ENVIRONMENTAL CONSULTING Pty Ltd

PRELIMINARY SITE INVESTIGATION

PROPOSED SHOP-TOP DEVELOPMENT

November 2023

PREPARED FOR: 17 The Evans Trust

Lot 7 DP 14089
17 McDonald Place
Evans Head NSW

HMC2023.531.04

RE: Lot 7 DP 14089, 17 McDonald Place, Evans Head NSW.

HMC Environmental Consulting Pty Ltd is pleased to present our report for a Preliminary Site Investigation for the abovementioned site.

We trust this report meets with your requirements. If you require further information, please contact HMC Environmental Consulting directly on the numbers provided.

HMC Environmental Consulting Suite 29, Level 2, 75-77 Wharf Street PO Box 311 Tweed Heads NSW 2485		PH: Email: Web: ABN:	0755368863 admin@hmcenvironment.com.au www.hmcenvironment.com.au 60 108 085 614
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EXECUTIVE SUMMARY

BACKGROUND

A three-storey shop-top development comprising a ground floor commercial tenancy, and carparking with two levels of residential units (10) is proposed for the site located Lot 7 DP 14089, 17 McDonald Place, Evans Head NSW. An existing dilapidated general store/cafe would be demolished. To address potential site contamination associated with current and former land use, HMC Environmental Consulting (HMC) was commissioned by Newton Denny Chapelle on behalf of the proponent 17 The Evans Trust, to undertake the required investigation in accordance with *State Environmental Policy (Resilience and Hazards) 2021 (SEPP 2021)*.

A Preliminary Site Investigation (PSI) including a desktop assessment of available information, and a detailed site inspection was completed. It was found that the existing structure had potentially been constructed with hazardous building materials which have since weathered. A preliminary soil investigation was conducted in the surrounds of the existing structure.

OBJECTIVES

The objectives of the Preliminary Site Investigation are to:

- Assess the current and former land use on the investigation area for potentially contaminating activities.
- Based on potentially contaminating activities associated with the current and former land use, assess the suitability of the investigation area for the proposed land use.

SCOPE OF WORKS

The scope of work undertaken during the investigation included the following:

- A desktop assessment of current and former land use on the investigation area including search of available records.
- A detailed site inspection.
- Preparation of a Preliminary Site Investigation report including:
  - review of available land use history information, and results of the site inspection.
  - assessment of potentially contaminating activities, potential contaminants of concern (PCoC) and areas of concern (AoC).
  - preparation of a soil and analysis quality plan (SAQP).
  - collection of four (4) primary soil samples (+ 2 x QA/QC samples) and laboratory analysis for a PCoC, (hazardous building material - lead paint), associated with the structure.
  - collection of five (5) bulk material potentially asbestos containing material (ACM) from the ground surface surrounding the existing structure and damaged external wall cladding, and laboratory analysis for a hazardous building material (asbestos).
  - evaluation of laboratory results for compliance with investigation criteria.
  - conclusions and recommendations including suitability of the investigation area for the proposed shop-top development and need for further investigation and remediation.

CONCLUSIONS/RECOMMENDATIONS

The Preliminary Site Investigation conclusions are based on the information described in this report and Appendices and should be read in conjunction with the complete report, including Section 14 Limitations.

A shop-top mixed use development is proposed for the site located Lot 7 DP 14089, 17 McDonald Place, Evans Head, NSW. A review of available information, and a detailed site inspection, indicated hazardous materials including lead paint and bonded asbestos containing material (fibro) may have been used in the construction/maintenance of the existing structure.

A Sampling and Analysis Quality Plan was prepared and implemented to assess total soil concentrations of potential contaminants of concern lead, and the visual evidence of bonded asbestos containing material around the perimeter of the existing dilapidated structure. Laboratory results recorded all total soil lead concentrations below the investigation criteria. Asbestos was identified in fragments of bonded asbestos containing material on the ground surface. This material is able to be managed during general pre-demolition activities by a Safework NSW licensed contractor. No further investigation is required.

Based on the information presented, in relation to potential site contamination, the investigation area located at Lot 7 DP 14089, 17 McDonald Place, Evans Head, as shown in Appendix 1 & 2 of this report, is considered suitable for the proposed shop top mixed use development subject to:

1. All bonded asbestos containing material including fragments located on the ground surface around the perimeter of the building is to be removed by a Safework NSW licensed contractor and transported to an approved facility for disposal.

Based on the information presented, in relation to potential site contamination associated with the current and former land use, no further investigation or remediation is required for the site of the proposed shop-top mixed use development to be located Lot 7 DP 14089, 17 McDonald Place, Evans Head, as shown in Appendix 1 & 2 of this report.

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ABBREVIATIONS/ ACRONYMS

ACM	Asbestos containing material
ANZECC	Australian and New Zealand Environment and Conservation Council
AoPC	Area of potential concern
ARMCANZ	Agricultural and Resource Management Council of Australia and New Zealand
AS	Australian Standard
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013)
Client	17 The Evans Trust
CLM Act	*Contaminated Land Management Act 1997*
CSM	Conceptual site model
DQO	Data quality objective
DSI	Detailed Site Investigation
EIL	Ecological Investigation Level
EPA	Environment Protection Authority
HIL	Health Investigation Level
HMC	HMC Environmental Consulting
Investigation Area	Proposed development area
mBGL	Metres below ground level
PCoC	Potential Contaminants of Concern
PSI	Preliminary Site Investigation
Site	Lot 7 DP 14089, 17 McDonald Place, Evans Head NSW
RVLEP 2014	Richmond Valley Local Environmental Plan 2012

1 INTRODUCTION

1.1 BACKGROUND

A three-storey shop-top development comprising a ground floor commercial tenancy, and carparking with two levels of residential units (10) is proposed for the site located Lot 7 DP 14089, 17 McDonald Place, Evans Head NSW. An existing dilapidated general store/cafe would be demolished. To address potential site contamination associated with current and former land use, HMC Environmental Consulting (HMC) was commissioned by Newton Denny Chapelle on behalf of the proponent 17 The Evans Trust, to undertake the required investigation in accordance with *State Environmental Policy (Resilience and Hazards) 2021 (SEPP 2021)*.

A Preliminary Site Investigation (PSI) including a desktop assessment of available information, and a detailed site inspection was completed. It was found that the existing structure had potentially been constructed with hazardous building materials which have since weathered. A preliminary soil investigation was conducted in the surrounds of the existing structure.

1.2 PROJECT DESCRIPTION

A shop-top development is proposed for the site located on the corner of McDonald Place and Elm Street, Evans Head NSW.

The project would extend across the entire site and include the following features:

- Demolition of existing single storey timber-framed general store
- Construction of a three-storey mixed development comprising:
  - Ground Floor – commercial tenancy (café or similar)
  - Carparking
  - Amenities
  - Storage
- Level 1 – five (5) residential units
- Level 2 – five (5) residential units

For the purposes of this report, as the proposed development extends across the total site, the *investigation area* would be the area within the site boundaries.

1.3 OBJECTIVE OF THE INVESTIGATION

The objectives of the Preliminary Site Investigation are to:

- Assess the current and former land use on the investigation area for potentially contaminating activities.
- Based on potentially contaminating activities associated with the current and former land use, assess the suitability of the investigation area for the proposed land use.

1.4 SCOPE OF WORKS

The scope of work undertaken during the investigation included the following:

- A desktop assessment of current and former land use on the investigation area including search of available records.
- A detailed site inspection.
- Preparation of a Preliminary Site Investigation report including:
  - review of available land use history information, and results of the site inspection.
  - assessment of potentially contaminating activities, potential contaminants of concern (PCoC) and areas of concern (AoC).
  - preparation of a soil and analysis quality plan (SAQP).

- collection of four (4) primary soil samples (+ 2 x QA/QC samples) and laboratory analysis for a PCoC, (hazardous building material - lead paint), associated with the structure.
- collection of five (5) bulk material potentially asbestos containing material (ACM) from the ground surface surrounding the existing structure and damaged external wall cladding, and laboratory analysis for a hazardous building material (asbestos).
- evaluation of laboratory results for compliance with investigation criteria.
- conclusions and recommendations including suitability of the investigation area for the proposed shop-top development and need for further investigation and remediation.

2 SITE INFORMATION

2.1 SITE IDENTIFICATION

Table 1 - Site Identification Summary

Street Address		17 McDonald Place, Evans Head
Allotment Description		Lot 7 DP 14089
Allotment size		822.02m^2
Property Number		147710
Local Government		Richmond Valley Council
Parish		Riley
County		Richmond
Geographical Coordinates (MGA Zone 56)		Easting: 542007.27m E Northing: 6778704.80m S (Approximate centre of site).
Zoning		RU1 – General Residential
Land use - Existing		Disused commercial structure
Land use - Proposed		Residential and Commercial (café)
Site Services		Power, Town Water, Sewer
Surround Land Uses	North	McDonald Place, Gunthorpe Reserve, Evans Head Holiday Park
	East	Club Evans RSL, Residential, Evans River
	South	Vacant Land, Residential, Evans River
	West	Elm Street, Residential
Closest Sensitive Environment		Stormwater runoff from the investigation area would generally flow northeast into the street stormwater drainage system along McDonald Place and Elm Street, and eventually discharge into the Evans River to the south.

Table 2 – Site Characteristics

Topography	The site is level and elevated above the river (SE) and reserve (NE) The elevation is approximately RL 4.6-5.3m AHD across the investigation area.
Regional Geology	Quaternary Coastal Dune Deposits Sand dune systems along the north coast. The sand is deposited by both wind (aeolian) and ocean currents. Older (Pleistocene) dunes are vegetated and stable. Younger (Holocene) dunes are not vegetated and may be highly mobile depending on wind and wave action.
Soil Landscape	Disturbed Terrain (xx) landscape: Made land varying from level plains to undulating terrain which has been disturbed by human activity to a depth of at least 100 cm. The

	original soil has been removed, greatly disturbed, or buried. Land fill includes soil, rock, building and waste material. The original vegetation has been completely cleared. *Soils:* Greatly varied dependant on the nature of the fill material and original natural material. *Geology:* Quaternary beach and dune sands. Artificial fill - This includes dredged sand or mud, rocks, and local soil materials along with demolition rubble, industrial and household waste. Bedrock—exposed in quarries, commonly basalt, metamorphics, and rhyolite.
Australian Soil Classification	Not assessed.
Regional Hydrogeology	Groundwater vulnerability is not mapped for the subject property. Groundwater was not intercepted to 2.5m depth below the ground surface. It is expected the groundwater gradient would be towards the Evans River generally east and south-east of the site.
Groundwater Database Search	The online NSW Office of Water groundwater mapping (http://allwaterdata.water.nsw.gov.au/water.stm) shows that there are numerous registered groundwater bores within 500m of the investigation area. The nearest groundwater bore (GW303828) is located approximately 80m south-west of the site.

3 SITE HISTORY

3.1 OWNERSHIP

As of the search date, the property is currently owned by 17 The Evans Pty Ltd. A review of the title information via the online Land and Property Information portal on 11 September 2023 provides the information shown in Table 3.

Table 3 – Property Ownership

Folio Description	Date of Folio	Search Date	Ownership Details
7/14089	1/7/2022	11/9/2023	17 The Evans Pty Ltd

3.2 AERIAL PHOTOGRAPH INTERPRETATION

A summary of the reviewed historic aerial photography is shown in Table 4.

