survey was to identify asbestos containing materials within safely accessible areas, document findings and produce an Asbestos Register and Asbestos Management Plan (AMP) for the site.

The purpose of the survey was to identify the following hazardous construction materials:

- asbestos containing materials (ACM);
- lead based paints;
- synthetic Mineral Fibre (SMF); and
- polychlorinated biphenyls (PCBs).

1.1 Scope of Works

The scope of works involved the following:

- Development of a task specific Safe Work Method Statement (SWMS);
- Walkthrough inspection of the site building/s;
- Identification of all visible and accessible hazardous materials including asbestos, lead, SMF & PCBs;
- Sampling of suspect materials where necessary/possible;
- Laboratory analysis of the samples where the inspector suspected the presence of asbestos containing materials; and
- Preparation of a Hazardous Materials Register and Management Plan in accordance with all relevant legislative requirements.

1.2 Objectives

The objectives of the Hazardous Materials Survey and Management Plan are to:

- Identify hazardous materials within the building(s);
- Detail the survey methodology;
- Provide a qualitative risk assessment of the identified hazardous materials and provide information regarding health risks;
- Provide recommendations for control measures and management strategies;
- Prepare a Hazardous Materials Register for the site to ensure legislative compliance;
- Outline the responsible persons and details those persons responsibilities in relation to managing on site Asbestos Containing Materials;
- Detail the principles of hazardous materials management;
- Detail management strategies for insitu asbestos and other hazardous materials;
- Provide information about Safe Working Practices for work involving asbestos and other hazardous materials;
- Detail the requirements for removal of Asbestos Containing Materials (ACM);
- Provide a template for Emergency Response Procedures; and
- Outline Asbestos Training and Awareness.

1.3 Legislative Requirements

The survey works and production of this report have been undertaken in accordance with the requirements of:

- NSW Work Health and Safety Act 2011 (WHS Act);
- NSW Work Health and Safety Regulations 2017 (WHS Regulation);
- Safe Work Australia Code of Practice: How to Manage and Control Asbestos in the Workplace (2020); and
- Safe Work Australia Code of Practice: How to Safely Remove Asbestos (2020).
- AS2601-2001 The Demolition of Structures (2001)
- National Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC:2006(1990)].
- National Standard for Synthetic Mineral Fibres [NOHSC:1004(1990)].
- AS4361.1 (2017) Guide to Lead Paint Management. Part 1: Industrial Applications.
- AS4361.2 (2017) Guide to Lead Paint Management. Part 2: Residential and Commercial Buildings.
- ANZECC (1997) Identification of PCB-containing Capacitors: An Information Booklet for Electricians and Electrical Contractors.

1.4 Site Description

The site consists of an elderly care facility built in 1964 with building additions over the years until 1978. The site is owned and operated by the Brisbane Water Legacy Club (BWLC), providing seniors housing under the NSW Retirement Villages Act 1999 (RV Act) and accommodates:

- 64 bedsit apartments which provide low cost rental accommodation for legacy widows;
- 8 two-bedroom units which operate under the RV Act;
- · Legacy Hall; and
- BWLC Administration Office.

The proposed development allows for the northern part of the site to be redeveloped, enabling existing residence to remain on site and be transferred to the new facilities once complete.

The unit blocks have a brick exterior and brick render interior, each unit has a bathroom and balcony area apart from the eastern block housing units 43-52 which has no balcony.

A workshop garage is present at the NE corner of the site. Finally, a residential cottage is located at the NW corner of the site, the cottage looks to predate the retirement facility.

Subsurface soil test pits have been conducted by Alliance Geotechnical, refer **Appendix D** for the test pit locations.



Figure 1. "The site" (image sourced form Google Earth Pro)

1.5 Background

The site has not been previously assessed by Safe Work and Environments. At the time of engagement, no Hazardous/Asbestos Materials Management Plan for the site was available. The purpose of the survey was to comply with current regulations, to identify hazardous materials within the building to enable all hazardous materials to be managed and/or removed in a satisfactory manner.

2 SURVEY METHODOLOGY

Hazardous materials surveys (including asbestos (AS), synthetic mineral fibre (SMF [in friable and exposed condition]), lead based paint systems (Pb) and Polychlorinated Biphenyls (PCB) are carried out applying a risk management approach to identify, assess and ultimately control the risk associated with the identified materials. Furthermore semi-quantitative asbestos risk assessment methodology was applied to assess the risk of all identified asbestos situations. This assessment methodology is presented in the below **Section 3.0** Asbestos Risk Assessment.

The survey comprises a walk through survey of the accessible areas of the premises and may also include the gathering of anecdotal information available from the public space, building occupants, owners and property management where available. Based upon the aforementioned information sources and physical inaccessibility on the day of the assessment, building fabric and fittings suspected of containing any of the above referenced hazardous materials are identified by means of visual observation and representative sampling. Sampling for asbestos and lead based paint systems will be confirmed by laboratory analysis. These findings will then be included in the hazardous materials register (**Section 4.0**) with all notated items risk assessed as per the above mentioned methodology.

The surveys are typically limited to the experience and training of the surveyor(s) and the information and access made available at the time of the survey by the client. All SWE surveyors are trained in accordance with our in house hazardous materials consulting manual and work instructions for asbestos and hazardous materials surveys, which amongst other parameters requires that all surveyors are trained by and 'shadowed' on numerous diverse sites by a competent and experienced surveyor prior to carrying out independent surveys. There is however still a possibility that some hazardous (asbestos) materials may not be identified as any surveying is subject to human error.

Where necessary the surveyor will sample suspected hazardous material situations to confirm or refute the presence asbestos fibres or other hazardous item within the sampled materials. All sampling is undertaken by use of representative sampling which caters for numerous similar situations when appropriate. This means that a close inspection of all similar situations within the site is carried out, however sampling may not be undertaken to reduce the risk of disturbance of materials, exposure to occupants and surveyor and analytical costs for client. Some sampling is also conducted as what is referred to as presumptive sampling. Presumptive samples may be included in the hazardous materials register where no actual sample is collected but there is reason to presume that a hazardous material may be present; however no access and/or safe access for sampling and/or no visual access can be obtained. Examples of typical presumptive samples are millboard insulation to electrical duct heaters, electrical backing boards, lift brake linings and similar. Sample collection is conducted in a non-destructive and non-invasive manner.

A standard hazardous materials survey does not include access and inspection of any areas that will require special access permits or other means of access to restricted areas such as confined spaces, work at height, isolation of energy services, live equipment and mechanical building services, partial demolition of structures and similar access limitations.

All properties will have concealed materials in its current state that cannot be accessed or revealed prior to demolition or refurbishment of the structure(s). Ongoing assessment of building materials is recommended and required during any such structural work and should be carried out by hazardous materials awareness trained personnel. Where any suspected material is uncovered an experienced hazardous materials consultant should be contacted to sample, risk assess and document the finding(s)...

3 HAZARDOUS MATERIALS RISK ASSESMENT

3.1 Asbestos

Asbestos is considered a health risk whenever a potential asbestos fibre release is likely to occur. The health risk posed by asbestos based materials and products in premises are due to a number of risk factors including:

- Condition of the material;
- Friability of the material;
- Airborne potential of the material;
- Accessibility of the material; and
- Location of the material.

A risk level for asbestos products or materials can be determined by multiplying the hazard level for the given asbestos type* by the 5 variants (above) which have also been assigned hazard levels (Table 1). The risk assessment methodology used in our assessment is based on the Australian Standard AS4360-1999, "Risk Management". The hazard levels for this assessment have been assessed according to the following:

Table 1

Asbe	stos Type* –Hazard Level 0 to 2	Condition – Hazard Level 1 to 3						
0	Non asbestos Detected (NAD)	1	No sign of damage/deterioration, non-friable					
1	Bonded	2	Mild damage/deterioration, friable by force					
2	Friable	3	Severe damage/deterioration, very friable					
Acce	ssibility – Hazard Level 1 to 3							
1	Fully concealed behind a false wall or ceiling, sealed	d/painte	d. Inaccessible due to height.					
2	Partial encapsulation, low activity area, low exposure	e to we	athering and/or physical impact.					
3	No encapsulation, high activity area; exposed to wea	athering	g, people and maintenance.					
Airbo	orne Potential – Hazard Level 1 to 3	Expo	sure potential – Hazard Level 1 to 3					
1	Material not present in common air space.	1	Accessed only by maintenance personnel.					
2	Material exposed to natural ventilation	2	Accessible to small numbers of personnel.					
3	Material exposed to forced ventilation (A/C, fans)	3	Readily accessible to the majority of persons					

By multiplying the hazard level from each risk factor the total can then be used to determine the recommended Health Risk/Action Priority Levels as presented in Table 2

Table 2

Risk Level	Risk Status	Action Priority
50+	High (H)	Immediate action should be taken (Materials that pose an immediate or elevated health risk to employees and/or general public – assessed as in poor condition / very friable).
20 - 49	Moderate (M)	Removal or encapsulation and regular monitoring of the material is recommended (likely potential for further deterioration, instability and an increased risk of exposure).
1 - 19	Low (L)	Label, maintain and review (Products or materials that pose little health risk to employees and/or general public – assessed as stable, non-friable, low access)
0	Nil (N)	No action necessary

Note: Where any planned maintenance, refurbishment or demolition works will disturb ACM, licensed removal is recommended.

3.2 Synthetic Mineral Fibres

The risk assessment factors for SMF are similar to those of asbestos including:

- Evidence of physical damage;
- Accessibility to material;
- Likelihood of disturbance;
- Accessibility to exposed areas; and
- Environmental and occupational conditions.

High Risk: Friable synthetic mineral fibre exposed and readily accessible.

Moderate Risk: Friable synthetic mineral fibre or damaged bonded material which due to its present condition and/or location is likely to be further damaged resulting in fibre release.

Low Risk: Non-friable or seated stable friable material that is unlikely to present a risk to health unless damaged, tooled, cut, sanded or machined.

3.3 Lead

Lead when inhaled or ingested is toxic to humans. The lead containing paint risk assessment factors are assessed based on these two exposure routes on human receptors (infants, children, adults or contractors). These factors include:

- Likelihood of inhalation or ingestion;
- Likelihood of disturbance;
- Condition of the paint system; and
- Environmental and occupational conditions.

High Risk: Damaged or deteriorated paint membrane, which due to its present condition and location, presents a significant health risk.

Moderate Risk: Paint membrane showing signs of deterioration and weathering which if left will continue to deteriorate and require abatement that is more extensive.

Low Risk: Stable paint membrane that is in good condition and/or covered by a lead-free paint membrane, which is also in a good condition.

Lead paint is defined by the Australian Standard (AS 4361.2 – 1998 *Guide to lead paint management Part 2: Residential and Commercial buildings*) as a paint or component coat of a paint system containing lead or lead compounds, in which the lead content (calculated as lead metal) is in excess of 0.1% by weight of the dry film as determined by laboratory testing.

3.3.1 Lead-containing dusts

Settled dust containing lead in ceilings spaces, voids and cavities is in fine particles and has a potential for greater bioavailability causing serious long-term health problems on the brain, kidneys and reproductive organs. Human exposure is through inhalation or ingestion. Routes of exposure and risk assessment factors include:

- Areas of exposed soil adjacent to the building;
- Type of materials and age of the building;
- Refurbishment works conducted on the building;
- Distance from roads, commercial garages and mining/smelting operations;
- Dust fall rates and carpet wear; and
- Nature of paint work.

In the absence of a legislative standard, SWE (in consultation with the Department of Health and WorkCover) has adopted a threshold of 1,500 mg/kg which is considered appropriate for industrial/commercial areas.

The below lead dust guidelines are extracted from Australian Standards AS 4361.2-1998, Section 5.6.4.2 (*Surface Dust Lead Loadings*) after lead paint management activities. The permissible amount of leaded dust remaining on each of the following surfaces following lead hazard work is:

- 1 mg/m² on floors (carpeted or uncarpeted)
- 5 mg/m² on interior window sills (or stools).
- 8 mg/m² on window troughs (the area where the sash sits when closed).
- 8 mg/m² on exterior concrete.

3.4 Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) are a set of persistent organic chemicals that are known or suspected to cause a wide range of health effects. There is clear evidence that PCBs cause cancer in animals, and they are considered probable human carcinogens [U.S. Environmental Protection Agency (EPA) 1996]. Human and animal data provide evidence that PCBs have significant toxic effects, including effects on the immune system, the reproductive system, the nervous system, and the endocrine system.

High Risk: PCB oil leaking from the component item under consideration.

Low Risk: Component item is in good condition; unlikely to present a risk to health unless capacitor is damaged or deteriorates.

4 HAZARDOUS MATERIALS REGISTER

4.1 Hazardous Materials Register – 51 Masons Parade, Point Frederick, NSW, 2250

Table Abbreviations: Amosite (AM), Chrysotile (CH), Crocidolite (CR), High (H), Low (L), Moderate (M), No Action Required (N), No Asbestos Detected (NAD), Not Applicable (N/A), Not Assessable (NA), Lead Paint (Pb); Polycarbonate Biphenyl (PCB), Synthetic Mineral Fibre (SMF); Visual Observation (VO).

