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MINARAH COLLEGE C/- MIDSON GROUP PTY LTD

Hazardous Materials Survey

268 & 278 Catherine Fields Rd, Catherine Field NSW

E25586.E10_Rev0
6 April 2022

Document Control

Report Title: 268 & 278 Catherine Fields Rd, Catherine Field NSW – Hazardous Materials Survey

Report No: E25586.E10_Rev0

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Revision	Details	Date	Amended By
0	Original	6 April 2022	-

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Executive Summary

Minarah College C/- Midson Group Pty Ltd engaged EI Australia (EI) to conduct a Hazardous Materials Survey for the property located at 268 & 278 Catherine Fields Rd, Catherine Field NSW (herein referred to as 'the site').

The purpose of this Hazardous Materials Survey is to present the findings of a qualitative risk assessment of the hazardous building materials located on the site. The site inspection was undertaken on 24th of March 2022.

This report has been developed to assist Minarah College C/- Midson Group Pty Ltd with the preparation for the redevelopment of the site. EI understand that proposed redevelopment of the site shall involve the demolition of existing structures.

Key Findings

The overall status of each hazardous material type is tabulated below.

Site Name	ACM (friable)	ACM (Non-friable)	SMF	LBP	PCBs
#278 Main Dwelling	No	No	**Yes**	No	**Yes**
#278 Detached Large Shed	No	No	No	No	No
#278 Detached Cabin	No	**Yes**	**Yes**	No	**Yes**
#268 Main Dwelling	No	**Yes**	**Yes**	No	**Yes**
#268 Southern Detached Shed	No	No	**Yes**	**Yes**	**Yes**
#268 Eastern Detached Shed	No	**Yes**	No	No	**Yes**

Note 1 Hazardous materials may be present within any inaccessible area stated in the register in **Appendix A**.

All identified hazardous building materials were ranked ***Priority 3 or Priority 4*** (i.e. stable and posing low to negligible health risk under present conditions. No immediate remedial action was deemed necessary.

Refer to **Appendix A** for the formal Hazardous Materials Register.

1. Introduction

1.1 Background and Purpose

EI Australia (EI) was engaged by Minarah College C/- Midson Group Pty Ltd to conduct a Hazardous Materials Survey (HMS) for the site located at 268 & 278 Catherine Fields Rd, Catherine Field NSW.

This report has been developed to assist Minarah College C/- Midson Group Pty Ltd with the preparation for the redevelopment of the site. EI understand that proposed redevelopment of the site shall involve the demolition of existing structures.

This report documents the findings of the HMS performed by EI, which involved inspection of the building on site for the presence of hazardous materials, sampling of potential hazardous materials, and subsequent laboratory analysis for the relevant hazardous substances. In addition, this report provides recommendations for the safe management of hazardous materials during demolition works.

1.2 Scope of Works

The aim of the HMS was to:

- Ascertain whether the buildings on site contained hazardous material(s), including;
  - Asbestos-containing materials (ACM);
  - Synthetic mineral fibre (SMF) materials;
  - Lead-based paint systems (LBP); and
  - Polychlorinated biphenyls (PCB) containing materials;
- Undertake a qualitative risk assessment of the hazardous materials contained within the buildings;
- Develop control strategies for the ongoing management of hazardous materials contained within the buildings;
- Identify and provide recommendations where remedial works are needed; and
- Prepare a report with the findings of the inspection, including the hazardous materials register and recommendations for the ongoing management or remedial works.

2. Site Description

2.1 Property Identification and Location

The site identification details and associated information are presented in **Table 2-1.**

Table 2-1 Site Identification and Location

Attribute	Description
Street Address	268 & 278 Catherine Fields Rd, Catherine Field NSW
Location Description	Approx. 10.3km north-west of Campbelltown central business district CBD, the site is bound by low-density residential property (north, east and south), and Catherine Fields Rd (west).
Site Coordinates	North-eastern corner of site (GDA2020-MGA56) Easting: 293290.809; Northing: 6237320.323. (Source: http://maps.six.nsw.gov.au)
Site Area	Approximately 4.50 hectares

2.2 Building Descriptions

A brief description of each building/structure inspected is located in **Table 2-2**.

Table 2-2 Building Descriptions

Description	
#278 Main Dwelling This building consists of a single storey residential building with four bedrooms, two bathrooms and a double garage. The building has a tiled roof, brick external walls, plasterboard and fibrous cement internal walls, plasterboard ceilings with concrete flooring.	

Description

#278 Detached Large Shed

This building consists of a single storey shed/warehouse structure with no amenities and is not entirely enclosed.

The building has a metal roof, external and internal walls, ceilings and concrete and dirt flooring.

#278 Detached Cabin

This building consists of a single storey cabin-like building with a single room, inclusive of a kitchen and fireplace. A deck and metal carport is present on the northern side.

The building has a metal roof, asbestos cement external walls, plasterboard ceiling, compressed wood internal walls and wooden flooring.

#268 Main Dwelling

This building consists of a single storey residential building with three bedrooms and one two bathrooms.

The building has a metal roof, brick and fibrous cement external walls, asbestos cement and plasterboard internal walls with fibrous cement and plasterboard ceilings, and concrete flooring.

Description

#268 Southern Detached Shed

This building consists of a single storey shed-like building with kitchen.

The building has a metal roof, fibrous cement external walls, plasterboard internal walls and ceilings, and concrete flooring.

#268 Eastern Detached Shed

This building consists of a single storey shed building with workshop areas.

The building has a metal and fibreglass roof, asbestos cement, metal and brick external walls, compressed wood, plasterboard, metal and brick internal walls, and concrete and gravel flooring.

3. General Methodology

The survey was conducted to identify the presence and condition of hazardous building materials within the site. For the purpose of this survey, hazardous building materials included:

- Asbestos containing materials (ACMs);
- Synthetic Mineral Fibre (SMF) insulation materials;
- Lead based paints (LBPs) applied to building surfaces; and
- Fluorescent light capacitor fittings, containing polychlorinated biphenyls (PCBs).

The scope of the survey was limited to inspection of the accessible building construction materials, including finishes and operational services, with the collection of representative samples suspected of containing a hazardous substance (listed above), where it was permissible to do so.

Due to the destructive nature of the sampling process or access constraints, it is not possible to collect samples of all (suspected) materials. Where it was not possible to collect a sample, the inspector used their professional experience to make a judgement on the status of the material, or area, concerned. Where the inspector believed the material could contain asbestos, LBP, SMF and/or PCB, this was recorded in the survey report and the corresponding material should be treated as hazardous.

3.1 Asbestos

This component of the survey was carried out in accordance with the guidelines documented in the SafeWork NSW (2019) *How to Manage and Control Asbestos in the Workplace* and SafeWork NSW (2019) *How to Safely Remove Asbestos*. Below are definitions of the two forms of asbestos.

Non Friable asbestos material

Non-friable (bonded) asbestos is any material that contains asbestos in a bonded matrix. It may consist of Portland cement or various resin/binders and cannot be crushed by hand when dry.

Friable asbestos material

Friable asbestos is any material that contains asbestos and is in the form of a powder or can be crumbled, pulverized or reduced to powder by hand pressure when dry.