Table 4 – Historic Aerial Photography Summary

Year	Source	Comments	Areas of Potential Concern Yes/No
1957	NSW Government (Historical Imagery) (1)	There is a structure located on the subject site, which appears to be the existing structure. The surrounding area has been generally developed, with a large structure located adjacent south-east to the subject site.	Existing structure noted on the property from 1957 to present.
1970		No visible changes noted to the subject site. A small structure appears to be visible to the south of the existing structure. The southern portion of the subject site appears to be covered in vegetation. The Club Evans RSL is now visible to the east.	
1976		No visible changes to the subject site. The structure adjacent south-east has now been removed with the area now used for	

		carparking. Structures to the south of the subject site have also been removed.	
1979		Similar to 1976.	
1987		Similar to 1979.	
1997		Similar to 1987. No visible changes to the subject site noted. The land surrounding the subject site to the east and south used for carparking for the RSL.	
2010 - 2023	Google Earth	Similar to 1997. No visible changes to the subject site are noted. A roundabout was constructed on the corner of McDonald Place and Elm Street. The land to the north has been heavily developed for the existing Holiday Park, as well as the vacant land to the west being developed for urban residential land use.	

(1) https://portal.spatial.nsw.gov.au/portal/apps/webappviewer/index.html?id=f7c215b873864d44bccddda8075238cb

Table 5 – Statutory Searches

Search	Comment
NSW EPA Contaminated Land Public Record http://www.epa.nsw.gov.au/prclmapp/searchregister.aspx	No records (orders, notices) for the site were discovered.
Australian Department of Defence Unexploded Ordinance Contaminated Sites http://www.defence.gov.au/uxo/where_is_uxo/UXOSearch.asp?State=NSW	The Evans Head Air Weapons Range [NSW] was identified as UXO that is located on the outskirts of the Evans Head village and would not have impacted on the subject site and immediate commercial and urban area.
Cattle dip site locator http://www.dpi.nsw.gov.au/agriculture/livestock/health/specific/cattle/ticks/cattle-dip-site-locator	There were no cattle dips located within 500m of the subject site.

3.3 HISTORIC PARISH MAPS & TOPOGRAPHIC MAPS

A summary of the available historic parish and topographic mapping information is shown in Table 6.

Table 6 – Historic Parish and Topographic Map Summary

Search	Comment
Historic Riley Parish Maps 1914, 1923, 1927, 1938 https://hlrv.nswlrs.com.au/	Maps do not record land use. Riley parish maps 1914 to 1938 show the subject site as part of the larger historic lot 363 (3.3 acres). No changes were noted during the 1914-1938 period.
Topographic Maps ● Australian Section of the Imperial General Staff (1942), *N°256 Zone 8 Woodburn,* Topographic Map ● NSW Land & Property Information (2011), *1:25000 9539-1N Woodburn,* Topographic Map	 There are structures mapped on the subject site and surrounding area but does not define specific structures. Elm Street and McDonald Place are both mapped but lot boundaries are not shown. The existing lot boundaries are now shown.; The property is mapped as built-up area. No structures are mapped for the subject site.

• NSW Land & Property Information (2017), *1:25000 9539-1N Woodburn*, GeoPDF Topographic Map • NSW Land & Property Information (2022), *1:25000 9539-1N Woodburn*, GeoPDF Topographic Map	Similar to 2011. The area to the west is no shown to have been developed. No changes noted to the subject site. Similar to 2017. No changes noted.

3.4 OWNER INTERVIEW

An interview was conducted by HMC with the current owner 17 the Evans Trust Pty Ltd on 24 August 2023. The information gathered is as follows:

- The property was purchased on 30 June 2022 from Club Evans. Club Evans had owned the property for the previous 20+ years and still own the neighbouring property. The property has an existing takeaway shop on subject site which is in a dilapidated condition, and is no longer in use.
- There has never been any cropping located on the site.
- Not aware of any bulk storage or chemicals and fuel. There also has not been any fill, farm dumps or groundwater bores located on subject site.

4 SITE INSPECTION

A site inspection was undertaken by M Tunks of HMC 23 August 2023 during the soil investigation. The subject site is located on level on the corner of McDonald Place and Elm Street with access off Elm Street. The subject site is adjacent a club building and carpark east of the subject site with a return and earn facility located in the carpark immediately south. A reserve and camping area are located north-east of the subject site with commercial land use north-west and residential occupancies to the west.

A timber-framed structure with a timber floor, fibreboard cladding and metal roof is located on the northern part of the subject site. The existing structure appears to have been a café/general store and is vacant and dilapidated.

The southern part of the subject site in un-paved, with generally grass groundcover and scattered shrubs and trees. No visible soil staining or vegetative die-off was recorded. On the ground surface near the structure there are fragments of fibreboard from the external cladding material that appeared to be asbestos containing material (fibro).

Due to the age of the structure, and potential hazardous building materials, targeted soil samples were collected from four accessible locations around the perimeter of the building, within the boundary, for assessment for total lead concentrations and five locations for ACM identification.

4.1 SUMMARY OF SITE CONDITIONS

Table 7 provides a summary of observations during the site inspection.

4.2 SITE PHOTOGRAPHS

See Appendix 10.

4.3 SITE LAYOUT

The details of the site inspections are shown in Table 7.

4.4 SITE FEATURES

Table 7 - Site Features Indicating Potential Contamination

Features of Contamination	Comments
Disturbed, discoloured, or stained soil	No visible soil staining or vegetative die-off.
Disturbed or distressed vegetation	None observed.
Surface water quality	The Evans River appeared to be good water quality.
Agrichemical Storage/Use	None recorded.
Other chemical/fuel storage	None recorded.
Waste storage	None recorded – likely commercial waste service discontinued.
Asbestos Waste or Use in Structures	Apparent asbestos containing material observed in the existing structure external cladding and fragments on soil surface around perimeter of structure where cladding damaged.
Fill from unapproved source	None recorded.
Other	None recorded.

5 IDENTIFIED AREAS OF CONCERN AND CONTAMINANTS OF POTENTIAL CONCERN

A detailed desktop assessment, including a review of historic topographic mapping from 1942 and historic aerial photography from 1957 to present, has recorded that the property was generally cleared of native vegetation prior to this period, with the current structure recorded on the subject site in 1957.

No potential off-site effects are likely to have impacted the subject site.

The site inspection recorded a dilapidated structure with damaged external cladding and fragments of fibreboard, likely ACM, on the soil surface around the perimeter of the structure. This hazardous building material, together with potential lead paint residue in the soil surface, requires further investigation.

Table 8 - List of Potential Contaminants of Concern (PCoC) and Areas of Concern (AoC)

AoPC	PCoC	Description and common relationship
Former structure	Heavy metal - lead (Pb),	Hazardous building materials found in older structures, associated with paint and cladding material
	Asbestos	

6 APPLICABLE INVESTIGATION LEVELS AND INVESTIGATION CRITERIA

6.1 SOIL CRITERIA

The proposed shop-top development would include both commercial (café) and residential occupancy (mixed use) that would extend across the entire site. The subject site would be subject to future site clearing and stripping, with the existing structure demolished and removed.

The number of persons residing on the subject site would increase, however, exposure to the soil would be limited, and it would be expected that the existing topsoil would be removed and stockpiled to allow the construction of the ground floor carparking and commercial tenancy.

Final exposure would depend on the presence, and concentration, of soil PCoC, and the likely use of the land. With the most sensitive land use proposed being residential with limited access to the soil and no gardens or poultry proposed, the applicable exposure settings for potential exposure of persons to soil, and soil disturbance associated with the potential land use, in and around the investigation area would be:

- Health investigation level (HIL B) - residential with minimal opportunities for soil access includes dwellings with fully and permanently paved yard space such as high-rise buildings and flats.

- Ecological investigation level (EIL) - urban residential/public open space is broadly equivalent to the HIL A, HIL B and HIL C land use scenarios.

The following guidance notes were considered in the preparation of this report:

- *National Environmental Protection (Assessment of Site Contamination) Measure 1999* (April 2013), EPHC 2013, Canberra.

  (Schedule B)
  - *(1) Guidelines on the Investigation Levels for Soil and Groundwater, and*
  - *(2) Guidelines on Site Characterisation*

In NSW the Measure is now being implemented by way of endorsement under section 105 of the Contaminated Land Management Act 1997. This will provide expanded technical guidance to site auditors, contaminated land consultants, planning authorities and the public when assessing a contaminated site.

- NSW EPA (2022) *Sampling design part 1 - application–Contaminated Land guidelines* were followed during design of the sampling and analysis plan and predetermination of data quality objectives (DQOs).
- SEPP (2021) *State Environmental Planning Policy (Resilience and Hazards)*– provided guidance on project objectives.'
- NSW EPA (2020) *Consultants reporting on contaminated land - Contaminated land guidelines* were followed throughout the investigations and during preparation of this report.

Table 9 - Investigation Criteria (Soil & Sediment)

Analyte	HIL B (1)	EIL (2)	HSL (3)	ESL (4)
Metals/Metalloids (mg/kg)				
Lead	1200	1100		

(1) Health Investigation Levels for residential "B" land use (HIL B) as stated in Table 1A (1) of Schedule B (1) Guideline of Investigation Levels for Soil and Groundwater within the National Environment Protection (Assessment of Site Contamination) Measure 1999 as amended and in force from 16 May 2013

(2) Ecological Investigation Levels (EILs) for Urban residential/public open space as stated in Tables 1B(1)-1B(5) of Schedule B (1) Guideline of Investigation Levels for Soil and Groundwater within the National Environment Protection (Assessment of Site Contamination) Measure 1999 as amended and in force from 16 May 2013

Table 10 – Investigation Criteria (Asbestos)

Analyte	Detected	Type
Asbestos		
Asbestos	Yes/No	Amosite (brown asbestos - Am) Crocidolite (blue asbestos – Cr

		Chrysotile (white asbestos - Ch) UMF (Unknown Mineral Fibres – UMF)

6.2 RELEVANT ENVIRONMENTAL MEDIA

Based on the site history, topography and soils, the relevant environmental media would generally be the surface soil, on and around the subject site, where soil might be disturbed during earthworks associated with the construction of the development, or subject to movement due to erosion (rain) or wind (dust). In this circumstance, the upper part of the soil profile would be most likely to be disturbed.

6.3 INVESTIGATION CRITERIA

The investigation criteria are based on the HIL deemed relevant for the proposed land use in sandy soil. The EIL applies to ecological receptors and are relevant within 2m of the ground surface.

Groundwater was expected to be more than 2m depth near the investigation area with sandy soil. Boreholes drilled for the acid sulfate soil investigations drilled to a maximum 2.5m depth did not intercept groundwater. No groundwater investigation was completed during this preliminary investigation. If surface soil investigation recorded elevated PCoC exceeding investigation criteria, then the groundwater regime would be further assessed and, if warranted, groundwater investigation, including collection of representative samples, would be implemented. No groundwater use for domestic purposes is proposed.

ASC NEPM (2013) recommends that "*at the very least, the maximum and the 95% UCL of the arithmetic mean contaminant concentration should be compared to the relevant Tier 1 screening criteria*" and also that "*the results should also meet the following criteria:*

- *the standard deviation of the results should be less than 50% of the relevant investigation or screening level, and*
- *no single value should exceed 250% of the relevant investigation or screening level*".