Assessment by:	Alexand	ar Mite	evski	Date of inspection:	17 th , 18 2021	3 th , 22	2 nd Ma	arch	Re	egister	Revie	March 2026			
Site Contact:	tact: Aidan Rooney				Site Location:	51 Masons Parade, Point Frederick, NSW 2250									
Sample No.	Results	Photo ID	Description		Location	Asbestos Type	Condition	Accessibility	Airborne Potential	Exposure Potential	Risk Score	Action Priority	Quantity (Lm, m², m³)	Comments/	Recommendations
Asbestos Contain	ing Materia	als	·					•				•		•	
OFFICE BLOCK															
S109616.1-A01	СН	1	Fibrous Cement Sheeting	Office blo throughou	ck, external, eave lining ut.	1	1	1	2	2	4	L	70m²	Maintain in goo remove prior to demolition.	od condition & or refurbishment or
S109616.1-A02	СН	2	Window Putty (Grey)	Office blo window fr	ock, external, aluminium rames, window putty.	1	1	2	3	3	18	L	ND	Some panels h with silicon bea good condition refurbishment	nave been replaced ading. Maintain in & remove prior to or demolition.
S109616.1-A03	СН	3	Fibrous Cement Sheeting	Office blo ceiling lin	ck, internal, bathrooms, ing.	1	1	1	3	3	9	L	8m ²	Maintain in goo remove prior to demolition	od condition & or refurbishment or

Sample No.	Results	Photo ID	Description	Location	Asbestos Type	Condition	Accessibility	Airborne Potential	Exposure Potential	Risk Score	Action Priority	Quantity (Lm, m², m³)	Comments/ Recommendations
Similar to S109616.1-A05	Presume Positive	4	Bituminous Backing Board	Office block, external, eastern wall, electrical backing board.	1	1	1	2	1	2	L	1m²	Maintain in good condition & remove prior to refurbishment or demolition
HALL													
Similar to S109616.1-A01	Presume Positive	5	Fibrous Cement Sheeting	Hall, external, eave lining.	1	1	1	2	2	4	L	100m ²	Maintain in good condition & remove prior to refurbishment or demolition.
Similar to S109616.1-A01	Presume Positive	6	Fibrous Cement Sheeting	Hall, external, fascia panels.	1	1	1	2	2	4	L	30m ²	Maintain in good condition & remove prior to refurbishment or demolition.
Similar to S109616.1-A02	СН	2	Window Putty (Grey)	Hall, external, aluminium window frames, window putty.	1	1	2	3	3	18	L	ND	Some panels have been replaced with silicon beading. Maintain in good condition & remove prior to refurbishment or demolition.
VO	Presume Positive	7	Fibrous Cement Sheeting	Hall, internal, M+F bathrooms, ceiling lining.	1	1	1	3	3	9	L	30m²	Ceiling not accessed due to >1.8m height. Arrange access and confirm status prior to refurbishment or demolition.
VO	Presume Positive	8	Fibrous Cement Sheeting	Hall, internal, storage room, ceiling lining.	1	1	1	3	3	9	L	30m²	Ceiling not accessed due to >1.8m height. Arrange access and confirm status prior to refurbishment or demolition.
VO	Presume Positive	9	Fibrous Cement Sheeting	Hall, internal, kitchen, ceiling lining.	1	1	1	3	2	6	L	40m ²	Ceiling not accessed due to >1.8m height. Arrange access and confirm status prior to refurbishment or demolition.

Sample No.	Results	Photo ID	Description	Location	Asbestos Type	Condition	Accessibility	Airborne Potential	Exposure Potential	Risk Score	Action Priority	Quantity (Lm, m², m³)	Comments/ Recommendations
COTTAGE													
S109616.1-A09	CH, AM, CR	10	Fibrous Cement Sheeting	Cottage, external, eave lining.	1	1	1	2	2	4	L	70m ²	Maintain in good condition & remove prior to refurbishment or demolition.
Similar to S109616.1-A09	Presume Positive	11	Fibrous Cement Sheeting	Cottage, internal, laundry, ceiling lining	1	1	2	3	3	18	L	15m²	Maintain in good condition & remove prior to refurbishment or demolition.
HOUSING BLOCK	(S – UNITS	1-56											
S109616.1-A06	CH, AM, CR	12	Fibrous Cement Sheeting	Eave linings, throughout.	1	1	1	2	2	4	L	200m ²	Maintain in good condition & remove prior to refurbishment or demolition.
Similar to S109616.1-A06	Presume Positive	13	Fibrous Cement Sheeting	Rear balcony awning linings, units 6-11, 19-30, 37-42, 48-56.	1	1	1	2	2	4	L	300m ²	Maintain in good condition & remove prior to refurbishment or demolition.
Similar to S109616.1-A02	СН	2	Window Putty (Grey)	Aluminium window frames, window putty.	1	1	2	3	3	18	L	ND	Some panels have been replaced with silicon beading. Maintain in good condition & remove prior to refurbishment or demolition.
S109616.1-A05	СН	14	Bituminous Backing Board	Meter room adj. Doug Fagan Lounge, electrical backing board.	1	1	1	1	1	1	L	5m²	Maintain in good condition & remove prior to refurbishment or demolition.
Similar to S109616.1-A05	Presume Positive	14	Bituminous Backing Board	Meter room adj. unit 18, electrical backing board.	1	1	1	1	1	1	L	3m ²	Maintain in good condition & remove prior to refurbishment or demolition.

Sample No.	Results	Photo ID	Description	Location	Asbestos Type	Condition	Accessibility	Airborne Potential	Exposure Potential	Risk Score	Action Priority	Quantity (Lm, m ² , m³)	Comments/ Recommendations
VO	Presume Positive	15	Fibrous Cement Sheeting	Meter room adj. unit 18, sheeting panel below backing board.	1	2	1	1	1	2	L	<1m ²	Maintain in good condition & remove prior to refurbishment or demolition.
Similar to S109616.1-A05	Presume Positive	14	Bituminous Backing Board	Meter room adj. unit 8, electrical backing board.	1	1	1	1	1	1	L	<1m²	Maintain in good condition & remove prior to refurbishment or demolition.
Similar to S109616.1-A05	Presume Positive	14	Bituminous Backing Board	Meter room adj. unit 33, electrical backing board.	1	1	1	1	1	1	L	3m²	Maintain in good condition & remove prior to refurbishment or demolition.
Similar to S109616.1-A05	Presume Positive	14	Bituminous Backing Board	Meter room, stairs between units 45 and 46, electrical backing board (x3)	1	1	1	1	1	1	L	3m²	Maintain in good condition & remove prior to refurbishment or demolition.
Similar to S109616.1-A05	Presume Positive	14	Bituminous Backing Board	Meter room, stairs between units 55 and 46, electrical backing board.	1	1	1	1	1	1	L	3m²	Maintain in good condition & remove prior to refurbishment or demolition.
Similar to S109616.1-A05	Presume Positive	14	Bituminous Backing Board	Meter room, cupboard behind unit 55, electrical backing board.	1	1	1	1	1	1	L	1m²	Maintain in good condition & remove prior to refurbishment or demolition.
VO	Presume Positive	16	Fibrous Cement Sheeting	Laundry adj. unit 48, southern end, wall lining to storeroom.	1	1	2	2	3	12	L	25m ²	Maintain in good condition & remove prior to refurbishment or demolition.
VO	Presume Positive	17	Fibrous Cement Sheeting	Storage room behind unit 39, loose sheets on floor.	1	2	1	2	1	4	L	1m ²	Limit access, consider removal due to condition.
VO	Presume Positive	17	Fibrous Cement Sheeting	Storage room behind unit 45, loose sheets on floor.	1	2	1	2	1	4	L	1m ²	Limit access, consider removal due to condition.

Sample No.	Results	Photo ID	Description	Location	Asbestos Type	Condition	Accessibility	Airborne Potential	Exposure Potential	Risk Score	Action Priority	Quantity (Lm, m², m³)	Comments/ Recommendations
S109616.1-A10	СН	18	Fibrous Cement Sheeting	Internal, bathroom, wall lining, units 53-56.	1	1	2	3	3	18	L	10m ²	Maintain in good condition & remove prior to refurbishment or demolition.
VILLAS – UNITS	57-64												
S109616.1-A13	СН	19	Fibrous Cement Sheeting	Villas, external, front and rear awnings, units 57-64.	1	1	1	2	2	4	L	200m ²	Maintain in good condition & remove prior to refurbishment or demolition.
Similar to S109616.1-A05	Presume Positive	20	Bituminous Backing Board	Villas, external, meter room adj. unit 58, electrical backing board.	1	1	1	2	1	2	L	1m ²	Maintain in good condition & remove prior to refurbishment or demolition.
VO	Presume Positive	21	Fibrous Cement Sheeting	Villas, external, meter room adj. unit 58, internal sheeting to underside of door.	1	1	1	2	1	2	L	3m ²	Maintain in good condition & remove prior to refurbishment or demolition.
Similar to S109616.1-A05	Presume Positive	20	Bituminous Backing Board	Villas, external, meter room adj. unit 62, electrical backing board.	1	1	1	2	1	2	L	1m²	Maintain in good condition & remove prior to refurbishment or demolition.
VO	Presume Positive	21	Fibrous Cement Sheeting	Villas, external, meter room adj. unit 62, internal sheeting to underside of door.	1	1	1	2	1	2	L	3m ²	Maintain in good condition & remove prior to refurbishment or demolition.
S109616.1-A12	СН	22	Fibrous Cement Sheeting	Villas, internal, bathroom wall lining, units 57-64.	1	1	2	3	3	18	L	10m ²	Maintain in good condition & remove prior to refurbishment or demolition.
S109616.1-A11	СН	23	Linoleum paper backing	Villas, internal, kitchen/laundry, original linoleum flooring below modern linoleum, units 57-64.	2	1	2	3	3	36	М	80m ²	Maintain in good condition & remove prior to refurbishment or demolition.
	NITS												

Sample No.	Results	Photo ID	Description	Location	Asbestos Type	Condition	Accessibility	Airborne Potential	Exposure Potential	Risk Score	Action Priority	Quantity (Lm, m², m³)	Comments/ Recommendations
Similar to S109616.1-A13	Presume Positive	43	Fibrous Cement Sheeting	Awning & Eave lining units 65-71	1	1	2	2	3	12	L	150m²	Maintain in good condition & remove prior to refurbishment or demolition.
Similar to S109616.1-A12	Presume Positive	44	Fibrous Cement Sheeting	Upstairs units 67, 72, 73, bathroom, wall linings	1	1	2	2	3	12	L	50m ²	Maintain in good condition & remove prior to refurbishment or demolition.
Similar to S109616.1-A05	Presume Positive	14	Electrical Backing Board	Main switch rooms (x2), electrical backing boards	1	1	1	2	1	2	L	4m ²	Maintain in good condition & remove prior to refurbishment or demolition.
GRASSED AREA	S												
S109616.1-A14	СН	24	Moulded Fibrous Cement	Masons Parade, adj. footpath, opposite Cottage, telecommunications pit.	1	2	1	2	2	8	L	1 pit	Limit access, consider removal due to condition.
Similar to S109616.1-A14	Presume Positive	25	Moulded Fibrous Cement	Masons Parade, adj. footpath, south of hall, telecommunications pit.	1	2	1	2	2	8	L	1 pit	Limit access, consider removal due to condition.
Similar to S109616.1-A14	Presume Positive	45	Moulded Fibrous Cement	York Street Units, adj. unit 68 main switch room telecommunications pit.	1	2	1	2	2	8	L	1 pit	Limit access, consider removal due to condition.
Similar to S109616.1-A14	Presume Positive	46	Moulded Fibrous Cement	York Street Units, adj. unit 66 SE corner telecommunications pit.	1	2	1	2	2	8	L	1 pit	Limit access, consider removal due to condition.
Sample reference TP18- 0.0-0.02	СН	-	Fibrous Cement Sheet Fragments in Soil	Test pit location 18 (TP18) – Subsurface Soil.	1	2	1	1	1	2	L	NA	Sampling conducted by Alliance Geotechnical. Refer to report number 723334-AID.
Sample reference TP19- 0.0-0.02	СН	-	Fibrous Cement Sheet Fragments in Soil	Test pit location 19 (TP19) – Subsurface Soil.	2	3	1	1	1	6	L	NA	Sampling conducted by Alliance Geotechnical. Refer to report number 723334-AID

Sample No.	Results	Photo ID	Description	Location	Asbestos Type	Condition	Accessibility	Airborne Potential	Exposure Potential	Risk Score	Action Priority	Quantity (Lm, m², m³)	Comments/ Recommendations
Non-Asbestos Co	ontaining M	aterial	S										
	٢S												
S109616.1-A04	NAD	-	Vermiculite	Internal, meter room adj. Doug Fagan Lounge, vermiculite ceiling.	0	-	-	-	-	-	Ν	20 m ²	No Action required
Similar to S109616.1-A04	NAD	-	Vermiculite	Internal, Doug Fagan Lounge, vermiculite ceiling.	0	-	-	-	-	-	Ν	80 m²	No Action required
Similar to S109616.1-A04	NAD	-	Vermiculite	Internal, units 1-52, vermiculite ceiling.	0	-	-	-	-	-	Ν	300 m ²	No Action required
Similar to S109616.1-A04	NAD	-	Vermiculite	Internal, fire stairs on dual level blocks, vermiculite ceiling.	0	-	-	-	-	-	Ν	50 m²	No Action required
Similar to S109616.1-A04	NAD	-	Vermiculite	Internal, York street units, vermiculite ceiling	0	-	-	-	-	-	N	150 m²	No Action required
S109616.1-A07	NAD	-	Fibrous Cement Sheeting	Internal, bathroom, ceiling lining, units 1-18, 31-36, 43-47, 53-56.	0	-	-	-	-	-	N	150 m²	No Action required
S109616.1-A08	NAD	-	Vinyl Floor Tiles (Beige)	Internal, kitchenette, vinyl floor tiles, unit 12 & 25.	0	-	-	-	-	-	Ν	5 m²	No Action required
VO	Presume Negative	-	Fibrous Cement Sheeting	Internal, fire stairs adj. Doug Fagan Lounge, upper level, storage room, sheeting adj. door.	0	-	-	-	-	-	Ν	2 m ²	No Action required
VO	Presume Negative	-	Fibrous Cement Sheeting	External, breezeway between units 18 & 31, ceiling lining.	0	-	-	-	-	-	Ν	50 m ²	No Action required
YORK STREET U	NITS												

Sample No.	Results	Photo ID	Description	Location	Asbestos Type	Condition	Accessibility	Airborne Potential	Exposure Potential	Risk Score	Action Priority	Quantity (Lm, m², m³)	Comments/ Recommendations
S109616.1-A15	NAD	-	Fibrous Cement Sheeting	External, unit entrances, timber-look wall cladding.	0	-	-	-	-	-	Ν	100 m ²	No Action required
OTHER													
VO	Presume Negative	-	Fibrous Cement Sheeting	External, Masons Parade, site entrance, pergola, ceiling lining.	0	-	-	-	-	-	N	20 m ²	No Action required
VO	Presume Negative	-	Fibrous Cement Sheeting	Workshop garage, external, rear brick building, sheeting wall strips below guttering.	0	-	-	-	-	-	N	4 m ²	No Action required

Sample No.	Results	Photo ID	Description	Location	SMF Type	Condition	Accessibility	Airborne Potential	Exposure Potential	Risk Score	Action Priority	Quantity (Lm, m², m³ <mark>)</mark>	Comments/ Recommendations
Synthetic Mineral	l Fibres												
VO	Positive	26	Ceiling Tiles	Office block, cellulose ceiling tiles, throughout office	1	-	-	-	-	-	L	160 m²	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	27	Insulation Batts	Office block, roof backed insulation	2	-	-	-	-	-	Μ	160 m²	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	28	Insulation Batts	Office block, insulation batts on underside of ceiling tiles	2	-	-	-	-	-	Μ	160 m²	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	29	Hot Water Tank	Office block, external, north end, hot water tank	1	-	-	-	-	-	L	1 unit	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	30	Insulation Batts	Housing blocks, throughout buildings, roof backed insulation	2	-	-	-	-	-	L	1,500 m²	Maintain in good condition. Remove prior to refurbishment of demolition works.

