Hazardous Building Materials Survey

Project

**4/56 Yorktown Parade,
Maroubra, NSW, 2035**

Prepared for

New South Wales Land Housing Corporation

Date

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Maroubra Project Summary

The following project summary has been provided by the client.

Project Overview

This hazardous building materials action plan (HBMAP) has been prepared by Alliance Geotechnical Pty Ltd (Alliance) on behalf of Homes NSW for a State Significant Development Application (SSD-71454960) for the redevelopment of existing social housing (the Project) at 195-213 Fitzgerald Avenue and 40-64 Yorktown Parade, Maroubra (the Site). The Project involves the replacement of the 33 social housing units across eight 2 storey apartment buildings and a single storey dwelling with 144 units across four 3 storey buildings and two part 3/part 4 storey buildings.

The purpose of this Hazardous Building Materials Survey (HBMS) was to determine the presence, location, quantity, condition and type of hazardous materials within the building structure prior to proposed demolition works and to address the Secretary's Environmental Assessment Requirements (SEARs) for the project issued on 6 June 2024 which identified the following specific assessment requirements:

- Condition 17 – Waste Management: If buildings are proposed to be demolished or altered, provide a hazardous materials survey.

SEARs Requirement 17 - Waste Management	Section Addressing SEARs Requirement
If buildings are proposed to be demolished or altered, provide a hazardous materials survey.	Addressed throughout the report

Site Information

The Site is located within the Randwick City Council local government area (LGA) and is zoned R3 Medium Density Residential under the Randwick Local Environmental Plan (LEP) 2012.

The Site has a total area of approximately 9,596 square metres (sqm) with frontages to Fitzgerald Avenue to the north and Yorktown Parade to the south. Refer to **Figure 1, Appendix A**.

The existing buildings on the Site are currently occupied. There are street trees located along the Fitzgerald Avenue frontage and a series of trees within the Site between the buildings and along both street frontages.

The site is accessible by public transport with services that run along Fitzgerald Avenue with frequent services to Maroubra town centre and Bondi Junction, with connecting services to Sydney CBD.

Proposed Development

The proposed development comprises demolition of existing buildings and the construction of four 3 storey and two part 3/part 4 storey residential flat buildings to accommodate 144 social and affordable housing apartments, a communal room and a single level basement car park including bulk earthworks, tree removal and associated landscaping and public domain works.

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1 INTRODUCTION

1.1 Background

Alliance Geotechnical Pty Ltd (Alliance) was engaged by New South Wales Land Housing Corporation (the client) to undertake a Hazardous Building Materials Survey (HBMS) of the pre-existing residential building structure located at Unit No. 4 / 56 Yorktown Parade, Maroubra, NSW, 2035, identified as a portion of Lot 248 of Deposited Plan (DP) 36345 (the site). The site location, layout and site boundary are shown in **Figure 1**, **Appendix A**.

Alliance notes eight residential two-storey buildings, and one single storey building were located at 195-213 Fitzgerald Avenue and 40-64 Yorktown Parade, Maroubra, however at the time of this survey, only one residential building (ref: No.56, specifically Unit No. 4) was made accessible to Alliance to conduct the HBMS. All other building structures are excluded from this survey.

The building structure onsite was inspected for the following hazardous building materials:

- Asbestos Containing Material (ACM);
- Asbestos Containing Dust (ACD);
- Lead Based Paint (LBP);
- Lead Containing Dust (LCD);
- Synthetic Mineral Fibres (SMF);
- Polychlorinated Biphenyls (PCBs); and
- Ozone Depleting Substances (ODS).

The client has requested a HBMS prior to demolition of the residential building structure, to identify and document the presence of accessible hazardous materials, and provide recommendations for the management and/or removal of identified hazardous materials.

No previous hazardous building material survey reports or hazardous building material registers were provided to Alliance prior to the completion of this survey.

1.2 Objectives

The objective of the survey was to determine the presence, location, quantity, condition and type of ACM, ACD, LBP, LCD, SMF, PCBs and ODs within the building structure prior to proposed demolition works.

The nominated scope of works was primarily undertaken with reference to the relevant sections of ANZECC (1997), AS 4874-2000, AS/NZS 4361.1:2017, AS/NZS 4361.2:2017, HB 40.1-2001, NSW EPA (1997), NSW EPA (2004), NSW EPA (2014), SafeWork NSW (2022a) and SafeWork NSW (2022b).

1.3 Scope of Works

The scope of works undertaken to address the HBMS objectives included:

- Development of a task specific Safe Work Method Statement (SWMS);
- Inspection and destructive survey of the residential buildings and structures;
- Risk assessment and identification of all visible and accessible hazardous materials, including ACM, ACD, SMF, LBP, LCD, PCB and ODs;
- Sampling of suspect hazardous materials where necessary or possible;
- Laboratory analysis of the representative suspected hazardous building material samples collected; and
- Preparation of a Hazardous Building Material Survey Report, including Hazardous Building Materials Register (**Appendix B**) in accordance with all relevant legislation and regulations.

1.4 Access Restrictions/Areas Not Accessed

Only safely accessible areas of the building structure were surveyed. It is possible that hazardous building materials may have been concealed within restricted and/or inaccessible areas/voids at the time of the survey.

Restricted areas at the site included:

- Subfloor voids or crawl space;
- Areas only accessible by significant destruction of equipment or performing demolition works;
- Operational areas such as live services (electrical, gas, water, chemical lines, or pressurised services);
- Height restricted areas and surfaces greater than 2.5 metres in height;
- Some below-ground building structures i.e. footings, foundations etc;
- Service pits, confined spaces, voids, etc.

Alliance surveyors have extensive experience in identifying and accessing hazardous building materials from building fabric, fittings, and age of materials. However, there is a potential that some hazardous building materials may be omitted during a survey due to inaccessibility, lack of information, or typical human error.

A standard survey does not include inaccessible and inspection of any areas that will require special access permits or other means of access to restricted areas as mentioned above. All building structures will have concealed materials in it's current condition that cannot be accessed or revealed prior to demolition of the structure.

Whilst all care is taken by the consultants to uncover hidden materials, not all areas can be accessed within the allowable timeframe without more power tools or structure demolition.

As such, only minor destructive sampling techniques were employed to gain access within authorised areas, and without substantial demolition of the building structure, it is not possible to guarantee that every hazardous building material has been detected.

In the event suspected hazardous materials are identified during demolition works, which are not included in this report, Alliance recommends that works cease, and an assessment of the materials undertaken by a competent person for further appropriate recommendations.

2 SURVEY METHODOLOGY

The hazardous building material survey was performed using a risk assessment approach to identify, assess, manage, and ultimately control potential associated risks with identified materials.

The survey involved a physical walk-through of the accessible areas within the site. Building/structure fabric and fittings suspected of containing ACM, ACD, SMF, LBP, LCD, PCBs and OCD were identified by means of visual observation and collecting representative material samples with minimum impact/ destruction where possible.

At the time of the survey, the location, type of material, accessibility, condition, friability and volume/dimensions were recorded for all hazardous materials identified during the survey.