Samples of suspected ACMs were laboratory analysed for their asbestos content (presence / absence), in accordance with Australian Standard AS4964-2004 *Method for the Qualitative Identification of Asbestos in Bulk Samples*. The reporting limit of the method was 0.1 g/kg. Refer to **Appendix B** for the laboratory documentation.

During the inspection, a number of confirmed and potential asbestos containing materials were identified, including:

- Asbestos cement sheeting (Asb-05, Asb-08, Asb-11, Asb-12, Asb-13, Asb-13, Asb-16, Asb-17 and Asb-18, additional not sampled and were assumed); and
- Electrical Distribution Boards (not sampled and were assumed).

3.2 Lead in Paint

Painted surfaces were sampled and laboratory analysed for their lead (Pb) content. The sampling program was representative of the various types of paints found within the site, concentrating on areas where LBPs may have been used (e.g. exterior gloss paints, window and door architraves, skirting boards, etc.).

Australian Standard AS 4361.2-2017 *Guide to Lead Paint Management, Part 2: Lead Paint in Residential, Public and Commercial Buildings* defines LBP as a paint film or component coat of a paint system in which the lead content (calculated as lead metal) is in excess of 0.1% by weight of the dry film, as determined by laboratory testing. The NSW *Work Health and Safety Regulation* 2017 currently defines a lead process as works on paint containing more than 1.0% by dry weight of lead. Refer to **Appendix B** for the laboratory documentation.

During the inspection, two confirmed lead based paints were identified:

- #268 Southern Detached Shed, white lead based paint (Pb-03); and
- #268 Southern Detached Shed, yellow lead based paint (Pb-04).

3.3 Synthetic Mineral Fibres (SMF)

This component of the survey was carried out in accordance with the guidelines documented in the Safe Work Australia *Code of Practice for the Safe Use of Synthetic Mineral Fibres* [NOHSC: 2006 (1990)]. This code broadly identifies SMF materials found or suspected of being present during the survey based on a visual assessment.

3.4 Polychlorinated Biphenyls (PCBs)

Where safe access was gained, detailed information of capacitors in light fittings and other electrical equipment were noted for cross-referencing with the Australian and New Zealand Environmental and Conservation Council (ANZECC, 1997) *Identification of PCB Containing Capacitors Information Booklet*. This document defines PCB materials and wastes as follows:

Concentration	Rating
<2 mg/kg	- PCB free.
2 mg/kg - <50 mg/kg	- Non-Scheduled PCB material or waste.
>50 mg/kg	- Scheduled PCB material or waste.
>100,000 mg/kg (10%)	- Concentrated PCB material

Due to the inherent hazard in accessing electrical components, or other reasons such as height restrictions, immovable equipment and furniture, some light fittings may not be safely accessed. In these instances, comment was made on the likelihood of PCB-containing materials, based upon age and appearance.

4. Risk Assessment

The building located at 268 & 278 Catherine Fields Rd, Catherine Field NSW was the subject of a Hazardous Materials Survey. The Hazardous Materials Register, presented in **Appendix A**, assesses the risks associated with each identified hazardous material. In order to assess the health risks associated with asbestos, LBP, SMF and PCBs the following must be considered:

- Product type;
- Friability of the material;
- Condition;
- Accessibility requirements for building and/or maintenance; and
- Exposed surface area;
- Surface treatment (if any).

The purpose of the material risk assessment is to establish the relative risk posed by specific hazardous building materials identified in this assessment. The following risk factors are defined to assist in determining the relative health risk posed by each item.

4.1 Friability

The friability of a material describes the ease by which the material can be crumbled, which in turn, can increase the release of fibres into the air. Therefore, friability is only applicable to asbestos and SMF.

- **Friable asbestos** can be crumbled, pulverised, or reduced to powder by hand pressure, which makes it more dangerous than non-friable asbestos.
- **Non-friable asbestos** is typically comprised of asbestos fibres tightly bound in a non-asbestos matrix. If accidentally damaged or broken these ACMs may release fibres initially but will not continue to do so.
- **Bonded SMF** describes a synthetic fibrous material which has a specific designed shape and exists within a stable manufactured product.
- **Un-bonded SMF** is a loosely packed synthetic fibrous material which has no adhesive or cementitious binding properties.
- **Friable lead based paints** exhibit signs of severe deterioration and crumbled, pulverised, or reduced to powder by hand pressure.
- **Non-friable lead based paints** have remained adhered to the surface and are not easily removed.

4.2 Condition

The condition of the hazardous building materials identified during the assessment is reported as being **good**, **fair** or **poor**.

- **Good** refers to a material that is in sound condition with no or very minor damage or deterioration.
- **Fair** refers to a material that is generally in a sound condition, with some areas of damage or deterioration.
- **Poor** refers to a material that is extensively damaged or deteriorated.

4.3 Accessibility

- **Regular:** in an occupied space of the building and accessible to all personnel using/entering the building.
- **Occasional:** buildings or rooms that are used infrequently.
- **Maintenance Only:** accessible to maintenance personnel only.

4.4 Priority Ratings

The risk elements above are used to rate the overall health risk posed by the presence of the hazardous materials:

Priority 1: Immediate Risk Level

Materials which, due to their present condition and location, present an immediate health risk. The material and area surrounding should be isolated from personnel with remedial actions recommended to be undertaken at the earliest practicable time.

Priority 2: Elevated Risk Level

Damaged or unstable materials which present an elevated health risk if disturbed to personnel within the vicinity, and have potential for contamination to be spread to other areas. The material should be stabilised immediately, with remedial actions considered for the material.

Priority 3: Low Risk Level

Stable material that have minor areas of damage requiring remedial action or is likely to be subject to damage or to degrade due environmental conditions. It is recommended that maintenance work be performed to stabilise and repair damaged areas. Controls should be implemented to protect these materials from further damage or degrading factors.

Priority 4: Negligible Risk Level

Stable material that presents a negligible health risk unless damaged. These materials should be maintained in good condition. They should be reassessed prior to any works that will impact the material.

Inaccessible:

The location was not accessed during the survey and a priority rating could not be applied. Once a location is accessed, the priority rating should be reassessed prior to any works at will be undertaken in this location.

5. Summary of Results

Based on the inspection of the structural materials making up the building designated for demolition, the identified hazardous materials are indicated in **Table 5-1**. Handling recommendations and material specific work plans for the relevant hazardous materials are outlined in **Section 6**. Photographs of the identified materials are presented in the register in **Appendix A**.