The 95% UCL of the arithmetic mean provides a 95% confidence level that the true population mean will be less than, or equal to, this value. The 95% UCL is a useful mechanism to account for uncertainty in whether the data set is large enough for the mean to provide a reliable measure of central tendency. Isolated hotspot sampling is problematic with statistical analysis.

6.4 Data quality objectives

- State the Problem
  - A historical aerial photography review shows the existing structure on the subject site since prior to 1957. Hazardous building materials including lead paint and bonded asbestos containing material appear to have been used in the construction of the existing dilapidated structure. PCoC may be present in the soil surrounding the existing structure at concentrations exceeding the investigation criteria for the proposed land use.
- Identify the Decisions/Goals
  - Soil concentrations of PCoC to meet adopted investigation criteria based on future residential land use with limited access to soil.
- Identify Information Inputs
  - Total soil lead and visual presence/absence of asbestos containing material in the surface soil.

- Sampling depth and location 0-150mm based on NSW EPA (2022) – Sampling design part 1 – application (section 5.3.1)
- Soil texture
- Field measurements - visual and olfactory specifically fragments of bonded ACM (fibro) found in the external cladding
- Investigation criteria generally based on residential land use for sand (coarse) soil (<2m depth) as shown in Table 9.

- Define the Study Boundaries
  - The investigation area extends across the entire site, however, the focus for the soil investigation would be the perimeter of the existing dilapidated structure with potentially hazardous building materials. The structure is located on the corner of McDonald Place and Elm Street on the northern part of the subject site, and extends to the road frontages. The southern and part of the eastern area of the subject site is vegetated, with both grass groundcover, shrubs and isolated trees.
- Develop the Analytical Approach
  - As a limited number of soil samples would be collected from the surface soil around the perimeter of the existing dilapidated structure on or near the drip line from the external wall cladding, the investigation criteria would be the initial screening value to assess compliance with the HIL/EIL. If the results exceeded the investigation criteria, then further risk assessment and soil investigation would be required.
  - If the results were below the investigation criteria, then the soil can remain in-situ, and the investigation area would be suitable for the proposed residential land use.
- Specify the Acceptance Criteria

  Investigation criteria:
  - Soil Lead - maximum total concentration >HIL B & EIL. - see Table 9.
  - Asbestos – absence/presence of visible fragments of bonded asbestos containing material in soil.
- Investigation Criteria
  - See Table 9.
- Optimise the Design
  - Vary design based on site conditions and results.

7 SAMPLING AND ANALYSIS PLAN AND SAMPLING METHODOLOGY

7.1 SAMPLING, ANALYSIS AND DATA QUALITY OBJECTIVES

The following sampling, analysis and data quality objectives have been adopted for this site investigation:

- To collect the minimum number of targeted soil and bulk ACM samples across the investigation area to assess whether concentrations of PCoC are present and meet the soil investigation criteria for the proposed land use.
- To employ quality assurance when sampling, assessing, and during evaluation of the subject soils.
- To ensure that decontamination techniques are applied during the sampling procedure and that no cross contamination of samples occurs.

7.2 SOIL SAMPLING AND ANALYSIS PROGRAM

A sampling and analysis quality plan (SAQP), and a sampling and analysis program, were developed to assess the site for PCoC associated with agrichemical applications. A systematic sampling approach was adopted.

Surface soil sampling was adopted as any soil exposure would be to the surface soil within the investigation area. The NSW EPA (2022) recommends 0-150mm sampling interval for disturbed areas.

The following basic measures were undertaken by HMC Environmental Consulting to conform to the minimum standards for field quality assurance and quality control procedures for the samples collected:

- Soil sampling was undertaken by M. Tunks of HMC Environmental Consulting, with experience in site contamination investigations on 9 August 2023.
- Dedicated, clean stainless-steel trowels were used to collect samples from immediately below the root zone and detritus layer, where present, (0-150mm) using disposable nitrile gloves.
- The trowels were decontaminated before sampling by pressure cleaning (12V) thoroughly with clean water, scrubbing with Decon 90 cleanser, and finally re-rinsing with clean water.
- Field quality assurance and quality control (QA/QC) protocols implemented included details of collection and analysis of field duplicate and triplicate samples.
- Chain of custody documentation was completed.
- The laboratory results and quality assurance and quality control reports including a description of the analytical methods used and reporting for surrogates was also completed.

8 QUALITY ASSURANCE AND QUALITY CONTROL

Sampling was undertaken in accordance with the SAQP (see section 7).

Table 11 – Soil Quality Control Samples

Primary Sample ID	Type	Quality Control Sample ID	Laboratory	Analytes
EHL1	Duplicate	EH DUP	ALS, Brisbane	OCPs, OPPs, and Metals
	Triplicate	EH TRIP	ALS, Sydney	OCPs, OPPs, and Metals

The laboratory results and quality control reports include a description of the analytical methods used and reporting for surrogates used by ALS Environmental.

Table 12 - Data Quality Indicators

Data Quality Indicator	Criteria	Comment
Precision		
Laboratory matrix duplicate relative percentage differences (RPDs) within criteria	Limits set by the laboratory: Soil results <10 times the laboratory level of reporting (LOR): No limit Soil results between 10-20 times the LOR: RPD must lie between 0-50% Soil results >20 times the LOR: RPD must lie between 0-30%	All soil results recorded an RPD within the prescribed limits.
Field duplicate RPDs within criteria	In accordance with AS4482.1 (2005), RPD results ≥50% will be considered to exceed the data quality objectives (DQO) of the assessment. However, based on	All field duplicate and triplicate <50% RPD.

	industry best practice, RPD results will be discounted if both sample results used to calculate the RPD are below the laboratory's limit of reporting (LOR) or less than 10 times the LOR.	
Accuracy		
Matrix spike sample results reported with prescribed limits	Limits set by the laboratory: Results to be between 70-130%.	All results were all between 70-130%.
Surrogate spike sample results reported with prescribed limits	Limits set by the laboratory: Recoveries must lie between 50-150%.	Surrogate spike sample results reported within the prescribed limits.
Laboratory method blanks reported with prescribed limits	Concentrations of targeted parameters should be below the laboratory's limit of reporting (LOR).	Laboratory method blanks reported with prescribed limits.
All analysis NATA accredited	Analysis to be completed by a NATA accredited laboratory.	All analysis NATA accredited
Representativeness		
Samples delivered to laboratory within sample holding times, chilled and with correct preservative	Target temp <4°C. Samples to be submitted to the laboratory within the designated holding times. Different holding times exist for different parameters. Samples to meet the preservation requirements set by the laboratory.	Samples delivered to laboratory within sample holding times, chilled and with correct preservative
Required number of field duplicates and sample blanks taken	Intra and inter laboratory duplicates are to be collected at a ratio of one duplicate pair per 20 samples. One rinse blank and field blank to be collected per day as required. One trip blank to be collected per cooler where analysis of volatile compounds is proposed.	Required number of field duplicates and sample blanks taken Dedicated stainless steel trowels but rinsate collected prior to sampling to check HMC implement cleaning.
Sample blanks reported results below detection limits	Concentrations of targeted parameters to be below the laboratory's limit of reporting (LOR).	The sample blank results were below the LOR
Samples collected in accordance with regulatory and HMC procedures	Samples to be collected in general accordance with standard operating procedures (SOPs) which are based on applicable regulatory guidance and industry best practice.	Samples collected in accordance with regulatory and HMC procedures

Comparability		
Same standard operation procedures (SOPs) applied during each sampling event	The same SOPs to be adopted for each sampling event.	Same standard operation procedures (SOPs) applied during each sampling event
LORs below the adopted assessment criteria	The laboratory's LOR is to be below the adopted assessment criteria.	LORs below the adopted assessment criteria
LORs below the adopted assessment criteria	The sampler is to be a Suitably Qualified Person (SQP)	SQP collected samples
Same type of sample preservation and analysis techniques	The same type of sample preservation and analysis techniques are to be applied to all samples. This information is to be provided within laboratory reports.	Same type of sample preservation and analysis techniques applied to all samples
Completeness		
All laboratory data reviewed and presented in the report (i.e., COCs, SRNs, COAs and QCRs)	All information provided by the laboratory is to be provided in the final report.	All laboratory data reviewed and presented in the report
All sample results reported	All sample results are to be reported and discussed.	All sample results reported
Sample blanks data reported	All sample blank data is to be reported.	Sample blanks not required
Relative percent differences (RPDs) calculated	RPDs to be calculated for all sets of field duplicates.	Relative percent differences (RPDs) calculated
Laboratory duplicates reported	All laboratory duplicate results are to be reported.	Laboratory duplicates/triplicates reported
NATA stamp on reports	NATA stamps to be shown on all laboratory reports.	NATA stamp on reports

9 FIELD AND ANALYTICAL RESULTS

9.1 FIELDWORK

Systematic field sampling was conducted by experienced an environmental scientist on 9 August 2023.

Table 13 – Sample Locations

Primary Sample	Location		Depth (mm)	ID	Soil Description	Laboratory Program
EHL1	Targeted soil surface sampling around the perimeter of the existing structure including the Elm Street and McDonald Place road frontages	South	0 - 150mm	Primary	Light grey-Dark grey Sand	Lead
EHL2		West				
EHL3		North				
EHL4		North-East				
EHL DUP	QA/QC Samples	South		Duplicate QA/QC		
EHL TRIP				Triplicate QA/QC		
ACM1	Targeted soil surface sampling around the perimeter of the existing structure including the Elm Street and McDonald Place road frontages	South	Fragment visible on soil surface	Primary		Presence/Absence of Asbestos [Amosite brown asbestos – Am, Crocidolite blue asbestos – Cr, Chrysotile white asbestos – Ch, UMF' Unknown Mineral Fibres – UMF]
ACM2		North-West				
ACM3		South-East				
ACM4	External wall cladding	South West	Damaged external cladding			
ACM5	Targeted soil surface sampling around the perimeter of the existing structure including the Elm Street and McDonald	North East	Fragment visible on soil surface			

	Place road frontages					

A total of 4 primary surface soil samples (plus 2 x QA/QC) were recovered from around the perimeter of the dilapidated structure and placed in laboratory supplied glass jars. The primary samples, together with the QA/QC samples were transported to the HMC office for refrigerated storage prior to delivery to ALS Environmental laboratory Brisbane for analysis for PCoC.

Five bulk samples of potential bonded ACM were also collected from around the perimeter of the existing structure, with four from the soil surface and one from the external cladding.

Refer to Appendix 12 for the site plan and sampling locations.

9.2 ANALYTICAL TESTING

Laboratory analytical services were provided by ALS Environmental, Brisbane and Sydney.

9.3 SOIL PROGRAM

A total of 4 primary samples were taken from the soil surface surrounding the existing structure and submitted for analysis for the following:

- Total Lead

Five bulk samples (fragments) of potential bonded ACM were also collected from the soil surface (4) and the external cladding (1) and submitted for analysis for the following:

- Asbestos – Presence/absence and type

9.4 PRIMARY AND REPLICATE RESULTS

The laboratory analysis of the selected primary samples is summarised in Table 14.