Sample No.	Results	Photo ID	Description	Location	SMF Type	Condition	Accessibility	Airborne Potential	Exposure Potential	Risk Score	Action Priority	Quantity (Lm, m², m³)	Comments/ Recommendations
VO	Positive	31	Hot Water Tank	Housing blocks, external, Doug Fagan Lounge, south end, small hot water tank	1	-	-	-	-	-	L	1 unit	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	31	Hot Water Tank	Housing blocks, cupboard between units 3&4, hot water tank	1	-	-	-	-	-	L	1 unit	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	31	Hot Water Tank	Housing blocks, cupboard between units 15&16, hot water tank	1	-	-	-	-	-	L	1 unit	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	31	Hot Water Tank	Housing blocks, cupboard between units 21&22, hot water tank	1	-	-	-	-	-	L	1 unit	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	31	Hot Water Tank	Housing blocks, cupboard between units 27&28, hot water tank	1	-	-	-	-	-	L	1 unit	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	31	Hot Water Tank	Housing blocks, fire stairs, between units 39&40, cupboard, hot water tank	1	-	-	-	-	-	L	1 unit	Maintain in good condition. Remove prior to refurbishment of demolition works.

Sample No.	Results	Photo ID	Description	Location	SMF Type	Condition	Accessibility	Airborne Potential	Exposure Potential	Risk Score	Action Priority	Quantity (Lm, m², m³)	Comments/ Recommendations
VO	Positive	31	Hot Water Tank	Housing blocks, external, behind unit 8, hot water tank	1	-	-	-	-	-	L	1 unit	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	31	Hot Water Tank	Housing blocks, external, adjacent unit 18, hot water tank	1	-	-	-	-	-	L	1 unit	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	31	Hot Water Tank	Housing blocks, room behind unit 39, hot water tanks (x2)	1	-	-	-	-	-	L	2 units	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	31	Hot Water Tank	Housing blocks, storage room behind unit 39, hot water tanks (x2)	1	-	-	-	-	-	L	2 units	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	31	Hot Water Tank	Housing blocks, storage room behind unit 55, hot water tank	1	-	-	-	-	-	L	1 unit	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	31	Hot Water Tank	Housing blocks, storage room behind unit 45, hot water tanks (x2)	1	-	-	-	-	-	L	2 units	Maintain in good condition. Remove prior to refurbishment of demolition works.

Sample No.	Results	Photo ID	Description	Location	SMF Type	Condition	Accessibility	Airborne Potential	Exposure Potential	Risk Score	Action Priority	Quantity (Lm, m², m³)	Comments/ Recommendations
VO	Positive	32	Roof Backed Insulation	Villas, units 57-64, ceiling space, roof backed insulation	2	-	-	-	-	-	Μ	160 m²	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	33	Insulation Batts	Villas, units 57-64, ceiling space, insulation batts on underside of ceiling	2	-	-	-	-	-	Μ	160 m²	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	34	Hot Water Tank	Villas, units 57-64, external, small hot water tank at the rear of each unit	1	-	-	-	-	-	L	8 units	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	35	Hot Water Tank	Cottage, external, adj. laundry, hot water tank	1	-	-	-	-	-	L	1 unit	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	32	Roof Backed Insulation	York Street Units, upstairs units, ceiling space, roof backed insulation	2	-	-	-	-	-	Μ	300 m²	Maintain in good condition. Remove prior to refurbishment of demolition works.
VO	Positive	33	Insulation Batts	York Street Units, upstairs units, ceiling space, loose insulations buts	2	-	-	-	-	-	М	300 m ²	Maintain in good condition. Remove prior to refurbishment of demolition works.

Sample No.	Results	Photo ID	Description	Location	SMF Tvpe	Condition	Accessibility	Airborne Potential	Exposure Potential	Risk Score	Action Priority	Quantity (Lm, m², m³ <mark>)</mark>	Comments/ Recommendations
Lead in Paint													
S109616-LP01	0.45%	36	Cream Paint System	Housing blocks, front and rear door frames.	-	-	-	-	-	-	М	400 Lm	Mostly fair condition. Remove flaking sections and replace with lead-free substitute.
S109616-LP02	0.20%	37	White Paint System	Housing blocks, handrails	-	-	-	-	-	-	L	400 m ²	Mostly good condition. Remove flaking sections and replace with lead-free substitute.
S109616-LP03	8.4%	38	Cream Paint System	Cottage, door and window frames, throughout.	-	-	-	-	-	-	М	50 Lm	Mostly poor/fair condition. Remove flaking sections and replace with lead-free substitute.
Lead in Dust*													
S109616-LD01	2,800 mg/kg	-	Accumulated Settled Dust	Cottage, settled dust within ceiling space.	-	-	-	-	-	-	М	NA	Limit access, wear appropriate PPE and remove prior to refurbishment or demolition works.
Presumed similar to S109616-LD01	Not sampled No access	-	Accumulated Settled Dust	Housing blocks, upper-level, ceiling space	-	-	-	-	-	-	М	220 m²	Presumed to have similar levels to the cottage, however, no there was no ceiling space access.
Polychlorinated E	Polychlorinated Biphenyls (PCB's)												

Sample No.	Results	Photo ID	Description	Location	SMF Type	Condition	Accessibility	Airborne Potential	Exposure Potential	Risk Score	Action Priority	Quantity (Lm, m², m³)	Comments/ Recommendations
VO	Presume PCB's	39	Ballasts and Capacitors	Housing blocks, ceiling storage void, fire stairs adj. Doug Fagan Lounge, old redundant fixtures	-	-	-	-	-	-	L	Unknown	Unknown number of fixtures stored in void.
VO	Presume PCB's	40	Ballasts and Capacitors	Housing blocks, long single fluorescent light fixture.	-	-	-	-	-	-	L	15 units	Confirm status once power has been isolated. Remove prior to refurbishment or demolition work.
VO	Presume PCB's	41	Ballasts and Capacitors	Housing blocks, circular wall mounted fixture.	-	-	-	-	-	-	L	50 units	Confirm status once power has been isolated. Remove prior to refurbishment or demolition work.
VO	Presume PCB's	42	Ballasts and Capacitors	Housing blocks, breezeways, older style single medium fixture.	-	-	-	-	-	-	L	10 units	Confirm status once power has been isolated. Remove prior to refurbishment or demolition work.

*300 mg/kg is the recommended threshold for low density residential areas.

4.2 Access Limitations

- Roofs throughout.
- Restricted height access areas i.e., >1.8m.
- Building subfloors.
- Within wall and floor cavities.

5 HEALTH RISKS

5.1 Asbestos

The related health aspects of exposure to airborne asbestos fibres has been documented in the Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC:2018(2005)]. The information in this code of practice identifies Asbestos as a known carcinogen. The inhalation of asbestos fibres is known to cause mesothelioma, lung cancer and asbestosis.

Malignant mesothelioma is a cancer of the outer covering of the lung (the pleura) or the abdominal cavity (the peritoneum). It is usually fatal. Mesothelioma is caused by the inhalation of needle-like asbestos fibres deep into the lungs where they can damage mesothelial cells, potentially resulting in cancer. The latency period is generally between 35 and 40 years, but it may be longer, and the disease is very difficult to detect prior to the onset of illness. Mesothelioma was once rare, but its incidence is increasing throughout the industrial world as a result of past exposures to asbestos. Australia has the highest incidence rate in the world.

Lung cancer has been shown to be caused by all types of asbestos. The average latency period of the disease, from the first exposure to asbestos, ranges from 20 to 30 years. Lung cancer symptoms are rarely felt until the disease has developed to an advanced stage. Asbestosis is a form of lung disease (pneumoconiosis) directly caused by inhaling asbestos fibres, causing a scarring (fibrosis) of the lung tissue which decreases the ability of the lungs to transfer oxygen to the blood. The latency period of asbestosis is generally between 15 and 25 years.

Asbestos poses a risk to health by inhalation whenever asbestos fibres become airborne and people are exposed to these fibres. Accordingly, exposure should be prevented. The National Exposure Standard (NES) TWA of 0.1 fibres/mL should never be exceeded, and control measures should be reassessed whenever air monitoring indicates the 'control level' of 0.01 fibres/mL has been reached.

ACM can release asbestos fibres into the air whenever they are disturbed, and especially during the following activities:

- any direct action on ACM, such as drilling, boring, cutting, filing, brushing, grinding, sanding, breaking, smashing or blowing with compressed air (State and Territory legislation prohibits most of these actions, and the relevant laws should be checked before performing any activity on ACM);
- the inspection or removal of ACM from workplaces (including vehicles, plant and equipment);
- the maintenance or servicing of materials from vehicles, plant, equipment or workplaces; and
- The renovation or demolition of buildings containing ACM.

5.2 Lead

Workers and others in the workplace can be exposed to residual lead based paint during restoring buildings and demolition work where structures with a high percentage of lead based paint are present. Surface preparation for repainting or work such as welding on structures with lead paint can also result in exposure to lead hazards.

Most buildings and homes decorated in Australia before 1970 contain lead paint. Deteriorating paint can peel off in large pieces, flake off in smaller chips or into a fine powder. Lead paint can be dangerous if it is peeling or breaking down. Old lead paint is not only confined inside the building, but may also contaminate other nearby areas, such as soil underneath the house or building. In addition to exposure in the workplace, workers can also carry small amounts of contaminants in their clothing and thus expose their families, particularly children, to lead.

Lead paint and lead contaminated dust is a major source of health risks to children and adults and control measures for the removal of lead dust or old paint are very important. Lead can harm virtually every organ

in the human body, especially the brain, kidney and reproductive system. Lead can enter the body through several routes, for example the respiratory tract, the gastrointestinal tract and through skin absorption. Lead gets into the body when you breathe in lead dust or fumes in air. If you swallow food or water that is contaminated by lead dust, small amounts of lead can build up in the body and cause health problems.

Most people with increased blood lead levels are asymptomatic; adults may not display symptoms until blood levels reach 60 micrograms per decilitre (μ g/dL) or 2.9 micromoles per litre (μ mol/L) and above. Children generally do not show symptoms of lead intoxication until blood lead levels reach 45 to 55 μ g/dL (2.7 to 2.64 μ mol/L). Yet, some may be asymptomatic even when blood lead levels are as high as 60 to 70 μ g/dL (2.89 to 3.38 μ mol/L).

The National Health and Medical Research Council has set guidelines for permissible levels of lead in the blood and in ambient air in Australia. It set a specific goal "to achieve for all Australians a blood lead level of below ten micrograms per decilitre (0.48 micromoles per litre)." Lead cannot be excreted. It stores in the body for up to 20-30 years in bone, from where it can be mobilised back into the blood. From a single exposure, lead is readily absorbed and quickly distributed to the following areas of the body: blood (1%), soft tissue (4%) and bones/teeth (95%). Anaemia can occur if lead accumulates in blood and in blood-forming tissues (bone marrow). Lead distorts the production of red blood cells in the body.

The current National Exposure Standard (NES) set by the National Occupational health and Safety Commission (NOHSC) is TWA of 0.15 mg/m3 of air. The NSW OHS Regulation 2001 sets levels of lead in blood for Lead Risk Work, removal of workers from lead risk jobs and for health surveillance.

5.3 Synthetic Mineral Fibres

For some years, there were concerns that SMF may be associated with health effects similar to those found with asbestos. This was because of the similarities of appearance, as well as the industrial application, of SMFs and asbestos. Now there is a large amount of scientific data from various studies, including epidemiological studies of workers in SMF industries. Reviews of these results show a number of health effects from exposure to various SMF.

Short term exposure can result in:

- Skin and eye irritation more likely in workers having direct contact with SMF products for the first time or after a period of absence. May involve reddening, burning, itching, prickling, scaling, thickening and inflammation around the fingernails.
- Upper respiratory tract irritation likely during exposure to very high concentrations of SMF in the air.

Long term exposure to SMF was shown to be associated with a slightly increased risk of lung cancer among exposed workers in early SMF industries. Animal studies have shown the potential of SMF to cause mesothelioma, but no cases of this lung disease were reported from studies in the fibreglass and rockwool manufacturing industries.

With other cancer-causing substances (carcinogens), there is no safe level of exposure -that is, there is no low level that can be guaranteed not to cause an increased cancer risk. However, current scientific opinion is that SMF caused chronic health effects will not occur under typical "modern-day" operations, provided adequate precautions are taken in the workplace. In particular fibrous dust is less easy to limit and control on construction sites and it is very important to ensure that contractors and other in the workplace are protected from over exposure.

The current National Exposure Standard (NES) set by Worksafe Australia is TWA of 0.5 fibres per millilitre of air for all types of SMF. Due to the limitations of available data on which to set a health-based exposure standard, another standard is applied alongside. This secondary standard recommends 2 mg/m3 of inhalable (Total) dust to minimise upper respiratory tract irritation from the larger sized fibres.