Table 5-1 Summary Hazardous Materials

Building	Location	Material Description
#278 Main Dwelling	External, eastern and western gables	Asbestos Cement Sheeting (assumed)
	External, northern side	Asbestos Electrical Distribution Board (assumed)
	External, southern side, hot water heater	SMF lined insulation (assumed)
	Internal, garage	PCB containing single fluorescent light fitting (assumed)
#278 Detached Large Shed	No hazardous building materials identified within accessible areas	
#278 Detached Cabin	External, walls and gables	Asbestos Cement Sheeting
	External, walls, edge capping	Asbestos Cement Sheeting
	External, northern side, hot water heater	SMF lined insulation (assumed)
	Internal, walls and ceiling	SMF Insulation
	Internal, floor	Beige Vinyl Floor Sheeting
	Internal, throughout	PCB containing single tube fluorescent light fittings (assumed)
#268 Main Dwelling	External, eaves	Asbestos Cement Sheeting (assumed)
	External, southern side	Asbestos Electrical Distribution Board (assumed)
	External, eastern side, southern section, wall	Asbestos Cement Sheeting
	Internal, north-eastern bedroom, walls and ceiling	Asbestos Cement Sheeting
	Internal, eastern laundry/bathroom, walls and ceiling	Asbestos Cement Sheeting
	External, northern side, hot water heater	SMF lined insulation (assumed)
	Internal, kitchen, floor, upper layer	Blue Vinyl Floor Sheeting
	External, eastern awning	PCB containing single tube fluorescent light fitting (assumed)
#268 Southern Detached Shed	External, southern side, hot water heater	SMF lined insulation (assumed)
	External, northern entry door	White lead based paint
	External, trimming throughout	Yellow lead based paint

Building	Location	Material Description
	Internal, throughout	PCB containing single tube fluorescent light fitting (assumed)
#268 Eastern Detached Shed	External, western and southern upper walls	Asbestos Cement Sheeting
	External, western and southern upper walls, edge capping	Asbestos Cement Sheeting
	Internal, western, central and eastern rooms, sheeted walls	Asbestos Cement Sheeting (assumed)
	Internal, eastern room, ground surface debris	Asbestos Cement Sheeting Fragments
	Internal, throughout	PCB containing single and dual tube fluorescent light fitting (assumed)

Note 1 Hazardous materials may be present within any inaccessible area stated in the register in **Appendix A**.

6. Recommendations

6.1 Asbestos

Asbestos materials should be removed prior to the commencement of any demolition works that may cause their disturbance. The removal of these materials is to be done in accordance with *NSW Work Health and Safety Act* and *Regulations 2017* and the following SafeWork NSW approved codes of practice:

- SafeWork NSW (2019) *How to Manage and Control Asbestos in the Workplace*; and
- SafeWork NSW (2019) *How to Safely Remove Asbestos*

The asbestos removal works require a minimum *Class A* licenced asbestos removal contractor (LARC) for any of the friable materials identified. *Class A* licenced asbestos removal contractors are permitted to remove any amount or quantity of asbestos or ACM including friable asbestos.

For any materials identified as non-friable (i.e. bonded) asbestos a minimum of a *Class A* or *B* LARC are permitted to complete the removal works.

Results from improper demolition practices associated with non-friable asbestos can elevate the classification of the materials identified within the buildings or extend the areas required to be remediated.

At the completion of asbestos removal works a clearance certificate is required.

The following recommendations must be observed as minimum requirements during the removal of all ACM.

- The work area should be barricaded and appropriate signage installed.
- The ACM should be sealed or wetted with water.
- ACM should be removed with minimal breakage and where applicable, should be lowered to the ground not dropped.
- Where ACMs are too large to fit into an asbestos labelled waste bag, the ACM should be stacked or placed on a 200µm plastic ground sheet or lined skip bin and not allowed to lie about the site where they may be further broken or crushed by machinery or workers.
- Asbestos waste is to be securely packaged and labelled. Asbestos waste bags are to be double bagged while ACM in polythene sheeting should be double wrapped with adhesive tape applied to the entire length of every overlap to secure materials to minimise the risk of the polythene sheeting tearing or splitting.
- Any dust and/or ACM debris remaining around the removal area should be cleaned up using an approved “H” type HEPA vacuum cleaner.
- All asbestos containing waste is to be disposed at an approved disposal facility (contact local council or SafeWork NSW for nearest asbestos waste facility).

Where asbestos is to be removed, the licenced asbestos removal contractor should prepare an asbestos removal control plan prior to undertaking any removal works.

6.1.1 Asbestos Removal Control Plan

A site-specific Asbestos Removal Control Plan (ARCP) must be prepared by the Asbestos Removalist Contactor to document the management measures required to address the risks associated with potential exposure to asbestos. The ARCP must cover:

- Work area isolation (barrier protection, buffer zone);
- Removal methods (friable/non-friable);
- Contamination control methods (decontamination procedures); and
- Health and safety procedures (respiratory protection).

Asbestos removal works at the site, including the disturbance of any asbestos-impacted soils, must be managed strictly in accordance with the ARCP.

6.1.2 Asbestos Fibre Air Monitoring

Asbestos fibre air monitoring is required during friable asbestos removal works. However, there is no requirement to undertake asbestos fibre air monitoring during the removal of the non-friable asbestos materials on the boundary of the work areas. As a matter of due diligence asbestos fibre air monitoring it is recommended to be undertaken on the boundary of the work areas. Asbestos fibre air monitoring is required to be undertaken by a company independent of the demolition and /or asbestos removal company. The asbestos fibre air monitoring should be undertaken by a company that is NATA (National Association of Testing Authorities) accredited.

6.1.3 Management of Asbestos Waste

The transportation and management of asbestos waste must be carried out in accordance with Part 7 of the *Protection of the Environment Operations (Waste) Regulation 2014*, which includes:

- Appropriate packaging, sealing, covering and/or wetting of the waste, as is required for the form of the asbestos contamination (i.e. bonded asbestos, friable asbestos or asbestos-contaminated soil);
- Reporting on transportation of asbestos waste by the transporter to the NSW EPA as required under Part 7, Section 79 of the *Waste Regulation 2014*; and

Disposal to an appropriately licensed (i.e. lawful) premises, with proper advice to the occupier of the premises, while incorporating measures for the prevention of dust generation, in accordance with Part 7, Section 80 of the *Waste Regulation 2014*.

Any ACM removed from the site should be tracked from the time of their removal from the structure until their disposal. Tracking of all ACM should be completed on the EPAs WasteLocate system. This system will require all details of the ACM to be transported, including but not limited to:

- Origin of material;
- Material type;
- Approximate volume; and
- Truck registration number.

Disposal locations will be determined by the remediation contractor. Disposal location, waste disposal documentation (i.e. weighbridge dockets, trip tickets and consignment disposal confirmation) and the above listed information should be provided to the remediation consultant for reporting purposes.

6.1.4 Asbestos Clearance Inspection

Under Clause 473 of the *NSW Work Health and Safety Regulation* 2017, a clearance inspection is required following the removal of any ACM. At the completion of the removal of friable asbestos a licenced asbestos assessor is required to undertake clearance inspections. A clearance inspection is to be carried out and a clearance certificate issued before the area can be re-occupied. The company undertaking the clearance inspection should be independent of the demolition and / or asbestos removal company.

6.2 Lead Paint

Site structures should be managed in accordance with the procedures detailed in the following references:

- Australian Standard AS 4361.2-2017 *Guide to Lead Paint Management, Part 2: Lead* Paint *in Residential, Public and Commercial Buildings*;
- NOHSC (1994a) *National Standard for the Control of Inorganic Lead at Work*; and
- NOHSC (1994b) *National Code of Practice for the Control and Safe Use of Inorganic Lead at Work.*

There are currently no legislative requirements for the general removal of stable lead-containing painted materials for structures remaining *in situ*.

The following recommendations must be observed as a minimum requirement when working with lead paint to reduce the potential for lead dust exposure.