Table 14 – Lead Laboratory Results Summary (23 August 2023)

Parameter	Number of primary samples	LOR (mg/kg)	Criteria Exceedances	Range (mg/kg)	Typical Background (Olszowy et al, 1995) mg/kg
Metals/Metalloids					
Lead	4	5	0	99.5 - 552	5-56

Table 15 – Asbestos Laboratory Results Summary (23 August 2023)

Asbestos	Presence/Absence Yes/No	Type
ACM1	No	NA
ACM2	No	NA
ACM3	Yes	Ch+Am
ACM4	Yes	Ch+Am
ACM5	Yes	Ch+Am+Cr

Am - Amosite (brown asbestos)
Cr - Crocidolite (blue asbestos)
Ch - Chrysotile (white asbestos)

10 QA/QC LABORATORY DATA REVIEW

10.1 RELATIVE PERCENT DIFFERENCE (RPD)

The results show very good correlation between the primary sample (EHL1) and the field replicate (EHLDUP) with a result below 50% RPD. The result also showed good correlation between the EHL1 and the field triplicate (EHLTRIP).

10.1.1 Rinsate

All results were below the laboratory level of reporting (LOR) and, therefore, indicative of adequate sampling technique and field QA/QC.

10.1.2 Statistical Analysis

There were no exceedances in the instigation criteria for the soil lab analysis, and therefore statistical analysis was not required.

10.2 SOIL INVESTIGATION CONCLUSIONS

The Soil and Analysis Quality Plan was implemented, there were concentrations of lead detected within the surface soil in the vicinity of the structure, however they were below the investigation criteria for the proposed land use.

Three of the bulk samples returned positive results for asbestos containing material.

11 CONCEPTUAL SITE MODEL

Table 16 – Conceptual Site Model

POTENTIAL SOURCE	PATHWAY	EXPOSURE ROUTE	RECEPTOR	OUTCOME
Historic structure	Surface water runoff	Chemical/sediment entering local water ways	Ecological receptors	Historic existing structure located onsite with potentially hazardous building materials used. The soil investigation recorded lead results below the investigation criteria. proposed residential land use. Positive identification of asbestos containing material in the external cladding was found.
	Exposed surface soil	Dermal contact to exposed soil during earthworks, proposed infrequent use	Site worker, Occupier, Visitor	
	Atmospheric dispersion	Inhalation of soil exposed during earthworks and in exposed bare soil areas		
	Leaching to groundwater	Groundwater movement off-site to beneficial users or ecological receptors	Beneficial users/Ecological receptor	

12 DISCUSSION

The review of available information, and a detailed site inspection indicated that the current structure has present on the site since prior to 1957.

The land use appears to have been a commercial café/general store for many years, now vacant and dilapidated. Due to the age of the structure hazardous building materials including lead paint and asbestos may have been used in construction/maintenance activities. To assess potential impacts on the subject site a soil investigation for PCoC (lead) was conducted in the area likely to have been impacted – the perimeter of the structure in the approximate drip line, where access was available. A visual assessment of the perimeter was also undertaken for any evidence of ACM as the existing cladding had been damaged.

The soil lead results were all below the investigation criteria. Although some fragments of apparent ACM were confirmed as asbestos, the removal of this material would be undertaken by a Safework NSW-licensed contractor prior to the general structure demolition.

13 CONCLUSIONS AND RECOMMENDATIONS

The Preliminary Site Investigation conclusions are based on the information described in this report and Appendices and should be read in conjunction with the complete report, including Section 14 Limitations.

A shop-top mixed use development is proposed for the site located Lot 7 DP 14089, 17 McDonald Place, Evans Head, NSW. A review of available information, and a detailed site inspection, indicated hazardous materials including lead paint and bonded asbestos containing material (fibro) may have been used in the construction/maintenance of the existing structure.

A Sampling and Analysis Quality Plan was prepared and implemented to assess total soil concentrations of potential contaminants of concern lead, and the visual evidence of bonded asbestos containing material around the perimeter of the existing dilapidated structure. Laboratory results recorded all total soil lead concentrations below the investigation criteria. Asbestos was identified in fragments of bonded asbestos containing material on the ground surface. This material is able to be managed during general pre-demolition activities by a Safework NSW - licensed contractor. No further investigation is required.

Based on the information presented, in relation to potential site contamination, the investigation area located at Lot 7 DP 14089, 17 McDonald Place, Evans Head, as shown in Appendix 1 & 2 of this report, is considered suitable for the proposed shop top mixed use development subject to:

2. All bonded asbestos containing material including fragments located on the ground surface around the perimeter of the building is to be removed by a Safework NSW - licensed contractor and transported to an approved facility for disposal.

Based on the information presented, in relation to potential site contamination associated with the current and former land use, no further investigation or remediation is required for the site of the proposed shop-top mixed use development to be located Lot 7 DP 14089, 17 McDonald Place, Evans Head, as shown in Appendix 1 & 2 of this report.

14 LIMITATIONS

Any conclusions presented in this report are relevant to the site condition at the time of inspection and legislation enacted as at date of this report. Actions or changes to the site after time of inspection or in the future will void this report as will changes in relevant legislation.

The findings of this report are based on the objectives and scope of work outlined in Section 1. HMC Environmental has performed the services in a manner consistent with the normal level of care and expertise exercised by members of the environmental assessment profession. No warranties or guarantees expressed or implied, are given. This report does not comment on any regulatory issues arising from the findings, for which a legal opinion should be sought. This report relates only to the objectives and scope of work stated and does not relate to any other works undertaken for the client. The report and conclusions are based on the information obtained at the time of the assessment.

The site history and associated uses, areas of use, and potential contaminants were determined based on the activities described in the scope of work. Additional site information held by the client, regulatory authorities or in the public domain, which was not provided to HMC Environmental or was not sourced by HMC Environmental under the scope of work, may identify additional uses, areas of use and/or potential contaminants. The information sources referenced have been used to determine the site history.

Whilst HMC Environmental has used reasonable care to avoid reliance on data and information that is inaccurate and unsuitable, HMC Environmental is not able to verify the accuracy or completeness of all information and data made available. Further chemicals or categories of chemicals may exist at the sites, which were not identified in the site history, and which may not be expected at the site. The absence of any identified hazardous or toxic materials on the subject land should not be interpreted as a warranty or guarantee that such materials do not exist on the site. If additional certainty is required, additional site history or desktop studies, or environmental sampling and analysis should be commissioned.

The results of this assessment are based upon site inspections and fieldwork conducted by HMC Environmental personnel and information provided by the client. All conclusions regarding the property area are the professional opinions of the HMC Environmental personnel involved with the project, subject to the qualifications made above. HMC Environmental assume no responsibility or liability for errors in any data obtained from regulatory agencies, information from sources outside of HMC Environmental, or developments resulting from situations outside the scope of this project.

15 SIGNATURE

This report has been prepared by Mark Tunks of HMC Environmental Consulting, a suitably qualified environmental consultant, in accordance with the NSW EPA (2020) *Consultants reporting on contaminated land – Contaminated land guidelines*. Note that HMC Environmental Consulting holds current Professional Indemnity Insurance to 4th August 2024.

.....

3 November 2023
Completion Date

Mark Tunks
Principal

16 REFERENCES

Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC guidelines) published by the Australian and New Zealand Environment and Conservation Council/National Health and Medical Research Council, January 1992

Hashimoto T.R & Troedson A.I. 2008 *Tweed Heads 1:100 000 and 1:25 000, Coastal Quaternary Geology Map Series*. Geological Survey of New South Wales, Maitland

Morand, D.T., Soil Landscapes of the Murwillumbah-Tweed Heads 1:100 000 Sheet, 1996

NEPC, 2013. National Environment Protection (Assessment of Site Contamination) Measure 1999 Schedule B (1) Guideline on the Investigation Levels for Soil and Groundwater, National Environment Protection Council Service Corporation, as amended 16 May 2013

NSW Environment Protection Authority (2020) Consultants reporting on contaminated land - Contaminated land guidelines

State Environmental Planning Policy (Resilience and Hazards) 2021

17 GLOSSARY

Conceptual site model (CSM) is a description of a site including the environmental setting, geological, hydrogeological and soil characteristics together with the nature and distribution of contaminants. Potentially exposed populations and exposure pathways are identified. Presentation is usually graphical or tabular with accompanying explanatory text.

Contamination means the condition of land or water where any chemical substance or waste has been added as a direct or indirect result of human activity at above background level and represents, or potentially represents, an adverse health or environmental impact.

Investigation levels and **screening levels** are the concentrations of a contaminant above which further appropriate investigation and evaluation will be required. Investigation and screening levels provide the basis of Tier 1 risk assessment.

Multiple-lines-of-evidence approach is the process for evaluating and integrating information from different sources of data and uses best professional judgement to assess the consistency and plausibility of the conclusions which can be drawn.

Screening is the process of comparison of site data to screening criteria to obtain a rapid assessment of contaminants of potential concern.

Tier 1 assessment is a risk-based analysis comparing site data with investigation and screening levels for various land uses to determine the need for further assessment or development of an appropriate management strategy.