5.4 Polychlorinated Biphenyls

PCBs are a serious health problem because of their persistence in the environment, their accumulation in human and animal tissues, and their potential for chronic or delayed toxicity. The importation of PCBs for most purposes was banned in Australia in the 1970s. However some equipment containing PCBs is still in use today.

Many workers exposed to PCBs have not been given information about the hazards of PCBs or information about correct procedures for the safe handling, transport and disposal of PCBs. A broad range of health problems have been reported in people exposed to PCBs. These health effects increase with the amount of PCBs and the length of exposure. PCBs accumulate in the body with repeated exposure and are stored in fat tissue and body organs including the liver, kidneys, lungs and brain. PCB exposure can cause:

- Chloracne (a severe, persistent acne-like rash) is the most commonly observed symptom in people exposed to high levels:
- Liver damage;
- Respiratory disorders;
- Thyroid gland disorders;
- Muscle and joint pain, headaches, loss of appetite, nausea, vomiting and abdominal pain;
- Cancer PCBs are classed as Carcinogen Class 2 (probable human carcinogen); and
- Reproductive problems in animals. These include increased spontaneous abortion rates, still births, underweight births and decreased post-natal survival.

When PCBs are exposed to extreme heat they may form dioxins, which are highly toxic. Workers involved in servicing and dismantling electrical appliances, transformers and capacitors may be exposed to PCBs. PCB-containing capacitors contain small amounts of PCBs and are unlikely to pose a health risk unless they become damaged or leaking. PCBs can affect the body if they contact the skin, if they are inhaled or if they are swallowed. Absorption through the skin represents the major occupational health risk. The National Occupational Health and Safety Commission (NOHSC) has determined a maximum exposure standard for PCB's:

- PCBs containing 42 % chloride: Time weighted average (TWA) 1 mg/m3, Short term exposure limit (STEL) 2 mg/m³
- PCBs containing 54 % chloride: Time weighted average (TWA) 0.5 mg/m3, Short term exposure limit (STEL) 1 mg/m³

STEL exposure standards refer to the maximum level of exposure allowed over a period of 15 minutes.

6 RESPONSIBILITIES

This Hazardous Materials Survey and Management Plan has been designed to be integrated into the existing maintenance and operations programs. It is critical to the Management Plan that all responsible persons involved in the management and functioning of the site are adequately informed and trained in the purpose and use of the document.

The personnel responsible for the implementation and maintenance of the Management Plan may include:

- Persons conducting a business or undertaking (PCBU);
- Persons conducting a business or undertaking with management or control of a workplace;
- Persons conducting a business or undertaking carrying out demolition or refurbishment work.

Table 3. Hazardous material management and control responsibilities of duty holders.

Duty Holder	Responsibilities
Person Conducting a business or undertaking (PCBU)	 Control risk of exposure must ensure, so far as is reasonably practicable, that exposure of a person at the workplace to airborne asbestos is eliminated, except in an area that is enclosed to prevent the release of respirable asbestos fibres and negative pressure is used. If this is not reasonably practicable, the exposure must be minimised so far as is reasonably practicable. must ensure the exposure standard for asbestos is not exceeded at the workplace.
Person Conducting a business or undertaking (PCBU)	 Health monitoring must ensure health monitoring is provided to a worker who is carrying out licensed removal work, other ongoing asbestos removal work or asbestos-related work and there is risk of exposure when carrying out that work. must ensure the health monitoring is carried out under the supervision of a registered medical practitioner and information as specified in the WHS Regulations is provided to that medical practitioner. must pay all expenses for health monitoring, obtain report and keep records of all health monitoring.
Person Conducting a business or undertaking (PCBU)	 Training and use of equipment must ensure that information, training and instruction provided to a worker is suitable and adequate and that it is provided in a way that is readily understandable by any person to whom it is provided must ensure that, if a worker is either carrying out asbestos-related work or may be involved in asbestos removal work, they are trained in the identification and safe handling of asbestos and ACM and the suitable control measures for workers who carry out work where asbestos is likely to be found, training must be provided on hazards and risks associated with asbestos.
Person Conducting a business or undertaking (PCBU)	 Controlling the use of equipment must not use, or direct or allow a worker to use, certain equipment on asbestos and ACM.
Person Conducting a business or undertaking (PCBU)	 Asbestos related work must, if there is uncertainty as to whether work is asbestos-related work, assume asbestos is present or arrange for an analysis of a sample to be undertaken to determine if asbestos or ACM is present. must give information as specified in regulation 480 of the WHS Regulations to a person who is likely to be engaged to carry out asbestos-related work. must ensure the asbestos-related work area is separated from other work areas at the workplace, signs are used to indicate where the asbestos-related work is being carried out and barricades are used to delineate the asbestos-related work area.

	 must ensure a competent person carries out air monitoring of the work area if there is uncertainty as to whether the exposure standard is likely to be exceeded. must ensure that asbestos waste is contained and labelled in accordance with the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) before it is removed, and is disposed of as soon as practicable. must ensure, where personal protective equipment (PPE) is used and contaminated with asbestos, such PPE is sealed, decontaminated, labelled and disposed of in accordance with the WHS Regulations. If this is not reasonably practicable, the PPE must be laundered in accordance with the WHS Regulations. PPE that is not clothing and cannot be disposed of must be decontaminated and kept in a sealed container until it is reused for the purposes of asbestos-related work.
PCBU with management or control of a workplace	 Identifying or assuming Asbestos or ACM must ensure, so far as is reasonably practicable, that all asbestos or ACM at the workplace is identified by a competent person or assume its presence. may identify asbestos or ACM by arranging a sample of the material to be analysed.
PCBU with management or control of a workplace	 Indicating presence and location must ensure the presence and location of asbestos or ACM identified (or assumed to be identified) at the workplace is clearly indicated (by a label if reasonably practicable).
PCBU with management or control of a workplace	 Asbestos register must ensure an asbestos register is prepared, maintained, reviewed and kept at the workplace. It must be readily available to workers, their health and safety representatives and other persons must ensure, when management or control of the workplace is relinquished, a copy of the asbestos register is given to the person assuming management or control.
PCBU with management or control of a workplace	 Asbestos Management Plan must, where asbestos has been identified at the workplace, ensure an asbestos management plan is prepared, maintained and reviewed. It must be accessible to workers, their health and safety representatives and other persons.
PCBU with management or control of a workplace	 Naturally occurring asbestos must manage the risks associated with asbestos at the workplace and, where identified at the workplace or likely to be present, ensure that a written asbestos management plan is prepared, maintained and reviewed.

PCBU with	Demolition and refurbishment work
management or control of a workplace	 prior to demolition or refurbishment work starting, must review the asbestos register and ensure all asbestos that is likely to be disturbed is identified and removed so far as is reasonably practicable
	 must provide a copy of the asbestos register to the person carrying out the demolition or refurbishment work before the work commences
	 must, if an emergency occurs and a structure or plant is to be demolished, ensure that before the demolition occurs there is a procedure to reduce the risk of exposure to asbestos to below the exposure standard and notify the regulator about the emergency.
PCBU carrying out	Demolition and refurbishment work
demolition or refurbishment work	 must, prior to the demolition or refurbishment work being carried out: obtain a copy of the asbestos register for the workplace from the person with management or control before the work commences
	 if an asbestos register is not available, ensure the structure or plant to be demolished or refurbished has been inspected by a competent person to determine if any asbestos or ACM is fixed to or installed (or assume it's presence)
	 where asbestos is determined to be fixed to or installed, tell the occupier, owner (if at a domestic premises) or the person with management or control in any other case
	 ensure asbestos at domestic premises that is likely to be disturbed by the demolition or refurbishment is identified and, if reasonably practicable, removed before the work starts
	 if an emergency occurs at domestic premises where asbestos is identified (or assumed) and it must be demolished, ensure there is a procedure to reduce the risk of the exposure to asbestos to below the exposure standard and notify the regulator about the emergency.

7 CONTROL OF HAZARDS AND REMOVAL

7.1 Site Specific Recommendations

The majority ACM encountered on Site was in good condition and therefore are considered **Low Risk**. Friable linoleum paper backing was found in villas 57-64, however this material was generally in good condition, this was conserved **Medium Risk**. If disturbed, please follow the control measures presented in **Section 7.2**.

Synthetic Mineral Fibres identified on site were considered **Low Risk**. The material is in good condition, with limited accessibility, it is unlikely to present a risk to health unless damaged, tooled, cut, sanded or machined.

The Lead based paint systems identified on site varied in condition. It recommended that flaking and caulking sections of paint in high access area be removed and replaced with a lead-free substitute.

The settled dust containing elevated levels identified on flat surfaces was generally in low traffic areas. It is recommended that high traffic areas have the excess dust removed by a licensed contractor.

Polychlorinated biphenyls were assumed to be present in various light fixtures in occupation, confirm the status of these once power has been isolated.

7.2 Control of Asbestos Hazards

Control measures need to be implemented based on the risks of exposure to ACM at a workplace. The control measures should be aimed at eliminating risk arising from ACM and preventing exposure. The control measures are to follow the following hierarchy of controls:

- 1. Elimination/removal
- 2. Substitution
- 3. Isolation/Enclosure/Sealing
- 4. Engineering Controls
- 5. Safe Work Practices (Administrative controls)
- 6. Personal Protective Equipment (PPE)

The following information should be used as a guideline when determining the correct control method for management the ACM risks.

- If the ACM are friable and not in a stable condition, and there is a risk to health from exposure, they should be removed by an asbestos removalist as soon as practicable.
- If the ACM are friable but are in a stable condition and are accessible, serious consideration should be given to their removal. If removal is not immediately practicable, short-term control measures, such as sealing and enclosure, may be able to be used until removal is possible, although some State and Territory WHS authorities do not permit the sealing or encapsulation of ACM.
- If the ACM are not friable and are in a good, stable condition, minimising disturbance and encapsulation may be appropriate controls. Again, however, some State and Territory authorities do not permit sealing or encapsulation.
- Any remaining ACM should be clearly labelled, where possible, and regularly inspected to ensure they are not deteriorating or otherwise contributing to an unacceptable health risk.
- ACM need to be removed before demolition, partial demolition, renovation or refurbishment if they
 are likely to be disturbed by those works, in accordance with the National Code of Practice for the
 Safe Removal of Asbestos.

7.2.1 Elimination/Removal of Asbestos

Asbestos removal work must be performed under certain controlled conditions. Removal is considered preferable to the other abatement options such as enclosure or encapsulation as it eliminates the hazard from the workplace. The removal process, however, does pose an increased risk to personnel engaged in the removal, and may result in increased levels of airborne contaminant (asbestos fibres) in adjacent occupied areas if the removal program is not strictly controlled. The recommendations, conclusions or stability of asbestos materials contained in this report shall not abrogate a person of their responsibility to work in accordance with Statutory Requirements, Codes of Practice, Guidelines, Material Safety Data Sheets, Work Instructions or reasonable work practices.

Asbestos containing materials (ACM) are referred to as either friable or bonded. *Friable asbestos* is in the form of a powder, or can be crumbled, pulverized or reduced to powder by hand pressure when dry. Friable asbestos includes materials such as sprayed and thermal insulation, pipe lagging and millboard, and can release fibres with only minimal disturbance. *Non-Friable asbestos* products are ones in which the asbestos fibres are bound within the matrix of the material. Non-friable asbestos is difficult to damage or cause the release of fibres by hand and includes materials such as asbestos cement sheeting (fibre cement or fibro), vinyl floor tiles and zelemite electrical switchboards. However, non-friable asbestos containing materials that have been subjected to weathering, physical damage, water damage, fire or other conditions may contain exposed fibres which could be released upon disturbance.

Control Measures

Friable Asbestos

Friable ACM exhibits the greatest risk to human health as fibres are released upon minimal disturbance. As such removal and replacement would be the preferred option if such materials were found in accessible areas or air conditioning systems.

The selection of the most appropriate control measure should be determined from risk assessments and detailed knowledge of the workplace and activities. The following general principles may be applied:

- 1. If the ACM is friable, in a poor/unstable condition and accessible with risk to health from exposure, immediate access restrictions should be applied and removal is required as soon as practicable using a licensed removalist.
- 2. If the ACM is friable and accessible but in a stable condition, removal is preferred. However, if removal is not immediately practicable, short-term control measures (i.e. restrict access, sealing, enclosure etc.) may be employed until removal can be facilitated.
- 3. If the ACM is friable, in good condition and not accessible, a lower priority for removal and replacement should be given any such material. However, the removal of friable asbestos should be planned for the medium to long term and preferable in conjunction with planned minor or major building works.

Non-Friable Asbestos

Where the ACM situation has been identified to be bonded but in a poor/unstable condition and assessed as high risk; minimising disturbance and removal or encapsulation may be appropriate controls.

For non-friable ACM's in a good and stable condition, ongoing maintenance and periodic inspection would be appropriate controls.

Any remaining identified ACM's or presumptions should be appropriately labelled, where possible, and regularly inspected to ensure they are not deteriorating resulting in a potential risk to health.

Prior to any demolition, partial demolition, renovation or refurbishment, asbestos containing materials likely to be disturbed by those works should be removed in accordance with the National Code of Practice for the Safe Removal of Asbestos including the development of asbestos removal control plan (ARCP).
Further assessment of risk through airborne fibre monitoring can assist with decisions on the most appropriate, and urgency of, control measures.

Asbestos Removal Requirements

In the event that activities are required to or will remove asbestos containing materials as part of any building works the following must be complied with:

- All maintenance on, or removal of, asbestos is only to be undertaken by licensed removal contractors.
- At no time are unlicensed maintenance personnel /contractors to undertake work that involves the disturbance of hazardous materials.

The following procedures are an outline of the methods to be used by the asbestos removal contractors when working in the buildings to allow access by maintenance personnel. These procedures *are not intended* for use for large scale asbestos removal. Specific procedures should be compiled for all large scale asbestos removal.

Asbestos Cement Sheeting Material

The following procedure is to be followed for undertaking maintenance work in areas containing asbestos cement sheeting. It is only necessary to adopt this procedure for work that will disturb the asbestos cement sheet. Other work in the adjacent area which does not disturb the asbestos may be undertaken without special precautions.

- Plastic sheeting is to be placed on the floor of the area in which the work is to be undertaken.
- Barrier tape with appropriate signage is to be placed approximately 10m from the work area to prevent unauthorised access.
- All persons involved in the maintenance work are to wear disposable coveralls and approved respirator.
- If asbestos cement sheet has to be disturbed, it is to be wetted to suppress any dust generated from the work. Approved vacuum cleaners are to be used during the work to collect dust generated by the work.
- At the completion of the work the area is to be thoroughly vacuumed and all plastic and disposable coveralls are to be sealed in plastic bags for disposal. Respirators are to be bagged for later cleaning and reuse.
- The area is to be inspected by the hygienist to ensure that all asbestos debris has been removed.
- A copy of clearance report is to be given to the building controller.

Non-Friable Asbestos Products such as Vinyl Floor Tiles & Electrical Backing Boards

The following procedure is to be followed for undertaking maintenance work in areas containing bonded asbestos materials. It is only necessary to adopt this procedure for work that will disturb the abovementioned asbestos materials. Other work in the adjacent area that does not disturb the asbestos material may be undertaken without special asbestos precautions:

- Where appropriate, plastic sheeting is to be placed on the floor of the area in which the work is to be undertaken.
- Barrier tape with appropriate signage is to be placed approximately 10m from the work area to prevent unauthorised access.
- All persons involved in the maintenance work are to wear disposable coveralls and approved respirator.
- All dust and debris generated during the work is to be collected and placed in plastic bags for disposal.

- At the completion of the work the area is to be vacuumed and wet wiped and all plastic and disposable coveralls are to be sealed in plastic bags for disposal. Respirators are to be bagged for later cleaning and reuse.
- The area is to be inspected by the hygienist to ensure that all asbestos debris has been removed.
- A copy of clearance report is to be given to the property controller.

Air Monitoring and Clearance Inspections

Before an area can be re-occupied post asbestos removal a clearance inspection must be performed. The clearance inspection must be undertaken by a competent person only and a clearance certificate must be obtained from the competent person. Clearance monitoring is recommended for Asbestos removal jobs and should be assessed as part of the planning and conduct of the removal job. All asbestos removal work must be verified by requiring final clearance certificates for both inspections and monitoring if required.

7.2.2 Leave In Situ

The identification of Asbestos containing material (ACM) in a building does not automatically necessitate its immediate removal. Materials in a stable condition and not prone to mechanical damage can generally remain in situ. The ACM will need to be inspected on a regular basis to ensure its integrity is maintained. The ACM should be labelled according to the National Code of Practice for the Management and Control Asbestos in Workplaces. This form of control method is to be used in conjunction with encapsulation or sealing to ensure that the risk of airborne fibres is minimised. It is also advisable to label all identified and presumed ACM while they remain in situ.

7.2.3 Sealing or Encapsulation

Encapsulation refers to the coating of the outer surface of the asbestos containing material by the application of some form of sealant compound that usually penetrate to the substrate and harden the material. Sealing is the process of covering the surface of the material with a protective coating impermeable to asbestos. Encapsulation or sealing helps protect the asbestos from mechanical damage, and is designed to reduce the risk of exposure by inhibiting the release of asbestos fibres into the airborne environment, and increase the length of serviceability of the product.

The use of encapsulation or sealing may be of limited application. It is not considered to be an acceptable alternative to repairing or removing severely damaged asbestos materials.

7.2.4 Enclosure or Isolation

Enclosure involves installing a barrier between the asbestos containing material and adjacent areas. This is effective in inhibiting further mechanical damage to the asbestos, and friable products such as calcium silicate pipe lagging or sprayed limpet asbestos which may be targeted for enclosure where removal is not an option. The type of barrier installed may include plywood or sheet metal products, constructed as a boxing around the asbestos.

7.2.5 Safe Work Practices

Work involving the removal of asbestos is to be conducted as per the guidelines in the National Code of Practice for the Safe Removal of Asbestos. Safe Work Practices regarding asbestos are covered in detail within **Section 9** of this AMP.

7.2.6 Personal Protective Equipment

The personal protective equipment requirements for work involving asbestos containing materials at the Subject site are to be based on the risk assessment. The National Code of Practice for the Safe Removal of Asbestos [NOHSC:2002 (2005)] should be consulted to determine the PPE needs as well as AS 1715

and AS 1716 for respiratory protection. PPE used during the asbestos removal should be treated as waste and disposed of in the approved asbestos waste bags. Personal Protective Equipment as a control against the asbestos risk is discussed in detail within *Section 9* of this AMP.

7.3 Control of Lead Hazards

7.3.1 Lead Paint

The selection of the most appropriate control measure should be determined from risk assessments and detailed knowledge of the workplace and activities. The following general principles may be applied:

- Regardless of condition, immediate access restrictions should be applied and removal undertaken if the lead-based paint is located in areas that are likely to be chewed or licked by children, knocked or are subject to friction.
- If the lead-based paint is flaking or chalking, or in a poor/unstable condition (and not located in areas as described above), repainting is required as soon as practicable. However, the surface will need to be prepared by a light wet sanding with wet-and-dry sandpaper to help the paint stick to the surface. Take care not to generate lead dust or contaminate the areas with water from the wetsanding process.
- Lead-based paint in good condition (and not located in areas as described above), should be left in place, unless major renovation and comprehensive removal is planned.
- Painting over lead-based paint is a temporary solution limited by the life of the paint. Alternatives to painting or the removal of lead-based paint include encapsulating the paint with other materials.

7.3.2 Lead Dust

The selection of the most appropriate control measure should be determined from risk assessments and detailed knowledge of the workplace and activities. The levels of lead in dust detected may be compared with the following indicative levels when undertaking the risk assessment:

Indicative Levels

According to the Australian Standard Guide to Lead Paint Management (AS 4361.2 – 1998), the permissible amount of leaded dust remaining on each of the following surfaces following lead hazard work is:

- 1 mg/m² on floors (carpeted or uncarpeted)
- 5 mg/ m² on interior window sills (stools).
- 8 mg/ m² on window troughs (the area where the sash sits when closed).
- 8 mg/ m² on exterior concrete (1 mg = 1000 μg).

In the absence of a legislative standard, SWE (in consultation with the Department of Health and WorkCover) has adopted a threshold of 300 mg/kg which is considered appropriate for residential roof / ceiling cavities).

Other control measures such as training and communication strategies, control of contractors and administrative procedures must be considered as part of the overall Asbestos Management Plan.

7.4 Control of Synthetic Mineral Fibre Hazards

The following National Standards and Codes of Practice are applicable to SMF:

Standard for Synthetic Mineral Fibres [NOHSC:1004(1990)]	Sets the recommended maximum exposure level for all types of SMF. (This is also contained in Exposure Standards for Atmospheric Contaminants [NOHSC: 1003 (1995)]
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Code of Practice for Synthetic Mineral Fibres NOHSC:2006(1990)]Provides practical guidance about managing risks from synthetic mineral fibres to keep exposure within the standard

Use hand tools, not power tools, and wet or dampen the material before cutting. If power tools are used, local exhaust ventilation should be installed. *Protective equipment* must be used wherever other means cannot keep the exposure level below the exposure standard. It should include the appropriate type of mask and clothing. The code of practice has a detailed guide to selecting respiratory protection.

At the end of demolition/removal operations, a clearance inspection and sampling program should be carried out and a Clearance Certificate issued. If the SMF insulation is to be disturbed or removed, the airborne SMF monitoring should be carried out during the removal operations by a NATA accredited laboratory. SMF's are currently not on the schedule of substances requiring health surveillance.

7.5 Control of Polychlorinated Biphenyls Hazards

Care must be taken when handling damaged capacitors to ensure that spillage does not occur. The person handling the damaged capacitor should take the following precautions:

- put on personal protective equipment and clothing before removing damaged or leaking components;
- wear gloves that are made of materials that are resistant to PCBs, such as Viton, polyethylene, polyvinyl alcohol (PVA), polytetrafluoroethylene (PTFE), butyl rubber, nitrile rubber, or neoprene;
- do not use gloves made of polyvinyl chloride (PVC) or natural rubber (latex);
- use disposable gloves;
- wear disposable overalls made of Tyvek or made of materials with similar chemical resistant properties;
- when working with overhead equipment (e.g. Fluorescent light fixtures), wear a full face shield and appropriate hair protection;
- wash any non-disposable contaminated equipment with kerosene and collect the kerosene for disposal as a PCB contaminated solvent;
- if PCB vapours are suspected (e.g. PCB leaks onto a hot surface in a confined space), wear a twin cartridge type respirator suitable for chlorinated vapours;
- always ensure adequate ventilation;
- Note: PCBs do not vaporise readily at room temperature;
- do not smoke; and
- after handling PCBs, employ good personal hygiene practices, including washing hands in warm, soap.

It is advisable to check the current regulations in effect with the authority responsible for environmental protection authority in your State or Territory. In the ACT this is WorkCover ACT and Environment Protection and Heritage. The absence of a capacitor from the ANZECC information booklet is not a guarantee that the capacitor does not contain PCBs: If there is any doubt as to whether a capacitor or any electrical equipment contains PCBs, treat the equipment as if it does contain PCBs.

8 ONGOING MANAGEMENT OF IN-SITU HAZARDOUS MATERIALS

For the safe management of in situ hazards materials it is important to ensure asbestos containing materials, SMF, and PCBs in capacitors are not disturbed or can deteriorate to such an extent that staff and users, external contractors or visitors are unnecessarily exposed to Inhalable asbestos fibres.

8.1 Re-inspections

Re-inspections of ACMs remaining on site are to be conducted by a competent person only. Such reinspections will comprise a visual assessment of the condition of the materials to determine whether the material remains in a satisfactory condition, or if deterioration has occurred since the previous inspection. Such re-inspections will determine if any remedial action, such as encapsulation, isolation or removal of the ACM, is required. Re-inspections will be performed on a regular basis (every 12 months for asbestos).

Normally, re-sampling of materials would not be required during re-inspections. If, however, previously unidentified or undocumented ACMs, or materials suspected of containing ACMs, are encountered during the re-inspection process, sampling and analysis will need to be performed. The ACMs register, where necessary, will be updated and re-issued at the completion of the re-inspection work.

8.2 Record Keeping

The property owner/controller shall maintain detailed records of all activities and work permits relating to ACMs works which have been undertaken on the premises. The records kept should include:

- Copies of all ACMs survey reports, including updates and amendments;
- Copies of all 'permit to work' documents;
- Site induction records pertaining to the informing of contractors about the presence of ACMs on site, and that such contractors have been appropriately trained in safe work procedures and practices;
- Records pertaining to the informing of employees about the presence of ACMs on site, and that such employees have been appropriately trained in safe work procedures and practices;
- Records of any ACMs abatement works performed on site;
- Clearance certificates indicating areas are safe to reoccupy after ACMs abatement works;
- Air monitoring results of asbestos fibre;
- Previous versions of the ACMs register; and
- All asbestos related records and documents are to be retained for 70 years after the removal of the ACM; after the building has been demolished; after the last action.

8.3 Labelling and Signage

The property owner/controller should implement a system of labelling throughout the premises, to clearly identify and provide warning of the presence of ACMs and principally asbestos containing materials.

ACMs labels must comply with Australian Standard AS1319 Safety Signs for the Occupational Environment. An example of the standard warning labels for asbestos is illustrated below:



The policy of the property owner/controller should be to install signage in areas that contain ACM including plant, equipment and components. These signs should be placed at all entrances to the work areas where asbestos is present. And also to cover the following situations and conditions;

- Labels are to be placed on items of ACM identified or presumed and any ACM enclosed or inaccessible;
- The positions and number of labels required should be determined by a competent person;
- The labels are to be located and consistent with the locations in the ACM register; and
- Warning labels are to be in a location that will alert persons to not disturb the material without the correct training.

8.4 Occupational Exposure Standards

The aim of the stakeholders is to keep personal exposure to hazardous (asbestos) building materials as low as reasonably achievable. Where occupational exposure to such hazards is likely to occur, exposure is not to exceed the occupational exposure standards as published by the National Occupational Health and Safety Commission (WorkSafe Australia).

Occupational exposure for asbestos is measured using the Membrane Filter Method, by collecting a sample of air from the breathing zone of a person, over a minimum four hours duration.

The current occupational exposure standards TWA for asbestos are:

- Chrysotile (white) asbestos 0.1 fibres per millilitre
- Amosite (brown) asbestos 0.1 fibres per millilitre
- Crocidolite (blue) asbestos 0.1 fibres per millilitre
- Other forms of asbestos or a mixture of asbestos types 0.1 fibres per millilitre

9 SAFE WORK PRACTICES

9.1 General

Prior to commencing any works on the Subject site, such as demolition, refurbishment or maintenance, the Asbestos register for the site or structure in question must be consulted to determine if any ACM is present which is at risk of being disturbed. If it is documented ACM is present in the area, and may be impacted upon by the proposed works, it must be removed under controlled conditions by a competent person licensed to perform asbestos removal work prior to the commencement of any further works.

Depending on the nature of the ACM, abatement options other than removal (such as encapsulation) may be feasible but removal is the preferred method of control. If unknown materials, or undocumented materials suspected of containing asbestos are encountered during site works, such materials are to be sampled and treated as if they contain asbestos and any work that would impact on that material must immediately cease, pending sampling and analysis by a qualified person. This will allow the property controller to determine what control methods are required.

Any external contractor contracted to perform works on or in a building of such an age that ACM may be present, must, prior to commencing work, undergo a site/client specific induction. Such an induction is designed to alert the contractor to the possible presence of ACM, and the various issues associated with working with asbestos in building structures. The asbestos register for the building in question will be consulted in the presence of the contractor during the site induction, and it will be determined if any ACM are at risk of being disturbed as a result of the intended works. If this is suspected to be the case, the contractor engaged is to ensure that a licensed asbestos removalist performs the asbestos removal work which will require an Asbestos Permit to Work to be made available prior to commencing the work.

It is important that safe work practices are in place when carrying out asbestos work or asbestos-related work. Wherever possible, dry asbestos should not be worked on. Techniques that prevent or minimise the generation of airborne asbestos fibres include:

- · the wetting of asbestos using surfactants or wetting agents, such as detergent water
- the use of thickened substances, pastes and gels, including hair gel and shaving cream, to cover the surfaces of asbestos being worked on (these substances should be compatible with the conditions of use, including the temperature, and should not pose a risk to health)
- the use of shadow vacuuming
- performing the task in a controlled environment (for instance, a ventilated enclosure).

9.2 Tools and Equipment

Tools and equipment to be used for asbestos removal jobs are to minimise the generation of airborne asbestos fibres. High-speed abrasive power or pneumatic tools such as angle grinders, sanders, saws and high speed drills must never be used. Hand tools are preferred over power tools. At the end of the removal work, all tools should be:

- Decontaminated (i.e. fully dismantled and cleaned under controlled conditions) or
- Placed in sealed containers (and used only for asbestos removal work); or
- Disposed of as asbestos waste.

9.3 Personal Protective Equipment (PPE)

PPE will need to be used, in combination with other effective control measures, when working with asbestos. The selection and use of PPE should be based on a risk assessment. The ease of decontamination should be one of the factors considered when choosing PPE. For PPE that is not clothing and cannot be disposed

of, it must be decontaminated and kept in a sealed container until it is reused for the purposes of asbestosrelated work.

9.3.1 Coveralls

- Protective clothing should be made from material capable of providing adequate protection against fibre penetration.
- When selecting protective clothing, other hazards—including heat stress, fire and electrical hazards—should also be considered.
- Disposable coveralls with fitted hoods and cuffs should be worn. Coveralls with open pockets and/or Velcro fastenings should not be used, because these features can be contaminated and are difficult to decontaminate. Fitted hoods should always be worn over the straps of respirators and loose cuffs should be sealed with tape. Disposable coveralls rated type 5, category 3 (prEN ISO 13982–1) or equivalent would meet this standard.
- Asbestos fibres must be prevented from being transported outside the workplace by thoroughly vacuuming asbestos fibres from work clothes using an asbestos vacuum cleaner or, depending on the level of contamination and risk, the use of a water spray bottle or damp cloths may be appropriate.
- Disposable coveralls need to be of a suitable standard to prevent penetration of asbestos fibres so far as is practicable. Disposable coveralls rated type 5, category 3 (prEN ISO 13982-1) or the equivalent would meet this standard.
- Non-disposable coveralls are not recommended and would require specialist laundering if used.
- Any clothing worn under coveralls must be disposed of or suitably bagged for laundering as asbestos-contaminated clothing.

9.3.2 Footwear and Gloves

- Laced boots should be avoided as they can be difficult to clean and asbestos dust can gather in the laces and eyelets. Laceless boots such as gumboots are preferred where practicable. If boot covers are worn, they should be of a type that has anti-slip soles to reduce the risk of slipping.
- Safety footwear must be decontaminated before being removed from the asbestos work area or sealed in double bags, the exterior of which is decontaminated, for use only on the next asbestos maintenance task. Alternatively, work boots that cannot be effectively decontaminated should be disposed of as asbestos waste at the end of the work.
- The use of protective gloves should be determined by a risk assessment. If significant amounts of
 asbestos fibres may be present, disposable gloves should be worn. Protective gloves can be
 unsuitable if dexterity is required. Personal decontamination including hand and fingernail washing
 should be carried out each time workers leave the asbestos work area and at the completion of
 asbestos maintenance and service work. Any gloves used must be disposed of as asbestos waste.

9.3.3 Respiratory Protective Equipment (RPE)

- In general, the selection of suitable RPE depends on the nature of the asbestos work, the probable
 maximum concentrations of asbestos fibres that would be encountered in this work and any personal
 characteristics of the wearer that may affect the facial fit of the respirator (for example, facial hair
 and glasses).
- A competent person should determine the most efficient respirator for the task.
- RPE should comply with AS/NZS 1716-2003 Respiratory Protective Devices and be selected, used and maintained in accordance with AS/NZS 1715-1994 Selection, Use and Maintenance of Respiratory Protective Devices. They must always be worn under fitted hoods. Face pieces should be cleaned and disinfected.

- RPE should be used until all contaminated disposable coveralls and clothing has been vacuum cleaned and/or removed and bagged for disposal and personal washing has been completed. RPE should be properly stored when not in use.
- More comprehensive advice on RPE is provided in the CoP for the Safe Removal of Asbestos.

9.4 Laundering Clothing

Disposable coveralls should be used as protective clothing unless it is not reasonably practicable to do so. When non-disposable protective clothing is used, the contaminated clothing must be laundered in a suitable laundering facility that is equipped to launder asbestos-contaminated clothing. Contaminated protective clothing must not be laundered in homes. Any clothing worn under coveralls must be disposed of or suitably bagged for laundering as asbestos-contaminated clothing.

9.5 Cleaning Up

Following any asbestos work carried out, there are requirements to ensure the work area, tools and workers are decontaminated and asbestos waste is disposed of properly. In addition to this, for licensed removal work a clearance certificate will be required before the work area can be reoccupied for ordinary use.

The Code of Practice for the Safe Removal of Asbestos provides details on decontamination and waste disposal.

10 EMERGENCY PROCEDURES

An emergency situation is most likely to entail such a scenario where asbestos containing materials (ACM) present on site have been inadvertently disturbed through actions of site employees, users, maintenance personnel, contractors, visitors, or damaged by severe weather conditions (e.g. hail damage to a corrugated asbestos cement roof). Where such damage has occurred, the site manager or persons with control of the site shall be notified immediately. The below procedural steps may form the framework for site operations in response to an emergency involving asbestos or an unexpected asbestos find:

Step 1: Suspected asbestos material uncovered at worksite.

Step 2: Cease work and evacuate affected area .

Step 3: Contact immediate supervisor and raise a Hazard Report.

Step 4: Consult Safety and Environment Coordinators, Site manager and OHS & E Consultant.

Step 5: Arrange for erection of barricades around the affected area. Ensure all PPE is worn as per **Section 9.3**.

Step 6: Provide PPE as per Section 9.3 to staff required to be in the vicinity of the affected area.

Step 7: Carry out staff site briefing.

Step 8: Assessment and testing of area by an OHS & E Consultant.

Step 9: If asbestos is found proceed with remediation under recommendations of consultant, if not resume works.

Step 10: Engage the removal contractor and gain appropriate Work Cover Permit if required and proceed with remediation and airborne asbestos monitoring.

Step 11: Clearance to be provided on completion.

Step 12: Return to normal operations.

During any removal of ACM an emergency within the building may necessitate the need to evacuate the building. The risks associated with any asbestos removal work should be assessed and include contingencies in the case of an emergency. Workers should be trained in the event of an emergency. Decontamination procedures can be temporarily waived in the event of an emergency and this is to be based on risk. The event likely to present in an emergency may include but not be limited to:

- Fire Evacuation.
- Chemical spill and contamination.
- Gas leak/contaminated atmosphere hazardous to health.

In the case of the above situations requiring an emergency, Site supervisor, Site Security and the other Stakeholders should be notified immediately and the area evacuated.

11 TRAINING AND AWARENESS

Licensed, reputable asbestos removalists should undertake all asbestos removal work. Site staff/personnel, contractors and others who may come into contact with asbestos containing materials (ACM) at the subject site either directly or indirectly should be provided with asbestos awareness training. Such training may include the following:

- Purpose of the training
- Information on the health risks associated with ACM;
- Information on the presence of ACM in relative buildings/sites, including the types of asbestos, uses and typical locations/likely occurrences where ACM may be encountered.
- The trainee roles and responsibilities under the Asbestos Management Plan.
- Information on the site register of ACM and how to access it.
- The timetable of ACM removal at the subject site.
- Process and procedure to be followed to prevent exposure.
- The correct use of maintenance and controls measures, PPE and work methods to minimise the risks from ACM, limit the exposure to workers and limit the spread of asbestos fibres outside any asbestos work area.
- The relevant National Exposure Standards and control levels for ACM.
- The purpose of any air monitoring or health surveillance that may occur.

12 STATEMENT OF LIMITATIONS

This report and the associated services performed by SWE are in accordance with the scope of services set out in the contract between SWE and the Client. The scope of services was defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to the Subject Site.

SWE derived the data in this report primarily from research, visual inspections, examination of available records, interviews with individuals with information about the site, and if requested, limited sample collection and analysis made on the dates indicated. In preparing this report, SWE has relied upon, and presumed accurate, certain information provided by government authorities, the Client and others identified herein. Except as otherwise stated in the report, SWE has not attempted to verify the accuracy or completeness of any such information.

Limitations also apply to analytical methods used in the identification of substances [refer to examples a), b) and c) below]. These limitations may be due to non-homogenous material being sampled (i.e. the sample to be analysed may not be representative), low concentrations, the presence of 'masking' agents and the restrictions of the approved analytical technique. As such, non-statistically significant sampling results can only be interpreted as 'indicative' and not used for quantitative assessments.

a). Due to the very low concentration of asbestos fibres and the non-homogenous matrix of vinyl floor tiles, false negative results may be obtained. Therefore the accuracy of all results cannot be guaranteed.

b). Notably, with some asbestos containing bulk material it can be very difficult, or impossible to detect the presence of asbestos using the polarised light microscopy analytical method, even after ashing or disintegration of samples. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or attributed to the fact that, very fine fibres have been distributed individually throughout the materials.

c). The analysis of many asbestos products used as a component of insulation materials, may be compromised in instances where the material has been heat affected, as heat may alter the morphology of the fibrous material.

No warranty, undertaking, or guarantee, whether expressed or implied, is made with respect to the data reported or to the findings, observation, conclusions and recommendations expressed in this report. Furthermore, such data, findings, observations, conclusions and recommendations are based solely upon the existence at the time of the investigation. The passage of time, manifestation of latent conditions or impacts of future events (e.g. changes in legislation, scientific knowledge, land uses, etc) may require further investigation at the site with subsequent data analysis and re-evaluation of the findings, observation, conclusions and recommendations expressed in this report.

This report has been prepared on behalf of and for the exclusive use of the Client, and is subject to and issued in connection with the provisions of the agreement between SWE and the Client. SWE accepts no liability or responsibility whatsoever and expressly disclaims any responsibility for or in respect of any use of or reliance upon this report by any third party or parties.

It is the responsibility of the Client to accept if the Client so chooses any recommendations contained within and implement them in an appropriate, suitable and timely manner.

13 REFERENCES

- Work Health and Safety Act 2011.
- AS2601 (2001) The Demolition of Structures.
- National Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC: 2018 (2005)].
- National Code of Practice for the Safe Removal of Asbestos 2nd Edition (NOHSC:2002 (2005)].
- National Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC:2006(1990)].
- National Standard for Synthetic Mineral Fibres [NOHSC:1004(1990)].
- AS4361.1 (1995) Guide to Lead Paint Management. Part 1: Industrial Applications.
- AS4361.2 (1998) Guide to Lead Paint Management. Part 2: Residential and Commercial Buildings.
- ANZECC (1997) Identification of PCB-containing Capacitors: An Information Booklet for Electricians and Electrical Contractors.
- UK Health and Safety Executive (HSE) HSG264 (2010) Asbestos The Survey Guide.

51 Masons Parade, Point Frederick, NSW 2250



Hazardous Materials – Legacy Village, Point Frederick



Photograph 7: Hall, bathroom ceiling lining presumed to contain asbestos.



Photograph 9: Hall, kitchen ceiling lining presumed to contain asbestos.



Photograph 11: Cottage internal laundry ceiling lining containing asbestos.



Photograph 8: Hall, storage room ceiling lining presumed to contain asbestos.



Photograph 10: Cottage, eave lining containing asbestos.



Photograph 12: Housing blocks, eave lining throughout containing asbestos.



Photograph 13: Housing blocks, rear balcony awnings throughout presumed to contain asbestos.



Photograph 15: Housing blocks, meter room adj. unit 18, sheet below backing board presumed to contain asbestos.



Photograph 17: Housing blocks, storage room behind units 39 & 45, loose sheets presumed to contain asbestos.



Photograph 14: Housing blocks, example of bituminous backing boards containing asbestos.



Photograph 16: Housing blocks, laundry adj. unit 48 wall lining presumed to contain asbestos.



Photograph 18: Housing units, units 53-56 wall lining containing asbestos.



Photograph 19: Villas, front & rear awnings containing asbestos.



Photograph 21: Villas, meter rooms adj. unit 58 and 62, sheeting attached to underside of doors, presumed to contain asbestos.



Photograph 23: Villas, units 57-64, original lino flooring paper backing containing asbestos.



Photograph 20: Villas, meter rooms adj. unit 58 and 62, backing boards containing asbestos.



Photograph 22: Villas, units 57-64 bathroom wall lining containing asbestos.



Photograph 24: Telecommunication pit adj. cottage containing asbestos.





Photograph 31: Housing blocks, example of hot water tanks throughout containing SMF internally.



Photograph 33: Villas, units 57-64, example insulation batts on underside of ceiling containing SMF.



Photograph 35: Cottage, hot water tank containing SMF.



Photograph 32: Villas, units 57-64, roof backed insulation containing SMF.



Photograph 34: Villas, units 57-64, example of small hot water tanks at each villa containing SMF.



Photograph 36: Housing blocks, cream paint systems to door frames containing lead.



Photograph 37: Housing blocks, white paint system to rails containing lead.



Photograph 39: Housing blocks, storage void adj lounge light fixtures presumed to contain PCB's.



Photograph 41: Housing blocks, circular wall mounted light fixtures presumed to contain PCB's.



Photograph 38: Cottage, cream paint system to door and window frames containing lead.