- LBPs on structures otherwise from residential premises, educational or child care institutions are to be removed from all surfaces prior to demolition.
- Lead paint waste arising otherwise from residential premises, educational or child care institutions has been pre-classified as *Hazardous Waste* under the NSW EPA (2014) *Waste Classification Guidelines*.
- All building materials with lead paint are to be disposed as *Hazardous Waste*, unless the lead paint is removed prior to demolition.
- Wear an approved (Australian Standard AS1716) half face respirator or dust mask with a ‘P2’ (dust and fumes) protection rating if working directly with materials coated with lead paint during the demolition works.
- Wear work clothes that do not catch dust or flakes in pockets or cuffs. Consider using disposable overalls.
- Use an industrial vacuum cleaner fitted with High Efficiency Particulate Air (HEPA) filters for dust and debris clean up.
- When working on lead paint surfaces:
  - Use heavy-duty plastic sheeting to seal off work areas and collect debris;
  - Place a plastic drop sheet under the area to be worked upon (ensuring it extends a minimum of two metres from the base of the wall or structure and an extra metre for each storey being worked on (consider height and use more plastic if needed));
  - Fold the edge of the plastic nearest the wall and/or structure and secure it with tape, in order to prevent any dust falling between the edge of the plastic and the wall or structure; and

  - Fold and brace external edges of the plastic drop sheet.

- Wet any lead paint surface to be sanded or cut. Use water sparingly and do not spray water on power tools (e.g. drills). Wet the wall or structure to dampen down for dust control.
- Do not use open flame burners on lead paint.
- At the completion of the works, plastic sheeting used during lead paint removal is to be folded and sealed to ensure the materials are contained within the plastic sheeting.

The *NSW Work Health and Safety Regulation 2017* require that a person conducting a business or undertaking (PCBU) must notify SafeWork NSW of any lead risk work being undertaken. The PCBU must assess each lead process to determine whether lead risk work is being carried out. If a PCBU cannot determine whether lead risk work is being carried out, then the process is taken to include lead risk work until it can be determined that lead risk work is not being undertaken. A notification of lead risk work form must be submitted to SafeWork NSW at least seven days before lead work begins. These forms are available on the SafeWork NSW website and lodgement instructions are listed on the forms.

6.3 Synthetic Mineral Fibres

SMF materials should be removed during any demolition works that may cause their disturbance. SMF materials must be handled and removed in accordance with the *NSW Work Health and Safety Regulation 2017* and the Safe Work Australia *Synthetic Mineral Fibres National Standard* (NOHSC:1004) and *National Code of Practice* (NOHSC:2006).

The following guidance documents should be consulted for guidance regarding removal and disposal of SMF:

- *National Standard for the Safe Use of Synthetic Mineral Fibres* [NOHSC:1004 (1990)];
- *National Code of Practice for the Safe Use of Synthetic Mineral Fibres* [NOHSC:2006 (1990)]; and
- *Code of Practice for the Safe Use of Synthetic Mineral Fibres* (NOHSC, 1993).

These documents should be referred to for the disposal SMF materials. Under the EPA (2014) *Waste Classification Guidelines*, “synthetic fibre waste from materials such as fibreglass, polyesters and other plastics, being waste that is packaged securely to prevent dust emissions, but excluding asbestos waste which is a special waste”, is pre-classified as *General Solid Waste (Non Putrescible)*.

6.4 Polychlorinated Biphenyl Capacitors

All metal-cased capacitors, including fluorescent light fittings, should be assumed as containing PCBs. Any leaking PCB-containing capacitors identified should be removed and disposed prior to the commencement of any demolition works that may cause their disturbance.

The following recommendations must be observed when removing / handling PCB containing capacitors.

- Small quantities of PCBs are usually found in sealed containers known as capacitors. PCB-containing capacitors are unlikely to pose a health risk unless they become damaged and leak. Care must be taken when handling a damaged capacitor to ensure that spillage does not occur.

- The person handling any (damaged) capacitor should use disposable gloves. 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. Mid-arm length gauntlets may be required. Do not use gloves made of polyvinyl chloride (PVC) or natural rubber (latex).
- Wear disposable overalls made of Tyvek or 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 waste.
- PCB-containing equipment (capacitors, ballasts, etc.) is to be placed in a polyethylene bag, which then is to be placed in a sealable metal container. This container must be clearly marked with the details of the contents and must be maintained in good order (that is, no visible signs of damage or corrosion). If some of these materials are leaking, the container should be partially filled with an absorbent material, such as a commercial absorbent, kitty litter or a diatomaceous earth. The plastic wrapped leaking components can then be placed in the container.
- If PCB vapours are suspected (e.g. PCB leaks onto a hot surface in a confined space), wear a suitable respirator. Use a cartridge respirator suitable for chlorinated vapours. It is always prudent to ensure adequate ventilation. NOTE: PCBs do not vaporise readily at room temperature.
- Do not smoke while handling PCB capacitors.
- After handling PCBs, even if gloves were worn, wash hands well in warm, soapy water before eating, drinking, smoking, handling food or drink, or using toilet facilities.

PCB capacitors are to be disposed at a licenced waste facility. If PCB concentration is above the threshold concentration for PCBs scheduled waste (i.e. >50mg/kg), the waste must be also be transported by a suitably licenced contractor. For further details on this, contact the NSW EPA.

7. Statement of Limitations

This report has been prepared by EI Australia (EI) pursuant to EI Australia's Terms and Conditions.

The report is for the sole use by Minarah College C/- Midson Group Pty Ltd. No responsibility is accepted for the use of any part of this report in any other context or for any other purpose or by other third parties. This report does not purport to provide legal advice. This report is prepared in response to specific instructions from Minarah College C/- Midson Group Pty Ltd.

Unless otherwise stated in this report, the survey evaluates the presence of hazardous materials in/on the building(s) of the identified site, and excludes buried waste materials, contaminated dusts, and soils. The findings presented in this report are the result of a site walkover inspection, sampling, laboratory analysis, interviews with site personnel, and review of any documentation provided to EI. To the best of EI's knowledge, and in view of these limitations, the findings presented in this report represent a reasonable interpretation of the building materials on the site at the time of investigation.

This report relies upon data, surveys, measurements, and/or results taken at, or under, the particular times and conditions specified in this report. Any conclusions or recommendations only apply to the findings at that particular time.

EI is not a professional quantity surveyor (QS) organisation. Any areas, volumes, tonnages or any other quantities noted in this report are indicative estimates only. The services of a professional QS organisation should be engaged if quantities are to be relied upon.

The report should not be separated or reproduced in part, and EI should be retained to assist other professionals who may be affected by the issues addressed in this report to ensure the report is not misused in any way. In the interests of Work Health and Safety, and in the absence of a comprehensive testing program, EI recommends that where there is doubt over the composition of any suspect material, it should be assumed to contain asbestos until verified otherwise by appropriate analysis.

This report must be read in its entirety, and must not be copied, distributed or referred to in part. This report is not intended to be used for the purpose of tendering, preparation of costing or budgets, programming of works, refurbishment works or demolition works, unless expressly stated. The report must not be reproduced without the written approval of EI.

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Inaccessible areas

It is noted that given the constraints of practicable access encountered during the HMS, the following areas were not accessed or inspected:

- Wall cavities and set ceilings;
- Ceiling voids;
- Within those areas accessible only by dismantling equipment;
- Concealed within the building structure;
- Within voids or internal areas of plant, equipment, air-conditioning ducts, etc;
- Energised services, gas, electrical, and pressurised vessels;
- Within totally inaccessible areas such as voids and cavities created and intimately concealed within the building structure. These voids are only accessible during major demolition works; and
- Height restricted areas, including building roof areas.

Should demolition operations entail disturbance of materials in these locations, further investigation and sampling of specific areas should be conducted as part of an asbestos and lead management and abatement program, as per 'AS 2601-2001: The Demolition of Structures', prior to any works proceeding.

Appendix A - Hazardous Materials Register

Table A.1 Key and Explanatory Notes to Hazardous Building Material Register

Column Heading	Description
Location	A detailed description of the location of the hazardous building material relevant to this entry.
Material Type	The specific hazardous building material type, e.g. Asbestos: asbestos cement sheet corrugated asbestos cement sheet, vinyl asbestos tiles, etc. SMF: foil backed SMF, compressed SMF ceiling tiles, SMF insulation to upper surface of ceiling, etc. Paint: Beige coloured lead-based paint system. PCB: Metal case capacitor 'Plessey 6.5 µF Type APF 265CR'. ***If inaccessible areas are noted, any of the above material types may be present.***
Friability	If the material can be crushed to a powder by hand pressure.
Sample	Sample Reference number allocated to the sample collected from this asbestos containing material
Results	Laboratory analytical results. Refer to **Appendix B** for laboratory analytical reports.
Quantity	The approximate quantity of hazardous building material relevant to this location. Depending on the nature of the material, the quantity is given as an area (m^2), length (m), number of pieces/units or not determined (ND).
Condition	**Good**: good and stable condition. **Fair**: early signs of deterioration or localised areas of damage. For PCB capacitors this would include evidence of seals deteriorating. **Poor**: the material is in poor condition and remedial action is required, e.g. deteriorated friable asbestos materials, capacitors are leaking, etc. **Unknown**: the area was inaccessible
Accessibility	**Regular**: in the occupied space of the building and accessible to all personnel using/entering the building. **Occasional**: buildings or rooms that are used infrequently. **Maintenance Only**: accessible to maintenance personnel only. **Inaccessible**: the area was not able to be accessed during the inspection
Risk Rating	The allocated priority rating for this entry, refer Section **4.4**. If the location was not accessible the risk rating is not able to be determined and shall be listed as inaccessible.
Recommendations	Recommended actions for demolition works or damaged material.
Photograph	Photograph of location where sample was taken.

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

Location	Material Type	Friability	Sample	Analysis Result:	Quantity	Condition and Accessibility	Priority	Recommendations/ Comments	Photograph of material
#278 Main Dwelling									
Inaccessible/Limited Access									
Internal, wall and ceiling cavities throughout	Possible hazardous materials	Unknown	-	-	Unknown	Unknown	Unknown	**Inspect when access is made available, prior to demolition.**	-
Internal, kitchen, walls behind tiles	Assumed to be brick behind tiling, potential for asbestos containing materials	Non-friable	Visual Inspection – Limited access due to floor to ceiling tiling	-	Not determined	Unknown Maintenance only	Priority 4: Negligible Risk Level	**Inspect during strip out works and removal of tiles. If suspect material is identified, organise for inspection by a competent environmental consultant to identify if asbestos is present**	
Asbestos									
External, eastern and western gables	Asbestos Cement Sheeting	Non-friable	Inaccessible (height restriction)	-	Approximately 10m²	Good Maintenance Only	NA	NA	
External, northern side	Asbestos Electrical Distribution Board (assumed)	Non-friable	Visual inspection (electrical hazard)	-	1 x board	Unknown Maintenance only	Priority 4 - Negligible Risk Level	**Remove during demolition works**	

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

Internal, south-western ensuite bathroom, walls	Fibrous Cement Sheeting	Non-friable	Asb-01	No Asbestos Detected Organic Fibres Detected	NA	NA	NA	NA	
Internal, kitchen, upper walls	Fibrous Cement Sheeting	Non-friable	Asb-02	No Asbestos Detected Organic Fibres Detected	NA	NA	NA	NA	
Internal, eastern bathroom, walls	Fibrous Cement Sheeting	Non-friable	Asb-03	No Asbestos Detected Organic Fibres Detected	NA	NA	NA	NA	

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

External, eaves	Fibrous Cement Sheeting	Non-friable	Asb-04	No Asbestos Detected Organic Fibres Detected	NA	NA	NA	NA	
SMF									
External, southern side, hot water heater	SMF lined insulation (assumed)	Sealed	Visual inspection (inaccessible)	-	1 x unit	Good Maintenance only	Priority 4 - Negligible Risk Level	**Remove during demolition works**	
Paints									
Internal and external, throughout	No lead based paint systems were identified within accessible areas	NA	Visual Inspection	NA	NA	NA	NA	NA	-
PCBs									
Internal, garage	PCB containing single fluorescent light fitting (assumed)	NA	Visual Inspection (electrical hazard)	-	1 x lighting fixture	Good Maintenance Only	Priority 4 - Negligible Risk Level	**Remove prior to demolition works**	

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

Location	Material Type	Friability	Sample	Analysis Result:	Quantity	Condition and Accessibility	Priority	Recommendations/ Comments	Photograph of material
#278 Large Detached Shed									
Inaccessible/Limited Access									
No Inaccessible areas identified	NA	NA	NA	NA	NA	NA	NA	**NA**	
Asbestos									
Internal and external, throughout	No suspected asbestos containing materials were identified within accessible areas	NA	Visual Inspection	NA	NA	NA	NA	NA	-
SMF									
Internal and external, throughout	No suspected SMF materials were identified within accessible areas	NA	Visual Inspection	NA	NA	NA	NA	NA	-
Paints									
Internal and external, throughout	No lead based paint systems were identified within accessible areas	NA	Visual Inspection	NA	NA	NA	NA	NA	-
PCBs									
Internal and external, throughout	No PCB systems were identified within accessible areas	NA	Visual Inspection	NA	NA	NA	NA	NA	-

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

Location	Material Type	Friability	Sample	Analysis Result:	Quantity	Condition and Accessibility	Priority	Recommendations/ Comments	Photograph of material
#278 Detached Cabin									
Inaccessible/Limited Access									
Internal, ceiling, floor and wall cavities throughout	Possible hazardous materials	Unknown	-	-	Unknown	Unknown	Unknown	**Inspect when access is made available, prior to demolition.**	-
Asbestos									
External, walls and gables	Asbestos Cement Sheeting	Non-friable	Asb-05	**Chrysotile Asbestos Detected** Organic Fibres Detected	Approximately 80m²	Fair Maintenance Only	Priority 4 - Negligible Risk Level	**Remove prior to demolition works**	
External, walls, edge capping	Asbestos Cement Sheeting	Non-friable	Asb-08	**Chrysotile Asbestos Detected** Organic Fibres Detected	Not determined	Fair Maintenance Only	Priority 4 - Negligible Risk Level	**Remove prior to demolition works**	

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

SMF

External, northern side, hot water heater	SMF lined insulation (assumed)	Sealed	Visual inspection (inaccessible)	-	1 x unit	Good Maintenance Only	Priority 4 - Negligible Risk Level	**Remove prior to demolition works**	
Internal, walls and ceiling	SMF Insulation	Unsealed	Asb-06	No Asbestos Detected **SMF Detected**	Approximately 80m²	Fair Maintenance Only	Priority 4 - Negligible Risk Level	**Remove prior to demolition works**	
Internal, floor	Beige Vinyl Floor Sheeting	Sealed	Asb-07	No Asbestos Detected **SMF Detected**	Approximately 40m²	Fair Maintenance Only	Priority 4 - Negligible Risk Level	**Remove prior to demolition works**	

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

Paints

External, northern side, door	Brown paint	NA	Pb-01	0.06% w/w	NA	NA	NA	NA	

PCBs

Internal, throughout	PCB containing single tube fluorescent light fitting (assumed)	NA	Visual Inspection (electrical hazard)	-	2 x lighting fixtures	Good Maintenance Only	Priority 4 - Negligible Risk Level	**Remove prior to demolition works**	

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

Location	Material Type	Friability	Sample	Analysis Result:	Quantity	Condition and Accessibility	Priority	Recommendations/ Comments	Photograph of material
#268 Main Dwelling									
Inaccessible/Limited Access									
Internal, floor, wall and ceiling cavities throughout	Possible hazardous materials	Unknown	-	-	Unknown	Unknown	Unknown	**Inspect when access is made available, prior to demolition.**	-
Asbestos									
External, eaves	Asbestos Cement Sheeting (assumed)	Non-friable	Visual Inspection (height restriction)	-	Approximately 30m²	Fair Maintenance only	Priority 4 - Negligible Risk Level	**Remove prior to demolition works**	
External, southern side	Asbestos Electrical Distribution Board (assumed)	Non-friable	Visual inspection (electrical hazard)	-	1 x board	Unknown Maintenance only	Priority 4 - Negligible Risk Level	**Remove during demolition works**	
External, eastern side, southern section, wall	Asbestos Cement Sheeting	Non-friable	Asb-13	**Chrysotile Asbestos Detected** Organic Fibres Detected	Approximately 10m²	Good Maintenance only	Priority 4 - Negligible Risk Level	**Remove during demolition works**	

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

Internal, north-eastern bedroom, walls and ceiling	Asbestos Cement Sheeting	Non-friable	Asb-11	**Chrysotile Asbestos Detected** Organic Fibres Detected	Approximately 30m²	Good Maintenance only	Priority 4 - Negligible Risk Level	**Remove during demolition works**	
Internal, eastern laundry/bathroom, walls and ceiling	Asbestos Cement Sheeting	Non-friable	Asb-12	**Chrysotile Asbestos Detected**	Approximately 30m²	Good Maintenance only	Priority 4 - Negligible Risk Level	**Remove during demolition works**	
SMF									
External, northern side, hot water heater	SMF lined insulation (assumed)	Sealed	Visual inspection (inaccessible)	-	1 x unit	Good Maintenance only	Priority 4 - Negligible Risk Level	**Remove during demolition works**	

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

Internal, kitchen, floor, upper layer	Blue Vinyl Floor Sheeting	Sealed	Asb-09	No Asbestos Detected **SMF Detected**	Approximately 15m²	Fair Maintenance Only	Priority 4 - Negligible Risk Level	**Remove prior to demolition works**	
Internal, kitchen, floor, lower layer	Cream Vinyl Floor Sheeting	Sealed	Asb-10	No Asbestos Detected Organic Fibres Detected	NA	NA	NA	NA	

Paints

External, throughout	Yellow paint	NA	Pb-02	<0.01% w/w	NA	NA	NA	NA	

PCBs

External, eastern awning	PCB containing single tube fluorescent light fitting (assumed)	NA	Visual Inspection (electrical hazard)	-	2 x lighting fixtures	Good Maintenance Only	Priority 4 - Negligible Risk Level	**Remove prior to demolition works**	

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

Location	Material Type	Friability	Sample	Analysis Result:	Quantity	Condition and Accessibility	Priority	Recommendations/ Comments	Photograph of material
#268 Southern Detached Shed									
Inaccessible/Limited Access									
Internal, wall and ceiling cavities throughout	Possible hazardous materials	Unknown	-	-	Unknown	Unknown	Unknown	**Inspect when access is made available, prior to demolition.**	-
Asbestos									
External, walls	Fibrous Cement Sheeting	Non-friable	Asb-14	No Asbestos Detected Organic Fibres Detected	NA	NA	NA	NA	
External, northern entry door, window	Putty/Sealant	Friable	Asb-15	No Asbestos Detected	NA	NA	NA	NA	

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

SMF

External, southern side, hot water heater	SMF lined insulation (assumed)	Sealed	Visual inspection (inaccessible)	-	1 unit	Good Maintenance only	Priority 4 - Negligible Risk Level	**Remove during demolition works**	

Paint

External, northern entry door	White lead based paint	NA	Pb-03	**0.36% w/w**	Approximately 2m²	Fair/Poor Occasional	Priority 3 – Low Risk under Present Conditions	**Remove any grossly peeling paint and stabilise remaining paint membrane. Minimise abrasive works that will disturb paint during demolition.**	
External, trimming throughout	Yellow lead based paint	NA	Pb-04	**0.43% w/w**	Approximately 15m²	Fair/Poor Occasional	Priority 3 – Low Risk under Present Conditions	**Remove any grossly peeling paint and stabilise remaining paint membrane. Minimise abrasive works that will disturb paint during demolition.**	

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

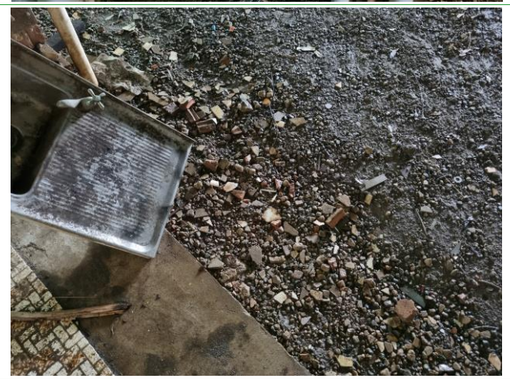
PCBs

Internal, throughout	PCB containing single tube fluorescent light fitting (assumed)	NA	Visual Inspection (electrical hazard)	-	Not determined	Fair Maintenance Only	Priority 4 - Negligible Risk Level	**Remove prior to demolition works**	

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

Location	Material Type	Friability	Sample	Analysis Result:	Quantity	Condition and Accessibility	Priority	Recommendations/ Comments	Photograph of material
#268 Eastern Detached Shed									
Inaccessible/Limited Access									
Internal, wall and ceiling cavities throughout	Possible hazardous materials	Unknown	-	-	Unknown	Unknown	Unknown	**Inspect when access is made available, prior to demolition.**	-
Asbestos									
External, western and southern upper walls	Asbestos Cement Sheeting	Non-friable	Asb-16	**Chrysotile Asbestos Detected** Organic Fibres Detected	Approximately 50m²	Fair Maintenance only	Priority 4 - Negligible Risk Level	**Remove prior to demolition works**	
External, western and southern upper walls, edge capping	Asbestos Cement Sheeting	Non-friable	Asb-17	**Chrysotile Asbestos Detected** Organic Fibres Detected	Approximately 3m²	Fair Maintenance only	Priority 4 - Negligible Risk Level	**Remove prior to demolition works**	