18 APPENDICES

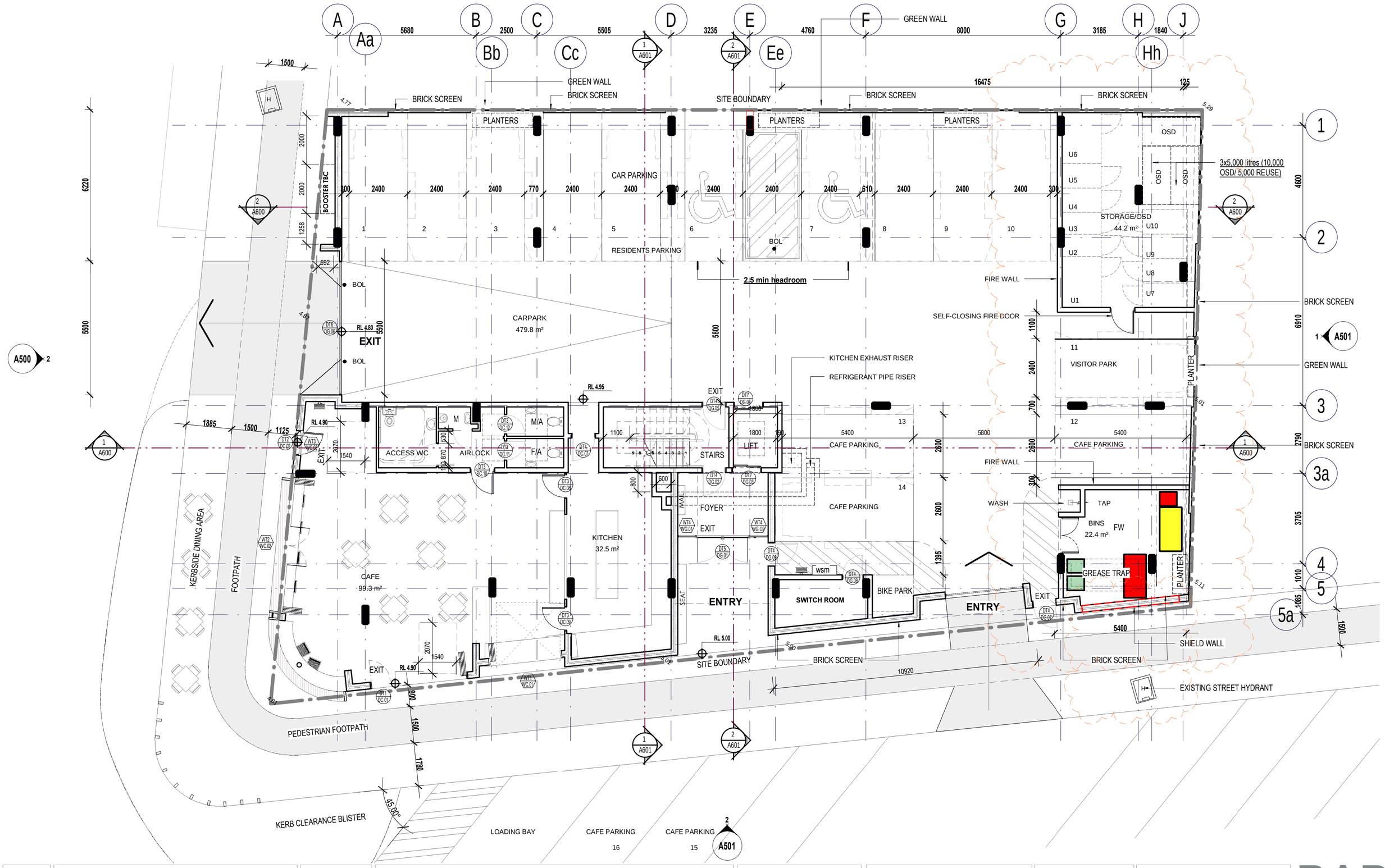
See following pages

APPENDIX 1 - LOCATION MAPS

Figure 1 - Surrounding Area (Source: Nearmap 2023)

Figure 2 – Subject Site (Source: Nearmap 2023)

APPENDIX 2 - SITE PLAN PROPOSED DEVELOPMENT



No.	DESCRIPTION	DATE
I	RLs	13.09.23
J	Update	22.09.23
K	Update	5.10.23
L	Update	16.10.23

NOTES

GROUND FLOOR

2205 Multi Use Development

17 McDonald Place Evans Head

sheet no.	A200
scale @A2:	1 : 100
date:	
drawn:	HS
revision	L

Barker Architects
02 6682 602
contact@barkerarchitects.com.au
www.barkerarchitects.com.au

BARKER ARCHITECTS

APPENDIX 3 - GEOLOGY AND SOIL LANDSCAPE

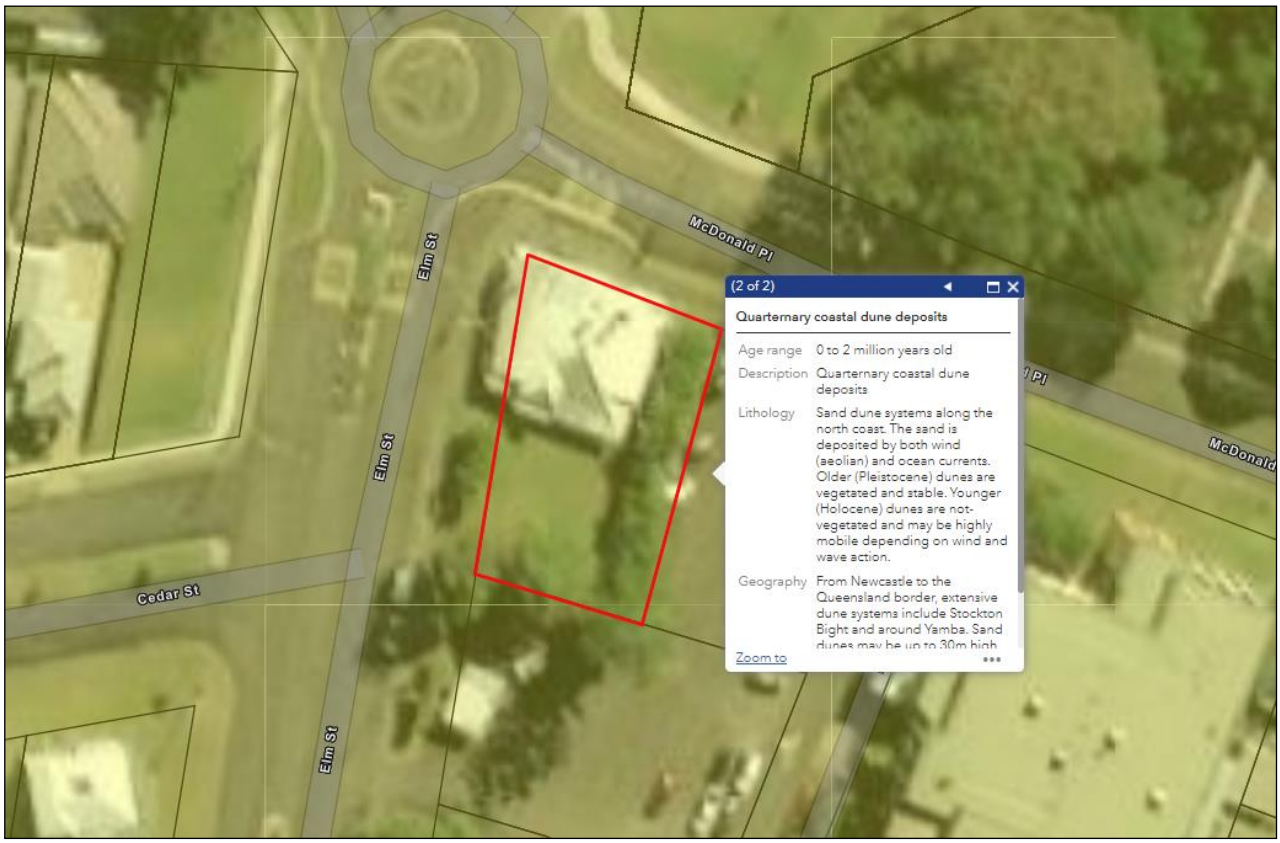


Figure 3 - Geology Map (Source: Geoscience Australia)

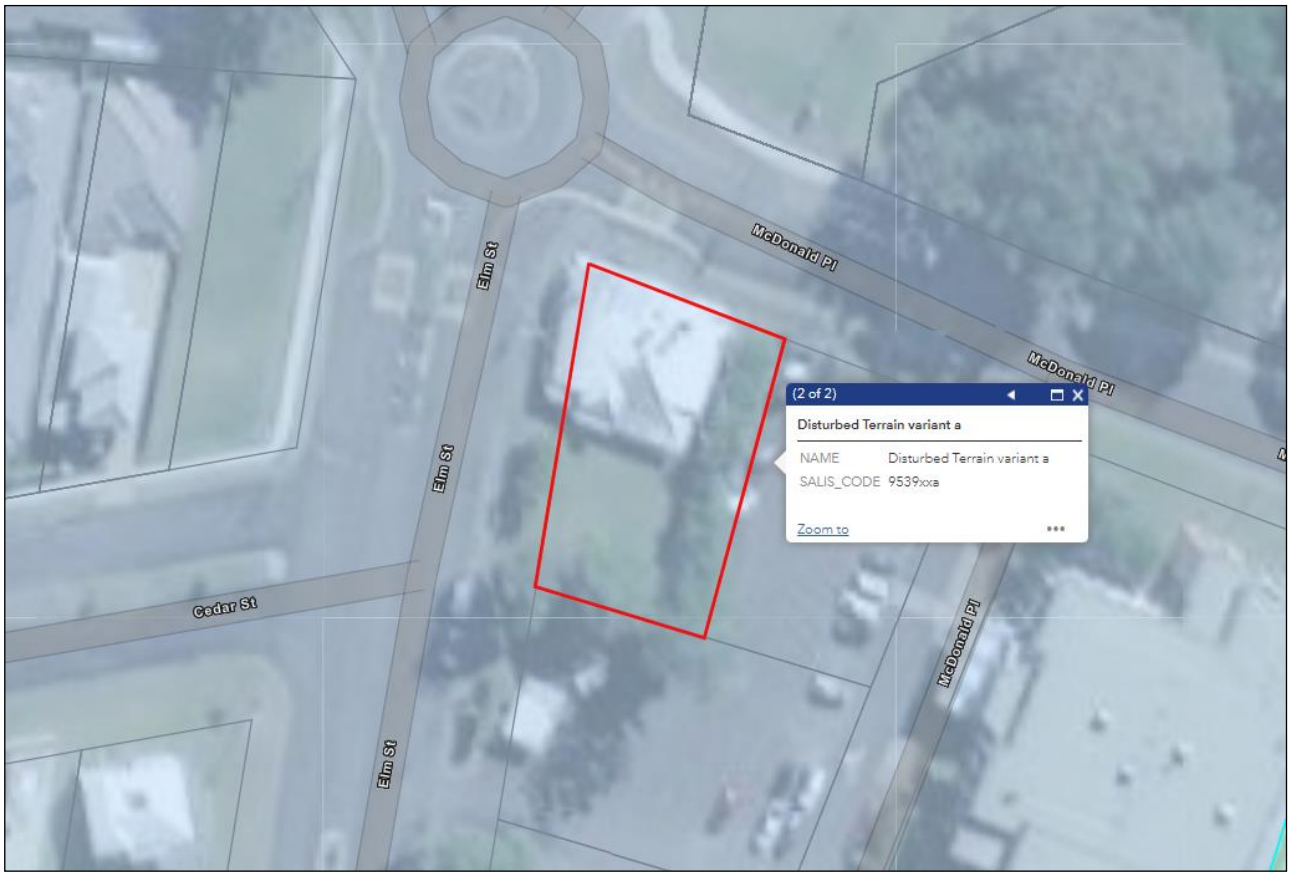


Figure 4 - Soil Landscape (Source: eSPADE NSW)

APPENDIX 4 - LICENSED GROUNDWATER BORES

Figure 5 – Groundwater Bore Locations (Source: http://allwaterdata.water.nsw.gov.au/water.stm)

APPENDIX 5 - CATTLE DIP SITES

Figure 6 – Cattle Dip Location (Source: DPI NSW)

APPENDIX 6 - HISTORICAL AERIAL PHOTOGRAPHY

Figure 7 - Historical Aerial 1957 (NSW Spatial Services Historical Imagery https://portal.spatial.nsw.gov.au)

Figure 8 - Historical Aerial 1970 (NSW Spatial Services Historical Imagery https://portal.spatial.nsw.gov.au)

Figure 9 - Historical Aerial 1976 (NSW Spatial Services Historical Imagery https://portal.spatial.nsw.gov.au)

Figure 10 - Historical Aerial 1979 (NSW Spatial Services Historical Imagery https://portal.spatial.nsw.gov.au)

Figure 11 - Historical Aerial 1987 (NSW Spatial Services Historical Imagery https://portal.spatial.nsw.gov.au)

Figure 12 - Historical Aerial 1997 (NSW Spatial Services Historical Imagery https://portal.spatial.nsw.gov.au)

Figure 13 - Historical Aerial 2010 (Google Earth)

Figure 14 - Historical Aerial 2017 (Google Earth)

Figure 15 - Historical Aerial 2023 (Google Earth)