Photograph 40: Housing blocks, long single fluorescent light fixtures presumed to contain PCB's.



Photograph 42: Housing blocks, breezeway, older medium single fluorescent light fixtures presumed to contain PCB's.



Photograph 43: York street units eaves and awnings presumed to contain asbestos.



Photograph 45: York street units, telcom pit adj. unit 68 presumed to contain asbestos.



Photograph 44: York street units upstairs bathrooms wall lining presumed to contain asbestos.



Photograph 46: York street units, telcom pit adj. unit 66, SE end presumed to contain asbestos.



Appendix B Hazardous Materials Maintenance Log



Hazardous Material Maintenance Log

The following log should be maintained by the responsible person. It should contain information relating to the ongoing maintenance or control measures associated with Hazardous Material, such as ACM including removal, remedial works, repairs, inspection, monitoring and clearance details etc.

Site:	Legacy Village – 51 Masons Parade, Point Frederick, NSW 2200			
Date	Scope / Location Carried out by Result/Comments Entered by			
21/03/2020	Initial Hazardous Materials Survey	Alexandar Mitevski, Safe Work Environments Pty Ltd	Register and Management Plan produced & delivered	Alexandar Mitevski, Safe Work Environments Pty Ltd

Hazardous Materials Survey & Management Plan





30 March 2021

Attention:	Aidan Rooney		
Company:	Alliance Geotechnical		
Fax/email:	aidan@allgeo.com.au		
Address:	PO Box 275, Seven Hills NSW 1730		
Client Reference:	51-57 Masons Parade, Point Frederick, NSW 2250		
SWE Report Reference	e: S109616.1		
Date of Receipt:	19 March 2021		
Sample Analysis Date:	19 March 2021		
SWE Laboratory:	Suite 25, 103 Majors Bay Road, Concord NSW 2137		



NATA Accreditation No:	17092	Site Number:	18665

Asbestos Identification

- **1.Introduction:** This report presents the results of 13 samples, collected by SWE on 19 March 2021 and analysed as received for the presence of asbestos. The collection of samples for analysis is not covered under the laboratory NATA Accreditation. The sampling reference location is not verified by Safe Work and Environments (SWE).
- **2. Methods:** Samples are examined under a Stereo Microscope and selected fibres are analysed via Polarized Light Microscopy in conjunction with Dispersion Staining; in accordance with Australian Standard *AS4964-2004* and SWE's In-House *ALM-Method 3 Fibre Identification*.

SWE REF.	CLIENT REFERENCE	SAMPLE DESCRIPTION ANALYTICAL RESULTS	
S109616.1/A01		Fibre cement sheet 28x12x3 mm	Chrysotile Asbestos Detected Organic Fibre Detected
S109616.1/A02		Window putty <1 g	Chrysotile Asbestos Detected Organic Fibre Detected
S109616.1/A03		Fibre cement sheet fragments <1 g	Chrysotile Asbestos Detected Organic Fibre Detected
S109616.1/A04		Vermiculite 4 g	No Asbestos Detected Organic Fibre Detected
S109616.1/A05		Electrical backing board fragments <1 g	Chrysotile Asbestos Detected
S109616.1/A06		Fibre cement sheet fragments <1 g	Chrysotile, Amosite & Crocidolite Asbestos Detected
S109616.1/A07		Fibre cement sheet fragments <1 g	No Asbestos Detected Organic Fibre Detected
S109616.1/A08		Vinyl floor tiles with an amber adhesive 65x24x4 mm	No Asbestos Detected Organic Fibre Detected
S109616.1/A09		Fibre cement sheet fragments <1 g	Chrysotile, Amosite & Crocidolite Asbestos Detected
S109616.1/A10		Fibre cement sheet fragments <1 g	Chrysotile Asbestos Detected

3. Results:

S109616.1-FID-190321



SWE REF.	CLIENT REFERENCE	SAMPLE DESCRIPTION	ANALYTICAL RESULTS
S109616.1/A11		Linoleum with a paper backing <1 g	Chrysotile Asbestos Detected Organic Fibre Detected
S109616.1/A12		Fibre cement sheet fragments <1 g	Chrysotile Asbestos Detected
S109616.1/A13		Fibre cement sheet fragments <1 g	Chrysotile Asbestos Detected
S109616.1/A14		Fibre cement sheet fragments <1 g	Chrysotile Asbestos Detected
S109616.1/A15		Fibre cement sheet fragments <1 g	No Asbestos Detected Organic Fibre Detected

Analysed and reported by:

Calvin Yung Analyst

Rune Knoph Approved Issuer of Report

S109616.1-FID-190321



Envirolab Services Pty Ltd ABN 37 112 535 645 12 Ashley St Chatswood NSW 2067 ph 02 9910 6200 fax 02 9910 6201 customerservice@envirolab.com.au www.envirolab.com.au

CERTIFICATE OF ANALYSIS 264846

Client Details	
Client	Safe Work & Environments
Attention	Alexandar Mitevski
Address	7/103 Majors Bay Rd, Concord, NSW, 2137

Sample Details	
Your Reference	<u>S109616</u>
Number of Samples	3 PAINT, 1 DUST
Date samples received	22/03/2021
Date completed instructions received	22/03/2021

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details		
Date results requested by	23/03/2021	
Date of Issue	23/03/2021	
NATA Accreditation Number 2901. This document shall not be reproduced except in full.		
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *		

<u>Results Approved By</u> Jaimie Loa-Kum-Cheung, Metals Supervisor Authorised By

Nancy Zhang, Laboratory Manager



Lead in Paint				
Our Reference		264846-1	264846-2	264846-3
Your Reference	UNITS	LP01	LP02	LP03
Date Sampled		19/03/2021	19/03/2021	19/03/2021
Type of sample		PAINT	PAINT	PAINT
Date prepared	-	23/03/2021	23/03/2021	23/03/2021
Date analysed	-	23/03/2021	23/03/2021	23/03/2021
Lead in paint	%w/w	0.45	0.20	8.4

Lead (dust)		
Our Reference		264846-4
Your Reference	UNITS	LD01
Date Sampled		19/03/2021
Type of sample		DUST
Date prepared	-	22/03/2021
Date analysed	-	22/03/2021
Lead	mg/kg	2,800

Method ID	Methodology Summary
Metals-020	Determination of various metals by ICP-AES.
Metals-020/021/022	Digestion of Paint chips/scrapings/liquids for Metals determination by ICP-AES/MS and or CV/AAS.

QUALITY CONTROL: Lead in Paint					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			23/03/2021	[NT]		[NT]	[NT]	23/03/2021	
Date analysed	-			23/03/2021	[NT]		[NT]	[NT]	23/03/2021	
Lead in paint	%w/w	0.005	Metals-020/021/022	<0.005	[NT]		[NT]	[NT]	94	

QUALITY CONTROL: Lead (dust)					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			22/03/2021	[NT]		[NT]	[NT]	22/03/2021	
Date analysed	-			22/03/2021	[NT]		[NT]	[NT]	22/03/2021	
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	93	[NT]

Result Definiti	ons
NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions					
Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.				
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.				
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.				
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.				
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.				

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.



Certificate of Analysis

Environment Testing

Alliance Geotechnical 10 Welder Road Seven Hills **NSW 2147**

> Aidan Rooney 723334-AID POINT FREDERICK 10827 Jun 02, 2020

Jun 12, 2020

Attention:

Project ID

Project Name

Received Date

Date Reported

Report

Methodology:	
Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.
Bonded asbestos- containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004. NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01% " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.



NATA Accredited Accreditation Number 1261 Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.




Project Name	POINT FREDERICK
Project ID	10827
Date Sampled	Jun 01, 2020
Report	723334-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP01-0.0-0.2	20-Jn04605	Jun 01, 2020	Approximate Sample 497g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP02-0.0-0.2	20-Jn04606	Jun 01, 2020	Approximate Sample 578g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP03-0.0-0.2	20-Jn04607	Jun 01, 2020	Approximate Sample 446g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP04-0.0-0.2	20-Jn04608	Jun 01, 2020	Approximate Sample 527g Sample consisted of: Brown coarse-grained soil, rocks and cement	ACM: Chrysotile asbestos detected in fibre cement fragments. Approximate raw weight of ACM = 3.2g Total estimated asbestos content in ACM = 0.32g* Total estimated asbestos concentration in ACM = 0.060% w/w* Organic fibre detected. No trace asbestos detected.
TP05-0.0-0.2	20-Jn04609	Jun 01, 2020	Approximate Sample 431g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP06-0.0-0.2	20-Jn04610	Jun 01, 2020	Approximate Sample 561g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP07-0.0-0.2	20-Jn04611	Jun 01, 2020	Approximate Sample 620g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.





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Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP08-0.0-0.2	20-Jn04612	Jun 01, 2020	Approximate Sample 472g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP09-0.0-0.2	20-Jn04613	Jun 01, 2020	Approximate Sample 611g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP09-1.2-1.4	20-Jn04614	Jun 01, 2020	Approximate Sample 746g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP10-0.0-0.2	20-Jn04615	Jun 01, 2020	Approximate Sample 483g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP11-0.0-0.2	20-Jn04616	Jun 01, 2020	Approximate Sample 577g Sample consisted of: Brown coarse-grained sandy soil, rocks and bituminous material	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP12-0.1-0.3	20-Jn04617	Jun 01, 2020	Approximate Sample 637g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP13-0.1-0.3	20-Jn04618	Jun 01, 2020	Approximate Sample 566g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP14-0.0-0.2	20-Jn04619	Jun 01, 2020	Approximate Sample 592g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP15-0.0-0.2	20-Jn04620	Jun 01, 2020	Approximate Sample 524g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP16-0.1-0.3	20-Jn04621	Jun 01, 2020	Approximate Sample 589g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP17-0.1-0.3	20-Jn04622	Jun 01, 2020	Approximate Sample 545g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP18-0.1-0.3	20-Jn04623	Jun 01, 2020	Approximate Sample 601g Sample consisted of: Brown coarse-grained sandy soil, rocks, brick and cement	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.





NATA Accredited Accreditation Number 1261 Site Number 18217

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP19-0.0-0.2	20-Jn04624	Jun 01, 2020	Approximate Sample 479g Sample consisted of: Brown coarse-grained soil and rocks	FA: Chrysotile asbestos detected in weathered fibre cement fragments. Approximate raw weight of FA = $0.49g$ Estimated asbestos content in FA = $0.15g^*$ Total estimated asbestos concentration in FA = 0.031% w/w*
				No trace asbestos detected.
TP20-0.1-0.3	20-Jn04625	Jun 01, 2020	Approximate Sample 441g Sample consisted of: Brown coarse-grained soil, rocks and plaster- like material	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP21-0.1-0.3	20-Jn04626	Jun 01, 2020	Approximate Sample 532g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP01-0.8-1.0	20-Jn04627	Jun 01, 2020	Approximate Sample 704g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP03-0.8-1.0	20-Jn04629	Jun 01, 2020	Approximate Sample 354g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP04-1.0-1.2	20-Jn04630	Jun 01, 2020	Approximate Sample 468g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP05-1.0-1.2	20-Jn04632	Jun 01, 2020	Approximate Sample 492g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP06-0.2-0.4	20-Jn04633	Jun 01, 2020	Approximate Sample 481g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP06-0.9-1.1	20-Jn04634	Jun 01, 2020	Approximate Sample 487g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP07-0.2-0.4	20-Jn04635	Jun 01, 2020	Approximate Sample 637g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP07-1.3-1.5	20-Jn04636	Jun 01, 2020	Approximate Sample 694g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP10-0.4-0.6	20-Jn04638	Jun 01, 2020	Approximate Sample 720g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.





NATA Accredited Accreditation Number 1261 Site Number 18217

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP15-1.0-1.2	20-Jn04645	Jun 01, 2020	Approximate Sample 765g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP17-0.9-1.1	20-Jn04646	Jun 01, 2020	Approximate Sample 561g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP19-1.0-1.1	20-Jn04647	Jun 01, 2020	Approximate Sample 268g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP21-0.7-0.9	20-Jn04649	Jun 01, 2020	Approximate Sample 703g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP18-FCS01	20-Jn04650	Jun 01, 2020	Approximate Sample 6g / 40x25x5mm Sample consisted of: Grey fibre cement material	Chrysotile asbestos detected.



Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Jun 03, 2020	Indefinite
Asbestos - LTM-ASB-8020	Sydney	Jun 03, 2020	Indefinite

	AURO	fine			A	ustral	ia											New Zealand	
ABN -	50 005 085 521	web : www.eurofin:	Enviro	nment Te	esting P D Dfins.com	elbourn Montere andeno hone : + ATA # 1 ite # 12	ne ey Roac ng Sout -61 3 85 I261 54 & 14	l h VIC 3 64 500 271	175 0	Sydney Unit F3 16 Mars Lane C Phone NATA #	/ , Buildir s Road ove We : +61 2 # 1261 \$	ng F st NSW 9900 84 Site # 18	2066 00 217	Brisb 1/21 S Murar Phone NATA	ane Smallwo rie QLD e : +61 7 a # 1261	ood Place 0 4172 7 3902 4 Site # 2	Perth 2/91 Leach Highway Kewdale WA 6105 600 Phone : +61 8 9251 9600 0794 NATA # 1261 Site # 23736	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290
Co Ad Pro	ompany Name: Idress: oject Name: oject ID:	Alliance Geo 10 Welder Ro Seven Hills NSW 2147 POINT FREE 10827	technical bad DERICK				Oi Re Pi Fa	rder N eport none: ax:	No.: #:	7	72333 1800 2 02 967	4 288 18 75 188	8 8				Received: Due: Priority: Contact Name:	Jun 2, 2020 5:25 PM Jun 10, 2020 5 Day Aidan Rooney	
		Sa	mple Detail			Asbestos - WA guidelines	Asbestos Absence /Presence	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins mgt Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	Eurofins mgt Suite B7A	BTEXN and Volatile TRH			
Mell	oourne Laborato	ory - NATA Site	# 1254 & 142	271									Х						
Syd	ney Laboratory	- NATA Site # 1	8217			X	X	Х	Х	Х	Х	X	Х	Х	X	Х			
Bris	bane Laborator	y - NATA Site #	20794																
Pert	h Laboratory - N	ATA Site # 237	36																
Exte No	ernal Laboratory Sample ID	Sample Date	Sampling	Matrix	LAB ID														
1	TP01-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04605	x					х	x			x				
2	TP02-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04606	x			x	1	x	x	х		x				
3	TP03-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04607	Х					Х	Х			х				
4	TP04-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04608	х					Х	х		х					
5	TP05-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04609	Х					Х	х			х				
6	TP06-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04610	х					Х	х			х				
7	TP07-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04611	Х					Х	Х		Х					
8	TP08-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04612	Х					Х	Х			Х				
9	TP09-0.0-0.2	Jun 01, 2020		Soil	S20-Jn04613	Х					Х	Х		Х					
10	TP09-1.2-1.4	Jun 01, 2020		Soil	S20-Jn04614	Х					Х	Х		Х					

	fine			Α	ustrali	ia											New Zealand	
ABN - 50 005 085 521	web : www.eurofin	Environ	ment Testi	ng Pr No om Si	elbourr Montere andenou none : + ATA # 1 te # 125	ne ey Road ng South 61 3 85 261 261 54 & 142	h VIC 3 64 5000 271	175 0	Sydney Unit F3 16 Mars Lane C Phone NATA #	/ , Buildir s Road ove We : +61 2 # 1261 \$	ng F est NSW 9900 84 Site # 18	2066 00 217	Brisb 1/21 S Murar Phone NATA	ane Smallwo rie QLD e : +61 7 a # 1261	ood Place 0 4172 7 3902 4 Site # 2	Perth 2/91 Leach Highway Kewdale WA 6105 600 Phone : +61 8 9251 9600 0794 NATA # 1261 Site # 23736	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290
Company Name: Address: Project Name:	Alliance Geo 10 Welder Ro Seven Hills NSW 2147 POINT FREE	technical bad DERICK				Or Re Ph Fa	der Neport none: x:	lo.: #:	7 1 0	72333 1800 2 02 967	4 288 18 75 188	8				Received: Due: Priority: Contact Name:	Jun 2, 2020 5:25 PM Jun 10, 2020 5 Day Aidan Rooney	
Project ID:	10827															Eurofins Analytical	Services Manager : And	rew Black
	Sa	mple Detail	-		Asbestos - WA guidelines	Asbestos Absence /Presence	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins mgt Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	Eurofins mgt Suite B7A	BTEXN and Volatile TRH			
Melbourne Laborator	ry - NATA Site	<u># 1254 & 14271</u>	1		×	×	v	×	×	×	×	X	X		X			
Sydney Laboratory -	NATA Site # 1	8217			X	X	X	X	X	X	X	X	X	X	X			
Perth Laboratory - N		<u>20794</u> 36																
11 TP10-0.0-0.2	Jun 01, 2020	s	Soil S20)-Jn04615	x					x	x			x				
12 TP11-0.0-0.2	Jun 01, 2020	S	Soil S20)-Jn04616	х					х	X		х					
13 TP12-0.1-0.3	Jun 01, 2020	S	Soil S20)-Jn04617	х					х	х			х				
14 TP13-0.1-0.3	Jun 01, 2020	S	Soil S20)-Jn04618	Х					Х	Х			Х				
15 TP14-0.0-0.2	Jun 01, 2020	S	Soil S20)-Jn04619	Х					Х	Х		Х					
16 TP15-0.0-0.2	Jun 01, 2020	S	Soil S20)-Jn04620	Х					Х	Х			Х				
17 TP16-0.1-0.3	Jun 01, 2020	S	Soil S20)-Jn04621	х					х	Х		х					
18 TP17-0.1-0.3	Jun 01, 2020	S	Soil S20)-Jn04622	х					Х	х			Х				
19 TP18-0.1-0.3	Jun 01, 2020	S	Soil S20)-Jn04623	х					х	х			Х				
20 TP19-0.0-0.2	Jun 01, 2020	S	Soil S20)-Jn04624	х					х	х		х					
21 TP20-0.1-0.3	Jun 01, 2020	S	Soil S20)-Jn04625	х					х	х			х				
22 TP21-0.1-0.3	Jun 01, 2020	S	Soil S20)-Jn04626	х					Х	х			х				
23 TP01-0.8-1.0	Jun 01, 2020	S	Soil S20)-Jn04627	Х						Х		Х					

	ofine			Austra	lia											New Zealand	
ABN - 50 005 085 521	web : www.eurofin	Environm	viroSales@eurofins.com	Melbour 6 Monte Dandeno Phone : NATA # Site # 12	ne rey Road ong Sout +61 3 85 1261 254 & 14	d th VIC 3 564 500 271	175 0	Sydney Unit F3 16 Mars Lane C Phone NATA #	/ , Buildir s Road ove We : +61 2 # 1261 \$	ng F est NSW 9900 84 Site # 18	2066 00 217	Brisb 1/21 \$ Murat Phon NATA	ane Smallwo rrie QLD e : +61 7 A # 1261	ood Place 0 4172 7 3902 4 I Site # 2	Perth 2/91 Leach Highway Kewdale WA 6105 600 Phone : +61 8 9251 9600 0794 NATA # 1261 Site # 23736	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290
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Project Name: Project ID:	POINT FRE 10827	DERICK													Eurofins Analytical	Services Manager : And	rew Black
	Sa	ample Detail		Asbestos - WA guidelines	Asbestos Absence /Presence	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins mgt Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	Eurofins mgt Suite B7A	BTEXN and Volatile TRH			
Melbourne Labo	oratory - NATA Site	# 1254 & 14271			_						Х						
Sydney Laborat	ory - NATA Site # 1	18217		X	X	Х	X	X	X	X	Х	Х	X	X			
Brisbane Labora	atory - NATA Site #	£ 20794															
	y - NATA Site # 23	/ 36	S20 In04629	,		v											
25 TP03-0.8-1	$\begin{array}{c c} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 $	Soil	S20-51104620) X						x		x					
26 TP04-1.0-1	.2 Jun 01, 2020	Soil	S20-Jn04630	$\frac{x}{x}$				1		x		x					
27 TP05-0.4-0	.6 Jun 01. 2020	Soil	S20-Jn04631		1	x	1										
28 TP05-1.0-1	.2 Jun 01, 2020	Soil	S20-Jn04632	2 X	1	1		1		x		Х					
29 TP06-0.2-0	.4 Jun 01, 2020	Soil	S20-Jn04633	3 X	1		Х		1	x	Х	Х					
30 TP06-0.9-1	.1 Jun 01, 2020	Soil	S20-Jn04634	L X						x		х					
31 TP07-0.2-0	.4 Jun 01, 2020	Soil	S20-Jn04635	5 X	1					х		х					
32 TP07-1.3-1	.5 Jun 01, 2020	Soil	S20-Jn04636	3 X						х		Х					
33 TP08-0.5-0	.7 Jun 01, 2020	Soil	S20-Jn04637	,		Х											
34 TP10-0.4-0	.6 Jun 01, 2020	Soil	S20-Jn04638	3 X						X		Х					
35 TP10-1.2-1	.4 Jun 01, 2020	Soil	S20-Jn04639)			Х			Х	Х						
36 TP11-0.4-0	.6 Jun 01, 2020	Soil	S20-Jn04640)		Х											

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		Sam	nple Detail			Asbestos - WA guidelines	Asbestos Absence /Presence	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins mgt Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	Eurofins mgt Suite B7A	BTEXN and Volatile TRH			
Melbourn	ne Laborato	ory - NATA Site #	1254 & 14271										Х						
Sydney L	Laboratory ·	- NATA Site # 18	217			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х			
Brisbane	e Laboratory	/ - NATA Site # 2	20794																
Perth La	boratory - N	ATA Site # 2373	6																
37 TP1	11-1.2-1.4	Jun 01, 2020	S	oil	S20-Jn04641			Х											
38 TP1	12-0.6-0.8	Jun 01, 2020	S	oil	S20-Jn04642			Х											
39 TP1	13-0.6-0.8	Jun 01, 2020	S	oil	S20-Jn04643			Х											
40 TP1	14-0.5-0.7	Jun 01, 2020	S	oil	S20-Jn04644			Х											
41 TP1	15-1.0-1.2	Jun 01, 2020	S	oil	S20-Jn04645	Х						Х		Х					
42 TP1	17-0.9-1.1	Jun 01, 2020	S	oil	S20-Jn04646	Х						Х		Х					
43 TP1	19-1.0-1.1	Jun 01, 2020	S	oil	S20-Jn04647	Х						Х		Х					
44 TP2	20-0.9-1.1	Jun 01, 2020	S	oil	S20-Jn04648			Х											
45 TP2	21-0.7-0.9	Jun 01, 2020	S	oil	S20-Jn04649	Х						х		х					
46 TP1	18-FCS01	Jun 01, 2020	B	uilding laterials	S20-Jn04650		x												
47 DUI	P01	Jun 01, 2020	S	oil	S20-Jn04651					Х		Х							
48 DUI	P02	Jun 01, 2020	S	oil	S20-Jn04652					Х		Х							

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Project Name:	POINT FREDER 10827	ICK														Eurofins Analytical	Services Manager : And	rew Black
	Sample	e Detail			Asbestos - WA guidelines	Asbestos Absence /Presence	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins mgt Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	Eurofins mgt Suite B7A	BTEXN and Volatile TRH			
Melbourne Laboratory -	- NATA Site # 12	254 & 14271										х						
Sydney Laboratory - NA	ATA Site # 18217	7			Х	x	х	Х	х	х	X	х	х	х	x			
Brisbane Laboratory - N	NATA Site # 207	94																
Perth Laboratory - NAT	A Site # 23736				L	ļ					\mid							
49 DUP03 Jur	n 01, 2020	S	oil	S20-Jn04653		<u> </u>			Х		X							
50 RIN-1 Jur	n 01, 2020	W	/ater	S20-Jn04654					Х									
51 TRIP SPIKE Jur	n 01, 2020	S	oil	S20-Jn04655							┝──┤				X			
52 BLANK Jur	n 01, 2020	S	OII	S20-Jn04656											X			



Internal Quality Control Review and Glossary

General

1. QC data may be available on request.

- 2. All soil results are reported on a dry basis, unless otherwise stated.
- 3. Samples were analysed on an 'as received' basis.
- 4. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 5. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w: weight for weight b	pasis	grams per kilogram
Filter loading:		fibres/100 graticule areas
Reported Concentration:		fibres/mL
Flowrate:		L/min
Terms		
Dry	Sample is dried by heating prior to analysis	
LOR	Limit of Reporting	
COC	Chain of Custody	
SRA	Sample Receipt Advice	
ISO	International Standards Organisation	
AS	Australian Standards	
WA DOH	Reference document for the NEPM. Government of Western Austr Sites in Western Australia (2009), including supporting document F	alia, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated tecommended Procedures for Laboratory Analysis of Asbestos in Soil (2011)
NEPM	National Environment Protection (Assessment of Site Contamination	on) Measure, 2013 (as amended)
ACM	Asbestos Containing Materials. Asbestos contained within a non-a: NEPM, ACM is generally restricted to those materials that do not p	sbestos matrix, typically presented in bonded and/or sound condition. For the purposes of the ass a 7mm x 7mm sieve.
AF	Asbestos Fines. Asbestos containing materials, including friable, w equivalent to "non-bonded / friable".	eathered and bonded materials, able to pass a 7mm x 7mm sieve. Considered under the NEPM as
FA	Fibrous Asbestos. Asbestos containing materials in a friable and/or materials that do not pass a 7mm x 7mm sieve.	severely weathered condition. For the purposes of the NEPM, FA is generally restricted to those
Friable	Asbestos-containing materials of any size that may be broken or cr outside of the laboratory's remit to assess degree of friability.	umbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is
Trace Analysis	Analytical procedure used to detect the presence of respirable fibre	as in the matrix.



Comments

S20-Jn04605, S20-Jn04607, S20-Jn04609, S20-Jn04612, S20-Jn04615, S20-Jn04624, S20-Jn04625, S20-Jn04629, S20-Jn04630, S20-Jn04632, S20-Jn04633, S20-Jn04634, S20-Jn04647: Samples received were less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

Sample Integrity	
Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

CodeDescriptionN/ANot applicable

Asbestos Counter/Identifier:

Laxman Dias

Senior Analyst-Asbestos (NSW)

Authorised by:

Sayeed Abu

Senior Analyst-Asbestos (NSW)

Glenn Jackson General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Hazardous Materials Survey & Management Plan





	She Layout				
Alliance Geotechnical ENGINEERING ENVIRONMENTAL TESTING Manage the earth, eliminate the risk	Client Name:	Grindley Constructions	•	Figure Number:	2
	Project Name:	Detailed Site Investigation	$\mathbf{\Lambda}$	Figure Date:	30 June 2020
	Project Location:	51 Mason Parade, Point Frederick NSW		Report Number:	10827-ER-1-2
	Alliance Geotechnical ENGINEERING ENVIRONMENTAL TESTING Manage the earth, eliminate the risk	Alliance Geotechnical Client Name: ENGINEERING ENVIRONMENTAL TESTING Project Name: Manage the earth, eliminate the risk Project Location:	Alliance Geotechnical Client Name: Grindley Constructions ENGINEERING ENVIRONMENTAL TESTING Project Name: Detailed Site Investigation Manage the earth, eliminate the risk Project Location: 51 Mason Parade, Point Frederick NSW	Alliance Geotechnical Client Name: Grindley Constructions ENGINEERING ENVIRONMENTAL TESTING Project Name: Detailed Site Investigation Manage the earth, eliminate the risk Project Location: 51 Mason Parade, Point Frederick NSW	Alliance Geotechnical Client Name: Grindley Constructions Figure Number: ENGINEERING ENVIRONMENTAL TESTING Project Name: Detailed Site Investigation Figure Date: Manage the earth, eliminate the risk Project Location: 51 Mason Parade, Point Frederick NSW Report Number:



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