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

Internal, western, central and eastern rooms, sheeted walls	Asbestos Cement Sheeting (assumed)	Non-friable	Visual Inspection – similar to Asb-16	**Chrysotile Asbestos Detected** Organic Fibres Detected	Approximately 25m²	Good Maintenance only	Priority 4 - Negligible Risk Level	**Remove prior to demolition works**	 
Internal, eastern room, ground surface debris	Asbestos Cement Sheeting Fragments	Non-friable	Asb-18	**Chrysotile and Amosite Asbestos Detected**	>1m²	Fair/Poor Maintenance only	Priority 3 – Low Risk under Present Conditions	**Remove prior to demolition works**	
SMF									
Internal and external, throughout	No suspected SMF materials were identified within accessible areas	NA	Visual Inspection	NA	NA	NA	NA	NA	-

Hazardous Materials Register
268 & 278 Catherine Fields Rd, Catherine Field NSW

Paints

External, walls throughout	Yellow paint	NA	Pb-05	<0.01% w/w	NA	NA	NA	NA	
Internal, structural beams throughout	Red/maroon paint	NA	Pb-06	<0.01% w/w	NA	NA	NA	NA	

PCBs

Internal, throughout	PCB containing single and dual tube fluorescent light fitting (assumed)	NA	Visual Inspection (electrical hazard)	-	Not determined	Poor Maintenance only	Priority 4 - Negligible Risk Level	**Remove prior to demolition works**	

Appendix B - Laboratory CoC and Analytical Results

Sheet 1 of 2

Site: 268 & 278 Catherine Fields Rd, Catherine Field

Project No: E25586. E10

Laboratory: Eurofins Environment Testing
16/16 Mars Rd
Lane Cove NSW 2066
P: 02 9900 8400

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	TRH/BTEX/Lead	TRH/BTEX	PAHs	VOCs	Asbestos	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	sPOCAS	Lead (% w/w)			TCLP PAHs	TCLP HM [A]	TCLP HM [B]
Ash-01		ZLB	24/3/22				X								X									
" -02							X																	
" -03							X																	
" -04							X																	
" -05							X																	
" -06							X																	
" -07							X																	
" -08							X																	
" -09							X																	
" -10							X																	
" -11							X																	
" -12							X																	

Comments

HM [A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

LABORATORY TURNAROUND

- ☐ Standard
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ 72 Hours
- ☐ Other_____

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Sampler's Comments:

Container Type:
J= solvent washed, acid rinsed, Teflon sealed, glass jaR
S= solvent washed, acid rinsed glass bottle
P= natural HDPE plastic bottle
VC= glass vial, Teflon Septum
ZLB = Zip-Lock Bag

Sampler's Name (EI):

Print: Riley East

Signature:

Date: 24/3/22

Received by (SGS):

Print: Lily Cains

Signature:

Date: 24/3/22 @ 4:35pm

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au

eiaustralia
Contamination | Remediation | Geotechnical
Suite 6.01, 55 Miller Street, PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

COC July 2016 FORM v.3 - SGS

Report: 874257

Sheet 2 of 2

Site: 268 + 278 Catherine Fields Rd. Catherine Field

Project No: E25586 - E10

Laboratory: Eurofins Environment Testing
6/16 Mars Rd
Lane Cove NSW 2066
P: 02 9900 8400

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM A /TRH/BTEX/PAHs	HM A /TRH/BTEX	TRH/BTEX/Lead	TRH/BTEX	PAHs	VOCs	Asbestos	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	sPOCAS	Lead (% w/w)			TCLP PAHs	TCLP HM A	TCLP HM B
Asb-13		ZLB	24/3/22				X								X									
" -14																								
" -15																								
" -16																								
" -17																								
" -18																								
Pb-01																			X					
" -02																								
" -03																								
" -04																								
" -05																								
" -06																								

Comments

HM A
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM B
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

LABORATORY TURNAROUND

- ☐ Standard
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ 72 Hours
- ☐ Other_____

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Sampler's Comments:

Container Type:
J= solvent washed, acid rinsed, Teflon sealed, glass jaR
S= solvent washed, acid rinsed glass bottle
P= natural HDPE plastic bottle
VC= glass vial, Teflon Septum
ZLB = Zip-Lock Bag

Sampler's Name (EI):

Print: Riley East

Signature:

Date: 24/3/22

Received by (SGS):

Print: Lily Cains

Signature:

Date: 24/3/22 @ 4.35pm

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au

eiaustralia
Contamination | Remediation | Geotechnical
Suite 6.01, 55 Miller Street, PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

Report: 874257

Certificate of Analysis

Environment Testing

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.

EI Australia Wollongong
Suite 101, Level 1, 1 Burelli Street
Wollongong
NSW 2500

Attention:	Riley East
Report	874257-AID
Project Name	268 + 278 CATHERINE FIELDS RD CATHERINE FIELD
Project ID	E25586.E10
Received Date	Mar 24, 2022
Date Reported	Mar 30, 2022

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 268 + 278 CATHERINE FIELDS RD CATHERINE FIELD
Project ID E25586.E10
Date Sampled Mar 24, 2022
Report 874257-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
ASB-01	22-Ma52556	Mar 24, 2022	Approximate Sample <1g / 10x5x2mm Sample consisted of: Brown fibre plaster material with off- white coating	No asbestos detected. Organic fibre detected. No trace asbestos detected.
ASB-02	22-Ma52557	Mar 24, 2022	Approximate Sample <1g / 8x5x2mm Sample consisted of: Brown compressed fibrous material and white coating	No asbestos detected. Organic fibre detected. No trace asbestos detected.
ASB-03	22-Ma52558	Mar 24, 2022	Approximate Sample <1g / 12x7x2mm Sample consisted of: Brown fibre plaster material	No asbestos detected. Organic fibre detected. No trace asbestos detected.
ASB-04	22-Ma52559	Mar 24, 2022	Approximate Sample <1g / 10x7x2mm Sample consisted of: Grey fibre plaster cement material	No asbestos detected. Organic fibre detected. No trace asbestos detected.
ASB-05	22-Ma52560	Mar 24, 2022	Approximate Sample 3g / 30x30x5mm Sample consisted of: Grey fibre plaster cement material	Chrysotile asbestos detected. Organic fibre detected.
ASB-06	22-Ma52561	Mar 24, 2022	Approximate Sample 1g / 50x50x2mm Sample consisted of: Brown/ gold vitreous insulation material	No asbestos detected. Synthetic mineral fibre detected. No trace asbestos detected.
ASB-07	22-Ma52562	Mar 24, 2022	Approximate Sample 7g / 1401x40x2mm Sample consisted of: Brown flexible linoleum sheet	No asbestos detected. Synthetic mineral fibre detected. No trace asbestos detected.
ASB-08	22-Ma52563	Mar 24, 2022	Approximate Sample 1g / 25x12x4mm Sample consisted of: Grey fibre plaster cement material	Chrysotile asbestos detected. Organic fibre detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
ASB-09	22-Ma52564	Mar 24, 2022	Approximate Sample 12g / 170x80x2mm Sample consisted of: Dark brown flexible linoleum sheet with clear glue	No asbestos detected. Synthetic mineral fibre detected. No trace asbestos detected.
ASB-10	22-Ma52565	Mar 24, 2022	Approximate Sample 1g / 40x30x2mm Sample consisted of: Brown flexible linoleum sheet with compressed fibrous backing and clear glue	No asbestos detected. Organic fibre detected. No trace asbestos detected.
ASB-11	22-Ma52566	Mar 24, 2022	Approximate Sample <1g / 20x12x3mm Sample consisted of: (a) Brown fibre plaster material (b) White coating	Chrysotile asbestos detected.(a) Organic fibre detected.
ASB-12	22-Ma52567	Mar 24, 2022	Approximate Sample 3g / 30x15x5mm Sample consisted of: Grey fibre cement material	Chrysotile asbestos detected.
ASB-13	22-Ma52568	Mar 24, 2022	Approximate Sample <1g / 15x8x3mm Sample consisted of: Grey fibre plaster cement material	Chrysotile asbestos detected. Organic fibre detected.
ASB-14	22-Ma52569	Mar 24, 2022	Approximate Sample 1g / 20x15x5mm Sample consisted of: Grey fibre plaster cement material with maroon coating	No asbestos detected. Organic fibre detected. No trace asbestos detected.
ASB-15	22-Ma52570	Mar 24, 2022	Approximate Sample 1g / 20x10x5mm Sample consisted of: Yellow mastic material	No asbestos detected. No trace asbestos detected.
ASB-16	22-Ma52571	Mar 24, 2022	Approximate Sample 3g / 302x30x5mm Sample consisted of: (a) Grey fibre plaster cement material (B) Beige coating	Chrysotile asbestos detected.(a) Organic fibre detected.
ASB-17	22-Ma52572	Mar 24, 2022	Approximate Sample 2g / 20x12x5mm Sample consisted of: Grey fibre plaster cement material	Chrysotile asbestos detected. Organic fibre detected.
ASB-18	22-Ma52573	Mar 24, 2022	Approximate Sample 5g / 40x15x5mm Sample consisted of: Grey fibre cement material	Chrysotile and amosite 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	Mar 25, 2022	Indefinite

eurofins | Environment Testing

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email: EnviroSales@eurofins.com

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NATA # 1261 Site # 1254

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

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Wollongong
NSW 2500

Project Name: 268 + 278 CATHERINE FIELDS RD CATHERINE FIELD
Project ID: E25586.E10

Order No.:
Report #: 874257
Phone: 0467 639 062
Fax:

Received: Mar 24, 2022 4:35 PM
Due: Mar 29, 2022
Priority: 3 Day
Contact Name: Riley East

Eurofins Analytical Services Manager : Emma Beesley

Sample Detail						Asbestos Absence /Presence	Lead (% w/w)
Melbourne Laboratory - NATA # 1261 Site # 1254							
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
Brisbane Laboratory - NATA # 1261 Site # 20794							
Mayfield Laboratory - NATA # 1261 Site # 25079							
Perth Laboratory - NATA # 2377 Site # 2370							
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	ASB-01	Mar 24, 2022		Paint	W22-Ma52556	X	
2	ASB-02	Mar 24, 2022		Paint	W22-Ma52557	X	
3	ASB-03	Mar 24, 2022		Paint	W22-Ma52558	X	
4	ASB-04	Mar 24, 2022		Paint	W22-Ma52559	X	
5	ASB-05	Mar 24, 2022		Building Materials	W22-Ma52560	X	
6	ASB-06	Mar 24, 2022		Building Materials	W22-Ma52561	X	
7	ASB-07	Mar 24, 2022		Building Materials	W22-Ma52562	X	

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16	ASB-16	Mar 24, 2022		Building Materials	W22-Ma52571	X	
17	ASB-17	Mar 24, 2022		Building Materials	W22-Ma52572	X	
18	ASB-18	Mar 24, 2022		Building Materials	W22-Ma52573	X	
19	PB-01	Mar 24, 2022		Paint	W22-Ma52574		X
20	PB-02	Mar 24, 2022		Paint	W22-Ma52575		X
21	PB-03	Mar 24, 2022		Paint	W22-Ma52576		X
22	PB-04	Mar 24, 2022		Paint	W22-Ma52577		X

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External Laboratory							
23	PB-05	Mar 24, 2022		Paint	W22-Ma52578		X
24	PB-06	Mar 24, 2022		Paint	W22-Ma52579		X
Test Counts						18	6

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. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. 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**).
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.
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	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Asbestos Counter/Identifier:

Chamath JHM Annakkage	Senior Analyst-Asbestos (NSW)

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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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: **Riley East**

Report **874257-S**
Project name 268 + 278 CATHERINE FIELDS RD CATHERINE FIELD
Project ID E25586.E10
Received Date Mar 24, 2022

Client Sample ID			**PB-01**	**PB-02**	**PB-03**	**PB-04**
Sample Matrix			**Paint**	**Paint**	**Paint**	**Paint**
Eurofins Sample No.			**W22-Ma52574**	**W22-Ma52575**	**W22-Ma52576**	**W22-Ma52577**
Date Sampled			**Mar 24, 2022**	**Mar 24, 2022**	**Mar 24, 2022**	**Mar 24, 2022**
Test/Reference	LOR	Unit				
Lead (% w/w)	0.01	%	0.06	< 0.01	0.36	0.43

Client Sample ID			**PB-05**	**PB-06**
Sample Matrix			**Paint**	**Paint**
Eurofins Sample No.			**W22-Ma52578**	**W22-Ma52579**
Date Sampled			**Mar 24, 2022**	**Mar 24, 2022**
Test/Reference	LOR	Unit		
Lead (% w/w)	0.01	%	< 0.01	< 0.01

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	Mar 25, 2022	6 Months

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

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External Laboratory							
15	ASB-15	Mar 24, 2022		Building Materials	W22-Ma52570	X	
16	ASB-16	Mar 24, 2022		Building Materials	W22-Ma52571	X	
17	ASB-17	Mar 24, 2022		Building Materials	W22-Ma52572	X	
18	ASB-18	Mar 24, 2022		Building Materials	W22-Ma52573	X	
19	PB-01	Mar 24, 2022		Paint	W22-Ma52574		X
20	PB-02	Mar 24, 2022		Paint	W22-Ma52575		X
21	PB-03	Mar 24, 2022		Paint	W22-Ma52576		X
22	PB-04	Mar 24, 2022		Paint	W22-Ma52577		X

Date Reported:Mar 30, 2022

eurofins | Environment Testing

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Project Name: 268 + 278 CATHERINE FIELDS RD CATHERINE FIELD
Project ID: E25586.E10

Order No.:
Report #: 874257
Phone: 0467 639 062
Fax:

Received: Mar 24, 2022 4:35 PM
Due: Mar 29, 2022
Priority: 3 Day
Contact Name: Riley East

Eurofins Analytical Services Manager : Emma Beesley

Sample Detail						Asbestos Absence /Presence	Lead (% w/w)
Melbourne Laboratory - NATA # 1261 Site # 1254							
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
Brisbane Laboratory - NATA # 1261 Site # 20794							
Mayfield Laboratory - NATA # 1261 Site # 25079							
Perth Laboratory - NATA # 2377 Site # 2370							
External Laboratory							
23	PB-05	Mar 24, 2022		Paint	W22-Ma52578		X
24	PB-06	Mar 24, 2022		Paint	W22-Ma52579		X
Test Counts						18	6

Date Reported:Mar 30, 2022

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
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

Terms

APHA	American Public Health Association
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 a moisture has been determined on a solid sample the result is expressed on a dry 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 is representative of 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 like compound to the analyte target and reported as percentage recovery.
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 5.4
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 be used as a guide only 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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a 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 is 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

Sample Integrity

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

Authorised by:

Robert Biviano	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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