APPENDIX 7 - HISTORIC PARISH MAPS

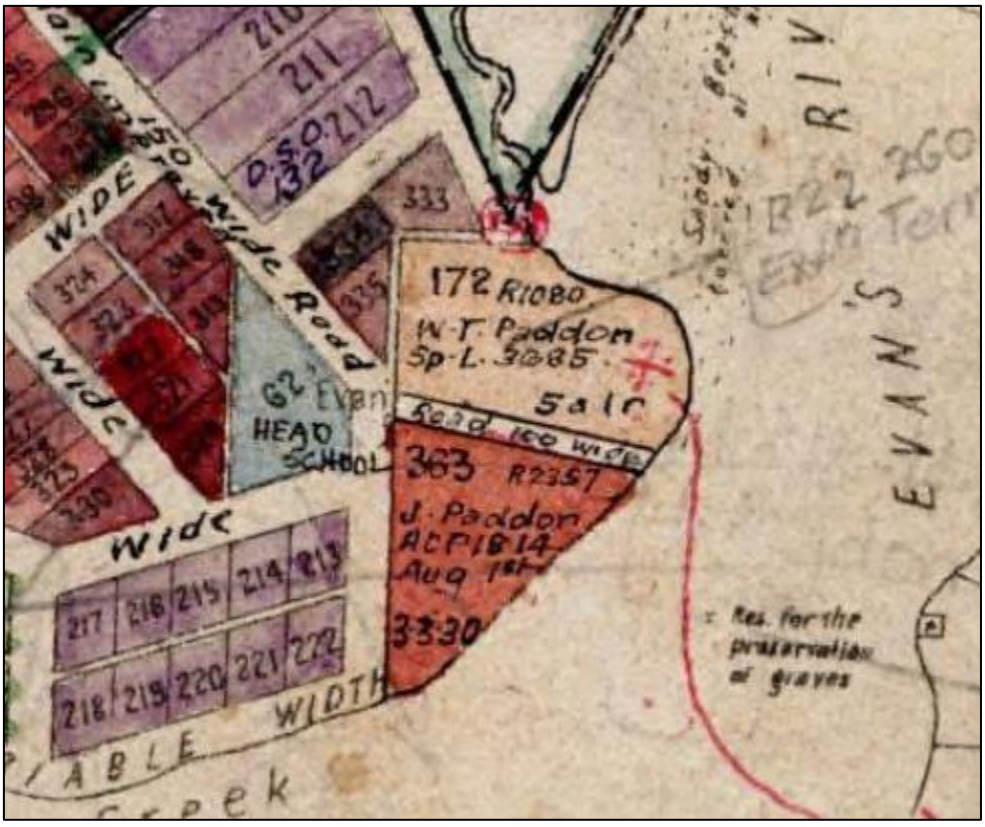


Figure 16 – 1914 Riley Parish Map Extract (http://hlrv.nswlrs.com.au/pixel.htm)

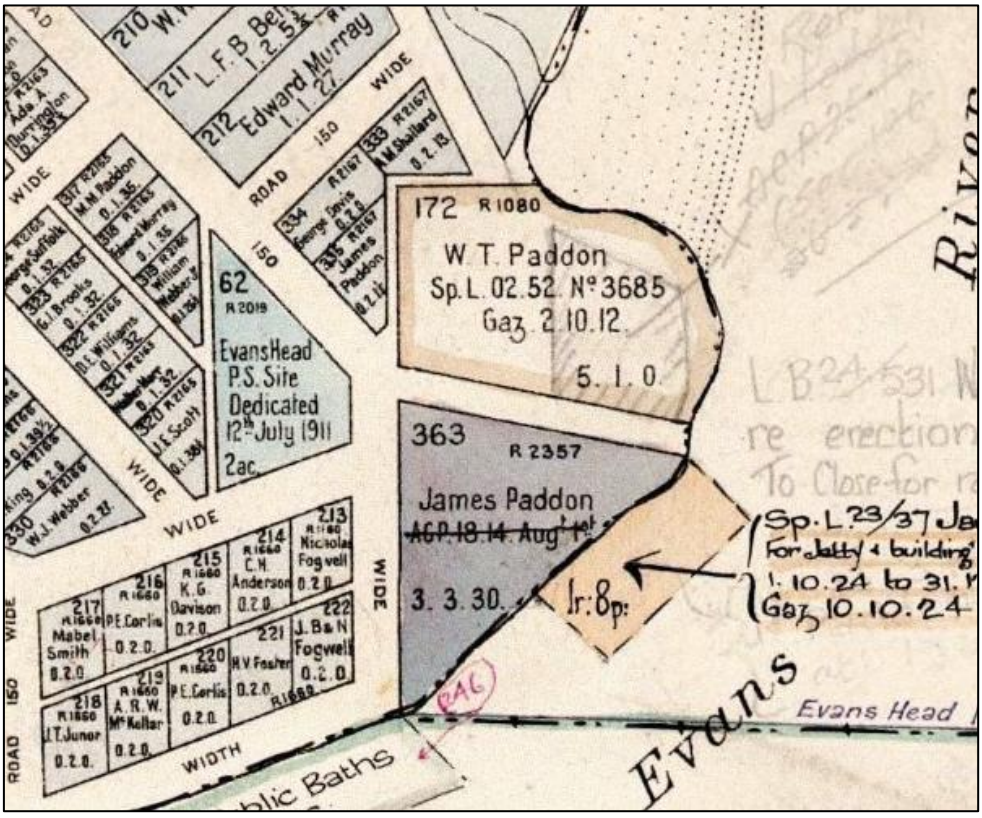


Figure 17 - 1923 Riley Parish Map Extract (http://hlrv.nswlrs.com.au/pixel.htm)

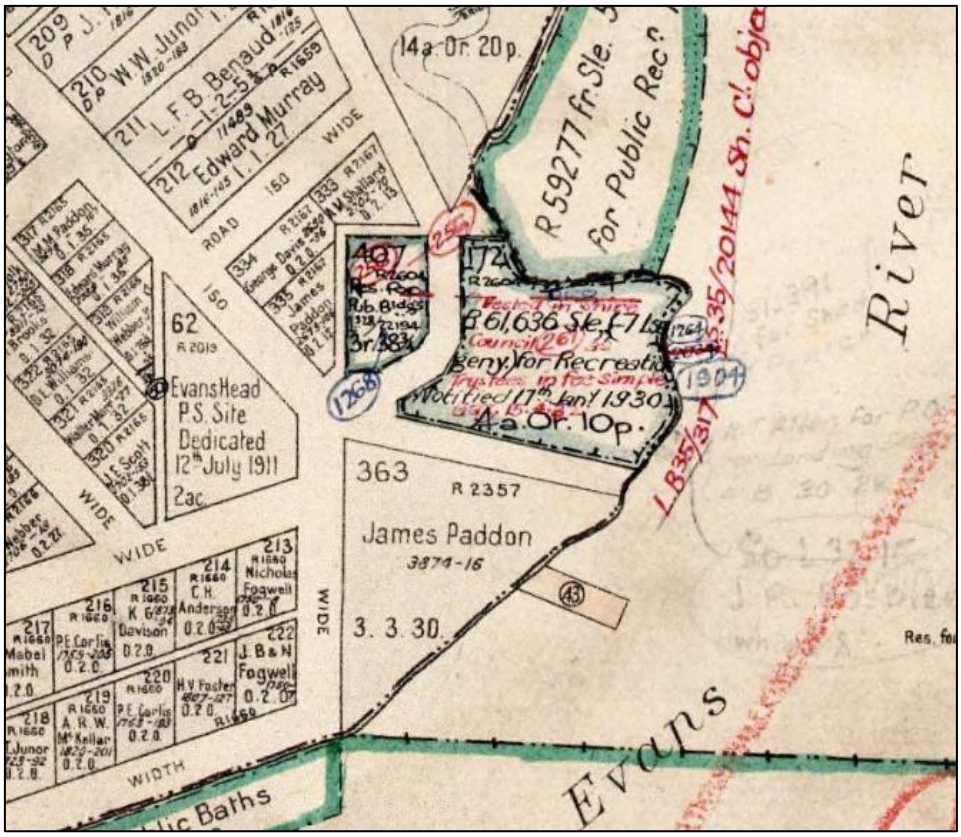


Figure 18 – 1927 Riley Parish Map Extract (http://hlrv.nswlrs.com.au/pixel.htm)

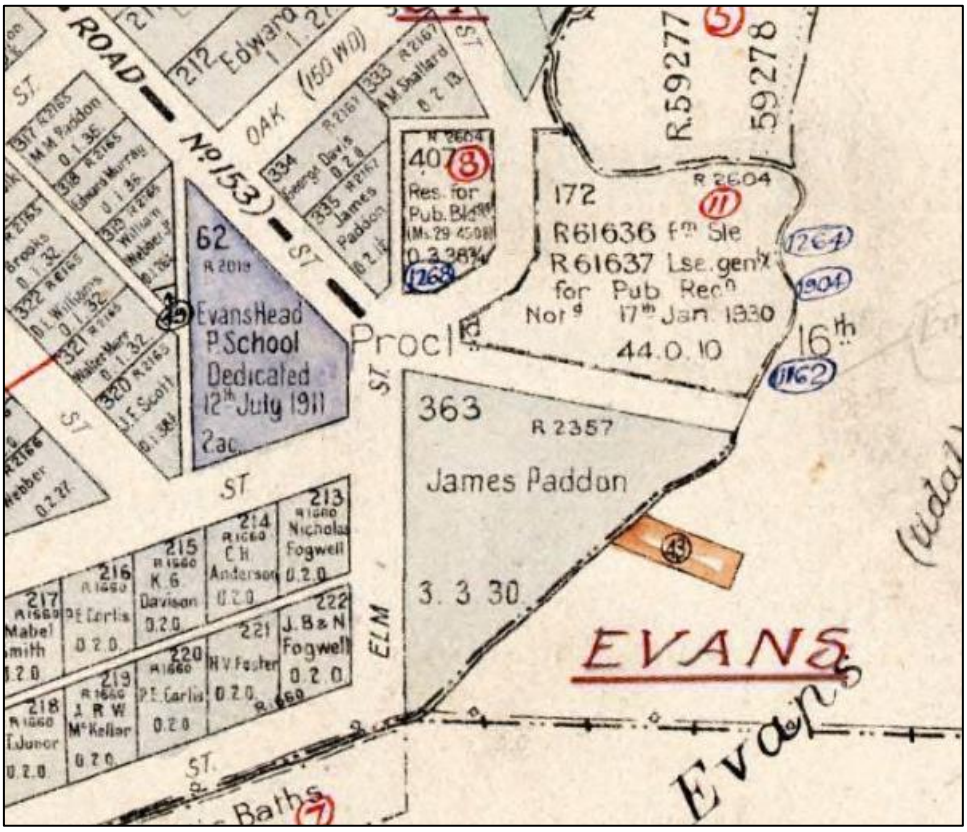


Figure 19 – 1938 Riley Parish Map Extract (http://hlrv.nswlrs.com.au/pixel.htm)