Sampling was conducted using all necessary personal protective equipment (PPE) and respiratory protective equipment (RPE), including new sterile nitrile gloves, a face-fitted half-face respirator or disposable P2 mask, and disposable coverall (if required for high-risk work areas). A knife blade and/or pliers were used to collect material samples of ACM and LBP via partial destructive techniques such as scraping surfaces and minimal demolition of interior and exterior surfaces, with the equipment decontaminated between collection sample locations.

The samples collected were stored within the appropriate zip-lock sample bags and marked on the chain of custody (CoC) before being sent via courier to the designated testing analytical laboratory. All samples were sent to a NATA-accredited laboratory to confirm the analysis of ACM and lead.

Visual observations and/or representative material samples were also collected during the HBMS. The sample locations are shown in **Appendix C.**

A representative sampling of different materials caters for multiple similar locations/situations that have been closely inspected to reduce the risk of disturbance of materials, exposure to both site users and surveyor(s), and analytical cost for the client.

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 SITE DESCRIPTION

The HAZMAT survey was conducted on 20 June 2024 by Shambhu Shrestha, an Alliance Environmental Consultant and Safework NSW Licensed Asbestos Assessor (ref: LAA001492). The site location, layout and site boundaries are shown in **Figure 1, Appendix A**.

A hazardous building material register is provided in **Appendix B** detailing the presence, location, quantity, condition and type of hazardous material identified during the survey. A photographic log is provided in **Appendix C**.

A summary of observations made during the survey is presented below:

- The residential building structure (Unit No. 4) was vacant;
- Unit No. 4 was located within a larger residential building structure;
- Unit No. 4 contained four separate rooms *(referred: Room 1, Room 2 and Room 3, Room 4)*, kitchen, bathroom and toilet and comprised a combination of fibre cement sheet, plasterboard ceiling, and roofing, covered in various coloured paints;
- The entrance to Unit No. 4 was via exteral stairs located to the north of the building, leading to a hallway;
- A laundry shed was located in the backyard; and
- The basement was inaccessible.

Laboratory samples were collected and submitted to the laboratory for analysis during the survey. Laboratory results are presented in **Appendix D**.

4 HAZARDOUS MATERIALS HUMAN HEALTH RISK ASSESSMENT

4.1 Asbestos Containing Material

Asbestos is considered a human health risk whenever a potential asbestos fibre release is likely to occur. The health risks posed by asbestos based materials and products in premises are due to several 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. The risk assessment methodology used in our survey is based on the Australian Standard AS4360-1999, “Risk Management”.

The hazard levels for this assessment have been assessed according to those outlined in **Table 4-1**.

Table 4-1 Summary of Hazard Levels

Asbestos 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

Accessibility – *Hazard Level 1 to 3*	
1	Fully concealed behind a false wall or ceiling, sealed/painted. Inaccessible due to height.
2	Partial encapsulation, low activity area, low exposure to weathering and/or physical impact.
3	No encapsulation, high activity area; exposed to weathering, people, and maintenance.

Airborne Potential – *Hazard Level 1 to 3*		**Exposure 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 most persons

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 4-2**.

Table 4-2 Outline of Health Risk and Action Priority Levels

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 the 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).

Risk Level	Risk Status	Action Priority
1 – 19	Low (L)	Label, maintain, and review (Products or materials that pose little health risk to employees and/or the 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.

4.2 Synthetic Mineral Fibres

This component of the survey was carried out in accordance with the guidelines documented in *the National Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC:2006(1990)]*.

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.

SMF-containing materials were either sampled as per the asbestos methodology or assumed to contain SMF from the consultant's experience of similar materials.

4.3 Lead Based Paint

Lead, when inhaled or ingested, is toxic to humans. The lead-based 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 more extensive abatement.

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

Lead paint is defined by the Australian/New Zealand Standard *Guide to hazardous paint management Part 2: Lead paint in residential, public, and commercial buildings 2017* (AS/NZS 4361.2:2017) as a paint film that contains greater than 0.1%w/w lead by mass in the dry film.

4.4 Lead Containing Dusts

Settled dust containing lead in ceiling spaces, voids, and cavities is made up of fine particles and has the potential for greater bioavailability, causing serious long-term health problems in 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 paintwork.

Representative samples of accumulated or settled dust were collected and delivered to a NATA accredited laboratory for analysis via ICP-OES (if collected).

In the absence of a legislative standard, lead dust levels are typically compared to conservative assessment criteria, which have been adopted for this survey given the potential for human exposure and the readily disturbed and uncontained nature of accumulated or settled dust.

The concentration of lead within accumulated or settled dust was compared against the health investigation level (HIL) for residential sites with garden/accessible soil of 300 mg/kg as outlined in National Environment Protection Measure (NEPC 2013) guidelines.

4.5 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.

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

For de-energised premises, all accessible fluorescent light fittings are visually inspected for PCB-containing capacitors or PCB-containing ballast, listed in '*Scheduled Waste Management: Identification of PCB-containing Capacitors* – (ANZECC 1997).

Where premises are energised or direct inspection is not possible due to limitations such as height, direct inspection of these components is not possible due to the hazard present. Under these circumstances, all light fittings are treated as potentially containing PCB capacitors until proven otherwise or unless a determination is made by the occupational hygienist based on the age and appearance of the electrical fitting.

4.6 Ozone Depleting Substances

The risk assessment factors for Ozone Depleting Substances such as chlorofluorocarbon (CFC'S) are similar to those of asbestos including:

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

5 RESULTS

All identified hazardous materials are recorded in the Hazardous Materials Register in **Appendix B** with relevant photographs provided in **Appendix C**.

NATA-accredited laboratory analysis (where applicable) reports and chain of custody are provided in **Appendix D**.

Summary of survey findings are presented below:

- ACM was visually identified and presumed to be contained within the following locations:
    - Exterior roof and eaves, white coloured painted cement plasterboard (Sample ID: VO), on the residential building structure;
- No LBP were reported by the laboratory in the samples collected, with all lead concentrations reported below 0.1% w/w by mass in the dry film;
- No SMFs were visually identified/presumed within the accessible areas of the Unit or detected by the laboratory within the samples collected;
- No PCBs were visually identified/presumed within the accessible areas of the Unit; and
- No ODs were visually identified/presumed within accessible areas of the Unit.

6 CONTROL AND REMOVAL OF HAZARDS

6.1 Site Specific Recommendations

For all immediate site-specific controls and/or recommendations, refer to recommendations outlined within the Hazardous Materials Register, provided in **Section 5**. For more detailed control recommendations, refer to the remainder of **Section 8.**

6.2 Control of Asbestos Hazards

Control measures need to be implemented based on the risks of exposure to ACM in a workplace. The control measures should be aimed at eliminating risks 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); and
6. PPE / RPE.

The following information should be used as a guideline when determining the correct control method for management the ACM risks in relation to Safework NSW Codes of Practice – How to safely remove asbestos (2022a) and Safework NSW Codes of Practice – How to manage asbestos in the workplace (2022b):

- 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;
- If the ACM are not friable and are in a good, stable condition, minimising disturbance and encapsulation may be appropriate controls; and
- 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 SafeWork NSW Code of Practice - How to Safely Remove Asbestos (2022a), and How to Safely Manage Asbestos In the Workplace (2022b).

6.3 Training

The PCBU shall not allow any person to carry out asbestos works unless they have undergone appropriate WHS training and will maintain records for each person carrying out the works for a period of three years.

The WHS induction training required by the NSW WHS Regulation (2017) is as follows:

- General occupational health and safety training for construction work;
- Work activity-based health and safety training (job-specific training); and
- Site-specific health and safety induction training.

6.4 Safe Work Method Statement

The Safe Work Method Statement (SWMS) details the proposed work methodologies to be used in order to safely and effectively remove, enclose or encapsulate the asbestos containing materials. The SWMS will be submitted to the project manager for review and approval, prior to commencing work on site.

Safe Work Method Statements will:

- Identify the safety risks
- Describe how work is to be carried out;
- Describe the equipment used in the work;
- Describe the control measures that will be applied to the work;
- Describe any standards or codes applicable to the work; and
- Training and qualifications required of persons undertaking the work.

6.5 Personal Protective Equipment

The personal protective equipment (PPE) 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.

The following PPE and respiratory protective equipment (RPE) are required on the project where there are nominated asbestos work boundaries, as defined by the Licensed Asbestos Removal Contractor:

- Laceless steel capped safety boots/rubber rolled work shoes/steel capped gum boots;
- Disposable latex/nitrile gloves (non-penetrable);
- Disposable boot covers;
- Safety hard hat;
- Safety glasses;
- Disposable coveralls (type 5, category 3 (EN ISO 13982–1) or equivalent that would meet this standard.
    - Coveralls worn should be made from either 100% synthetic material or a mixed natural/synthetic fabric capable of providing adequate protection against fibre penetration. All fabrics are to be capable of preventing the penetration of asbestos fibres down to a diameter of 0.5 µm and a maximum of 1% penetration of all airborne asbestos fibres. Once worn, disposable overalls are not to be reused or laundered.
- Minimum disposable half-face particulate respirator (P3 rated or higher): The respirator will comply with requirements of AS/NZS 1716:2009 *Selection, Use and Maintenance of Respiratory Protective Devices* or its equivalent. These disposable respirators are to be replaced at each decontamination event:
    - Respirators shall be correctly fitted, maintained in good condition, and kept in clean storage when not in use;
    - All workers will be clean-shaven if wearing half-face respirators to ensure a proper seal of the respirator to the face and appropriately face-fit tested for the respirator;
    - Respirators should be issued for personal use only; and

- Any respirator defects should be reported for subsequent repair with replaceable filters and cartridges replaced regularly in accordance with guidelines issued by the manufacturer.

It is noted that, as part of the Safe Work permitting process, additional PPE/RPE may be required.

NOTE: All disposable PPE will be disposed of as asbestos waste at the completion of the removal works.

6.6 Asbestos Removal Control Plan

An Asbestos Removal Control Plan (ARCP) is to be developed by a Class A or Class B Licensed Asbestos Removal Contractor prior to undertaking any asbestos removal/handling works. The ARCP will identify the specific control measures a license holder will install to ensure workers and other persons are not at risk when asbestos removal work is being conducted. An asbestos removal control plan helps ensure that asbestos removal is well-planned and carried out in a safe manner.

The asbestos removal control plan will include details of:

- The exact location and type of asbestos removal works;
- Names and details of all relevant parties, roles and responsibilities;
- How the asbestos removal will be carried out, including the method, tools, equipment, and PPE to be used;
- The asbestos to be removed, including the location, type, and condition of the asbestos;
- Decontamination procedures and waste disposal, storage and transport; and
- Asbestos air monitoring and clearance certificate requirements.

6.7 Elimination/Removal of Asbestos

Asbestos removal work must be performed under certain controlled conditions. Removal is considered preferable to the other 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.

ACMs are referred to as either friable or bonded. *Friable asbestos* is in the form of a powder or can be crumbled, pulverised 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.

6.8 Control of Asbestos Hazards

The asbestos containing materials, as identified in Hazardous Materials Register (**Appendix B**) should be managed as per below.

6.8.1 Friable (AF/FA)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 inaccessible 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 and
3. If the ACM is friable, in good condition and not accessible, a lower priority for removal and replacement should be given to 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.

6.8.2 Non-Friable (Bonded) 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 ACMs in good and stable condition, ongoing maintenance and periodic inspection would be appropriate controls.

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

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 Safework NSW Code of Practice – How to safely remove Asbestos (2022) 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.

6.8.3 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; and
- 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.

6.8.4 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 respirators;
- 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; and
- A copy of clearance report is to be given to the building manager.

6.8.5 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 for bonded asbestos (non-friable) and a Licensed Asbestos Assessor (LAA) for friable asbestos and a clearance certificate must be prepared by the inspecting competent person/LAA.

Monitoring should also be used to validate implemented controls put in place to mitigate potential asbestos exposure. Monitoring shall be completed in accordance with the National Occupational Health and Safety Commission's Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres – 2nd Edition [NOHSC: 3003(2005)].

Portable battery-operated air monitors are to be placed within static positions approximately 1.5m above the ground surrounding the work/removal area. The monitoring shall be conducted by a NATA-accredited laboratory.

Safe Work Australia's Workplace Exposure Standards for Airborne Contaminants (2018) identifies the current exposure standard for a standard 8-hour shift as:

- The level of respirable asbestos fibres - 0.1 fibres/mL;

Action levels for daily concentrations of airborne fibres have been outlined by WHS Regulation 2017 and SafeWork NSW (2022) to identify potential fibre releases prior to an exceedance of the national exposure standard, as **Table 6.8.5** below.

Table 6.8.5: Concentration of Asbestos Fibres

Action Level (airborne asbestos fibres/mL)	Action
Less than 0.01	Continue without the requirement for additional control measures.
Between 0.01 and 0.02	Review control measures; Investigate the cause and Implement new controls to prevent further release.
More than 0.02	Stop removal works immediately; Notify the relevant regulator that work has ceased; Investigate the cause; Extend the isolation area and implement controls to minimise further exposure; and Do not recommence work until fibre levels are at or below 0.01 fibres/mL.

Should respirable asbestos fibre levels be reported as more than 0.02 fibres/mL, then the Asbestos Removal Contractor must order asbestos removal/related works to stop and notify the PCBU and SafeWork NSW

immediately. Notification is required until such time that the LAA/Competent has identified the source and established an appropriate management procedure to manage the risk of exposure and asbestos fibre migration to other areas of the site.

Clearance monitoring is recommended for bonded asbestos removal jobs and should be assessed as part of the planning and conduct of the removal job. It is mandatory for asbestos air monitoring to be undertaken in the presence of friable asbestos.

All asbestos removal work must be verified by requiring final clearance certificates for both inspections and monitoring if required.

6.8.6 Leave In-situ

The identification of 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 of 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 ACMs while they remain in situ.

6.8.7 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 penetrates the substrate and hardens 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.

6.8.8 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 boxing around the asbestos.

6.8.9 SafeWork NSW Practices

Work involving the removal of asbestos is to be conducted as per the guidelines in SafeWork NSW (2022) Code of Practice: How to Manage and Control Asbestos in the Workplace and SafeWork NSW (2022) Code of Practice: How to Safely Remove Asbestos.

6.9 Control of Lead Hazards

6.9.1 Lead Based 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 ingested 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 wet-sanding 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; and
- 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.

6.9.2 Lead Containing 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); and
- 8 mg/ m² on exterior concrete (1 mg = 1,000 µg).

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

6.10 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)].
*Code of Practice for Synthetic Mineral Fibres N*OHSC: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 appropriate for working with SMF including and minimum of P2 respirator, safety goggles and gloves 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 by a qualified occupational hygienist. 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.

SMFs are currently not on the schedule of substances requiring health surveillance.

6.11 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:

- Due to the potential electrical hazard, light fittings were not physically sampled but may contain PCBs;
- Prior to main demolition works, remove all fluorescent light fittings (disposing of capacitors separately);
- 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 with warm soap.

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.

6.12 Control of Ozone Depleting Substance Hazards

Care must be taken when handling or disposing of air conditioning units to ensure that damage does not occur.

The person handling air conditioning units that may contain ODs should take the following precautions:

- Due to encapsulation and the potential electrical hazard, air conditioning units were not physically sampled but may contain ODs;
- Prior to main demolition works, remove all air conditioning units;
- Put on PPE before removing damaged or leaking components;
- Always ensure adequate ventilation;
- Do not smoke; and
- Use disposable gloves.

7 UNEXPECTED FINDS

Any hazardous building materials deemed to be consistent with those detailed in the Hazardous Materials Register that have not been previously identified should be assumed to have the same content and be treated accordingly.

Should any additional suspected hazardous materials be observed during or prior to demolition or refurbishment works, works should cease until a suitably qualified occupational hygienist /competent person can assess the suspected hazardous material and provide appropriate recommendations for management and/or removal.

8 STATEMENT OF LIMITATIONS

No survey can be guaranteed to locate all hazardous building materials. The demolition or refurbishment of site structures may uncover hazardous building materials which were concealed or otherwise impractical to access during this survey.

The findings presented in this report are based on specific searches of relevant government historical databases and anecdotal information that were made available during this investigation. To the best of our knowledge, these observations represent a reasonable interpretation of the general condition of the site at the time of report completion.

This report has been prepared solely for the use of the client to whom it is addressed, and no other party is entitled to rely on its findings.

No warranties are made as to the information provided in this report. All conclusions and recommendations made in this report are the professional opinions of personnel involved with the project, and while normal checking of the accuracy of data has been conducted, any circumstances out exterior the scope of this report or which are not made known to personnel and which may impact on those opinions is not the responsibility of Alliance Geotechnical Pty Ltd.

Should information become available, regarding conditions at the site including previously unknown sources of contamination, Alliance reserves the right to review the report in the context of the additional information.

Figures, photographs, and drawings are generated for this report based on individual Alliance consultant interpretations of nominated data, as well as observations made at the time site walkover/s were completed.

Data and/or information presented in this report must not be redrawn for inclusion in other reports, plans, or documents, nor should it be separated from this report in any way.

Should additional information that may impact on the findings of this report be encountered or site conditions change, Alliance Geotechnical Pty Ltd reserves the right to review and amend this report.

9 REFERENCES

ANZECC (1997) Identification of PCB-containing Capacitors: An Information Booklet for Electricians and Electrical Contractors

AS1319 (1994), Safety Signs in the Occupational Environment

AS4260 (1997), High Efficiency Particulate Air (HEPA) Filters – Classification, Construction and Performance;

AS4874 (2000), Guide to the investigation of potentially contaminated soil and deposited dust as a source of lead available to humans;

AS/NZS-1716 (2003), Respiratory Protective Devices

AS/NZS-60335.2.69 (2003), Household and similar electrical appliances – Safety - Particular requirements for wet and dry vacuum cleaners, including power brush, for industrial and commercial use

AS/NZS-1715 (2009), Selection, Use & Maintenance of Respiratory Protective Equipment

AS/NZS 4361.1:2017, Guide to hazardous paint management, Part 1: Lead and other hazardous metallic pigments in industrial applications

AS/NZS 4361.2:2017, Guide to hazardous paint management, Part 2: Lead paint in residential, public and commercial buildings

Australian Government (1995). Ozone Protection and Synthetic Greenhouse Gas (OSGG) Management Regulations 1995

Electrical Contractors' Association of Australia (1993) Code of Practice for the Safe Handling of Equipment Containing Polychlorinated Biphenyls

EnHealth Council (2005), Management of asbestos in the non-occupational environment

HB 40.1-2001, The Australian refrigeration and air-conditioning code of good practice, Part 1 – reduction of emissions of fluorocarbon refrigerants in commercial and industrial refrigeration and air-conditioning applications;

National Occupational Health and Safety Commission (1990) National Standard for Synthetic Mineral Fibres [NOHSC:1004(1990)]

National Occupational Health and Safety Commission (1990) National Code of practice for safe use of Synthetic Mineral Fibres [NOHSC:2006(1990)]

NSW EPA (1997) Polychlorinated Biphenyl (PCB) Chemical Control Order 1997; and

NSW EPA (2004), Environmentally Hazardous Chemicals Act 1985, Chemical Control Order In Relation To Scheduled Chemical Wastes;

NSW EPA (2014) Waste Classification Guidelines – Part 1: Classifying Waste.

NSW Government (2011) Workplace Health and Safety Act 2011 (NSW)

NSW Government (2017) Workplace Health and Safety Regulation (NSW)

SafeWork NSW (2013) Guide to Handling Refractory Ceramic Fibres

SafeWork NSW (2019) Code of Practice: Demolition Work

SafeWork New South Wales (2022a) Code of Practice: How to Safely Remove Asbestos

SafeWork New South Wales (2022b) Code of Practice: How to Manage and Control Asbestos the Workplace

Standards Australia (2017) Australia Standard 4361.1 Guide to Lead Paint Management. Part 1: Industrial Applications

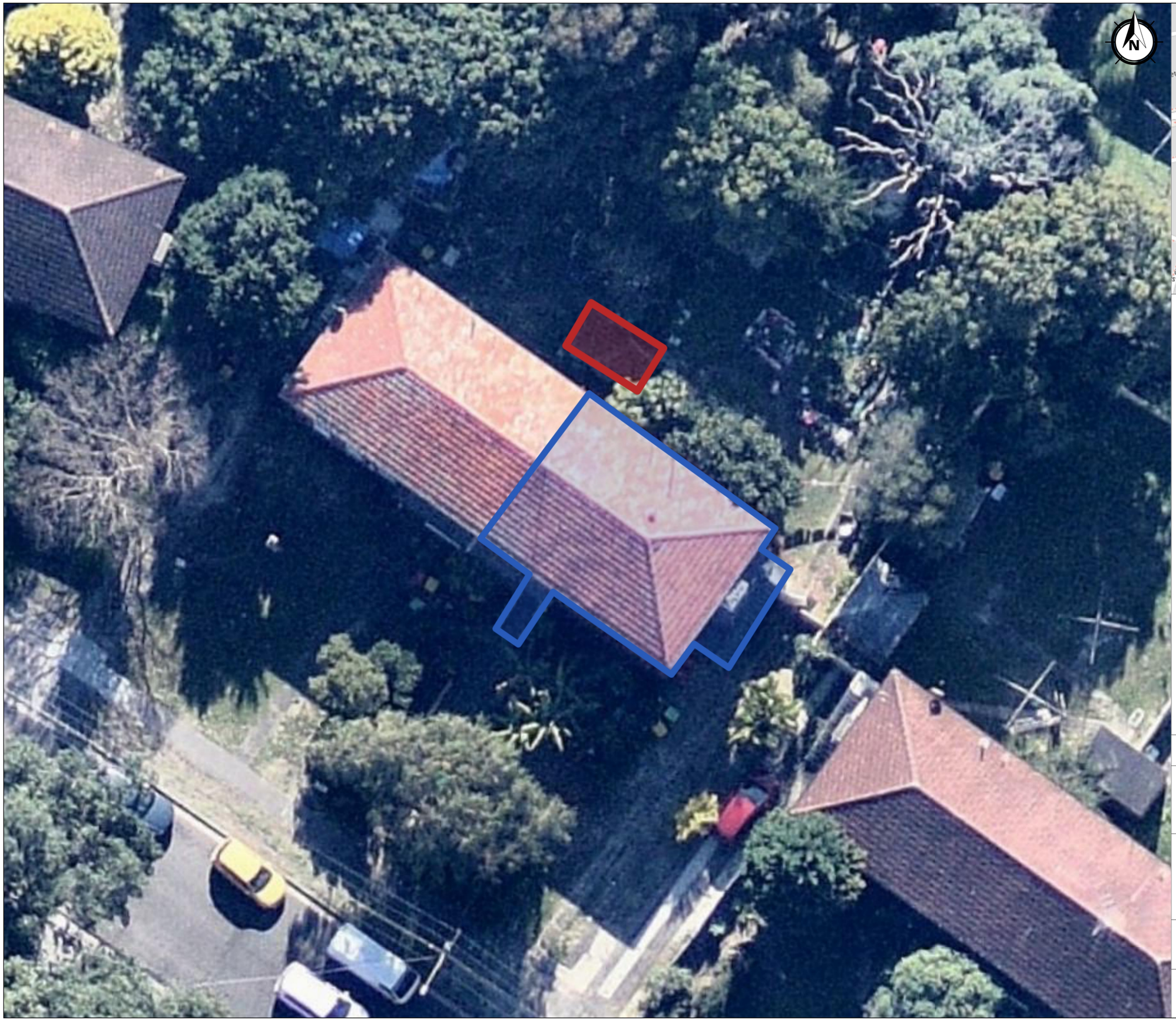
Standards Australia (2017). Australian Standard 4361.2: Guide to Hazardous Paint Management, Part 2: Lead Paint in Residential, Public and Commercial Buildings

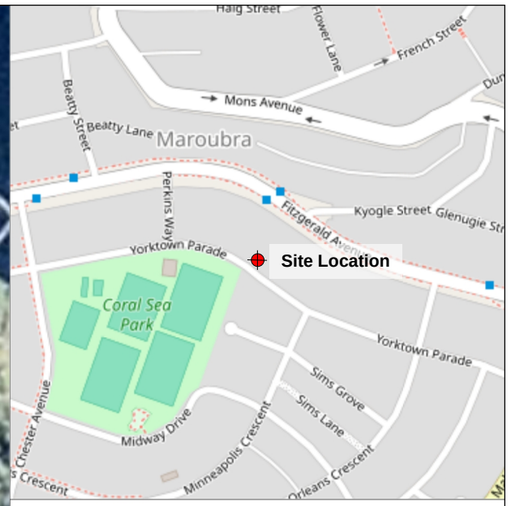
Standards Australia (2000) Australian Standard 4874: Guide to the Investigation of Potentially Contaminated Soil and Deposited Dust as a Source of Lead Available to Humans

United Nations Environment Programme's Division of Technology (2001) Inventory of Trade Names of Chemical Product Containing Ozone Depleting Substances and their Alternatives (Information Paper)

Queensland Department of Environmental and Heritage Protection (2016). Guideline Waste Management - Managing Polychlorinated biphenyl

APPENDIX A – FIGURE





Legend

- No. 4 / 56 Yorktown Parade Residential Building Structure
- External Laundry Shed

0 2.5 m 5 m

© Nearmap

alliance

Produced by **Datanest.earth**

Title: Site layout with Site locality		
Client: Housing Australia Future Fund Project		Size: A3
Project: Hazardous Building Materials Survey	Drawn: SS	Figure No.: 1
Date: 25-06-2024	Checked: SS	
Proj No: 17716-ER-4-1	Scale: 1:174	Version: Final

APPENDIX B – HAZARDOUS BUILDING MATERIAL REGISTER

Phone:1800 288 188
Email: office@allgeo.com.au
Website: www.allgeo.com.au
ABN: 62 106 885 214

Hazardous Building Materials Register

Environmental Consultant / SafeWork NSW **Shambhu Shrestha (LAA 001492)**

Address: 4/56 Yorktown Parade, Maroubra NSW 2035

Inspection Date: 20/06/2024

Client: NSW Land Housing Corporation

ANALYTICAL RESULT LEGEND	
	Asbestos

Table Abbreviations: High (H), Low (L), Moderate (M), No Action Required (N), No Asbestos Detected (NAD), Not Applicable (N/A), Not Assessable (NA), Visual Observation (VO)

	LOCATION				MATERIAL DESCRIPTION									RISK MANAGEMENT	
Date of Inspection	Building	Room/ Area	Direction / Features	Surface	Material Application/ Features	Quantity	Units	Sample Type	Sample ID No.	Photo No.	Analytical Result	Material Condition as Surveyed	Asbestos Friability	Risk Status	Control Recommendations / Comments
Unit 4 / 56 Yorktown Parade															
20/06/2024	56- Exterior	Roof	Roof	Eaves	White coloured fibre cement Sheeting Board	116	m3	Asbestos	VO	2	**Presumed Asbestos**	Good	Bonded	Low	Removal works to be completed by a licensed asbestos removalist, in accordance with Safework NSW Code of Practice – How to Safely Remove Asbestos (2022)
20/06/2024	56- Exterior	Outdoor	North	Gate	Yellow paint system	1.8x2	m2	Lead Based Paint	4- LP1	3	**< 0.01 % w/w**	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	56- Exterior	Outdoor	North	Handrail on stair	Dark grey paint system	8x1	m2	Lead Based Paint	4- LP2	4	**0.07 % w/w**	Fair	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	56- Exterior	Roof	All four sides	Gutter system	Green paint system	TO	-	Lead Based Paint	4- LP3	5	**< 0.01 % w/w**	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	56- Exterior	Outdoor/ Backyard	Laundry shed	Door	White paint system	1	m2	Lead Based Paint	4- LP4	6	**0.09 % w/w**	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	56- Exterior	Outdoor/ Backyard	Laundry shed	Door	Brown paint system	1.5	m2	Lead Based Paint	4- LP5	7	**< 0.01 % w/w**	Fair	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	56- Exterior	Outdoor/ Backyard	Laundry shed	Walls	Yellow paint system	TO	-	Lead Based Paint	same as 4- LP8	8	-	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Exterior	Poarch	-	Walls	White paint system	TO	-	Lead Based Paint	4- LP6	9	**< 0.01 % w/w**	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Kitchen/ Hallway	Ceiling	Ceiling	White paint system	TO	-	Lead Based Paint	4- LP7	10	**< 0.01 % w/w**	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Kitchen/ Hallway	Ceiling	Ceiling	White coloured plaster board	5x3	m2	Asbestos	4- A1	11	**NAD**	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Kitchen	Walls	Walls	Yellow paint system	5x2.5	m2	Lead Based Paint	4- LP8	12	**0.03 % w/w**	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Kitchen/ Hallway	Floor	Floor of ceiling	Grey vinyl tile with adhesive	5x3	m2	Asbestos	4- A2	13	**NAD**	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Kitchen	Floor	base to vinyl tile	Brown coloured vinly tile base with adhesive	5x3	m2	Asbestos	4- A3	14	**NAD**	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Kitchen	Floor	base to vinyl tile	Brown fibre cement material, cement material with adhesive (adhesive glue under base of vinly tile)	5x3	m2	Asbestos	4- A4	15	**NAD**	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Room 1	Ceiling	Ceiling	White paint system	5x3	m2	Lead Based Paint	same as 4- LP7	16	-	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Room 1	Walls	Walls	Yellow paint system	TO	-	Lead Based Paint	same as 4- LP8	17	-	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Room 1	Ceiling	Ceiling	White coloured plaster board	4 x 4	m2	Asbestos	same as 4- A1	16	-	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Room 1	West	Fire place	Yellow coloured fibre cement plaster board	0.6x0.6	m2	Asbestos	4- A5	18	**NAD**	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Room 2	Walls	Walls	Yellow paint system	TO	-	Lead Based Paint	same as 4- LP8	19	-	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Room 2	Ceiling	Ceiling	White coloured plaster board	4 x 4	m2	Asbestos	same as 4- A1	19	-	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Room 2	Ceiling	`	White paint system	TO	-	Lead Based Paint	same as 4- LP7	19	-	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Room 3	Walls	Walls	Yellow paint system	TO	-	Lead Based Paint	same as 4- LP8	20	-	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Room 3	Ceiling	Ceiling	White coloured plaster board	4 x 4	m2	Asbestos	same as 4- A1	20	-	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Room 3	Ceiling	Ceiling	White paint system	5x3	m2	Lead Based Paint	same as 4- LP7	20	-	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Room 4	Walls	Walls	Yellow paint system	TO	-	Lead Based Paint	same as 4- LP8	21	-	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Room 4	Ceiling	Ceiling	White coloured plaster board	4 x 4	m2	Asbestos	same as 4- A1	21	-	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.
20/06/2024	Unit 4/ 56 - Interior	Room 4	Ceiling	Ceiling	White paint system	TO	-	Lead Based Paint	same as 4- LP7	21	-	Good	-	-	No hazardous materials detected in the analytical laboratory results. No further action required.

APPENDIX C – PHOTOGRAPHS LOG

Confirmed or assumed hazardous material (ACM, ACD, SMF, PCB, ODs, LBP, LCD):

Confirmed non-hazardous material (ACM, ACD, SMF, PCB, ODs, LBP, LCD):

Photograph 1 (20.06.24): Representative photo of Unit 4 / 56 Yorktown Parade, Maroubra NSW 2035

Photograph 2 (20.06.24): Representative photos of White coloured fibre cement sheeting board, External, Roof- Eaves; Sample ID: Visual Only (Presumed ACM)

Photograph 3 (20.06.24): Representative photo of yellow paint system, external, northern side gate, Sample ID: 4-LP1 (< 0.01 % w/w)

Photograph 4 (20.06.24): Representative photo of dark grey paint system, external, northern side staircase handrail, Sample ID: 4-L2 (0.07 % w/w)

Photograph 5 (20.06.24): Representative photo of green paint system, external roof gutter system and downpipe, Sample ID: 4-LP3 (< 0.01 % w/w)

Photograph 6 (20.06.24): Representative photo of white paint system, external backyard laundry shed door frame, Sample ID: 4-LP4 (0.09 % w/w)

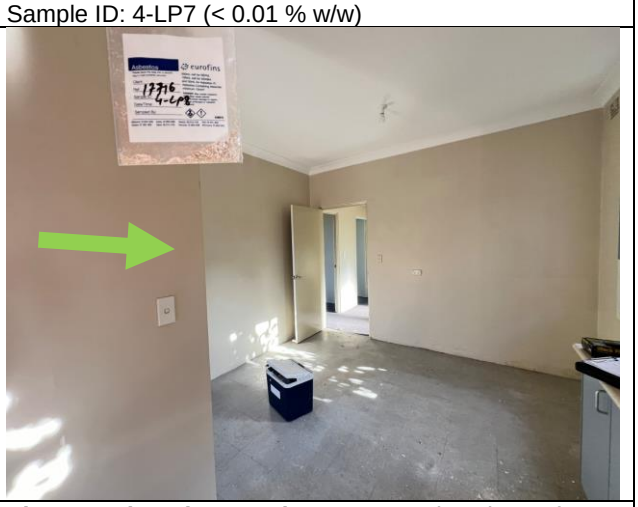
Photograph 7 (20.06.24): Representative photo of brown paint system, external backyard laundry shed door, Sample ID: 4-LP5 (< 0.01 % w/w)

Photograph 8 (20.06.24): Representative yellow paint system, external backyard laundry shed walls, Sample ID: Same as 4-LP8 (0.03 % w/w)

Photograph 9 (20.06.24): Representative photo of white paint system, external porch area, Sample ID: 4-LP6 (<0.01 % w/w)

Photograph 10 (20.06.24): Representative photo of white paint system, internal kitchen and hallway ceiling, Sample ID: 4-LP7 (< 0.01 % w/w)

Photograph 11 (20.06.24): Representative photo of white-coloured plasterboard, internal kitchen and hallway ceiling, Sample ID: 4-A1 (NAD)



Photograph 12 (20.06.24): Representative photo of yellow paint system, internal kitchen walls on all four walls, Sample ID: 4-LP 8 (< 0.01 % w/w).

Photograph 13 (20.06.24): Representative photo of vinyle tiles on the internal kitchen floor, Sample ID: 4-A2 (NAD).

Photograph 14 (20.06.024):): Representative photo of the brown-coloured base to vinyl tiles on the internal kitchen floor, Sample ID: 4-A3 (NAD).

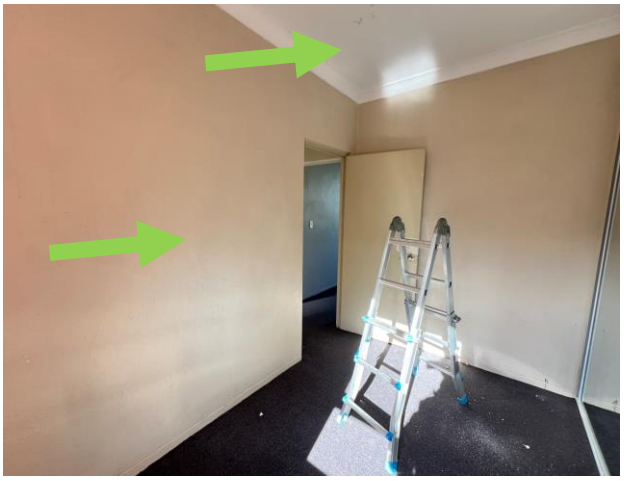
Photograph 15 (20.06.24): Representative photo of adhesive glue at the base to vinyl tiles on the internal kitchen floor, Sample ID: 4-A4 (NAD).

Photograph 16 (20.06.24): Representative photo of white paint system and plasterboard, internal Room 1 ceiling, Sample ID: Lead - Same as 4- LP7 (< 0.01 % w/w) and Asbestos – Same as A1.

Photograph 17 (20.06.24): Representative photo of yellow paint system, internal room 1 walls on all 4 walls, Sample ID: same as 4- LP 8 (< 0.01 % w/w).

Photograph 18 (20.06.24): Representative photo of yellow coloured plasterboard, internal Room 1 on the fireplace cover, Sample ID: A5 (NAD).

Photograph 19 (20.06.24): Representative photo of yellow paint system (walls) and white paint system (ceiling) and white coloured plasterboard (ceiling), internal Room 2 Sample ID: Lead - Same as 4- LP 8 (< 0.01 % w/w) and Asbestos – Same as A1 (NAD).



Photograph 20 (20.06.24): Representative photo of yellow paint system (walls), white paint system (ceiling) and white coloured plasterboard (ceiling), internal Room 3, Sample ID: Lead - Same as 4- LP 8 (< 0.01 % w/w) and Asbestos – Same as A1 (NAD).

Photograph 21 (20.06.24): Representative photo of yellow paint system (walls), white paint system (ceiling) and white coloured plasterboard (ceiling), internal Room 4, Sample ID: Lead - Same as 4- LP 8 (< 0.01 % w/w) and Asbestos – Same as A1 (NAD).

Photograph 22 (20.06.24): Representative photos of basement of building structure located at 56 Yorktown Parade, Maroubra (inaccessible).

APPENDIX D – LABORATORY AND COC DOCUMENTATION

CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company	ALLIANCE GEOTECHNICAL	Project №	1716	Project Manager	A. Finey
Address	10 WELDER ROAD, SEVEN HILLS NSW	Project Name	Maroubra - 4/56	EDD Format (ESdat, EQuIS, Custom)	Esdat
Contact Name	Shambhu Shrestha				
Phone №	1800 288 188				
Special Directions					
Purchase Order					
Quote ID №					

Sampler(s)	Shambhu Shrestha
Handed over by	S. Shrestha
Email for Invoice	Enviro@allgeo.com.au
Email for Results	shambhu@allgeo.com.au; Enviro@allgeo.com.au

Analyses (Note: Where metals are requested, please specify Total or Filtered. SUITE codes must be used to ensure SUITE pricing)

Containers

Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)

Overnight (9am)* | 1 Day* | 2 Day* | (3 Day*) | 5 Day | * Surcharges apply | Other ( )

№	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Alliance WHS Suite B	Asbestos ID	Lead (%w/w)	1L Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964 WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	4 - A1				✓									✓	
2	4 - A2				✓									✓	
3	4 - A3				✓									✓	
	4 - A4				✓									✓	
	4 - A5				✓									✓	
	4 - LP1					✓								✓	
	4 - LP2					✓								✓	
	4 - LP3					✓								✓	
	4 - LP4					✓								✓	
	4 - LP5					✓								✓	
	4 - LP6					✓								✓	
	4 - LP7					✓								✓	
	4 - LP8					✓								✓	
21															
	Total Counts														

Method of Shipment	Courier (✓)	Hand Delivered	Postal	Name	shambhu shrestha		Date	20/06	Time	
Eurofins | mgt Laboratory Use Only	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW		Signature		Date	20/6	Time	9:45 pm	Temperature 8/17
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW		Signature		Date	/ /	Time	:	Report №

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

1109948

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: Alliance Geotechnical
Contact name: Alex Finney
Project name: MAROUBRA-4156
Project ID: 17716
Turnaround time: 3 Day
Date/Time received Jun 20, 2024 9:07 PM
Eurofins reference 1109948

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
N/A	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✗	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com

Results will be delivered electronically via email to Alex Finney - alexf@allgeo.com.au.

Note: A copy of these results will also be delivered to the general Alliance Geotechnical email address.

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Alliance Geotechnical
Address: 10 Welder Road
Seven Hills
NSW 2147

Project Name: MAROUBRA-4156
Project ID: 17716

Order No.:
Report #: 1109948
Phone: 1800 288 188
Fax: 02 9675 1888

Received: Jun 20, 2024 9:07 PM
Due: Jun 25, 2024
Priority: 3 Day
Contact Name: Alex Finney

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos Absence /Presence	Lead
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	4-A1	Not Provided		Building Materials	S24-Jn0052642	X	
2	4-A2	Not Provided		Building Materials	S24-Jn0052643	X	
3	4-A3	Not Provided		Building Materials	S24-Jn0052644	X	
4	4-A4	Not Provided		Building Materials	S24-Jn0052645	X	
5	4-A5	Not Provided		Building Materials	S24-Jn0052646	X	
6	4-LP1	Not Provided		Paint	S24-Jn0052647		X
7	4-LP2	Not Provided		Paint	S24-Jn0052648		X
8	4-LP3	Not Provided		Paint	S24-Jn0052649		X
9	4-LP4	Not Provided		Paint	S24-Jn0052650		X
10	4-LP5	Not Provided		Paint	S24-Jn0052651		X
11	4-LP6	Not Provided		Paint	S24-Jn0052652		X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
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Project ID: 17716

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Phone: 1800 288 188
Fax: 02 9675 1888

Received: Jun 20, 2024 9:07 PM
Due: Jun 25, 2024
Priority: 3 Day
Contact Name: Alex Finney

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos Absence /Presence	Lead
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
12	4-LP7	Not Provided		Paint	S24-Jn0052653		X
13	4-LP8	Not Provided		Paint	S24-Jn0052654		X
Test Counts						5	8

Certificate of Analysis

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Alliance Geotechnical
10 Welder Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention:	Alex Finney
Report	1109948-AID-V2
Project Name	MAROUBRA-4156
Project ID	17716
Received Date	Jun 20, 2024
Date Reported	Jun 25, 2024

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.*

Project Name MAROUBRA-4156
Project ID 17716
Date Sampled
Report 1109948-AID-V2

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
4-A1	24-Jn0052642	not provided	Approximate Sample 2g / 35x30x2mm Sample consisted of: White plaster boarding with paint flakes	No asbestos detected. Organic fibre detected. No trace asbestos detected.
4-A2	24-Jn0052643	not provided	Approximate Sample 3g / 35x20x3mm Sample consisted of: Grey vinyl tile with adhesive	No asbestos detected. No trace asbestos detected.
4-A3	24-Jn0052644	not provided	Approximate Sample 3g / 30x30x2mm Sample consisted of: Brown vinyl tile with adhesive	No asbestos detected. Organic fibre detected. No trace asbestos detected.
4-A4	24-Jn0052645	not provided	Approximate Sample 2g / 25x20x2mm Sample consisted of: Brown fibre cement material, cement material with adhesive	No asbestos detected. Organic fibre detected. No trace asbestos detected.
4-A5	24-Jn0052646	not provided	Approximate Sample 1g / 20x10x2mm Sample consisted of: Grey fibre cement material with white paint flakes	No asbestos detected. Organic fibre detected. No trace asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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 20, 2024	Indefinite

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079 & 25289

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Order No.:
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Phone: 1800 288 188
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Received: Jun 20, 2024 9:07 PM
Due: Jun 25, 2024
Priority: 3 Day
Contact Name: Alex Finney

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos Absence /Presence	Lead (% w/w)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	4-A1	Not Provided		Building Materials	S24-Jn0052642	X	
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4	4-A4	Not Provided		Building Materials	S24-Jn0052645	X	
5	4-A5	Not Provided		Building Materials	S24-Jn0052646	X	
6	4-LP1	Not Provided		Paint	S24-Jn0052647		X
7	4-LP2	Not Provided		Paint	S24-Jn0052648		X
8	4-LP3	Not Provided		Paint	S24-Jn0052649		X
9	4-LP4	Not Provided		Paint	S24-Jn0052650		X
10	4-LP5	Not Provided		Paint	S24-Jn0052651		X
11	4-LP6	Not Provided		Paint	S24-Jn0052652		X

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Contact Name: Alex Finney

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos Absence /Presence	Lead (% w/w)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
12	4-LP7	Not Provided		Paint	S24-Jn0052653		X
13	4-LP8	Not Provided		Paint	S24-Jn0052654		X
Test Counts						5	8

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 the colour **blue** 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 the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
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:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix may be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**). This estimate is not NATA-accredited.
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to “non-bonded / friable”.
AFM	Airborne Fibre Monitoring, e.g., by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total %w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory’s remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
Sampling	Unless otherwise stated Eurofins are not responsible for sampling equipment or the sampling process.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average %w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
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	N/A
Some samples have been subcontracted	No

Asbestos Counter/Identifier:

Bennel Jiri	Senior Analyst-Asbestos

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos

Glenn Jackson
Managing Director

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.

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Alliance Geotechnical
10 Welder Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Alex Finney**

Report **1109948-S-V2**
Project name MAROUBRA-4156
Project ID 17716
Received Date Jun 20, 2024

Client Sample ID			**4-LP1**	**4-LP2**	**4-LP3**	**4-LP4**
Sample Matrix			**Paint**	**Paint**	**Paint**	**Paint**
Eurofins Sample No.			**S24-Jn0052647**	**S24-Jn0052648**	**S24-Jn0052649**	**S24-Jn0052650**
Date Sampled			**Not Provided**[I12]	**Not Provided**[I12]	**Not Provided**[I12]	**Not Provided**[I12]
Test/Reference	LOR	Unit				
Lead (% w/w)	0.01	%	< 0.01	0.07	< 0.01	0.09

Client Sample ID			**4-LP5**	**4-LP6**	**4-LP7**	**4-LP8**
Sample Matrix			**Paint**	**Paint**	**Paint**	**Paint**
Eurofins Sample No.			**S24-Jn0052651**	**S24-Jn0052652**	**S24-Jn0052653**	**S24-Jn0052654**
Date Sampled			**Not Provided**[I12]	**Not Provided**[I12]	**Not Provided**[I12]	**Not Provided**[I12]
Test/Reference	LOR	Unit				
Lead (% w/w)	0.01	%	< 0.01	< 0.01	< 0.01	0.03

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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
Lead (% w/w)	Sydney	Jun 25, 2024	6 Months

- Method: LTM-MET-3040 Metals in Waters Soils & Sediments by ICP-MS

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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Alliance Geotechnical
Address: 10 Welder Road
Seven Hills
NSW 2147

Project Name: MAROUBRA-4156
Project ID: 17716

Order No.:
Report #: 1109948
Phone: 1800 288 188
Fax: 02 9675 1888

Received: Jun 20, 2024 9:07 PM
Due: Jun 25, 2024
Priority: 3 Day
Contact Name: Alex Finney

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos Absence /Presence	Lead
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	4-A1	Not Provided		Building Materials	S24-Jn0052642	X	
2	4-A2	Not Provided		Building Materials	S24-Jn0052643	X	
3	4-A3	Not Provided		Building Materials	S24-Jn0052644	X	
4	4-A4	Not Provided		Building Materials	S24-Jn0052645	X	
5	4-A5	Not Provided		Building Materials	S24-Jn0052646	X	
6	4-LP1	Not Provided		Paint	S24-Jn0052647		X
7	4-LP2	Not Provided		Paint	S24-Jn0052648		X
8	4-LP3	Not Provided		Paint	S24-Jn0052649		X
9	4-LP4	Not Provided		Paint	S24-Jn0052650		X
10	4-LP5	Not Provided		Paint	S24-Jn0052651		X
11	4-LP6	Not Provided		Paint	S24-Jn0052652		X

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6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
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Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
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Report #: 1109948
Phone: 1800 288 188
Fax: 02 9675 1888

Received: Jun 20, 2024 9:07 PM
Due: Jun 25, 2024
Priority: 3 Day
Contact Name: Alex Finney

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos Absence /Presence	Lead
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
12	4-LP7	Not Provided		Paint	S24-Jn0052653		X
13	4-LP8	Not Provided		Paint	S24-Jn0052654		X
Test Counts						5	8

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the '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 before sample receipt deadlines as stated on the SRA.

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Lead (% w/w)	%	< 0.01			0.01	Pass	

Comments

This report has been revised (V2) to correct reporting units for lead from (mg/kg) to (%w/w).

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
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	N/A
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
M10	NATA accreditation does not cover the performance of this service in soil matrices

Authorised by:

Nileshni Goundar	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal
Sayeed Abu	Senior Analyst-Asbestos

Glenn Jackson
Managing Director

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.

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