APPENDIX 8 - HISTORIC TOPOGRAHPIC MAPS

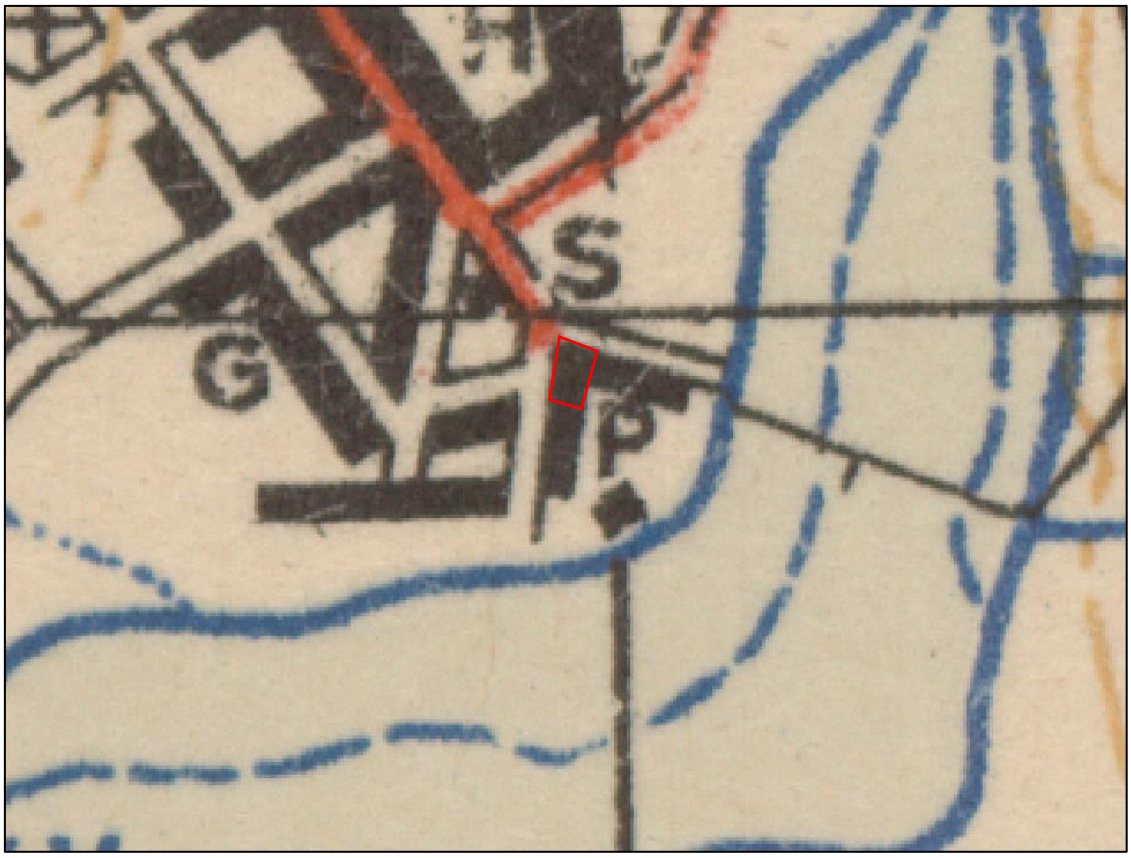


Figure 20 – 1942 *Woodburn* Topographical Map extract.

Figure 21 – 2011 *Woodburn* Topographical Map extract.

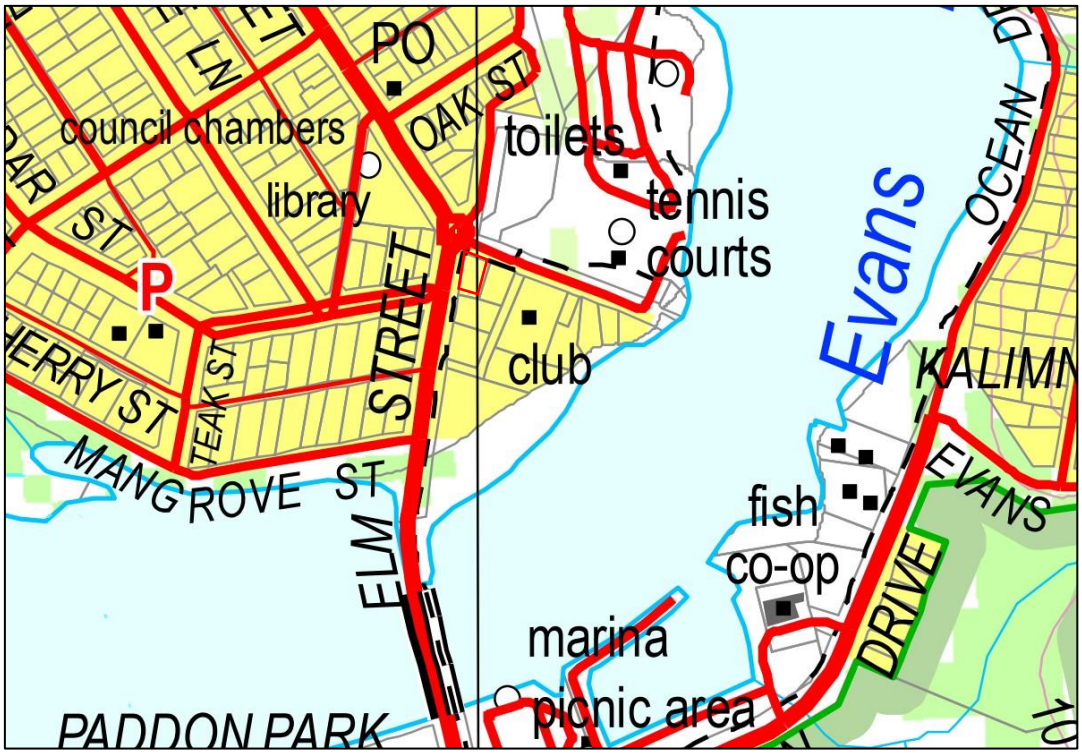


Figure 22 – 2017 *Woodburn* Topographical Map extract.

Figure 23 – 2022 *Woodburn* Topographical Map extract

APPENDIX 9 - ZONE MAPPING

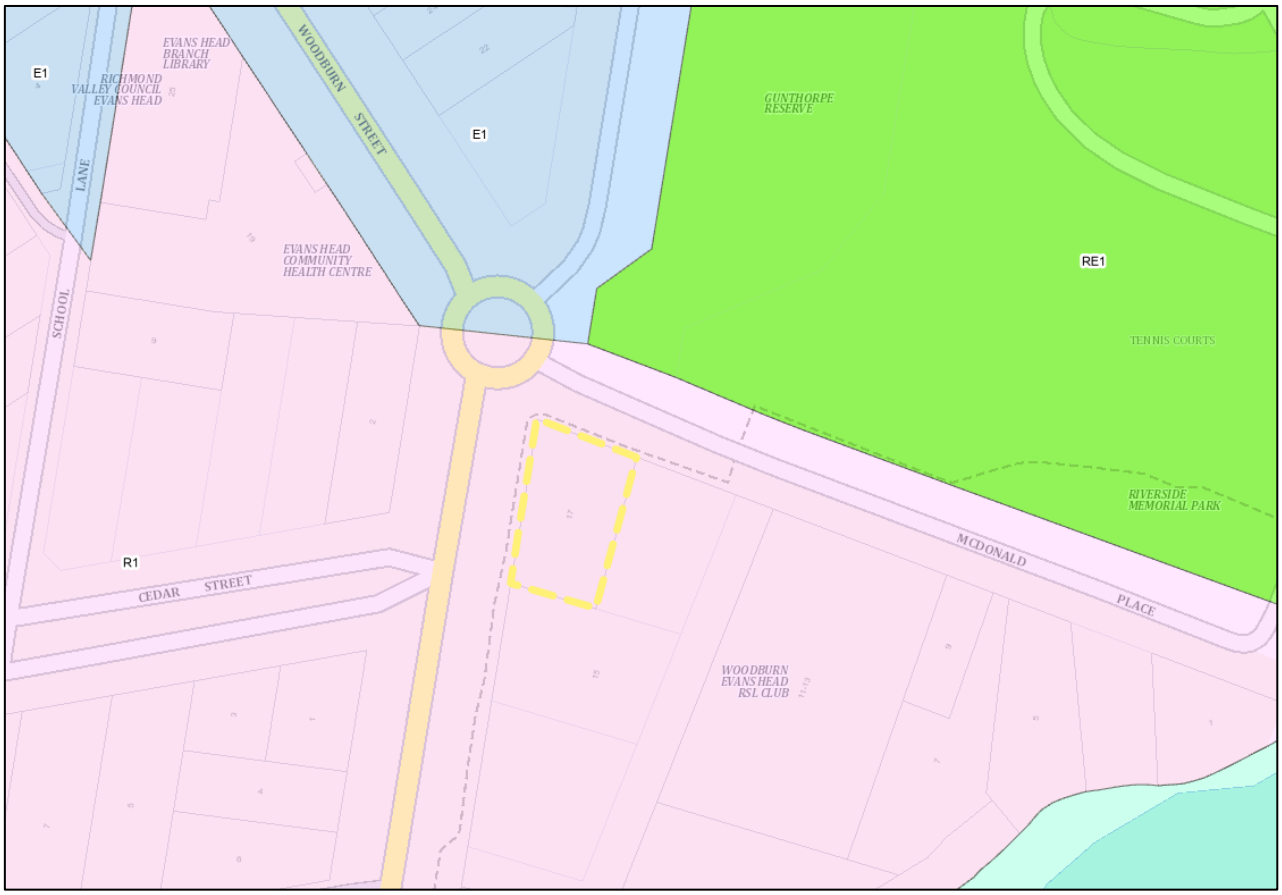


Figure 24 – NSW Legislation Zone Plan

(Source: http://www.legislation.nsw.gov.au/maintop/view/inforce/epi+177+2014+cd+0+N)

APPENDIX 10 - PHOTOGRAPHIC LOG

Photo No. 1	Date 31.08.2023

Description:
View South: Existing structure to be demolished

Photo No. 2	Date 31.08.2023

Description:
View North: Rear of existing structure to be demolished

Photo No. 3	Date 31.08.2023

Description:

Photo No.	Date
4	31.08.2023

Description:

Photo No.	Date
5	31.08.2023

Description:

APPENDIX 11 - LABORATORY RESULTS SUMMARY & RPD

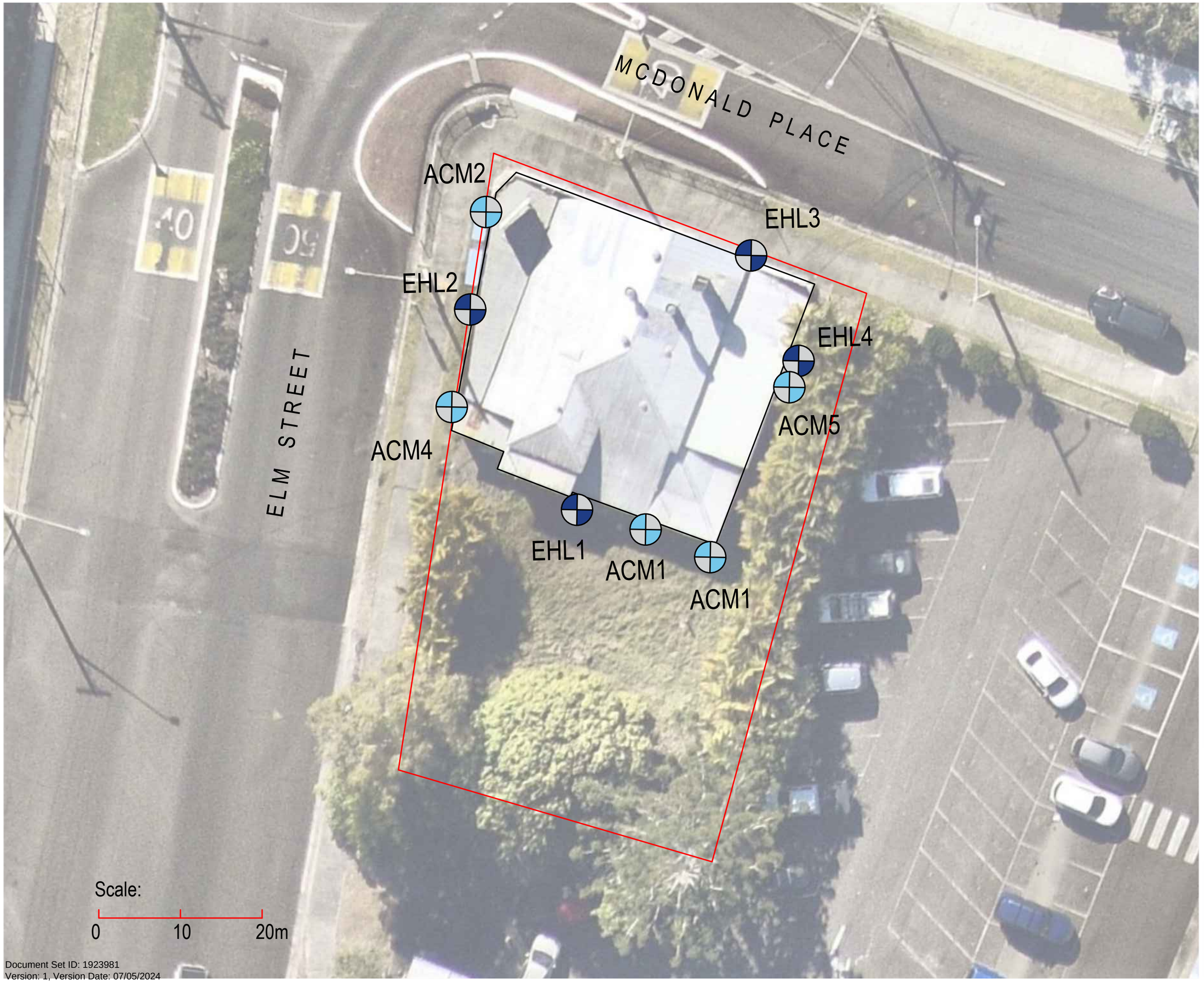
Table 17 – Systematic Sampling Laboratory Results

Analyte (mg/kg)	EHL1	EHL2	EHL3	EHL4	EHDUP	EHTRIP
Metals/Metalloids (mg/kg)						
Lead	332	99.5	552	266	284	324

Table 18 – Relative Percentage Difference (RPD%)

Analyte	EHL1	EHDUP	Mean	RPD%	EHL1	EHTRIP	Mean	RPD%
Metals/Metalloids (mg/kg)								
Lead	332	284	308	15.6	332	324	328	2.4

APPENDIX 12 - INVESTIGATION AREA - SAMPLING LOCATIONS PLAN



PRELIMINARY SITE INVESTIGATION

SAMPLING LOCATIONS

HMC Lead Sampling Locations 23.08.2023

HMC ACM Sampling Locations 23.08.2023

Lot 7 DP 14089
17 McDonald Place
Evans Head NSW

HMC2023.531.02
Date: September 2023
VERSION: 05/09/2023
DRAWN: MF
BASE: Nearmap 2023

HMC
ENVIRONMENTAL CONSULTING Pty Ltd
HMC Environmental Consulting Pty Ltd
Tweed Heads NSW
0755368863
www.hmcenvironment.com.au
admin@hmcenvironment.com.au

APPENDIX 13 - CHAIN OF CUSTODY

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ADELAIDE 3/1 Burma Road Pooraka SA 5095 Ph: 08 8162 5130 E: adelaide@alsglobal.com

☐BRISBANE 2 Byth Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

☐GLADSTONE 48 Callemondah Drive Gladstone QLD 4680 Ph: 07 4878 7944 E: ALSEnviro.Gladstone@alsglobal.com

☐MACKAY Unit 2/20 Caterpillar Drive Paget QLD 4740 Ph: 07 4952 5795 E: ALSEnviro.Mackay@alsglobal.com

☐MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

☐MUDGEE 1/29 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com

☐NEWCASTLE 5/585 Maitland Road Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com

☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: ALSEnviro.Townsville@alsglobal.com

☐WOLLONGONG 1/19-21 Ralph Black Drive, Nth Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: HMC Environmental Consulting Pty Ltd	**TURNAROUND REQUIREMENTS :** ☐ Standard TAT **(List due date):**		**FOR LABORATORY USE ONLY (Circle)**
OFFICE: Tweed Heads	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Non Standard or urgent TAT **(List due date):**		Custody Seal Intact? Yes No N/A
PROJECT: McDonald Place EVANS HEAD **PROJECT NO.:**	**ALS QUOTE NO.:**	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER: 2023.531 **PURCHASE ORDER NO.:**	**COUNTRY OF ORIGIN:**	COC: (1) 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Mark Tunks **CONTACT PH:** 0755 368863		OF: (6) 2 3 4 5 6 7	Other comment:
SAMPLER: Mark Tunks **SAMPLER MOBILE:** 0408 279212	**RELINQUISHED BY:**	**RECEIVED BY:**	**RELINQUISHED BY:** / **RECEIVED BY:**
COC Emailed to ALS? (YES) **EDD FORMAT (or default):**	DATE/TIME: 24/8/2023	DATE/TIME: 25/8/23 1120	DATE/TIME: / DATE/TIME:
Email Reports to (will default to PM if no other addresses are listed): admin@hmcenvironment.com.au			
Email Invoice to (will default to PM if no other addresses are listed): admin@hmcenvironment.com.au			

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL: SAMPLES POTENTIAL ASBESTOS - DOUBLE BAGGED

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES	EG020F (LEAD)	EA200B							Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	EHL1	23/08/2023 0:00	S	ST	1	X								
2	EHL2	23/08/2023 0:00	S	ST	1	X								
3	EHL3	23/08/2023 0:00	S	ST	1	X								
4	EHL4	23/08/2023 0:00	S	ST	1	X								
5	EHDUP	23/08/2023 0:00	S	ST	1	X								
6	EHTRIP	23/08/2023 0:00	S	ST	1	X								Interlab
7	EHRS1	23/08/2023 0:00	W	N	1	X								
8	ACM1	23/08/2023 0:00	SOLID	B	1		X							POTENTIAL ASBESTOS
9	ACM2	23/08/2023 0:00	SOLID	B	1		X							POTENTIAL ASBESTOS
10	ACM3	23/08/2023 0:00	SOLID	B	1		X							POTENTIAL ASBESTOS
11	ACM4	23/08/2023 0:00	SOLID	B	1		X							POTENTIAL ASBESTOS
12	ACM5	23/08/2023 0:00	SOLID	B	1		X							POTENTIAL ASBESTOS
				TOTAL	12	6	5							

Environmental Division Brisbane
Work Order Reference
EB2326214

Telephone : + 61-7-3243 7222

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

APPENDIX 14 - LABORATORY CERTIFICATES

CERTIFICATE OF ANALYSIS

Work Order	: **EB2326214**	Page	: 1 of 5
Client	: **HMC ENVIRONMENTAL**	Laboratory	: Environmental Division Brisbane
Contact	: MARK TUNKS	Contact	: Customer Services EB
Address	: SUITE 29, LEVEL 2 75-77 WHARF STREET TWEED HEADS 2485	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: 07 5536 8863	Telephone	: +61-7-3243 7222
Project	: McDonald Place EVANS HEAD	Date Samples Received	: 25-Aug-2023 11:20
Order number	: 2023.531	Date Analysis Commenced	: 25-Aug-2023
C-O-C number	: ----	Issue Date	: 04-Sep-2023 15:21
Sampler	: MARK TUNKS		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 11		
No. of samples analysed	: 11		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Soil Preparation, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Tim Kuo	Approved Asbestos Identifier	Melbourne Asbestos, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- **EA200B conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- **EA200 Legend**
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Analysis of asbestos from swabs and tapes is not covered under the current scope of NATA accreditation.
- EA200: N/A - Not Applicable

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	EHL1	EHL2	EHL3	EHL4	EHDUP
			Sampling date / time	23-Aug-2023 00:00	23-Aug-2023 00:00	23-Aug-2023 00:00	23-Aug-2023 00:00	23-Aug-2023 00:00
Compound	CAS Number	LOR	Unit	EB2326214-001	EB2326214-002	EB2326214-003	EB2326214-004	EB2326214-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	6.9	4.8	3.0	8.0	6.8
EG020T: Total Metals by ICP-MS								
Lead	7439-92-1	0.1	mg/kg	332	99.5	552	266	284

Analytical Results

Sub-Matrix: SOLID (Matrix: SOLID)			Sample ID	ACM1	ACM2	ACM3	ACM4	ACM5
			Sampling date / time	23-Aug-2023 00:00	23-Aug-2023 00:00	23-Aug-2023 00:00	23-Aug-2023 00:00	23-Aug-2023 00:00
Compound	CAS Number	LOR	Unit	EB2326214-007	EB2326214-008	EB2326214-009	EB2326214-010	EB2326214-011
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**Yes**	**Yes**	**Yes**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**Ch + Am**	**Ch + Am**	**Ch + Am + Cr**
Asbestos (Trace)	1332-21-4	-	-	**No**	**No**	**N/A**	**N/A**	**N/A**
Sample weight (dry)	----	0.01	g	**28.9**	**80.1**	**66.2**	**56.3**	**120**
Synthetic Mineral Fibre	----	-	-	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	-	-	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
APPROVED IDENTIFIER:	----	-	--	**T. KUO**	**T. KUO**	**T. KUO**	**T. KUO**	**T. KUO**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	EHRS1	----	----	----	----
				Sampling date / time	23-Aug-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2326214-006	--------	--------	--------	--------
					Result	----	----	----	----
EG020T: Total Metals by ICP-MS									
Lead	7439-92-1	0.001	mg/L		<0.001	**----**	**----**	**----**	**----**

Analytical Results

Descriptive Results

Sub-Matrix: **SOLID**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	ACM1 - 23-Aug-2023 00:00	Grey fragment with attached organic matter and paint approx 85 x 65 x 5mm.
EA200: Description	ACM2 - 23-Aug-2023 00:00	Organic sheeting fragment with attached paint approx 120 x 110 x 5mm.
EA200: Description	ACM3 - 23-Aug-2023 00:00	Asbestos sheeting fragment with attached organic matter approx 140 x 130 x 5mm.
EA200: Description	ACM4 - 23-Aug-2023 00:00	Grey fragment with asbestos fibres, attached organic matter and paint approx 100 x 80 x 5mm.
EA200: Description	ACM5 - 23-Aug-2023 00:00	Brown fragments with asbestos fibres, attached organic and soil matter approx 50 x 40 x 5mm.

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(SOLID) EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples