Long Term Environmental Management Plan

Walka Water Works

Maitland City Council

30 November 2022

→ **The Power of Commitment**

GHD Pty Ltd | ABN 39 008 488 373
GHD Tower, Level 3, 24 Honeysuckle Drive
Newcastle, New South Wales 2300, Australia
T +61 2 4979 9999 | **F** +61 2 9475 0725 | **E** ntlmail@ghd.com | **ghd.com**

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Executive Summary

GHD Pty Ltd (GHD) was commissioned by Maitland City Council (Council) to prepare a Long Term Environmental Management Plan (LTEMP), inclusive of an asbestos management plan (AMP) to manage the risks to health associated with identified site contamination identified at the Walka Water Works located off Scobies Lane, Oakhampton Heights NSW (the Site). Primary risks to health at the site are associated with soil contaminated with asbestos containing materials (ACM). A summary of key LTEMP provisions required under the Contaminated Land Management Act 1997 (CLM Act) is provided below, with a Quick Reference guide provided for convenience, for non-intrusive use and maintenance of the site. The Quick Reference guide should not be regarded as a substitute for the LTEMP and should be read in the context of the whole LTEMP.

Purpose of the LTEMP

This LTEMP is required across the entire site to provide procedures for appropriately identifying, assessing and managing asbestos in soils which could be encountered at the site. The aim of the procedures outlined in this LTEMP is to protect human health during routine occupation, construction or maintenance works at the site and to maintain the suitability at the site (from a contamination perspective) for ongoing use as a public recreation facility. It should be noted that the AMP attached to this LTEMP includes management of hazardous building materials, to avoid having a separate document for asbestos in structures. Nonetheless this LTEMP is strictly limited to management of soil contamination.

This LTEMP is not intended to replace or supersede any existing health and safety plans for the site. This LTEMP should be considered as a supplement to these documents and is targeted primarily to deal with the presence of ACM impacted soils.

Description of the nature of the residual contamination

Previous investigations of the site were carried out by GHD in 2021 and 2022, as documented in reports '*Walka Water Works, Contamination Assessment*' (GHD 2022a) and '*Walka Water Works, Supplementary Site Investigations 2022*'.

On the basis of previous investigations carried out at the site, the following conclusions were made:

– Investigations do not indicate any significant contamination is present at the site as a result of historical use except for asbestos, including bonded ACM and friable asbestos materials. While some elevated concentrations of metals and TRH were identified in soil and sediment, these are limited to exceedances of ecological criteria and based on the concentrations and frequency of occurrence, are not considered to present any significant risk to the environment nor affect the suitability of the site for continue recreational use.
– Groundwater does not appear to have been impacted by former industrial use of the site. Metals concentrations exceeding groundwater investigation levels are considered likely to be representative of natural groundwater concentrations.
– Previous surface water sampling (GHD 2022a) and Council monitoring results do not indicate any significant contamination of surface water in the reservoir has occurred from contamination on the site (e.g. attributable to historical land use), however the water quality is not considered suitable for recreational use involving exposure to the water (e.g. swimming or wading), primarily due to biological contaminants. Current restrictions to use (i.e. no swimming or fishing) should continue, however the water quality is not considered to affect the suitability of the site for other recreational (non-water-based) land use.

Areas of significant asbestos contamination have been broadly delineated and appear to be primarily confined to the following areas:

- Former power station footprint, including beneath soft-fall in the playground (separated by geotextile) and extending into the eastern embankment beyond the fence line.
- Lawn to the east of the pump house.
- The beach area, extending into the reservoir sediments and isolated occurrences around the mini train station.

One shallow hand excavation (HE368) located near to the former workmen's cottages identified asbestos in soil exceeding the adopted human health criteria of 0.001% w/w for recreation/open space (HIL C). No visible ACM was present at this location, but some building debris was present. On a weight of evidence it is considered likely that asbestos contamination in this area would be isolated, most likely bonded ACM and of relatively low risk of disturbance.

Asbestos containing debris was observed on the surface of filter beds J5 and J6. These areas could not be safely accessed for sampling, but ACM has previously been identified in other filter beds.

Areas of soil impacted with asbestos have been outlined on figures provided within Appendix A.

Remediation and/or management of the areas with identified asbestos contamination will be required for the site to be suitable for use as a recreational facility.

No asbestos has been identified outside of the above areas in recent investigations, although isolated occurrences of asbestos contamination have been observed in previous investigations. The risk of exposure to airborne asbestos fibres from potential soil contamination in these broader site areas (including identified asbestos in soil near the former workmen's cottages) is considered low for normal use and maintenance of the site, and it is considered these broader areas of the site are suitable for recreational use subject to ongoing management under the provisions of the site-specific asbestos management plan, including provision of an unexpected finds protocol to address any contamination that may be identified during future use of the site.

Summary of the actions required by the LTEMP

Preliminary and administrative controls for long-term environmental management of the site include the following:

– Maintenance of the asbestos register
– Record keeping, signage, information and training
– Development of safe working procedures

Specific surface water management procedures include maintenance of restricted access to the reservoir at the site, through site signage and implementation of no-access procedures.

The management approach to asbestos in soil and sediment at the site is broadly outlined within Section 4 of the LTEMP and is specific to respective areas of the site based on contamination present and associated risk to human health and the environment. Further detail around specific actions associated within asbestos in soil contamination at the site is provided within Section 6. Actions are required at the site associated with the following stages:

– Interim management prior to remediation;
– Interim management between nominated stages of remediation; and
– Long term management following remediation

How the LTEMP can reasonable be made to be legally enforceable

This LTEMP is legally enforceable in accordance with the requirements of the Work Health and Safety Regulations 2011 (NSW) clause 429:

"A person with management or control of a workplace must ensure a written asbestos management plan is prepared for the workplace if asbestos or ACM has been identified or assumed present or is likely to be present from time to time at the workplace. The asbestos management plan must be maintained to ensure the information is up-to-date."

This LTEMP incorporates an asbestos management plan (AMP) and must be made available and should be easily accessible to Council and Proponent / PCBU intending to access or conduct works at the site.

The WHS Regulation also states that a person with management or control of a workplace must ensure an asbestos register is prepared and kept at the workplace. The asbestos register must be maintained, to ensure the information in the register is up to date. Council shall be responsible for maintaining the asbestos register.

How there will be public notification

Council shall register the site/s within the Before You Dig Australia (BYDA) scheme. Any Proponent/PCBU who plans to undertake any work within or near controlled areas of the site will be notified during the BYDA search and shall contact Council if notified by BYDA.

Signage shall be maintained on site to inform recreational users that hazardous materials are being managed on the site, and that maintenance or intrusive activities are subject to a site-specific management plan, with Council contact details for further information. Where appropriate, signage may be incorporated with site heritage information.

Information from Council indicates the following notification scheme has been established:

– Council internal notifications shall be made through Council's GIS planning management system for identification of contaminated land and asbestos containing building materials. Any future projects will be informed by process and provide link to applicable site assessment reports, RAP and LTEMP/AMP.
– Council's contractor management system shall incorporate reference to site assessment reports, RAP and LTEMP/AMP and applicable management requirements. Procurement and contractual arrangements shall be adequate to allow for required management practices.

Further details on communications are provided in Section 1.8 of this LTEMP.

This report is subject to, and must be read in conjunction with, the limitations set out in section 7 and the assumptions and qualifications contained throughout the Report.

Quick Reference Guide

This LTEMP is intended for use with the Stage 1 re-opening of Walka Water Works, as described in Sections 1.3 and 6.3 of this LTEMP and illustrated in Figure E.1 below. Access to asbestos exclusion zones (as shown below) is prohibited except for workers who have been fully inducted in this LTEMP, and subject to appropriate safe work procedures and personal protective equipment (PPE).

Other areas of the site are accessible to the public and to workers for non-intrusive activities, without restriction. The risk associated with potential asbestos contamination in the broader areas of the site is considered low for normal use and maintenance of the site, although isolated occurrences of asbestos may be encountered.

Figure E.1 Stage 1 access restrictions

An asbestos management plan (AMP) as required by WHS Regulations is provided in Appendix B of this LTEMP. Procedures have been prepared to guide the implementation of the LTEMP, with an index of procedures provided in Section 6.1, and the actual procedures provided in Appendix B of the AMP. Site workers should be familiar with the procedures relevant to their activities, and the management requirements described in this LTEMP.

If incidental asbestos containing material (ACM) is encountered during non-intrusive use of the site, the following procedures apply as detailed in Section 6.4:

– Hand picking of any observed incidental fragments must be completed by a licenced asbestos removal contractor (if the asbestos material is friable or involves more than 10 m^2 of bonded ACM) or competent person (for less than 10 m^2 of bonded ACM).
– Where ACM is identified/collected during hand picking, the location, condition and weights of asbestos should be recorded to assist in evaluating whether there is any change to the risk profile in the area of the site where the ACM is identified, and to update the LTEMP if required. The site specific asbestos register should be updated with the finding and subsequent incidental removal.

Unexpected contamination could be encountered at any areas of the sites which have not been investigated (including between sampling locations) and/or remediated and may include unexpected areas of asbestos containing materials or other types of unexpected contamination.

A competent person must be engaged to undertaken appropriate assessment of unexpected contamination that may be encountered, and to recommend necessary management requirements (if any) prior to the continuation of works in the affected area. A preliminary unexpected finds protocol (UFP) has been developed for the site and is included as Figure E.2 below.

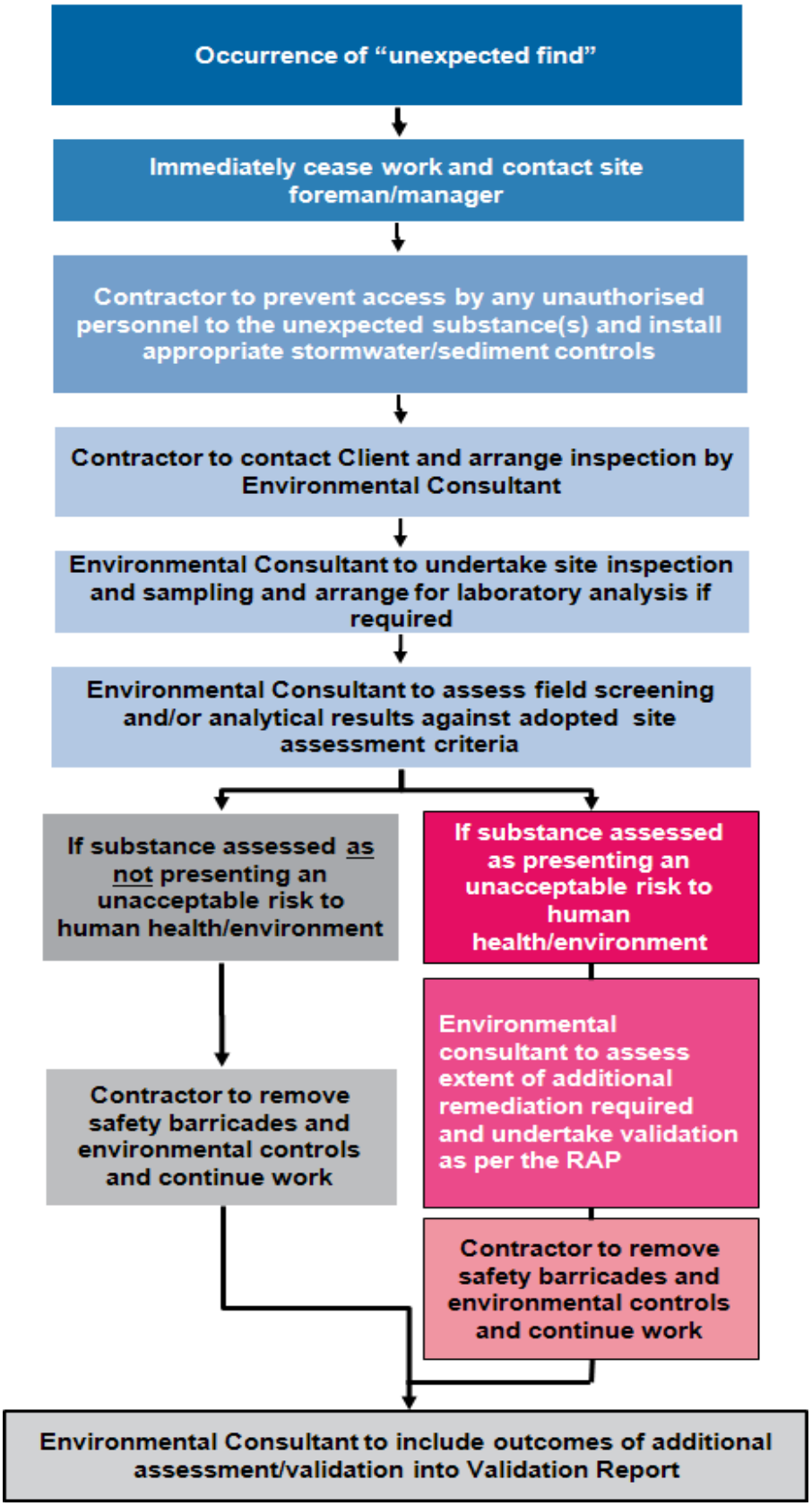

Figure E.2 Unexpected finds decision process

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1. Introduction

1.1 Purpose of this report

GHD Pty Ltd (GHD) was commissioned by Maitland City Council (Council) to prepare a Long Term Environmental Management Plan (LTEMP), inclusive of an asbestos management plan (AMP) to manage the risks to health associated with identified site contamination identified at the Walka Water Works located off Scobies Lane, Oakhampton Heights NSW (the Site). Primary risks to health at the site are associated with soil contaminated with asbestos containing materials (ACM).

A location plan and site features are provided as Figures 1 and 2 respectively in Appendix A. Areas of identified asbestos contamination are shown in Figures 3 to 5.

This LTEMP is required across the entire site to provide procedures for appropriately identifying, assessing and managing asbestos in soils which could be encountered at the site. The aim of the procedures outlined in this LTEMP is to protect human health during routine occupation, construction or maintenance works at the site and to maintain the suitability at the site (from a contamination perspective) for ongoing use as a public recreation facility. It should be noted that the AMP attached to this LTEMP includes management of hazardous building materials, to avoid having a separate document for asbestos in structures. Nonetheless this LTEMP is strictly limited to management of soil contamination.

This LTEMP is not intended to replace or supersede any existing health and safety plans for the site. This LTEMP should be considered as a supplement to these documents and is particularly focused on asbestos contamination issues present at the site.

No one section or part of a section should be taken as representing the findings of this LTEMP and it should be read in its entirety, including appendices and attachments. It is to be read in conjunction with the applicable asbestos register (as contained in within the Asbestos Management Plan within Appendix B).

This LTEMP is subject to independent review by an EPA accredited site auditor [redacted] as part of a non-statutory site audit of the site under the provisions of the Contaminated Land Management Act 1997 (CLM Act).

1.2 Background

Previous investigations of the site were carried out by GHD in 2021 and 2022, as documented in reports '*Walka Water Works, Contamination Assessment*' (GHD 2022a) and '*Walka Water Works, Supplementary Site Investigations 2022*' (GHD 2022b). These investigations identified asbestos containing materials within structures at the site and within surficial soils, near surficial soils and at depth in various areas. A number of instances of ACM and areas of asbestos in soil were recommended for further investigation, remediation or management.

GHD subsequently conducted a remediation options assessment and prepared a remediation action plan (RAP) '*Walka Water Works, Remediation Action Plan*' (GHD 2022c) outlining the preferred remedial strategy and conceptual remediation design. Detailed design of remediation approach is yet to be completed.

As required by the adopted remediation strategy, long term management is required to control potential risks from the ACM impacted material identified at the site, and this LTEMP is the resulting document designed to inform management approach.

1.3 Staged management and remediation

As an interim approach prior to implementation of long term remediation, the site has been closed to public access. As advised by Council, re-opening and remediation (where required) of the site will be conducted in a staged manner, as illustrated on Figure 6 and 7 in Appendix A, detailed in Section 7.3.1 of the LTEMP and summarised below.

Stage 1 – Opening of the site with interim capping of access to amenities and to reservoir wall track. Significantly contaminated areas will be fenced 'exclusion zones' pending remediation. The broader site areas (with a low potential for asbestos contamination) will be subject to management as per the LTEMP procedures, which will essentially remain unchanged for all subsequent stages, unless revision of the LTEMP is triggered by a change in site circumstances or risk profile.

Stages 2 – 5 – Progressive remediation of the contaminated areas. As each area is remediated and validated, it will be released for public access, with management requirements depending on whether complete remediation is achieved. The LTEMP will be updated at each stage, however management requirements are provided in this version for the range of expected outcomes of the remediation.

Following remediation of contaminated areas, the management approach for those areas would be reassessed and should allow ongoing use of the areas in line with the proposed site use.

Major redevelopment is excluded from this LTEMP and would be subject to specific procedures to be prepared and approved for the specific circumstances in which major development would be undertaken.

1.4 Site identification

Site information and environmental setting information is summarised below in Table 1.1.

Table 1.1 Site information and environmental setting

Item	Description
Site Owner	Maitland City Council
Site Address	Scobies Lane, Oakhampton Heights NSW
Lot/DP	Lot 445 DP 722263
Local Government Area	Maitland City Council
Site Area	Approximately 64.23 hectares
Current Zoning	RE1 – Public Recreation
Previous Land Use	Former water treatment facility, pumping station and power station
Site Location and Layout Plan	Refer to Figures 1 and 2, Appendix A

1.5 Objectives

This LTEMP has been developed to provide management procedures to control potential exposure to receptors (i.e. to manage risks to human health) from identified asbestos contamination in soils at the site. The strategy of the LTEMP has been based on the findings of GHD's assessment reports (GHD 2022a and GHD 2022b).

The objectives of this LTEMP are therefore to:

– Document the locations of known asbestos contamination at the site.
– Describe the management procedures for the site to control potential exposure to areas of known or unexpected contamination.
– Provide a system for the implementation of the minimum procedures/strategies for managing risk associated with asbestos at the site.
– Provide necessary procedures to be followed if disturbing asbestos during site management.

1.6 Review of LTEMP

This LTEMP has been developed in line with the current *Work Health and Safety Act 2011* and Regulation, relevant Codes of Practice and Standards as a means to comply with asbestos prohibitions and prevent or minimise exposure to airborne asbestos hazards.

This LTEMP relates solely to the management of asbestos currently identified at the site. It should be referred to regularly and in accordance with legislative requirements, reviewed, updated and maintained by Council in the following circumstances:

– There is a change in the nature of land use.
– There is a review of the asbestos register or a control measure.
– The plan is no longer adequate for managing asbestos contamination at the site.
– A regulator or health and safety representative requests a review.
– At least once every 5 years.

As noted in Section 1.3, the LTEMP should be updated following completion of each stage of remediation, and the updated LTEMP reviewed and approved by a NSW EPA accredited site auditor. If any other revisions to the LTEMP from circumstances such as those listed above results in a decrease in site management requirements, these must also be reviewed and approved by an accredited site auditor.

This LTEMP or an approved revision must remain in place until such time as no further management of contamination at the site is required (e.g. following full remediation), as approved by an accredited site auditor and/or the appropriate regulatory authority.

1.7 Responsibilities

The implementation of the procedures provided in this LTEMP will be the responsibility of the entities detailed in Table 1.2. The responsibilities may include informing other parties of their obligations to comply with the LTEMP. All individuals accessing the site are responsible for complying with the requirements under this LTEMP, as applicable. It is acknowledged that responsibilities of external service providers are subject to appropriate commercial arrangements with Council.

Table 1.2 Responsibilities for LTEMP implementation

Position and Company/Entity	Responsibilities
Council and owners of the site	
WHS Manager and Group Manager Infrastructure and Works	Approve the LTEMP and revisions to the LTEMP (including engagement of appropriately experienced environmental consultants as and when required to review and update the LTEMP and obtaining Site Auditor approval for relevant revisions as discussed in Section 1.6). Authorise engagement of external service providers as required.
Site Manager	Ensure staff and contractors are inducted to the LTEMP, clearly understand its requirements and ensure that compliance with the LTEMP is a condition of any agreement with these parties. Ensure appropriate consents and licences (as required) are obtained for any works conducted at the site. Ensure Contractor WHS Plans comply with the LTEMP. Provide site induction for employees and contractors required to access or perform works at the site.
	Advise occupiers of the application of the LTEMP and provide a copy of the LTEMP to the supervisor or person in charge of employees and/or contractor/s who are accessing or performing works at the site. Ensure staff and contractors comply with the requirements of the LTEMP.
	Update the LTEMP if the condition of the site is changed, and, if necessary, inform other parties of the changes.
	Provide the LTEMP for inclusion on the relevant records maintained for the site.

Position and Company/Entity	Responsibilities
	Ensure an inspection of the surface of the site is undertaken at appropriate intervals, and as otherwise required such as following adverse weather events and record the results of the inspections as per the requirements of the LTEMP. The inspection shall focus on the integrity of fencing or capping (as applicable), ground surface, known ACM and presence of any ACM debris previously not identified.
Site Manager / Works Co-ordinator / Worker	Implement LTEMP provisions relevant to tasks being completed. Ensure all non-conformance and/or complaints are recorded as per the requirements of the LTEMP.
Contractors and consultants	
Project Manager	Implement the LTEMP to ensure compliance. Ensure task specific risk assessments comply with requirements of the LTEMP. Notify Council of any new activities on the site that may impact locations of known ACM or likely asbestos at the site.
Works Supervisor	Ensure only staff inducted to the LTEMP are used in work at Walka Water Works. Conduct works in an environmentally responsible manner. Meet relevant Workplace Health and Safety (WHS) regulatory requirements. Implement the works in a safe and responsible manner. Ensure that environmental protection measures are identified and in place and are functioning correctly during the works and after completion of the works, if required. Notify Council if suspected ACM or other suspect contaminants are encountered during works or access to the sites. Document the nature and location of any such ACM or other suspect contaminants encountered during works or access to the site. Complete non-conformance and corrective action reports as required and undertake follow-up corrective actions, as required. Conduct monitoring as required in the LTEMP. Inform Council if conditions are different from those documented in the LTEMP.
Workers	Acknowledge understanding of LTEMP requirements. Implement LTEMP provisions relevant to tasks being completed. Notify Works Supervisor if suspected ACM or other suspect contaminants are encountered during works or access to the sites. Inform Works Supervisor if conditions are different from those documented in the LTEMP.
Environmental Consultant	Provide clearance and validation services, assistance with unexpected finds and other consulting services as may be required and directed by Council. Review / update LTEMP in consultation with relevant stakeholders as required from time to time (see Section 1.6).
Site Auditor	Review revised or updated versions of LTEMP to confirm its appropriateness as a basis for the suitability of the site for ongoing land use, including any changes to the land use.
Asbestos specialists	Competent person / licensed asbestos assessor or removalists shall undertake tasks as required by relevant WHS regulations and codes of practices and/or as specified within this LTEMP.
General public	
Site users	Comply with all reasonable directions and restrictions to use of the site.

1.8 Notifications and communication

There must be appropriate notification of all restrictions applying to the site to ensure that current and future site owners and occupiers are aware of the risk and existence of this LTEMP. Council will be required to notify current site owners and occupiers (including the resident caretaker and family) and known future site users of the requirements of the LTEMP.

1.8.1 External notification scheme

Council shall register the site/s within the Before You Dig Australia (BYDA) scheme. Any Proponent/PCBU who plans to undertake any work within or near controlled areas of the site will be notified during the BYDA search and shall contact Council if notified by BYDA.

The Proponent / PCBU who plans to undertake any excavation, including that which may breach capping, will require to apply for a Permit through Council. Procedures in Section 7 of this LTEMP shall be followed.

Signage shall be maintained on site to inform recreational users that hazardous materials are being managed on the site, and that maintenance or intrusive activities are subject to a site-specific management plan, with Council contact details for further information. Where appropriate, signage may be incorporated with site heritage information.

1.8.2 Council internal notification scheme

Information from Council indicates the following notification scheme has been established:

– Council internal notifications shall be made through Council's GIS planning management system for identification of contaminated land and asbestos containing building materials. Any future projects will be informed by process and provide link to applicable site assessment reports, RAP and LTEMP/AMP.
– Council's contractor management system shall incorporate reference to site assessment reports, RAP and LTEMP/AMP and applicable management requirements. Procurement and contractual arrangements shall be adequate to allow for required management practices.

1.8.3 Communications

The requirements of the LTEMP will be communicated by Council directly to contractors working on the site and stakeholders with formal agreements for use of the site. At the time of preparation of this LTEMP, formal agreements are in place with the following stakeholders:

– Crown Lands and Maitland Council based on a Memorandum of Understanding for the management of the park/reserve.
– Park Run
– Model Yacht Club
– Miniature Rail Club
– Bird Watchers

Communications to the general public will be in accordance with the following protocols (note - development of all communications is to include approval from the landowner prior to issue – Crown Lands):

1. For general information regarding the project status and site access and management:
    - A dedicated project page is provided on the Maitland Council Website, including regular updates regarding the project (https://www.maitland.nsw.gov.au/projects/walka-water-works-closure).
    - A FAQs page is provided on the website providing more specific information regarding the site.
    - General contact details are provided for Councils customer service team to answer any direct questions via phone (02 4934 9700) or email (info@maitland.nsw.gov.au).
    - Customer service will then seek clarification as required to any specific questions from either the nominated Walka Site Manager or Project Manager.
2. For communications nominating any changes to reserve operations and public vehicular and pedestrian access to the site due to pre-planned remediation or grounds maintenance works:
    - Dedicated communications/media releases will be issued on the Council website and media platforms a minimum of 2 weeks prior to any changes being made.
    - User groups with agreements to use the site will be provided with direct communications either by phone or email.

- Contact details are provided for Councils customer service team to answer any direct questions.
- Customer service will then seek clarification as required to any specific questions from either the nominated Walka Site Manager or Project Manager.

3. For communications nominating any emergency closures of the reserve or emergency contacts for the public in relation to the site:
    - For emergency closures of the site, communications via website and media platforms are to be issued a minimum of 6 hours prior to site closure.
    - The Council is to inspect the site and clear the site of any public members prior to closing the site.
    - User groups with agreements to use the site will be provided with direct communications either by phone or email.
    - Emergency Services [https://www.maitland.nsw.gov.au/my-neighbourhood/home-safety/emergencies-and-disaster – including 000 and NSW SES on 132 500], Council after hours and customer service contact details (02 4934 9700 or email info@maitland.nsw.gov.au) are provided on the website for any publicly reported emergencies or unexpected asbestos finds.
    - Council after hours and or Customer service will seek clarification as required to any emergency situations from either the nominated Walka Site Manager or Project Manager.

1.9 Enforcement

This LTEMP is legally enforceable in accordance with the requirements of the *Work Health and Safety Regulations 2011* (NSW) clause 429:

"A person with management or control of a workplace must ensure a written asbestos management plan is prepared for the workplace if asbestos or ACM has been identified or assumed present or is likely to be present from time to time at the workplace. The asbestos management plan must be maintained to ensure the information is up-to-date."

Section 5.2 of the Code of Practice (COP) *How to Safely Manage and Control Asbestos at the Workplace* provides:

"Sites contaminated with asbestos become a workplace when work is carried out there. TheWHS Regulations require that, where asbestos is identified as contaminating a workplace, a register and asbestos management plan be created for the site."

In addition, an AMP must be reviewed at least once every five years or as otherwise required such as when site conditions or use change or following remediation works conducted at the site.

This LTEMP incorporates an asbestos management plan (AMP) and must be made available and should be easily accessible to Council and Proponent / PCBU intending to access or conduct works at the site.

The *WHS Regulation* also states that a person with management or control of a workplace must ensure an asbestos register is prepared and kept at the workplace. The asbestos register (included in the AMP in Appendix B of this LTEMP) must be maintained, to ensure the information in the register is up to date. Council shall be responsible for maintaining the asbestos register.

1.10 Timeframes

This LTEMP is to be applied to the site due to the presence of known asbestos contamination and to allow for unexpected contamination to be identified and recorded. The LTEMP has been prepared to reflect current site activities and will be amended from time to time as detailed in Section 1.6.

This LTEMP shall remain in force until such time as it is replaced by an appropriate equivalent or an accredited site auditor or the relevant approving authority provides written advice that it is no longer required.

1.11 Financial assurance and planning

Council is required to incorporate this LTEMP into its contaminated site maintenance program and allow for sufficient budget for LTEMP implementation ongoing. Consideration should be given to the expected lifecycle of any containment cells constructed and requirements around maintenance, removal or reconstruction in the future.

2. Basis of the management requirements

2.1 Legislative and regulatory framework

Council has a legal obligation under the Work Health and Safety Act 2011 (the WHS Act) and prescribed in the Work Health and Safety Regulation 2017, to ensure the work health and safety of its workers and visitors.

Primary legislative requirements for asbestos obligations are discussed below.

Implementation of this LTEMP is subject to the provisions of the relevant legislation and guidelines described in this LTEMP, or such updated versions as may be endorsed by the appropriate regulators from time to time.

2.1.1 CLM ACT

The Contaminated Land Management Act 1997 (CLM Act) provides for the regulation of contamination and the administration of the NSW Site Auditor Scheme.

The EPA uses its powers under the CLM Act to manage contamination that is significant enough to warrant regulation, given the site's current or approved use. In relation to environmental management plans, the EPA may:

– require an appropriate person, such as a landowner or land manager, to prepare an EMP as part of a management order or ongoing maintenance order under the CLM Act.
– request a landowner or other responsible person submitting a voluntary management proposal to include an EMP as part of the proposal.

(It is noted that the site is not currently regulated by the EPA).

Site auditors can be engaged to review the work of consultants to help ensure appropriate standards in the management of contaminated land. When undertaking their work, site auditors must consider the relevant statutory guidelines made or approved by the EPA under the CLM Act. A site auditor may determine that a site is suitable for a particular use or uses if managed in compliance with an EMP.

In accordance with section 3.4.6 of the *Guidelines for the NSW Site Auditor Scheme* (EPA, 2017), a site auditor must not include implementation of an EMP as a condition on a site audit statement, nor accept implementation of the EMP as a means of managing contamination, unless the following conditions have been met:

– The EMP has been reviewed by the auditor.
– The EMP can reasonably be made to be legally enforceable.
– There will be appropriate public notification of any restrictions applying to the land.
– There is no off-site migration of contamination from the site which is the subject of the site audit, or where there is off-site migration or its potential, that contamination within the site is managed or monitored so it does not present an unacceptable risk to either the on-site or off-site environments.

These requirements have been addressed within this LTEMP, which is subject to review by the site auditor.

2.1.2 Work Health and Safety Act 2011

Under the WHS Act, Council is “a person conducting a business or undertaking” and has a responsibility to provide a safe workplace for workers including paid staff, volunteers, visitors and customers that use its sites.

Council’s responsibilities under the Act include:

– Providing and maintaining a safe work environment, plant and structures, systems of work, use, handling and storage of plant, structures and substances.
– Providing adequate facilities and ensuring access to facilities and necessary information, training, instruction or supervision.

2.1.3 Work Health and Safety Regulation 2017

The *WHS Regulation* is the legislative instrument that gives persons conducting a business or undertaking more specific information on how they may comply with the *WHS Act 2011* (see Section 2.1.2 above).

Asbestos is covered in Chapter 8 of the regulation. This chapter sets out prohibitions and exceptions relating to work with asbestos, the general duty of persons conducting a business or undertaking to identify or assume the presence of asbestos at a workplace, the management of asbestos and associated risks, the management of naturally occurring asbestos, health monitoring, training, control on use of certain equipment, demolition or refurbishment of structures or plant, asbestos removal work, licencing and licence requirements and asbestos related work.

Clause 419 of the WHS Regulation states that a person conducting a business or undertaking must not carry out or direct or allow a worker to carry out work involving asbestos if that work involves tasks including transporting, storing, removing, handling, disposing of or disturbing asbestos or ACM, except in prescribed circumstances.

The exceptions to the prohibition of that work relevant to this LTEMP are considered to primarily be the following:

– Sampling and identification in accordance with the *WHS Regulation.*
– Removal or disposal of asbestos or ACM in accordance with the *WHS Regulation.*
– Transport and disposal of asbestos and asbestos waste in accordance with the *POEOAct 1997.*
– Demonstrations, education or practical training in relation to asbestos or ACM.
– Where the regulator approves the method adopted for managing risk associated with asbestos.

Clause 420 (1) of the *WHS Regulation* requires that a person conducting a business or undertaking at a workplace must ensure that exposure of a person at the workplace to airborne asbestos is eliminated so far as is reasonably practicable, and if not reasonably practicable to eliminate exposure to airborne asbestos, exposure is minimised so far as is reasonably practicable.

Clause 429 of the *WHS Regulation* requires an asbestos management plan if asbestos containing materials are identified in a workplace or likely to be present at a workplace from time to time. A workplace is a place where work is carried out and includes any place where a worker goes, or is likely to be, while at work[1]. The site is therefore a workplace and requires an asbestos management plan. Also, under Clause 425 of the *WHS Regulation*, a person with management or control of a workplace must ensure an asbestos register is prepared and kept at the workplace. The asbestos register must be maintained, to ensure the information in the register is up to date. An asbestos register for the site is included within the Asbestos Management Plan within Appendix B.

The following Codes of Practice provide practical guidance on achieving the standards of health, safety and welfare required under the *WHS Act* and *Regulation* in relation to management of asbestos.

– Safework NSW 2019. *How to manage and control asbestos in the workplace*: Code of practice
– Safework NSW 2019. *How to safely remove asbestos*. Code of practice

[1] Section 8 Work Health and Safety Act 2011 NSW

2.2 Relevant guidelines

Guidelines relevant to the assessment and management of asbestos contamination of soils include the following:

– NSW EPA (2017) *Guidelines for the NSW Site Auditor Scheme* (3rd Edition), NSW Environment Protection Authority. October 2017
– NSW EPA (2020) *Consultants reporting on contaminated land*, NSW EPA, 2020. New South Wales Environment Protection Authority. May 2020
– NSW EPA 2014, *Waste Classification Guidelines, Part 1: Classifying Waste*
– National Environment Protection Council (NEPC) (2013), *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM) (updated 2013)
– NSW EPA 2022, *Practice note - Preparing environmental management plans for contaminated land*
– WA DoH 2021, *Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia*

It should be noted that the WA DoH 2021 guidelines have not been endorsed by the NSW EPA, who are still reviewing their position on these guidelines. In addition, the WorkCover NSW (2014) guidelines "*Managing asbestos in or on soil*" are under review, with update understood to be pending finalisation of the NSW EPA's position on the WA DoH 2021 guidelines.

2.3 Asbestos related human health considerations

Asbestos related human health considerations are provided within Section 2.3 of the AMP in Appendix B.

2.4 Permit to work

If it is determined, after consulting the asbestos register, that asbestos containing materials are present in the vicinity of the planned works, an Asbestos Permit to Work will need to be issued to, and signed by, the contractor. Permit to work authorities will only be issued by Council or a person authorized to act on its behalf.

Before being issued with an Asbestos Permit to Work, individuals will be required to read and understand the LTEMP as well as copies of relevant asbestos containing materials registers.

The permit to work should detail the nature of the work to be performed and document the contractor's agreement to:

– Abide with the requirements for working with ACM as detailed in the Codes of Practice
– Isolate/restrict access to the work area
– Provide and erect appropriate warning signs
– The use of safe work techniques
– Wearing of PPE
– Appropriate decontamination and clearance inspections of the work area
– Remove and dispose of any ACM (including PPE) in accordance with WHS legislation

Where practicable, project personnel should be made aware of the requirements of the LTEMP prior to tendering for procurement of any site works to ensure they allow for such requirements when quoting.

Workers engaged in asbestos removal work of any asbestos containing materials will not be issued with a permit to work unless they are a competent person for asbestos containing materials type removal work (e.g. licensed to perform asbestos removal work issued by Safework NSW).

3. Contamination identified at the site

3.1 Asbestos register and asbestos containing building materials

An asbestos register for the site and information pertaining to asbestos containing building materials is provided within the AMP in Appendix B of this LEMP.

3.2 Asbestos in soil and sediment

Various areas of the site contain asbestos in soil concentrations above applicable criteria at the site surface, near surface and at depth including findings of ACM, asbestos fines (AF) and fibrous asbestos (FA). A location plan of the site showing areas of known asbestos in soil contamination is provided as Figure 3, 4 and 5 in Appendix A.

Further information is provided within the GHD Contamination Assessment reports (GHD 2022a and 2022b) and the asbestos register provided within the AMP. It should be noted that asbestos in soil contamination at the site has not been fully delineated, as outlined in GHD 2022a and 2022b.

3.3 Surface Water and groundwater

Previous surface water sampling (GHD 2022a) and MCC monitoring results do not indicate any significant contamination of surface water in the reservoir has occurred from contamination on the site (e.g. attributable to historical land use), however the water quality is not considered suitable for recreational use involving exposure to the water (e.g. swimming or wading), primarily due to biological contaminants. Current restrictions to use (i.e. no swimming or fishing) should continue, however the water quality is not considered to affect the suitability of the site for other recreational (non-water-based) land use.

Recent investigations (GHD 2022b) indicate groundwater does not appear to have been impacted by former industrial use of the site. Metals concentrations exceeding groundwater investigation levels are considered likely to be representative of natural groundwater concentrations. It should be noted that groundwater has not been assessed for any particular use and should not be extracted for use without assessment for that particular purpose.

3.4 Conceptual site model

The LTEMP has been developed to outline the procedures to protect human health and the environment from contamination during on-going occupation and maintenance at the sites.

Based on the previous investigations undertaken at the site as described in GHD 2022a and GHD 2022e, the identified contaminants of concern (i.e. presenting a potential unacceptable risk to human health or the environment for continued recreational use of the site) are limited to the following:

– Asbestos contamination in soils
– Metals in groundwater
– Metals, biological contaminants and nutrients in surface water (reservoir)

Based on the contamination identified at the site and the CSM presented below, this LTEMP has been developed to focus primarily on the identified asbestos contamination in soils at the site, but also includes management of potential exposure to contaminants in surface water.

3.4.1 Source-pathway-receptor CSM

A CSM based on the findings of the previous investigations is presented in Table 3.1. This CSM will be updated in revised versions of the LTEMP, as various stages of remediation are completed.

Table 3.1 Conceptual site model

Sources	Pathways	Receptors	Pathway Present?
– Contaminated soils on site including: – impacts from former electrical generation activities, water treatment and hazardous building materials, including ACM – Volatile organic compounds (VOCs) associated with former site use, including fuel tanks. – Contaminants associated with coal use, disposal and storage. – Potential contaminants associated with rail spur relating to use of pesticides / herbicides and asbestos from train braking – Off-site sources including adjacent former Abattoir	Inhalation of contaminated particles/dust/ asbestos fibres	On or offsite intrusive maintenance workers	<u>Industrial use area</u> Possible for recreational users and maintenance workers –asbestos debris and friable asbestos have been identified in soils within the former power station footprint, in the lawn east of the pump house and the "beach" area. Although there is grass cover over the main areas of asbestos contaminated soils in the pump house and former power station areas, some other areas particularly the beach) were observed with ACM on the soil surface and there is potential for recreational users and maintenance workers to come in contact with impacted soils through direct exposure and inhalation if soils are disturbed. Friable asbestos poses a higher risk as it is not bound by a matrix. Access to these areas should be restricted on an interim basis, and the areas should be remediated to avoid potential exposure during future land use. <u>Remaining site area</u> Unlikely – only isolated instances of asbestos impact to soils were observed in remaining areas of the site, and the likelihood of historical sources of impact is much lower. It is considered these areas can be managed under the provisions of a long-term EMP, without active remediation.
		Recreational users	
	Direct contact (including ingestion and dermal exposure) with contaminated soil (chemical contaminants)	On or offsite intrusive maintenance workers,	Unlikely – No soil samples reported concentrations above the HIL/HSL. Soil sampling has been limited in some portions of the site, however the general absence of contamination across the site, and absence of historical sources of impact outside the industrial use area indicates the potential for undiscovered contamination is low.
		Recreational users	
		Offsite receptors	Unlikely – No significant contamination was identified near site boundaries and off-site receptors are unlikely to come into contact with onsite soils.
		Ecological receptors	Unlikely– Soil samples reported TRH F3 fraction concentrations above the ESL during the investigation. TRH concentrations are likely linked to coal chitter that has been used as fill at the Site.
Contaminated surface water including: – Contaminants potentially associated with the former power station or water treatment – Off-site sources including adjacent former Abattoir	Direct contact (including ingestion and dermal exposure) with contaminated water	Recreational users and visitors including unauthorised use for fishing	Unlikely – Whilst contamination exceeding recreational exposure criteria in the reservoir water was identified in review of the MCC surface water monthly sampling data, there is no known current use of surface water and groundwater at the site with the exception of passive use of the reservoir e.g. for bird watching, model boats and potential for unauthorised uses such as fishing. Restrictions should remain in place.
		On or offsite intrusive maintenance workers	
		Ecological receptors	Unlikely – while metals concentrations exceeded aquatic guidelines in the former cooling water channel, this water was stagnant and the channel heavily vegetated, and concentrations did not exceed aquatic guidelines in the reservoir.

Sources	Pathways	Receptors	Pathway Present?
Contaminated ground water including: – Per- and poly-fluoroalkyl substances (PFAS) potentially associated with the former power station – Soil contaminants associated with historical use of the site	Leaching of contaminants into groundwater Extraction of groundwater for use Migration of groundwater to ecological receptors	On or offsite intrusive maintenance workers Recreational users and visitors Ecological receptors	Unlikely. Groundwater is not extracted for use at the site, and nearby residential properties have reticulated water. Groundwater is relatively deep and is unlikely to be encountered during excavations at the site. No significant impact to groundwater was apparent, and metals concentrations exceeding GILs are considered likely to be representative of natural groundwater conditions.
Contaminated sediments	Inhalation of contaminated particles/dust/ asbestos fibres	On or offsite intrusive maintenance workers Recreational users and visitors	Possible – asbestos has been identified in sediments adjoining the beach area. If water levels in the reservoir drop and sediments become exposed, or if sediments are removed and dried out, there is a potential for airborne fibres.
	Direct contact (including ingestion and dermal exposure) with contaminated sediments	Recreational users and visitors	Unlikely – exposure to contaminated sediments unlikely by users of community area, given restrictions to active use of the reservoir and thick vegetation present in the former cooling water channel. Sediments localised to reservoir and former cooling water channel and will not move off site.
		On or offsite intrusive maintenance workers	Unlikely – sediment concentrations were below the SQGV high value for metals and TRH following silica gel clean up analysis.
		Ecological receptors	Unlikely– Sediment exceedances were below the SQGV high value criteria. Sediment mobilisation into the surface water body is unlikely and the reservoir is not connected to offsite receptors.

3.4.2 Complete SPR Linkages

The identified SPR linkages are considered to be complete or partially complete for the following scenarios:

– Concentrations of asbestos in soil in the former industrial areas of the site could lead to inhalation of harmful concentrations of airborne asbestos fibres through disturbance during current and future use of the site by receptors including:
  - Recreational users
  - Maintenance workers
– Should the water level in the reservoir drop and sediments be exposed and dry out, concentrations of asbestos in sediments could lead to inhalation of harmful concentrations of airborne asbestos fibres to current and future users of the site including:
  - Recreational users
  - Maintenance workers
– Concentrations of biological contaminants within the surface water within the reservoir could lead to harmful direct contact (including ingestion and dermal exposure) with surface water by receptors including:
  - Recreational users
  - Maintenance workers

4. Asbestos in soil and sediment management approach

The following sub-sections outline the level of management required for the respective areas of the site, based on the risk presented by the identified or potential presence of asbestos in the areas. All maintenance or intrusive activities in any areas of the site (except for validated areas) are subject to the management procedures described in the subsequent sections of this LTEMP, relevant to the type of activities being undertaken.

4.1 Asbestos exclusion zones

Areas where asbestos in soils (comprising bonded and/or friable asbestos containing materials) has been identified at concentrations exceeding HSLs for recreational land use, either on or beneath the site surface, and where no capping is in place, are to remain fenced and excluded from unauthorised access. Current exclusion zones are shown on Figure 6 in Appendix A.

Access to these areas and any works carried out within these areas are subject to the asbestos control measures described in Section 6 of this LTEMP.

Access to exclusion zones is to only be made available to personnel who are appropriately trained for the activities they will be undertaking and are inducted into the requirements of this LTEMP.

Regular inspections of the integrity of fencing and exclusion measures are to be undertaken in accordance with Section 7 of the LTEMP.

4.2 Capped areas

Areas where potential asbestos contaminated soils have been appropriately capped and validated may be accessed without any specific management requirements or asbestos control measures.

No intrusive works are to be undertaken in these areas, except where undertaken in accordance with the procedures described in Section 6 of the LTEMP.

Regular inspections of the site condition and integrity of capping materials are to be undertaken in in accordance with Section 6 of the LTEMP.

Stage 1 areas, which are to be capped prior to reopening of the site to the public, are shown on Figure 6 in Appendix A. Areas which will be capped in subsequent stages of remediation (indicative areas are shown in Figure 7 in Appendix A) will be identified by survey and referenced in updated versions of the LTEMP.

4.3 Broader site areas

Investigations have identified only isolated instances of asbestos contamination in the broader areas of the site (i.e. areas other than those described above). A weight of evidence indicates that the risk of exposure to airborne asbestos fibres from potential soil contamination in these broader site areas (including identified asbestos in soil near the former workmen's cottages) is considered low for normal use and maintenance of the site, and it is considered these broader areas of the site are suitable for recreational use subject to ongoing management under the provisions of the AMP in Appendix B, including provision of an unexpected finds protocol to address any contamination that may be identified during future use of the site.

Should land use for broader site areas change from normal recreational use, such as for holding events, the appropriateness of management approach to management of those areas must be reassessed.

Any asbestos encountered during use or maintenance of the broader site areas must be removed and documented in accordance with the procedures in Section 6.4 of this LTEMP, and the provisions of the LTEMP for management of the particular area reviewed to consider whether existing management provisions are adequate or if update of the LTEMP is required.

4.4 Validated areas

Areas which have been remediated and validated as suitable for proposed use from a contamination perspective, may be accessed without any specific management requirements or asbestos control measures.

Unexpected finds procedures continue to apply to all site areas, including validated areas, as site conditions may change over time, including introduction of contamination to previously validated areas through improper site use or disposal activities.

No areas have been validated to date. Areas which may be validated in subsequent stages of remediation will be identified by survey and referenced in updated versions of the LTEMP.

5. Management requirements

5.1 Preliminaries

A number of preliminary or ‘administrative’ controls are required by a person conducting a business or undertaking (PCBU) to address legislative requirements to do with asbestos management in the workplace.

Preliminary controls as outlined below are provided within Section 3 and 4 of the AMP in Appendix B:

– Contractor site induction and provision of an asbestos register
– Re-inspections
– Record keeping
– Labelling/ signage
– Workplace exposure standards
– Asbestos awareness training and information
– Safe work practices and need for additional assessment
– Personal protective equipment
– Health surveillance
– Additional precautionary testing
– Planning of maintenance, refurbishment or demolition works
– Principles of asbestos management

5.2 Site maintenance activities

Site maintenance activities are described within the AMP in Appendix B. Until such time as long-term remediation of asbestos in soil is carried out at the site, interim control measures shall consist of:

– Maintaining restricted access to areas identified to contain surficial or near surficial asbestos in soil.
– Maintaining ground cover including long grass within areas identified to contain surficial or near surficial asbestos in soil.
– Where adequate ground cover is not present, carry out interim management measures such as soil stabilisation or interim capping.
– Updating SWMS and other procedures associated with the maintenance and management of the site with the findings of the assessment report and this asbestos management plan. Site maintenance activities should not disturb the ground surface, soils known to contain asbestos or suspected asbestos containing materials.
– Engage a competent person to undertake regular inspections, at least quarterly, following significant weather events, incidents or as otherwise required at the site to reassess risk and appropriateness of interim control measures.
– Providing training and awareness of the asbestos in soil hazard at the site to Council staff, contractors and other site users (where appropriate).

Any significant disturbance of the site such as for remediation or redevelopment, shall be subject to specific management requirements developed for the particular works.

5.3 Surface water management

Previous surface water sampling (GHD 2022a) and MCC monitoring results do not indicate any significant contamination of surface water in the reservoir has occurred from contamination on the site (e.g. attributable to historical land use), however the water quality is not considered suitable for recreational use involving exposure to the water (e.g. swimming or wading), primarily due to biological contaminants.

Current restrictions to use (i.e. no swimming or fishing) should continue, via site signage and awareness of controls provided within site induction.

5.4 Heritage considerations

As noted in [redacted], the main legislation governing heritage, including relics, is the NSW Heritage Act 1977. The Walka Water Works is listed on the NSW State Heritage Register as an item of cultural significance. This means the item is of Stage heritage significance and warrants conservation into the future for the State and is managed under s.57 of the NSW Heritage Act. According to s.57, any potential disturbance to the heritage infrastructure is prohibited except pursuant to an approval granted under Subdivision 1 of Division 3.

According to [redacted], impacts within the identified curtilage of the Walka Water Works SHR area which may lead to the disturbance and removal of relics require an approval from the Heritage Council of NSW under s.60 of the Heritage Act 1977. This requires the writing of an Archaeological Research Design for the application, specifying the methodology to undertake any excavation and field recording, and identifying suitably qualified archaeologists to undertake this work.

The management of site heritage will need to be considered when undertaking any activities that may result in the destruction or disturbance of heritage infrastructure.

6. Management of asbestos in soil and sediment

6.1 Management procedures

A number of procedures have been provided to guide the implementation of this LTEMP. The key procedures are listed in Table 6.1 and are provided as part of the AMP in Appendix B.

Table 6.1 Asbestos management procedures

Procedure Title	Number
Signage	01
Capping maintenance	02
Interim grounds maintenance works	03
Subsurface works (breach of capping)	04
Repair of capping material	05
Site inspections	06
Reporting inspections	07
Waste storage	08
Unexpected finds	09
Non-compliance with AMP	10
Record keeping	11
Review of AMP implementation	12
Review of AMP – site and/or land ownership changes	13

6.2 Removal of asbestos in structures

Removal of asbestos in structures is not specifically covered in this LTEMP but is outlined within the site AMP included in Appendix B.

6.3 Remediation of asbestos in soil

The preferred remedial option and long-term management approach to mitigate risk associated with the identified asbestos in soil at the site is documented within GHD RAP, 'Walka Water Works, Remediation Action Plan' (GHD 2022c). The remediation approach is inclusive of the following requirements:

– Excavation of impacted soils
– Capping and containment of impacted soils

Workplace health and safety and environmental management requirements during remediation are outlined within the RAP (GHD 2022c).

6.3.1 Asbestos in soil remediation staging

Council's preferred remediation staging approach is shown on Figures 6 and 7 provided within Appendix A.

The remediation staging outlines six stages, to be delivered in sequence including the following:

– Stage 1- installation of interim control measures to reopen the site (note this stage is considered interim management as discussed in Section 6.3.2).
– Stage 2- Remediation of pump house lawn.

– Stage 3- Remediation of car park and associated areas.
– Stage 4- Remediation of Power station lawn.
– Stage 5a/b - Remediation of Beach/Mini Train Station area. (Note, as discussed in the RAP, it is considered Stage 5a requires active remediation, but Stage 5b can be managed by way of the LTEMP).
– Stage 6- Broader areas of historic industrial site. (As discussed in the RAP, the former water treatment area will be used for containment of material excavated from Stage 2 through to Stage 5, while the remaining areas of the broader site can be managed by way of the LTEMP).

It is understood the site will be required to be suitable for opening to the public at periods of time between stages of remediation.

6.3.2 Ongoing interim management of asbestos in soil and sediment

6.3.2.1 Interim management prior to remediation works commencing

Management of the site is required prior to commencement of nominated remediation activities, to minimise the potential for additional contamination to occur from activities such as illegal dumping, or for changes to site characteristics to occur from on-site remediation activities in other areas of the site and to prevent inadvertent harmful exposure to site contaminants.

Until such time as long-term remediation of asbestos in soil is carried out at the site, interim control measures shall consist of:

– Maintaining restricted access to areas identified to contain surficial or near surficial asbestos in soil.
– Maintaining ground cover including long grass within areas identified to contain surficial or near surficial asbestos in soil.
– Where adequate ground cover is not present, carry out interim management measures such as soil stabilisation or interim capping.
– Updating SWMS and other procedures associated with the maintenance and management of the site with the findings of the assessment report and this asbestos management plan. Site maintenance activities should not disturb the ground surface, soils known to contain asbestos or suspected asbestos containing materials.
– Engage a competent person to undertake regular inspections, at least quarterly, following significant weather events, incidents or as otherwise required at the site to reassess risk and appropriateness of interim control measures using the applicable site inspection checklists provided in Appendix B of the AMP.
– The water level within the reservoir should be maintained to limit exposure to asbestos contamination within sediments adjacent to the beach area. Should the water level become lower prior to remediation, additional management and/or remediation may be required in this area.
– Providing training and awareness of the asbestos in soil hazard at the site to Council staff, contractors and other site users (where appropriate).

Should illegal dumping or other incidents occur, an assessment should be made as to whether contamination can be adequately managed on site until the commencement of remediation, or whether immediate remediation is required to prevent the spread of contamination. The relevant procedures outlined in this LTEMP and/or unexpected finds protocol should be followed if any remediation is required.

6.3.2.2 Stage 1 interim management works

As noted in Section 1.2, the site has been closed to public access. Council's intent is to open selected areas of the site to the public under interim management measures, in line with "Stage 1" as indicated on Figure 6 provided within Appendix A, prior to the commencement of remediation works described in Section 6.3.1. Interim management requirements for this stage of access will comprise the following:

– Installation and maintenance of appropriate fencing and signage to restrict access to hazardous areas (asbestos exclusion zones).
– Detailed inspection and asbestos clearance of areas subject to interim capping and re-opened to public access by an independent licensed asbestos assessor from the environmental consultant.

– Completion of representative background air monitoring[2] for a period of one week (5 days) prior to, and for a period of one week (6 days, including Saturday morning park run) initially during periods of public access to assess the effectiveness of the asbestos control measures in place at the site (i.e. temporary Stage 1 capping, exclusion zones). Air monitoring is required to be conducted by a licensed asbestos assessor in accordance with NOHSC Guidance Note on the Membrane Filter Method for Estimating Method Airborne Asbestos Fibres 2nd Edition [NOHSC:3003 (2005)]. Monitoring will be carried out at five locations as shown on Figure 6 in Appendix A. (Locations may change in consultation with Council due to weather conditions or other factors).
– We understand Council will undertake periodic maintenance (e.g. mowing, weed control) including within the asbestos exclusion zones, to manage safety risks (e.g. snakes, grass fire) associated with public use of the site. The site (or as a minimum, extents adjoining the maintenance areas) should be closed to the public during maintenance. Control air monitoring should be undertaken during the maintenance works of each exclusion zone, in accordance with the above-mentioned procedures.
– Maintenance is considered to represent a “worst case” circumstance for potential generation of airborne asbestos fibres, however additional air monitoring may be required during prolonged periods of dry weather and/or site activities resulting in visibly dusty conditions, if no maintenance monitoring occurs during such conditions (and if such conditions occur).
– The results of background air monitoring, maintenance monitoring or additional monitoring should be compared with the Air monitoring action levels provided in Table 2.2 of the AMP in Appendix B. Should concentrations exceed the Action Level of 0.01 fibres/ml, as per the AMP control measures should reviewed and the situation re-assessed before the potentially affected area(s) are re-opened to the public. Any filters with fibre counts exceeding the action level may be analysed by Scanning Electron Microscopy (SEM) or similar methodology as part of the assessment to confirm whether fibre counts were attributable to asbestos or to other fibres. Air monitoring should be repeated for a week of results less than the action level of 0.01 fibres/ml prior to re-opening the potentially affected area(s).
– Inspection of interim management measures for implementation and effectiveness in line with the inspection checklist templates provided within Appendix B of the AMP.

6.3.2.3 Interim management between remediation stages

As noted above, the site is proposed to be reopened to the public at times between proposed remediation stages. Interim management between remediation stages, and subsequent public access to the site at that time would generally be contingent on, and consist of the following:

– Installation and maintenance of appropriate fencing and signage to restrict access to hazardous areas (asbestos exclusion zones).
– Suitable control airborne fibre monitoring results conducted during the applicable stage of remediation. Control monitoring would be required daily during periods of remediation. Air monitoring is required to be conducted by a licensed asbestos assessor independent from the remediation contractor. Remediation activities are expected to constitute “worst case” circumstance for potential generation of airborne asbestos fibres, and monitoring results from the remediation period should be reviewed to assess the need for further monitoring prior to and following re-opening as discussed below.
– Suitable visual clearance inspection and clearance air monitoring results obtained from clearances of remediation areas and applicable transit routes at completion of the applicable stage of remediation. Clearance inspections are required to be conducted by a licensed asbestos assessor from the environmental consultant.
– Subject to review of air monitoring results from the remediation period, conduct representative background air monitoring and/or monitoring during site maintenance works as described above for the Stage 1 interim management works. Decisions on the basis of any additional monitoring would be as described in Section 6.3.2.2 above.

In addition, ongoing management of the site between remediation stages should be conducted in accordance with broader management approaches outlined within this LTEMP.

[2] It should be noted that air monitoring in accordance with WHS requirements is intended for comparison with workplace exposure standards, which will not necessarily provide an assessment of exposure risk to the public under recreational land use scenarios.

6.4 Documentation and removal of incidental ACM

Hand picking of any observed incidental fragments (as and where required) must be completed by a licenced asbestos removal contractor (if the asbestos material is friable or involves more than 10 m^2 of bonded ACM) or competent person (for less than 10 m^2 of bonded ACM).

Where ACM is identified/collected during hand picking, the location, condition and weights of asbestos should be recorded to assist in evaluating whether there is any change to the risk profile in the area of the site where the ACM is identified, and to update the LTEMP if required. The site specific asbestos register should be updated with the finding and subsequent incidental removal.

Hand picking should consist of at least two passes of the picking area made with 90 degree direction change between each and using a grid pattern to enable thorough coverage of the area. If ACM is in the form of non-friable fragments which are partially buried, surface raking of the top 100 mm of soil should be undertaken to disturb the subsurface soils and remove any partially buried fragments.

– ACM should not be further damaged or distributed by the process.
– Percent ACM contamination may be calculated using 1 cm as soil depth for hand picking.
– A final visual inspection should not detect surface ACM.
– The affected areas should be validated to confirm the removal of the ACM

Any asbestos materials found and recovered will be removed and handled in accordance with *How to Safely Remove Asbestos – Code of Practice*, SafeWork NSW 2019, classified in accordance with the NSW EPA *Waste Classification Guidelines, Part 1: Classifying Waste* (NSW EPA 2014), and disposed of offsite to a facility licenced to receive asbestos waste, or contained within on-site containment cells.

6.5 Unexpected contamination finds

Unexpected contamination could be encountered at any areas of the sites which have not been investigated (including between sampling locations) and/or remediated and may include the following:

– Unexpected areas of asbestos containing materials
– Other types of unexpected contamination

A competent person must be engaged to undertaken appropriate assessment of unexpected contamination that may be encountered, and to recommend necessary management requirements (if any) prior to the continuation of works in the affected area. A preliminary unexpected finds protocol (UFP) has been developed for the site and is included in Appendix C.

6.6 Incident response

It is recommended that workers and recreational users be provided contact information for the Site Health and Safety Manager in the event of an asbestos related query or emergency situation. The contact should be available during site hours of 7:00 am – 5:00 pm.

When asbestos materials present at the site are inadvertently disturbed the following procedures must be completed:

– Stop work immediately and evacuate if necessary. Site procedures for evacuation are to be conveyed to contractors and employees during site inductions.
– Immediately notify the nominated site emergency contact on the location and nature of the incident.
– If evacuation is not required, isolate the area and restrict access where possible. Ensure any exhaust extraction, air conditioning systems, fans etc are controlled. Secure the area with asbestos warning tape or barricades.

– Seek advice/response by a Competent Person experienced with asbestos management and this LTEMP for clean-up or monitoring procedures as required. Emergency response is to be in accordance with the requirements of Commonwealth, State legislation, national Standards and Codes of Practice. These may include:
    - Sampling of suspect materials to determine if asbestos present.
    - Sealing or encapsulation of the affected area.
    - Clean up of affected area.
    - Repairs to damaged ACM (sealant or repairs).
    - Inspection of affected area to ensure removal/clean up, air monitoring as required, waste disposal as required.

A competent person must be engaged to undertaken appropriate assessmentof unexpected contamination that may be encountered, and to recommend necessary management requirements (if any) prior to the continuation of works in the affected area.

7. Limitations

This long term environmental management plan ("report"):

1. has been prepared by GHD for Maitland City Council;
2. may be used by and relied on by Maitland City Council;
3. may be used by and provided to the appointed site auditor, the EPA and the relevant planning authority for the purpose of meeting statutory obligations in accordance with the relevant provisions of the Contaminated Land Management Act 1997 or the Environment Planning and Assessment Act 1979;
4. must not be used by, or relied on by any person other than those listed in 1 – 3 above without the prior written consent of GHD and subject always to the next paragraph; and
5. may be used only for the purpose agreed between GHD and Maitland City Council as set out in Section 1.1 of this report (and must not be used for any other purpose).

GHD otherwise disclaims responsibility to any person other than Maitland City Council arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report. The services were undertaken in accordance with current profession practice and by reference to relevant environmental regulatory authority and industry standards, guidelines and assessment criteria in existence as at the date of this report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described throughout this report. GHD disclaims liability arising from any of the assumptions being incorrect.

The opinions, conclusions and any recommendations in this report are based on information obtained from, and testing undertaken at or in connection with, specific sample points. Site conditions at other parts of the Site may be different from the site conditions found at the specific sample points. Investigations undertaken in respect of this report were constrained by the particular site conditions, such as the location of buildings, heritage constraints, services and vegetation. As a result, not all relevant site features and conditions may have been identified in this report.

Investigations undertaken in respect to this report are not intended to address physical hazards such as subsidence, structures and water bodies. GHD does not accept responsibility arising from, or in connection with physical hazards or structural conditions.

Site conditions (including the presence of hazardous substances and/or site contamination) may change after the date of this report. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this report if the site conditions change.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, GHD Pty Ltd reserves the right to review the report in the context of the additional information.

GHD has prepared this report on the basis of information provided by Maitland City Council and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

Except as otherwise expressly stated in this report, GHD makes no warranty, statement or representation of any kind concerning the suitability of the site for any purpose or the permissibility of any use, development or re-development of the site.

These Disclaimers should be read in conjunction with the entire report and no excerpts are taken to be representative of the findings of this report.

8. References

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Appendices

Appendix A

Figures

Paper Size ISO A4

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Metres

Map Projection: Transverse Mercator
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Grid: GDA 1994 MGA Zone 56

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GHD

Maitland City Council
Walka Water Works – Scobies Lane, Oakhampton Heights NSW
Long Term Environmental Management Plan

Project No. **12553096**
Revision No. **1**
Date **10/02/2022**

Site locality

FIGURE 1

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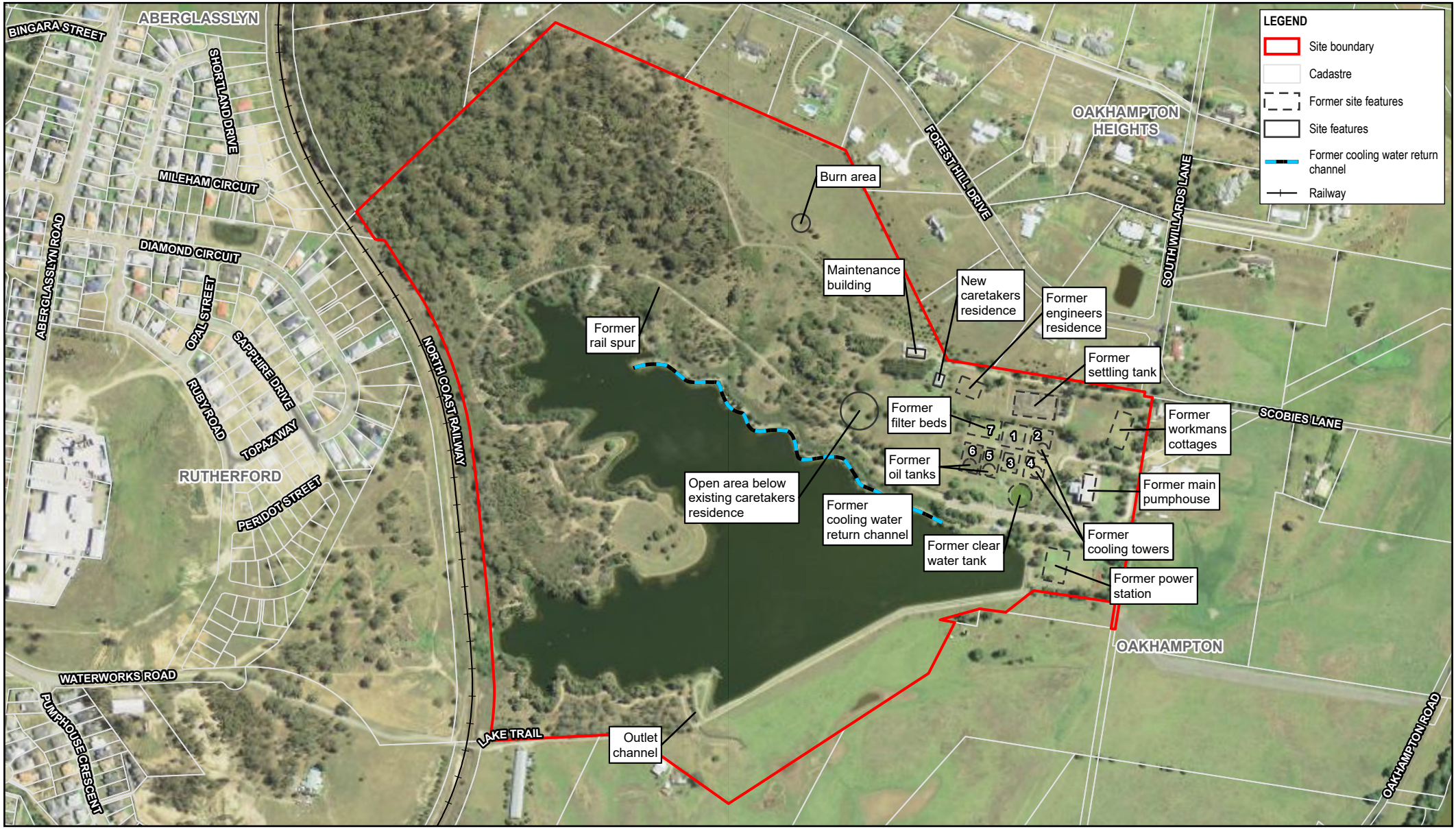

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Grid: GDA 1994 MGA Zone 56

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GHD

Maitland City Council
Walka Water Works – Scobies Lane, Oakhampton Heights NSW
Long Term Environmental Management Plan

Project No. **12553096**
Revision No. **1**
Date **10/02/2022**

Site features

FIGURE 2

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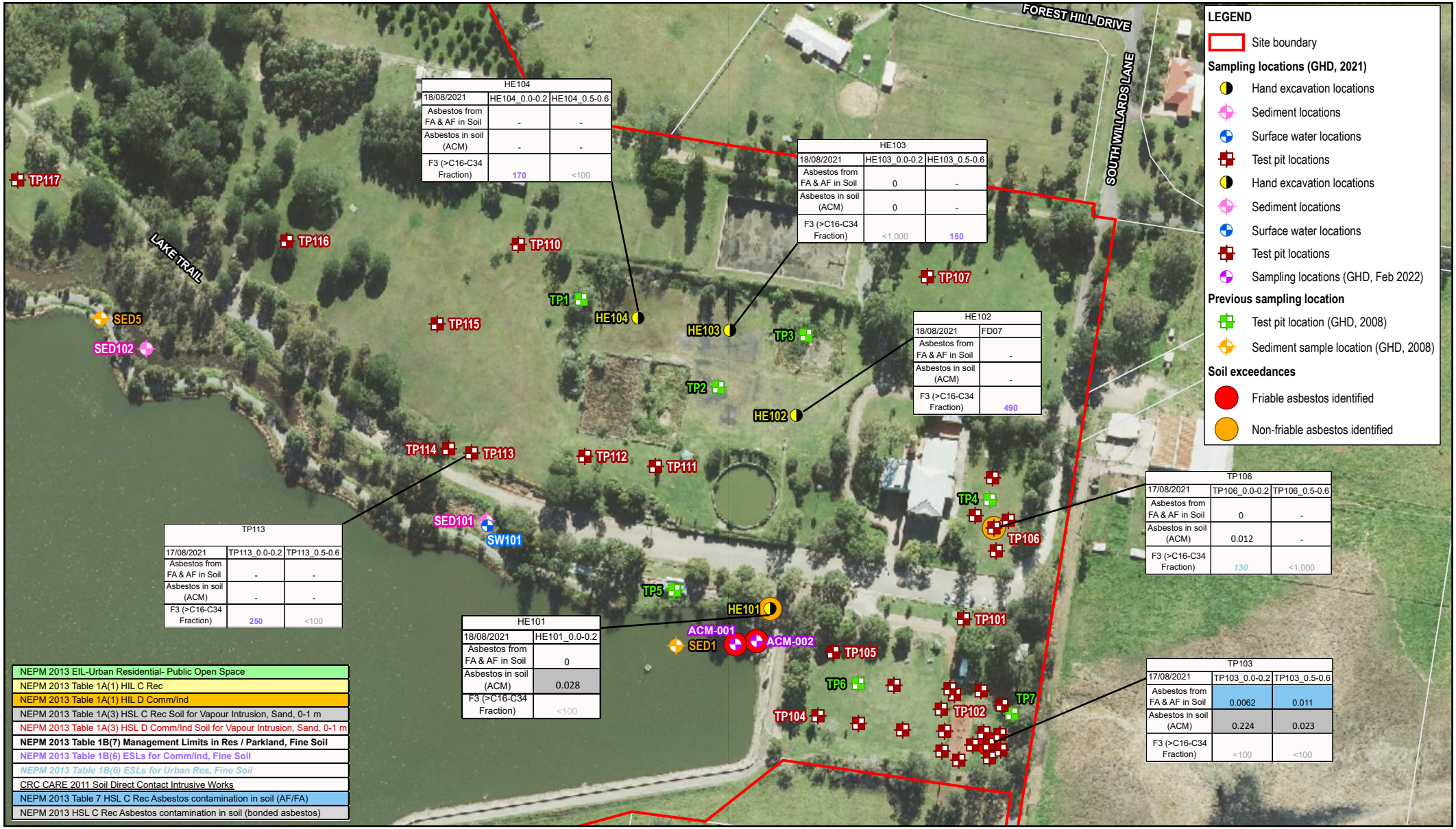

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Grid: GDA 1994 MGA Zone 56

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GHD

Maitland City Council
Walka Water Works – Scobies Lane, Oakhampton Heights NSW
Long Term Environmental Management Plan

Soil exceedances (August 2021)

Project No. **12553096**
Revision No. **1**
Date **10/02/2022**

FIGURE 3

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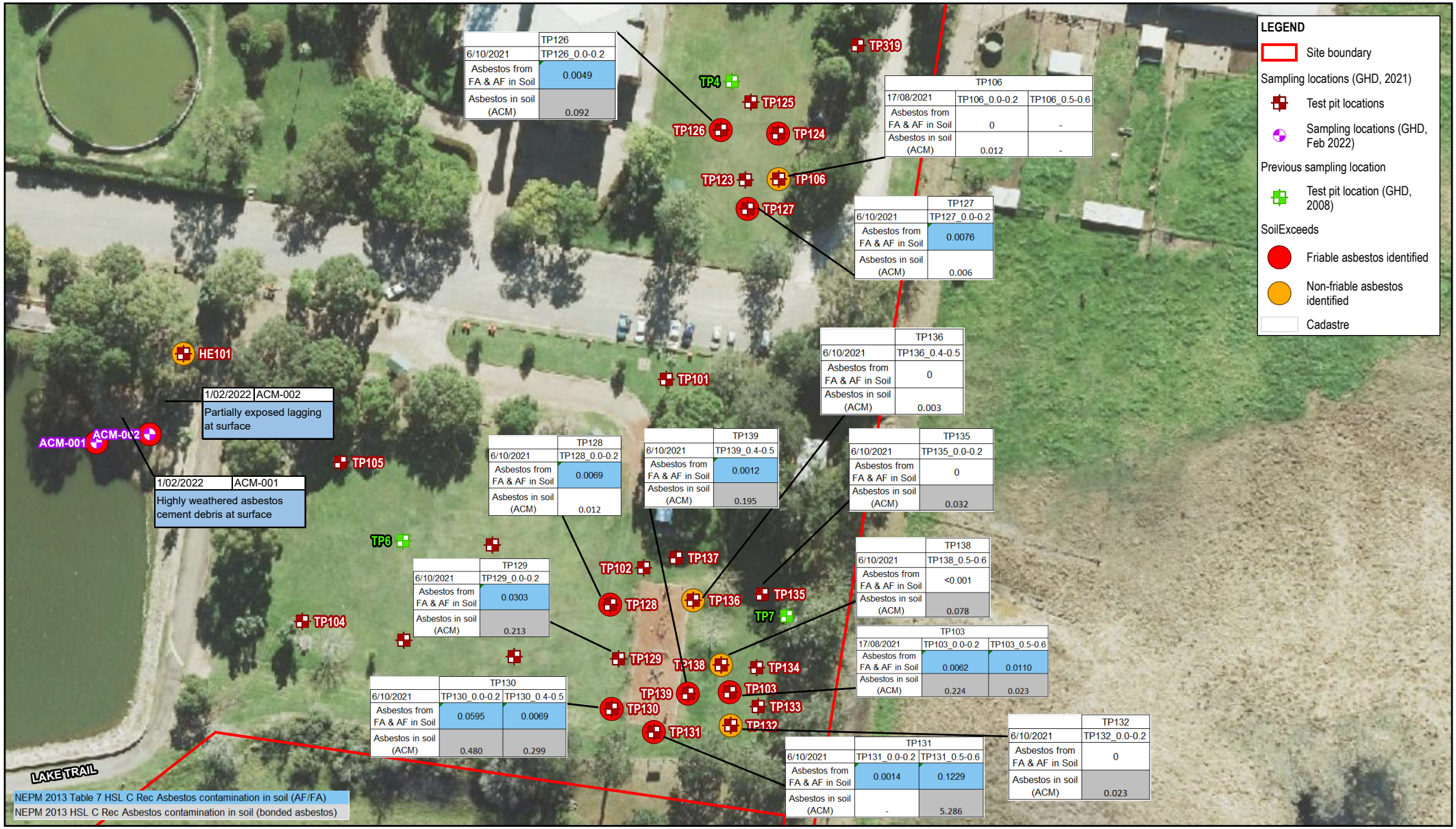

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Grid: GDA 1994 MGA Zone 56

Maitland City Council
Walka Water Works – Scobies Lane, Oakhampton Heights NSW
Long Term Environmental Management Plan

Project No. **12553096**
Revision No. **1**
Date **10/02/2022**

Soil exceedances (October 2021)

FIGURE 4

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Maitland City Council
Walka Water Works – Scobies Lane, Oakhampton Heights NSW
Long Term Environmental Management Plan

Proposed Remediation Stage 1

Project No. **12553096**
Revision No. **0**
Date **07/10/2022**

FIGURE 6

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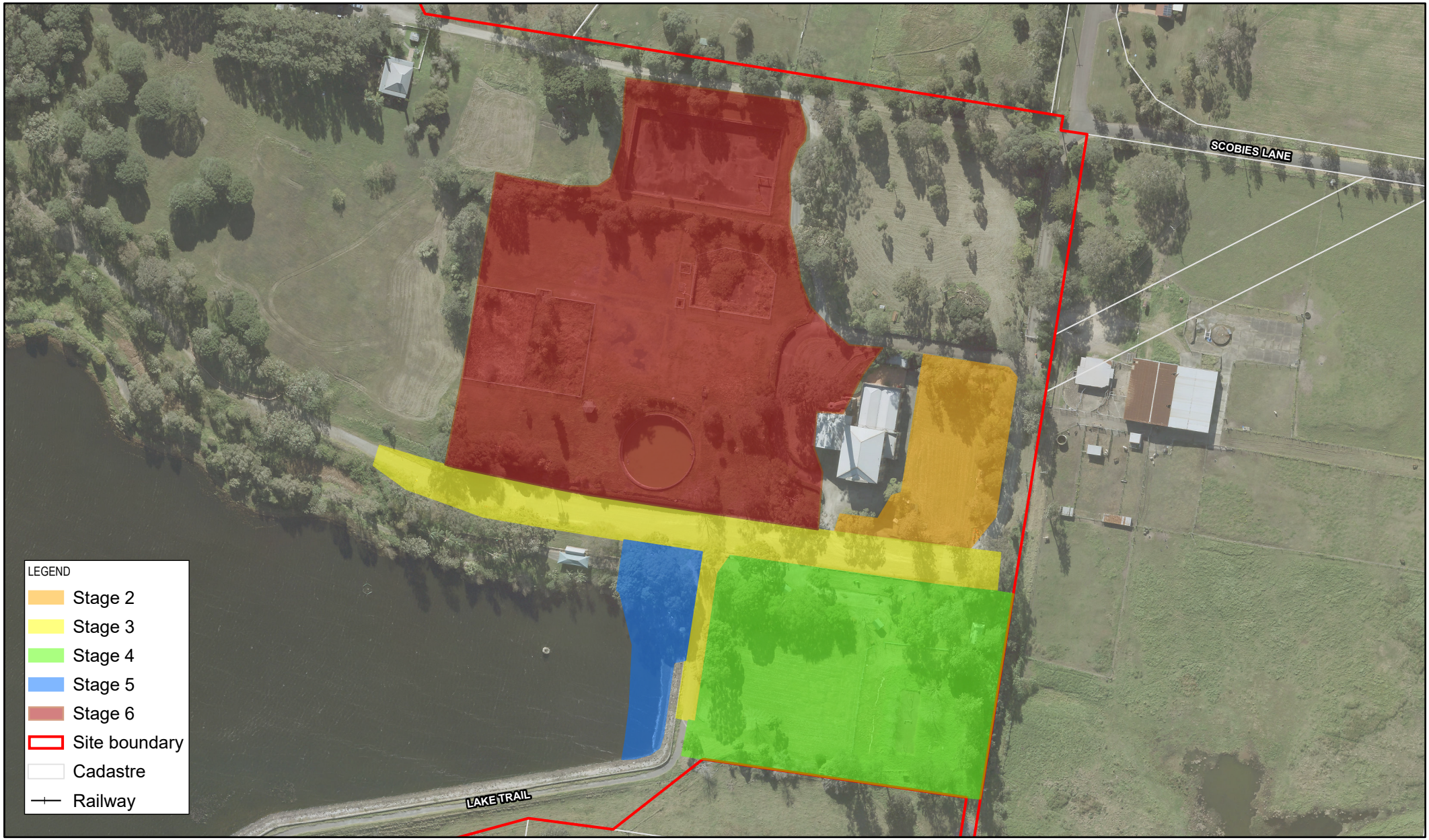

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GHD

Maitland City Council
Walka Water Works – Scobies Lane,
Oakhampton Heights NSW
Long Term Environmental Management Plan

Proposed Remediation Stage 2-6

Project No. **12553096**
Revision No. **0**
Date **07/10/2022**

FIGURE 7

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Appendix B

Asbestos Management Plan

Asbestos Management Plan

Walka Water Works

Maitland City Council

10 October 2022

→ **The Power of Commitment**

GHD Pty Ltd | ABN 39 008 488 373
GHD Tower, Level 3, 24 Honeysuckle Drive
Newcastle, New South Wales 2300, Australia
T +61 2 4979 9999 | **F** +61 2 9475 0725 | **E** ntlmail@ghd.com | **ghd.com**

Document status

Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S4	0	[redacted]					06/05/22
S4	1						17/06/22
S4	2						10/10/2022

Contents

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1. Introduction

1.1 Purpose of this report

GHD Pty Ltd (GHD) was commissioned by Maitland City Council (Council) to prepare an Asbestos Management Plan (AMP) to address the risks associated with asbestos containing materials (ACM) identified at the Walka Water Works located off Scobies Lane, Oakhampton Heights NSW (the Site).

A location plan of the site showing structures and areas of known asbestos in soil contamination is provided as Figure 1, Appendix A.

This AMP is required across the entire site to provide procedures for appropriately identifying, assessing and managing asbestos containing building materials and asbestos in soils which could be encountered during routine occupation, construction or maintenance works at the site. The aim of the procedures outlined in this AMP is to protect human health during routine occupation, construction or maintenance works at the site and to maintain the suitability at the site (from a contamination and hazardous building material perspective) for ongoing use.

1.2 Background

GHD undertook a reassessment of the site in 2021 and 2022 (GHD Contamination Assessment reports, February and August 2022) which identified asbestos containing materials within structures at the site and within surficial soils, near surficial soils and at depth in various areas. A number of areas were considered inaccessible during the assessment undertaken.

The management of asbestos in soils at the site is primarily addressed within the Long Term Environmental Management Plan (LTEMP) GHD Ref: 12553096-REP_Walka Water Works LTEMP. This AMP is designed to primarily address the management of asbestos containing building materials at the site.

1.3 Site identification

Site information and environmental setting information is summarised below in Table 1.1.

Table 1.1 Site information and environmental setting

Item	Description
Site Owner	Maitland City Council
Site Address	Scobies Lane, Oakhampton Heights NSW
Lot/DP	Lot 445 DP 722263
Local Government Area	Maitland City Council
Site Area	Approximately 64 ha For the purpose of this AMP the Walka Water Works portion of the site is considered to be from the former power station in the eastern corner extending to the caretaker's residence in the north and including the reservoir.
Current Zoning	RE1 – Public Recreation
Previous Land Use	Former water treatment facility, pumping station and power station
Site Location and Layout Plan	Refer to Figure 1, Appendix A

1.4 Objectives

This AMP has been developed to outline the procedures to control potential exposure to receptors (i.e. to manage risks to human health) from identified ACM at the site. The strategy of the AMP has been based on the findings of GHD's assessment reports (GHD 2022a and 2022b).

The objectives of this AMP are therefore to:

– Document the locations of known ACM at the site.
– Describe the management procedures for the site to control potential exposure to areas of known or unexpected contamination.
– Provide a system for the implementation of the minimum procedures/strategies for managing risk associated with asbestos at the site.
– Provide necessary procedures to be followed if disturbing asbestos during site management.

This AMP has been developed in line with the current *Work Health and Safety Act 2011* and Regulation, relevant Codes of Practice and Standards as a means to comply with asbestos prohibition and prevent or minimise exposure to airborne asbestos hazards.

This AMP relates solely to the management of asbestos currently identified at the site. It should be referred to regularly and in accordance with legislative requirements, reviewed, updated and maintained by Council in the following circumstances:

– There is a review of the asbestos register or a control measure.
– The plan is no longer adequate for managing asbestos contamination at the site.
– A regulator or health and safety representative requests a review.
– At least once every 5 years.

This AMP is not intended to replace or supersede other health and safety plans in place at the site.This AMP should be considered as a supplement to these documents and is particularly focused on asbestos contamination issues present at the site.

No one section or part of a section should be taken as representing the findings of this AMP and it should be read in its entirety, including appendices and attachments. It is to be read in conjunction with the applicable asbestos register (as contained in Appendix C).

1.5 Responsibilities

The implementation of the procedures provided in this AMP will be the responsibility of the entities detailed in Table 1.2. The responsibilities may include informing other parties of their obligations to comply with the AMP. All individuals accessing the site are responsible for complying with the requirements under this AMP, as applicable.

Table 1.2 Responsibilities for AMP implementation

Position and Company/Entity	Responsibilities
Council and owners of the site	
WHS Manager and Group Manager Infrastructure and Works	Approve the AMP and revisions to the AMP
Site Manager	Ensure staff and contractors are inducted to the AMP, clearly understand its requirements and ensure that compliance with the AMP is a condition of any agreement with these parties Ensure appropriate consents and licences (as required) are obtained for any works conducted at the site Ensure Contractor WHS Plans comply with the AMP Provide site induction for employees and contractors required to access or perform works at the site
	Advise occupiers of the application of the AMP and provide a copy of the AMP to the supervisor or person in-charge of employees and/or contractor/s who are accessing or performing works at the site Ensure implementation of the AMP Ensure staff and contractors comply with the requirements of the AMP
	Update the AMP if the condition of the properties is changed, and, if necessary, inform other parties of the changes
	Provide the AMP for inclusion on the relevant records maintained for the site
	Ensure an inspection of the surface of the site is undertaken at appropriate intervals, and as otherwise required such as following adverse weather events and record the results of the inspections as per the requirements of the AMP. The inspection shall focus on the integrity of ground surface, known ACM and presence of any ACM debris previously not identified
Site Manager / Works Co-ordinator / Worker	Implement AMP provisions relevant to tasks being completed Ensure all non-conformance and/or complaints are recorded as per the requirements of the AMP
Contractors	
Project Manager	Implement the AMP to ensure compliance Ensure task specific risk assessments comply with requirements of the AMP Notify Council of any new activities on the site that may impact locations of known ACM or likely asbestos at the site
Works Supervisor	Ensure only staff inducted to the AMP are used in work at Walka Water Works Conduct works in an environmentally responsible manner Meet relevant Workplace Health and Safety (WHS) regulatory requirements Implement the works in a safe and responsible manner Ensure that environmental protection measures are identified and in place and are functioning correctly during the works and after completion of the works, if required Notify Council if suspected ACM or other suspect contaminants are encountered during works or access to the sites Document the nature and location of any such ACM or other suspect contaminants encountered during works or access to the site Complete non-conformance and corrective action reports as required and undertake follow-up corrective actions, as required Conduct monitoring as required in the AMP Inform Council if conditions are different from those documented in the AMP
Workers	Implement AMP provisions relevant to tasks being completed Notify Council if suspected ACM or other suspect contaminants are encountered during works or access to the sites

1.6 Notifications

There must be appropriate notification of all restrictions applying to the site to ensure that current and future site owners and occupiers are aware of the risk and existence of this AMP. At the time this AMP was prepared it is understood that Council has notified current site owners, and known future site occupiers of the development of the AMP and will be providing a copy to them once it is completed.

1.7 Enforcement

In accordance with the *Work Health and Safety Regulations 2011* (NSW) regulation 429:

"A person with management or control of a workplace must ensure a written asbestos management plan is prepared for the workplace if asbestos or ACM has been identified or assumed present or is likely to be present from time to time at the workplace. The asbestos management plan must be maintained to ensure the information is up-to-date."

Section 5.2 of the Code of Practice (COP) *How to Safely Manage and Control Asbestos at the Workplace* provides:

"Sites contaminated with asbestos become a workplace when work is carried out there. TheWHS Regulations require that, where asbestos is identified as contaminating a workplace, a register and asbestos management plan be created for the site."

In addition, an AMP must be reviewed at least once every five years or as otherwise required such as when site conditions or use change or following remediation works conducted at the site.

This AMP must be made available and should be easily accessible to Council staff and anyone intending to access or carry out works at the site.

1.8 Timeframes

This AMP is to be applied to the site due to the presence of known asbestos contamination, asbestos containing building materials and to allow for unexpected contamination to be identified and recorded. The AMP has been prepared to reflect current site activities and will be amended from time to time as detailed in the Procedures in (Appendix B).

This AMP shall remain in force until such time as it is replaced by an appropriate equivalent or an accredited site auditor or the relevant approving authority provides written advice that it is no longer required.

2. Basis of the management requirements

2.1 Legislative and regulatory framework

Council has a legal obligation under the Work Health and Safety Act 2011 (the WHS Act) and prescribed in the Work Health and Safety Regulation 2017, to ensure the work health and safety of its workers and visitors.

Primary legislative requirements for asbestos obligations are discussed below.

2.1.1 Work Health and Safety Act 2011

Under the WHS Act, Council is "a person conducting a business or undertaking" and has a responsibility to provide a safe workplace for workers including paid staff, volunteers, visitors and customers that use its sites.

Council's responsibilities under the Act include:

– Providing and maintaining a safe work environment, plant and structures, systems of work, use, handling and storage of plant, structures and substances.
– Providing adequate facilities and ensuring access to facilities and necessary information, training, instruction or supervision.

2.1.2 Work Health and Safety Regulation 2017

The *WHS Regulation* is the legislative instrument that gives persons conducting a business or undertaking more specific information on how they may comply with the *WHS Act 2011* (see Section 2.1.1 above).

Asbestos is covered in Chapter 8 of the regulation. This chapter sets out prohibitions and exceptions relating to work with asbestos, the general duty of persons conducting a business or undertaking to identify or assume the presence of asbestos at a workplace, the management of asbestos and associated risks, the management of naturally occurring asbestos, health monitoring, training, control on use of certain equipment, demolition or refurbishment of structures or plant, asbestos removal work, licencing and licence requirements and asbestos related work.

Clause 419 of the WHS Regulation states that a person conducting a business or undertaking must not carry out or direct or allow a worker to carry out work involving asbestos if that work involves tasks including transporting, storing, removing, handling, disposing of or disturbing asbestos or ACM, except in prescribed circumstances.

The exceptions to the prohibition of that work relevant to this AMP are considered to primarily be the following:

– Sampling and identification in accordance with the *WHS Regulation.*
– Removal or disposal of asbestos or ACM in accordance with the *WHS Regulation.*
– Transport and disposal of asbestos and asbestos waste in accordance with the *POEOAct 1997.*
– Demonstrations, education or practical training in relation to asbestos or ACM.
– Where the regulator approves the method adopted for managing risk associated with asbestos.

Clause 420 (1) of the *WHS Regulation* requires that a person conducting a business or undertaking at a workplace must ensure that exposure of a person at the workplace to airborne asbestos is eliminated so far as is reasonably practicable, and if not reasonably practicable to eliminate exposure to airborne asbestos, exposure is minimised so far as is reasonably practicable.

Clause 429 of the *WHS Regulation* requires an asbestos management plan if asbestos containing materials are identified in a workplace or likely to be present at a workplace from time to time. A workplace is a place where work is carried out and includes any place where a worker goes, or is likely to be, while at work[1]. The site is therefore a workplace and requires an asbestos management plan. Also, under Clause 425 of the *WHS Regulation*, a person with management or control of a workplace must ensure an asbestos register is prepared and kept at the workplace. The asbestos register must be maintained, to ensure the information in the register is up to date. An asbestos register for the site is included in Appendix C.

The following Codes of Practice provide practical guidance on achieving the standards of health, safety and welfare required under the *WHS Act* and *Regulation* in relation to management of asbestos.

– Safework NSW 2019. *How to manage and control asbestos in the workplace*: Code of practice

– Safework NSW 2019. *How to safely remove asbestos*. Code of practice

2.2 Relevant guidelines

In addition to the Codes of Practice listed above, guidelines relevant to the assessment and management of asbestos contamination of soils include the following:

– NSW EPA (2017) *Guidelines for the NSW Site Auditor Scheme* (3rd Edition), NSW Environment Protection Authority. October 2017

– NSW EPA (2020) *Consultants reporting on contaminated land*, NSW EPA, 2020. New South Wales Environment Protection Authority. May 2020

– NSW EPA 2014, *Waste Classification Guidelines, Part 1: Classifying Waste*

– National Environment Protection Council (NEPC) (2013), *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM) (updated 2013)

2.3 Human health considerations

2.3.1 Potential diseases

Asbestos is a known carcinogen. Airborne asbestos fibres can be inhaled and enter the smallest parts of the lungs where they irritate lung tissue, causing a range of chronic diseases including:

Asbestosis is a form of lung disease (pneumoconiosis) directly caused by inhaling asbestos fibres, causing a scarring (fibrosis) of the lung tissue which decreases the ability of the lungs to transfer oxygen to the blood. The latency period of asbestosis is generally between 15 and 25 years.

Lung cancer has been shown to be caused by all types of asbestos. The average latency period of the disease, from the first exposure to asbestos, ranges from 20 to 30 years. Lung cancer symptoms are rarely felt until the disease has developed to an advanced stage.

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

[1] Section 8 Work Health and Safety Act 2011 NSW

Pleural diseases - Inhalation of asbestos can also cause benign pleural plaques or one ormore of a range of other potentially lethal pleural (lung) diseases including:

– Pleural effusions – build ups of fluid between the pleural layers
– Pleural plaques - calcified build ups on the pleura
– Pleuritis, pleurisy and pleuritic chest pain - excessive inflammation of the pleura
– Diffuse pleural thickening – appearance of lesions on the pleural lining that causethickening of the tissue
– Atelactasis – also known as asbestos pseudotumor or Blesovsky Syndrome, this condition often accompanies pleural thickening and involves scar tissues contracting andcausing the pleural lining to fold into the lung
– Chronic Obstructive Pulmonary Disease (COPD) – while asbestos does not cause COPD, it can increase the risk of developing the condition

2.3.2 Risk of exposure

The import of asbestos-containing materials into, and manufacture of them in, Australia is now banned. However, asbestos was used for more than 100 years and there is still a large amount present in Australia.

Fibre cement sheeting, commonly known as ‘fibro’, ‘asbestos sheeting’ or ‘AC sheeting’ is common and, along with other asbestos-containing materials, can present risks when:

– Materials are cut, drilled or sanded, especially by power tools
– Sheets are broken, crushed or weathered
– Sheets are blasted with high-pressure water or compressed air
– Damaged by fire, hail, flood or high wind

Forms of asbestos that are more likely to generate airborne fibres include:

– Asbestos-contaminated dust, including dust left in place after past asbestos removal
– Sprayed (limpet) coatings and loose fill
– Unenclosed lagging and packings
– Asbestos insulating board
– Rope and gaskets
– Millboard and paper
– Floor tiles, mastic and roof felt
– Decorative paints and plasters

2.3.3 Health based soil investigation levels

Health-based soil Investigation Levels (HILs) are provided for a range of different exposure settings, which are based on the nature of the use(s) for which the land is currently used and/or its approved use(s). Based on the site setting, and accessibility, GHD consider the NEPM (2013) Health Investigation Levels for Recreational C land use to be most appropriate for the majority of the site.

The NEPM (2013) Health Investigation Levels for Residential A land use have been applied within the fenced boundaries of the caretakers residence given the residential nature of this portion of the site.

Residential A includes standard residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake,(no poultry)), includes children’s day care centres, preschools and primary schools.

Recreational C includes public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and unpaved footpaths.

GHD has also adopted the NEPM (2013) health screening levels for asbestos in soils, referenced in the NEPM to the *Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia*, May 2009.

Table 2.1 Adopted soil criteria

Compound	Health Screening Level (mg/kg) Residential A (a)	Health Screening Level (mg/kg) Recreational C (b)
Bonded ACM	0.01% w/w	0.02% w/w
Fibrous Asbestos (FA) and Asbestos fines (AF) (b)	0.001%	
All forms of asbestos	No visible asbestos for surface soil (top 10 cm)	

NEPM 2009 – Residential A.
NEPM 2009 – Recreational C.
The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures.

2.3.4 Workplace exposure standards

As asbestos poses a risk to health by inhalation when asbestos fibres are airborne, personal exposure should be kept as low as reasonably achievable. The current workplace exposure standard for all forms of asbestos is 0.1 fibres/ml of air (time weighted average, ppm). This workplace exposure standard should not be exceeded outside an appropriately managed asbestos work area.

Air monitoring may be required when:

– It is not clear whether new or existing control measures are effective.
– There is evidence that control measures have not been effective.
– Modifications or changes in safe work methods have occurred that may adversely affect worker exposure.
– There has been an uncontrolled disturbance of asbestos at the workplace.
– As a part of asbestos remedial or remediation works.

The limit of detection is the primary control level associated with air monitoring results in relation to asbestos removal and abatement works. Control measures should be reassessed whenever air monitoring indicates action levels as prescribed within codes of practice are approached, met or exceeded.

Table 2.2 Air monitoring action levels

Action Level	Action
< 0.01 fibres/ml	Continue with control measures
At 0.01 fibres/ml or <= 0.02 fibres/ml	Review control measures, investigate cause and implement controls to minimise exposure and prevent further release
> 0.02 fibres/ml	Stop removal work Notify relevant regulator (phone followed by written statement) Investigate the cause Implement controls to eliminate or minimise exposure and prevent further release Do not recommence removal work until further air monitoring is conducted and fibre levels are < 0.01 fibres/ml

3. Preliminaries

A number of preliminary or ‘administrative’ controls are required to address legislative requirements to do with asbestos management in the workplace.

3.1 Contractor site induction and provision of an asbestos register

The development of a contractor site induction is required to aid in the management of in-situ asbestos containing materials within the site. Council should incorporate such issues identified at the site into any associated works contacts, designed to ensure any asbestos containing materials on, or in, the site is dealt with in an appropriate manner.

The inductions should be site specific and should include the asbestos risk present specific to the site. Access to the asbestos register, assessment report and this AMP should be provided to persons where interaction with known or possible ACM is likely.

The induction would be the responsibility of Council, the site owners or the contractor in charge of works and include at least the following:

– Making all workers aware of the potential for contaminated soil to be encountered as described in this AMP
– Assignment of responsibilities
– Discussion of current site conditions
– Details of the work to be completed
– Assessment of potential risks associated with identified hazards
– Establishment of personnel protection standards and mandatory safety practices and procedures
– Establishment of appropriate environmental management protocols
– Evacuation procedures and emergency information
– Incident reporting

3.2 Re-inspections

Re-inspections of asbestos containing materials and implemented controls are to be conducted by a Competent Person (such as a licensed asbestos assessor) and will normally constitute a visual assessment and review of the condition and exposure rankings of the material, to ensure that the management strategy remains valid. Re-inspections shall be performed at least every five years (or as required with the WHS legislation such as when site conditions change) and where changes occur, the asbestos register shall be updated accordingly.

3.3 Record keeping

Council shall maintain detailed records of all activities and work guides relating to asbestos containing materials which have been undertaken at the site. The records kept should include:

– Copies of all Asbestos Survey reports, including updates and amendments.
– Copies of all Asbestos Containing Materials Work Guides.
– Site induction records pertaining to informing employees and contractors about the presence of asbestos containing materials on site, and that such contractors have been appropriately trained in safe work procedures and practices.
– Records pertaining to informing Council employees and contractors about the presence of asbestos containing materials on site, and that such workers have been appropriately trained in safe work procedures and practices.
– Records of the nature and location of any previously unidentified ACM encountered at the site.
– Records of any asbestos containing materials abatement works performed on site.

– Clearance certificates indicating areas are safe to reoccupy after asbestos containing materials abatement work.
– Air monitoring results conducted to measure the presence of airborne asbestos fibres.
– Previous versions of the Asbestos Containing Materials Register.

3.4 Labelling/ signage

All identified or assumed asbestos, including where the asbestos is inaccessible, must be clearly indicated. If it is reasonably practicable, labels must be used to identify the material as containing asbestos. However, signs may be more appropriate to use. The Safework NSW Code of Practice, How to Manage and Control Asbestos in the Workplace states warning signs and labels should comply with AS 1319 Safety Signs for the Occupational Environment.

3.5 Workplace exposure standards

As asbestos poses a risk to health by inhalation when asbestos fibres are airborne, personal exposure should be kept as low as reasonably practical and monitored through asbestos air monitoring where there is a potential risk of exposure, called for within codes of practice and guidelines or where otherwise required by legislation. Exposure monitoring measures the levels of respirable fibres in the breathing zone of the worker while work is being undertaken. Exposure monitoring must be carried out by a competent person such as licensed asbestos assessor.

The sample collection and analysis need to be conducted in accordance with the Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC:3003(2005)]. The analysis should be performed by a NATA registered laboratory.

Where background or control air monitoring is undertaken, the concentration of fibres at the site boundaries should be <0.01 fibres/mL of air. Action levels are outlined within the SafeWork NSW Code of Practice, How to Safely Remove Asbestos.

3.6 Asbestos awareness training and information

All staff and occupants who have the potential to disturb or be exposed to ACM while at the site should be made aware of the presence of ACM at the site and be provided with information regarding the assessment of the risk.

Council should undertake an assessment of the needs and requirements of its workers and recreational users and then develop a training or information package in line with the requirements of this Asbestos Management Plan. Such a package or training may include the following:

– Information on the health risks associated with ACM.
– Information on the presence of ACM at the site, including the types of asbestos, uses and typical locations/likely occurrences where asbestos containing materials may be encountered.
– The roles and responsibilities under the Asbestos Management Plan.
– Information on Asbestos Registers and how to access them.
– The timetable of asbestos containing materials removal (if relevant).
– Process and procedures to be followed to prevent exposure.
– The correct use of maintenance and controls measures, PPE and work methods to minimise the risks from asbestos containing materials, limit the exposure to workers and limit the spread of asbestos dust outside any asbestos containing materials work area.
– The relevant National Exposure Standards and control levels for asbestos containing materials.
– The purpose of any air monitoring or health surveillance that may occur.

The objective of the training is to create changes in behaviour and improvements in asbestos management by ensuring that tenants, workers, contractors and recreational users understand the consequences of exposure to asbestos, appropriate control measures, their legislative obligations and Council's requirements on the safe handling of asbestos including the use of PPE.

3.7 Safe work practices and need for additional assessment

If for any reason, works are required within the site which may disturb known asbestos or areas suspected to contain asbestos, Council should engage a competent person to undertake an assessment of the work area. Background air monitoring may be used as a reassurance to these works. If ACM are identified and may be impacted, the ACM is to be removed under controlled conditions by a licensed removal contractor. As outlined in Section 5.2.4**,** GHD has noted inaccessible areas that could not be accessed for inspection. Access to these areas should remain restricted prior to future abatement works.

During emergency situations, access should be established in accordance with the relevant safe work procedures, the area isolated and a Licensed Asbestos Assessor engaged as soon as practical to assess the works areas and conduct background reassurance air monitoring.

3.8 Personal protective equipment

All workers conducting asbestos related works must wear appropriate levels of PPE as outlined within the applicable codes of practice. The selection and use of PPE should be based on a risk assessment with other factors considered such as ease of decontamination (if PPE cannot be disposed of).

3.8.1 Coveralls

Protective clothing should be made from material capable of providing adequate protection against fibre penetration. Disposable coveralls with fitted hoods and cuffs should be worn (fitted hoods should always be worn over the straps of respirators and loose cuffs should be sealed with tape). Disposable coveralls rated type 5, category 3 (prEN ISO 13982–1) or equivalent would meet this standard.

Asbestos fibres must be prevented from being transported outside the workplace by thoroughly vacuuming asbestos fibres from work clothes using an asbestos vacuum cleaner or, depending on the level of contamination and risk, the use of a water spray bottle or damp cloths may be appropriate.

Non-disposable coveralls (not recommended) or any clothing worn under coveralls must be disposed of or suitably bagged for laundering as asbestos-contaminated clothing.

3.8.2 Footwear and gloves

Lace less boots (such as gumboots) are recommended where practicable. Safety footwear must be decontaminated before being removed from the asbestos work area or sealed for use only on the next asbestos maintenance task. Alternatively, work boots that cannot be effectively decontaminated should be disposed of as asbestos waste at the end of the work.

The use of protective gloves should be determined by a risk assessment. Protective gloves can be unsuitable if dexterity is required. Personal decontamination including hand and fingernail washing should be carried out each time workers leave the asbestos work area and at the completion of asbestos maintenance and service work. Any gloves used must be disposed of as asbestos waste.

3.8.3 Respiratory Protective Equipment (RPE)

The selection of suitable RPE depends on the nature of the asbestos work, the probable maximum concentrations of asbestos fibres encountered and any personal characteristics of the wearer that may affect the facial fit of the respirator (facial hair and glasses etc).

A competent person should determine the most efficient respirator for the task. RPE should comply with AS/NZS 1716-2012 *Respiratory Protective Devices* and be selected, used and maintained in accordance with AS/NZS 1715-2009 *Selection, Use and Maintenance of Respiratory Protective Devices*. They must always be worn under fitted hoods. Face pieces should be cleaned and disinfected.

RPE should be used until all contaminated disposable coveralls and clothing has been vacuum cleaned and/or removed and bagged for disposal and personal washing has been completed. RPE should be properly stored when not in use.

3.9 Health surveillance

Health surveillance is an important part of the monitoring of exposure to hazardous substances, including asbestos, to ensure the health and safety of people in workplaces. One of its main purposes is to ensure that control measures are effective and provide an opportunity to reinforce specific preventative measure and safe work practices.

Health surveillance, if required, should be undertaken in accordance with Council policy.

3.10 Additional precautionary testing

If suspected asbestos containing materials are encountered during, maintenance, refurbishment or demolition (but are not listed in the asbestos register) it is recommended that Council undertake additional precautionary testing.

3.11 Planning of maintenance, refurbishment or demolition works

With respect to any known or potential asbestos material, the planning of maintenance, refurbishment or demolition works associated with any asset needs to be undertaken carefully. It should include consideration of the following:

– Requirements of an overarching management plan or similar.
– Recognition that any identified asbestos material is the minimum amount of material present.
– Subsequent recognition that the scope and limitations of prior asbestos survey(s) may result in additional unidentified materials being present. This may require work to:
    - Address known information gaps, such as surveying any previously inaccessible rooms and assuming that asbestos may be present in other areas not generally accessed by previous survey(s).
    - Project team undertaking an asbestos risk analysis and incorporating suitable provisions into contract/specifications.
    - Consider directing the Contractor to undertake an intrusive asbestos survey of the work area (may use existing information) that then adds an additional layer of assurance as well as minimizing potential Contractor time and cost variations as works progress.

Prior to demolition or refurbishment all asbestos materials likely to be disturbed by those works should be removed.

3.12 Permit to work

If it is determined, after consulting the asbestos register, that asbestos containing materials are present in the vicinity of the planned works, an Asbestos Permit to Work will need to be issued to, and signed by, the contractor. Permit to work authorities will only be issued by Council or a person authorized to act on its behalf.

Before being issued with an Asbestos Permit to Work, individuals will be required to read and understand the AMP as well as copies of relevant asbestos containing materials registers.

The permit to work should detail the nature of the work to be performed and document the contractor's agreement to:

– Abide with the requirements for working with ACM as detailed in the Codes of Practice.
– Isolate/restrict access to the work area.
– Provide and erect appropriate warning signs.
– The use of safe work techniques.
– Wearing of PPE.
– Appropriate decontamination and clearance inspections of the work area.
– Remove and dispose of any ACM (including PPE) in accordance with WHS legislation.

Where practicable, project personnel should be made aware of the requirements of the AMP prior to tendering to ensure they allow for such requirements when quoting.

Workers engaged in asbestos removal work of any asbestos containing materials will not be issued with a permit to work unless they are a competent person for asbestos containing materials type removal work (e.g. licensed to perform asbestos removal work issued by Safework NSW).

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4. Principles of asbestos management

4.1 Asbestos management

How to Manage and Control Asbestos in the Workplace: Code of Practice 2019 outlines the requirement for the development of an asbestos management plan to help prevent exposure to airborne asbestos fibres while asbestos-containing materials remain in the workplace. Council is required to have prepared and implemented an asbestos management plan under the current WHS legislation if asbestos containing materials are identified within assets under their ownership.

Figure 4.1 taken from the former *Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC: 2018(2005)]* illustrates the general management phases undertaken after the risk assessment process has been completed, including identification, evaluation, control, and on-going monitoring/re-assessment.

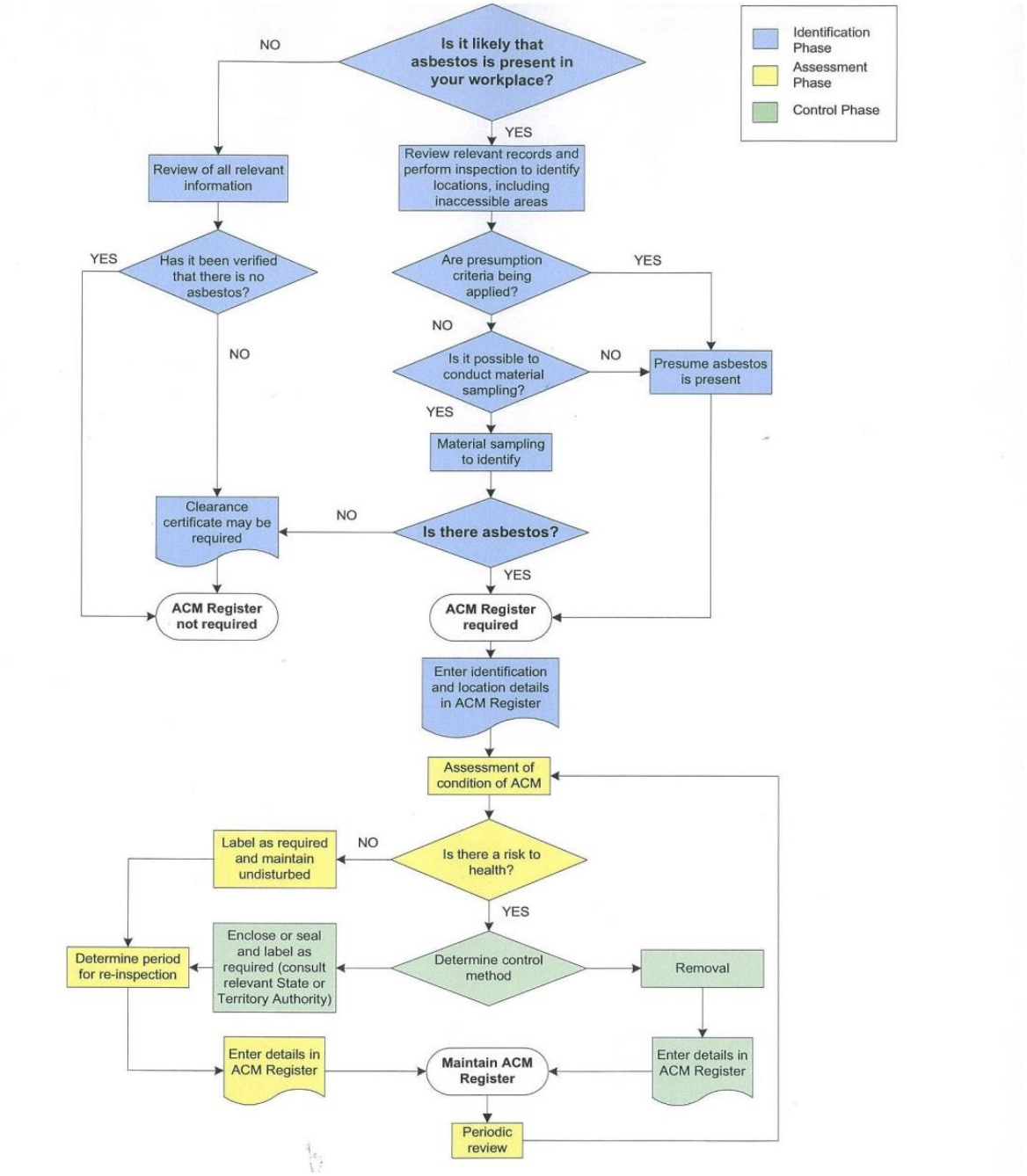

Figure 4.1 Asbestos management flow chart

4.2 Management hierarchy

4.2.1 Hazardous building materials

Where the evaluation process has revealed a likelihood of exposure to those hazards, all practicable steps should be taken to ensure that occupants of the properties are not unnecessarily exposed. A thorough examination of the typical activities undertaken by the occupants is an essential preliminary action. Procedures designed to ensure that occupants are not exposed to hazards from ACM should then be adopted. *How to Manage and Control Asbestos in the Workplace: Code of Practice 2019* provides for priorities to be set for the effective control of the risks of ACM in the short term with the ultimate goal of a workplace free of ACM. The focus is on the risks of exposure to asbestos because there is no definitive “safe” level of asbestos exposure. The hierarchy of control for asbestos in-situ is as follows:

– Elimination and removal (most preferred)
– Isolation, enclosure or sealing
– Engineering controls
– Safe work practices (administrative controls)
– Personal protective equipment (least preferred)

These hierarchies of controls should be used when making decisions on control measures for identified asbestos in-situ and presumed ACM. These controls should be determined from a risk assessment and should follow the principles as outlined in the national code:

– If the ACM is friable and not in a stable condition, and there is risk to health from exposure, it should be removed as soon as practicable by an asbestos removal contractor with a **Class A** (friable) asbestos removal licence under the WHS Regulations.
– If the ACM is friable but in a stable condition and is accessible, serious consideration should be given to its removal as the material could be easily disturbed.
– If the ACM is not friable and is in a good, stable condition, minimising disturbance and encapsulation may be appropriate controls. Removal of non-friable asbestos can be undertaken by an asbestos removal contractor with a **Class B** (non-friable) asbestos removal licence under the WHS Regulations.
– Any remaining ACM should be clearly labelled, where possible, and regularly inspected to ensure it is not deteriorating or otherwise contributing to an unacceptable health risk.
– Asbestos-containing materials require removal before demolition, partial demolition, renovation or refurbishment if they are likely to be disturbed by those works.
– If a material or area is proven or presumed to contain asbestos, it is essential to determine whether maintenance or service work can be done without disturbance.

Whenever removal or disposal of asbestos is identified as the preferred control measure it must be undertaken in accordance with the *How to Safely Remove Asbestos in the Workplace: Code of Practice, 2019*.

4.2.2 Asbestos in soils

While contaminated land guidelines or legislation do not over-ride WHS regulatory requirements as outlined above, the management hierarchy may be different for asbestos in soils. The NEPM (NEPC 2013) states that if the Tier 1 screening levels (as presented in Section 2.3.3 above) are not exceeded, and an appropriate level of investigation has been carried out, then no contamination management actions are required except for ensuring the surface soil is free of visual asbestos. This may be achieved by multidirectional raking or tilling and hand-picking of exposed fragments of bonded ACM. Final visual inspection of the assessment and remediated areas should not detect any visible asbestos.

Where the Tier 1 screening levels are exceeded, either a Tier 2 risk analysis should be carried out, or a conservative management response implemented. The NEPM states that remediation options which minimise soil disturbance and therefore public risk are preferred. Management of asbestos in situ is encouraged, which may include covering the contamination with uncontaminated fill or other protective or warning layers. It should be noted that the common alternative of complete removal of asbestos from a site often involves extensive and costly investigative and validation sampling and may not be effective or necessary for the protection of human health.

5. Asbestos identified at the site

5.1 Asbestos registers

The SafeWork NSW *How to Manage and Control Asbestos in the Workplace: Code of Practice* outlines a requirement for the establishment of an asbestos register to record information regarding identification of asbestos-containing materials, risk assessments and control measures.

The register which identifies, and details known and suspected asbestos containing building materials and asbestos in soil is presented in Appendix C. Before any work at the site is performed, the register is to be made readily accessible to a worker who carries out or intends to carry out work on site; and health and safety representatives who represent workers that carry out or intend to carry out work on site.

There is a legislative requirement for the following information to be kept on the asbestos register:

– Record any ACM that has been identified or is likely to be present at the subject site from time to time. This would include: the date on which the asbestos or ACM was identified, the location, type and condition of the asbestos.
– State that no ACM is identified at the workplace if the person knows that no asbestos or ACM is identified or is likely to be present from time to time at the workplace.

A comprehensive asbestos register should also include:

– Details of any ACM assumed to be in the workplace.
– Results of any analysis that confirms a material at the workplace is or is not ACM.
– Dates when the identification was carried out.
– Details of inaccessible areas.
– Photographs or drawings to visually show the location of the asbestos or ACM in the workplace.
– Any maintenance or service work on any ACM, including the company or persons involved, the date and scope of the work undertaken and details on clearance certificates.

5.1.1 Risk Assessment

The risk assessment utilised in the development of the asbestos register is outlined within GHD 2022a.

In accordance with the current Code of Practice, the asbestos register should be reviewed at least once every five years (or as otherwise required) by a competent person to ensure it is kept up-to-date and is accurate. Additional periodic reviews may be necessary in the instant that:

– A risk assessment indicates the need for reassessment.
– Any asbestos-containing materials have been disturbed or removed.

Re-inspections of ACM are to be conducted by a licensed asbestos assessor or Competent Person (as defined by WHS legislation). A visual inspection of identified asbestos-containing materials and review of the condition and exposure rankings of the materials should be undertaken, to ensure that strategy remains valid.

5.2 Summary of asbestos findings

5.2.1 Building materials

The results of the asbestos materials assessment are presented in a register format which is designed to provide readily available information about the presence of ACM. Note that this register includes identified asbestos in soil, as well as asbestos containing materials in buildings or structures.

The asbestos register is provided in Appendix C.

5.2.2 Asbestos in soil

Various areas of the site contain asbestos in soil concentrations above applicable criteria at the site surface, near surface and at depth including findings of ACM, asbestos fines (AF) and fibrous asbestos (FA). A location plan of the site showing structures and areas of known asbestos in soil contamination is provided as Figure 1, Appendix A.

Further information is provided within the GHD Contamination Assessment reports (GHD 2022a and 2022b) and the asbestos register provided as Appendix C. It should be noted that asbestos in soil contamination at the site has not been fully delineated, as outlined in GHD 2022a and 2022b.

5.2.3 High risk asbestos instances

The following instances of asbestos highlighted below in Table 5.1 have been identified as High Risk following the assessment as outlined within GHD 2022a. They have been identified to be in a poor condition and may have an elevated likelihood of disturbance by asset occupants. It is recommended that access to the areas where these materials are located be controlled and that the materials be removed or managed in situ in accordance with relevant guidelines and codes of practice as soon as practicable.

Table 5.1 High risk asbestos instances

Primary Location	Secondary Location	Material type	Action
Main pumphouse, first floor and ground floor	Museum, and women's toilet, Electrical Duct Heater (EDH)	Insulating Millboard	Inspect prior to refurbishment, reoccupation or reuse
East of former power station footprint	TP103. TP128, TP129, TP130, TP131. TP132. TP135. TP138, TP139	Asbestos debris and free fibre asbestos	Remove or manage in situ
East of main pumphouse	TP106, TP124, TP126, TP127	Asbestos debris and free fibre asbestos	Remove or manage in situ
West of former power station footprint (bank leading down to beach at NE corner of reservoir)	ACM-001 and ACM-002	Asbestos debris and lagging debris at ground surface	Remove or manage in situ Restrict access to area and undertaken interim management pending long-term actions

An EDH was identified within the first and ground floor of the main pumphouse facility, however, was inaccessible and is presumed to contain asbestos millboard. Asbestos millboard is considered friable and, as such, further investigation is required prior to refurbishment, reoccupation or use of the EDH within main pumphouse.

It is recommended that the asbestos debris identified on the driveway of the Caretaker's residence is removed by a suitably qualified Class A or Class B asbestos removalist as soon as possible. While asbestos on concrete surfaces within the sand filter beds is not currently accessible, it should also be removed as a priority.

Due to the presence of friable asbestos on the surface of the "beach" area and bank leading down to the beach at the north-eastern end of the reservoir, access to this area should be restricted and interim management measures (e.g. soil stabilisation or interim capping) should be undertaken as a priority pending determination of longer term remediation or management measures.

5.2.4 Inaccessible areas

Areas that were inaccessible and are presumed to contain asbestos, are outlined below in Table 5.2. It is recommended that the areas be inspected prior to refurbishment, maintenance, demolition or reoccupation.

Table 5.2 Areas presumed to contain asbestos

Primary Location	Secondary Location
Caretaker's residence	Interior and exterior
Entrance gate / former power station footprint	EDB, backing panels
Main pumphouse	EDH, interior (throughout)
	Gaskets
	Telstra Pit
	Woman's toilet
	Light switch cables

5.2.5 Undocumented asbestos remediation

The areas outlined in Table 5.3 previously contained ACM and were subject to undocumented asbestos remediation.

Table 5.3 Undocumented asbestos remediation

Primary Location	Assessment
Main pumphouse, shower, ceiling lining.	Ceiling lining had been observed to be removed, no ACM was observed at the time of the inspection. No asbestos was detected in the one dust sample (FC06) collected from the ground surface of the shower. Ceiling height limited the inspection of battens.
Former engineer's residence, ground surface, corrugated sheeting.	Corrugated sheeting was observed to have previously been removed at the time of inspection. The inspection was visual only, due to heritage constraints associated with the structure.
Reservoir southern wall, fibre cement conduct.	The fibre cement conduit was unable to be located at the time of inspection.

5.3 Conceptual Site model

The AMP has been developed to outline the procedures to protect human health and the environment from asbestos during on-going occupation and maintenance at the sites. The CSM provide includes only information pertaining to asbestos. Additional contaminants at the site are covered within GHD Ref 12553096_Walka Water Works LTEMP.

5.3.1 Source-pathway-receptor CSM

A CSM based on the findings of the previous investigations is presented in Table 5.4.
This CSM should be updated in revised versions of the AMP, as various stages of remediation are completed.

Table 5.4 Conceptual site model

Sources	Pathways	Receptors	Pathway Present?
Contaminated soils on site including: – impacts from former electrical generation activities, water treatment and hazardous building materials, including ACM – Volatile organic compounds (VOCs) associated with former site use, including fuel tanks. – Contaminants associated with coal use, disposal and storage. – Potential contaminants associated with rail spur relating to use of pesticides / herbicides and asbestos from train braking – Off-site sources including adjacent former Abattoir	Inhalation of contaminated particles/dust/ asbestos fibres	On or offsite intrusive maintenance workers	<u>Industrial use area</u> Possible for recreational users and maintenance workers –asbestos debris and friable asbestos have been identified in soils within the former power station footprint, in the lawn east of the pump house and the "beach" area. Although there is grass cover over the main areas of asbestos contaminated soils in the pump house and former power station areas, some other areas particularly the beach) were observed with ACM on the soil surface and there is potential for recreational users and maintenance workers to come in contact with impacted soils through direct exposure and inhalation if soils are disturbed. Friable asbestos poses a higher risk as it is not bound by a matrix. Access to these areas should be restricted on an interim basis, and the areas should be remediated to avoid potential exposure during future land use. <u>Remaining site area</u> Unlikely – only isolated instances of asbestos impact to soils were observed in remaining areas of the site, and the likelihood of historical sources of impact is much lower. It is considered these areas can be managed under the provisions of a long-term EMP, without active remediation.
		Recreational users	
Contaminated sediments	Inhalation of contaminated particles/dust/ asbestos fibres	On or offsite intrusive maintenance workers Recreational users and visitors	Possible – asbestos has been identified in sediments adjoining the beach area. If water levels in the reservoir drop and sediments become exposed, or if sediments are removed and dried out, there is a potential for airborne fibres.

5.3.2 Complete SPR Linkages

The identified SPR linkages are considered to be complete or partially complete for the following scenarios:

– Concentrations of asbestos in soil in the former industrial areas of the site could lead to inhalation of harmful concentrations of airborne asbestos fibres through disturbance during current and future use of the site by receptors including:
  - Recreational users
  - Maintenance workers
– Should the water level in the reservoir drop and sediments be exposed and dry out, concentrations of asbestos in sediments could lead to inhalation of harmful concentrations of airborne asbestos fibres to current and future users of the site including:
  - Recreational users
  - Maintenance workers

6. Incident notification and response

6.1 Unexpected contamination finds

Unexpected contamination could be encountered at any areas of the sites which have not been investigated (including between sampling locations) and/or remediated and may include the following:

– Unexpected areas of asbestos containing materials

A competent person must be engaged to undertaken appropriate assessment of unexpected contamination that may be encountered, and to recommend necessary management requirements (if any) prior to the continuation of works in the affected area.

6.2 Incident response

It is recommended that workers and recreational users be provided contact information for the Site Health and Safety Manager in the event of an asbestos related query or emergency situation. The contact should be available during site hours of 7:00 am – 5:00 pm.

When asbestos materials present at the site are inadvertently disturbed the following procedures must be completed:

– Stop work immediately and evacuate if necessary. Site procedures for evacuation are to be conveyed to contractors and employees during site inductions.
– Immediately notify the nominated site emergency contact on the location and nature of the incident.
– If evacuation is not required, isolate the area and restrict access where possible. Ensure any exhaust extraction, air conditioning systems, fans etc are controlled. Secure the area with asbestos warning tape or barricades.
– Seek advice/response by a Competent Person experienced with asbestos management and this AMP for clean-up or monitoring procedures as required. Emergency response is to be in accordance with the requirements of Commonwealth, State legislation, national Standards and Codes of Practice. These may include:
    - Sampling of suspect materials to determine if asbestos present.
    - Sealing or encapsulation of the affected area.
    - Clean up of affected area.
    - Repairs to damaged ACM (sealant or repairs).
    - Inspection of affected area to ensure removal/clean up, air monitoring as required, waste disposal as required.

A competent person must be engaged to undertaken appropriate assessmentof unexpected contamination that may be encountered, and to recommend necessary management requirements (if any) prior to the continuation of works in the affected area.

7. Asbestos management procedures

A number of procedures have been provided to guide the implementation of this AMP. The key procedures are listed in Table 7.1 and are provided in Appendix B.

Table 7.1 Asbestos management procedures

Procedure Title	Number
Signage	01
Capping maintenance	02
Interim grounds maintenance works	03
Subsurface works (breach of capping)	04
Repair of capping material	05
Site inspections	06
Reporting inspections	07
Waste storage	08
Unexpected finds	09
Non-compliance with AMP	10
Record keeping	11
Review of AMP implementation	12
Review of AMP – site and/or land ownership changes	13

7.1 Removal of asbestos in structures

Council should ensure that all asbestos removal works are conducted in accordance with the *Code of Practice: How to Safely Remove Asbestos* and the WHS legislation, and that contractors hold appropriate licences and are qualified to remove asbestos in accordance with the conditions and legislation adhered to.

A detailed site specific Asbestos Removal Control Plan (ARCP) to include a risk assessment and SWMS, is to be developed by the asbestos removal contractor in conjunction with the Site manager in accordance with the *Code of Practice: How to Safely Remove Asbestos* and be provided to Council before asbestos removal work commences. The removal of asbestos containing materials will require a removal work area set up appropriate to the level of risk outlined in the risk assessment to ensure that the workplace exposure limits are not breached. Contractors should not commence removal work without obtaining a permit to work endorsed by Council.

Asbestos removal contractors working at the site, performing asbestos removal work are to hold appropriate licenses as follows:

Friable asbestos - Anyone who removes, repairs or disturbs friable asbestos material must hold a current friable asbestos removal licence (Class A). Before starting work, a work site-specific permit approving each friable asbestos project must be obtained. The licensed asbestos removalist must notify the regulator in writing at least five days before the licensed asbestos removal work commences.

Non-friable asbestos - Anyone who removes, repairs or disturbs non-friable asbestos must hold a non-friable (Class B) or a friable asbestos licence (Class A). Licensed contractors must notify the regulator of each non-friable asbestos removal project. The licensed asbestos removalist must notify the regulator in writing of at least 5 days before the licensed asbestos removal work commences.

Council should ensure that airborne fibre monitoring is conducted in accordance with the *Code of Practice: How to Safely Remove Asbestos* and the WHS legislation. The monitoring should be conducted in accordance with NOHSC *Guidance Note on the Membrane Filter Method for Estimating Method Airborne Asbestos Fibres* 2nd Edition [NOHSC:3003 (2005)].

Air monitoring requirements vary depending on the type of asbestos being removed, the location/position of the asbestos, if an enclosure is used and whether the asbestos removal work is within a building or outside.

Friable asbestos – Air monitoring is mandatory for all friable asbestos removal and includes prior to dismantling an enclosure and for the purposes of the clearance inspection.

Non-friable asbestos – Air monitoring is not required but may be considered, to be carried out by an independent licensed asbestos assessor to ensure compliance with the duty to eliminate or minimise exposure to airborne asbestos and to ensure the exposure standard is not exceeded.

Public Location – Air monitoring should be considered where the asbestos removal work is being undertaken in or next to a public location.

Exposure air monitoring – Air monitoring should be carried out at other times to determine a worker's exposure to airborne asbestos if, based on reasonable grounds, there is uncertainty as to whether the exposure standard may be exceeded and a risk assessment by a competent person indicates it is necessary. Since most uses of asbestos are prohibited, exposure monitoring should not be required frequently.

Following completion of licenced asbestos removal work, Council must ensure that a clearance inspection is carried out by a licensed assessor and a clearance certificate is issued before the workplace can be reoccupied.

7.1.1 Waste removal and disposal

Loose asbestos waste is not to be allowed to accumulate within the asbestos work area and must be collected and disposed of in asbestos waste bags and/or in a solid, sealable asbestos waste container (bin/drum). If asbestos waste cannot be disposed of immediately, it is to be stored in a solid waste drum, bin or container or skip and sealed and secured upon the completion of each day's work so that unauthorized access is prevented. Asbestos waste (including contaminated PPE, cleaning materials and covering materials) are to be removed and disposed of into bags.

7.1.1.1 Asbestos bags

Asbestos waste bags are to be heavy-duty 200 µm (minimum thickness) polythene bags that are no more than 1,200 mm long and 900 mm wide and labelled with an appropriate warning, clearly stating that they contain asbestos and that dust creation and inhalation should be avoided. Only previously unused bags are to be used, and bags marked for asbestos waste are not to be used for any other purpose.

To minimize the risk of a bag tearing or splitting, hard and sharp asbestos waste may require preliminary sealing or a protective covering before it is placed in the waste bags and asbestos waste bags are not to be filled more than half full of excess air evacuated from the waste bag (in a manner that does not cause the release of dust). The neck of the bags is to be twisted tightly, folded over and secured in the folded position (adhesive tape/cable ties). All asbestos waste is to be double bagged outside the work area immediately following the decontamination process.

7.1.1.2 Waste drums/bins

All drums or bins used for the storage and disposal of asbestos waste must be in a good condition, with well-fitting lids and rims, and free of hazardous residues. The drums or bins must be lined with plastic (minimum 200 µm thickness), and labelled with an appropriate warning, clearly stating that they contain asbestos and that dust creation and inhalation should be avoided (top and sides). Re-use of drums/bins is permitted however the asbestos waste must be packed and sealed so no residual asbestos contamination remains when emptied.

Where possible, drums/bins should be placed in the asbestos work area prior to work commencing and remain there until the clearance inspection is complete. At the completion of asbestos works the drums/bins should be sealed and the outer surfaces wet wiped and inspected as part of the clearance procedure prior to removal from the asbestos work area. If it is not possible to locate the drums or bins inside the asbestos work area, they should be located as close to the work area as possible.

Drums/bins used to contain bagged asbestos waste need to be kept in an area where they are unaffected by weather conditions (e.g. filling with rainwater).

7.1.1.3 Waste skips or Storage Containers

The ACM must be sealed in double-lined, heavy-duty plastic sheeting or double bagged before they are placed in the skip, vehicle tray or similar container. Non-friable asbestos waste may be placed directly into a skip or vehicle tray that has been double lined with heavy-duty plastic sheeting (200µm minimum thickness), provided it is kept damp to minimize the generation of airborne asbestos fibres.

Once the skip is full, contents are to be completely sealed with the plastic sheeting. If a skip or container is to be used for storing the asbestos waste its contents must be able to be secured (e.g. using a lockable lid) and placarding provided on the exterior of the container identifying the contents.

7.1.2 Waste disposal

All details of offsite disposal are to be included in the asbestos removal control plan.

Waste should be transported and tracked in accordance with relevant Safework NSW and NSW EPA requirements.

All asbestos waste material shall be buried at an approved landfill site and in a manner approved by the local and state authorities.

All waste disposals shall be recorded (date, quantity, disposal contract etc) in an appropriate register (e.g. within the sites waste management plans for disposal of asbestos wastes).

7.2 Remediation of asbestos in soil

Remediation of asbestos in soil at the site is outlined with the Remediation Action Plan (RAP) GHD Ref: 12553096-REP-0_Walka Remediation Action Plan.

Further details regarding interim and ongoing management of asbestos in soils is provided within the Long Term Environmental Management Plan (LTEMP) GHD Ref: 12553096-REP_Walka Water Works LTEMP.

8. Limitations

This report has been prepared by GHD for Maitland City Council and may only be used and relied on by Maitland City Council for the purpose agreed between GHD and Maitland City Council as set out in Section 1.1of this report.

GHD otherwise disclaims responsibility to any person other than Maitland City Council arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described throughout this report. GHD disclaims liability arising from any of the assumptions being incorrect.

The opinions, conclusions and any recommendations in this report are based on information obtained from, and testing undertaken at or in connection with, specific sample points. Site conditions at other parts of the Site may be different from the site conditions found at the specific sample points.

Investigations undertaken in respect of this report are constrained by the particular site conditions, such as the location of buildings, heritage constraints, services, vegetation and COVID 19 restrictions. As a result, not all relevant site features and conditions may have been identified in this report.

Investigations undertaken in respect to this report are not intended to address physical hazards such as subsidence, structures and water bodies. GHD does not accept responsibility arising from, or in connection with physical hazards or structural conditions.

Site conditions (including the presence of hazardous substances and/or site contamination) may change after the date of this report. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this report if the site conditions change.

Assessment of groundwater conditions was not included in the objectives or scope of works for these investigations. Should extraction and use of groundwater be proposed, it should be assessed for the proposed use.

GHD has prepared this report on the basis of information provided by Maitland City Council and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

9. References

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SafeWork NSW (2019). *Code of practice: How to manage and control asbestos in the workplace.*

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Appendices

Appendix A

Site location figures

DRAFT

Paper Size ISO A4

0 20 40 60 80

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

GHD

Maitland City Council
Walka Water Works – Scobies Lane, Oakhampton Heights NSW
Asbestos Management Plan

Site location layout and indicative areas of asbestos in soil contamination

Project No. **12553096**
Revision No. D
Date **30/11/2022**

FIGURE 1

\\ghdnet\ghd\AU\Newcastle\Projects\22\12553096\GIS\Maps\Working\SAQP_ActivityBased_EA_A.aprx
Print date: 05 May 2022 - 09:34

Data source: LPI: DTDB / DCDB, 2017; Metromap Tile Service: . Created by: asharma4

Appendix B

Asbestos management procedures

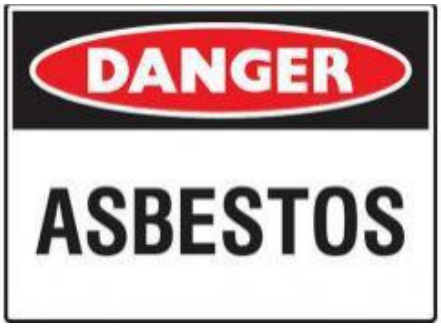
Procedure 01. Signage

Area Effected: All areas with asbestos contamination or Asbestos Containing Materials.

Responsibility: Site Manager (or delegate).

Objective: Appropriate signage informing site occupants to the presence of asbestos contamination. Signage should comply with Australian Standard 1319 Safety Signs for the Occupation Environment.

Procedure: *How to manage and control asbestos in the workplace* recommends signs and labels should comply with Australian Standard 1319 Safety Signs for the Occupational Environment. Areas where asbestos related work is undertaken will be signposted with appropriate signs as per the examples below.



Inspection Frequency: Annually.

Inspection/Reporting: The signage should be inspected annually and reported in accordance with **Procedure 06**.

Actions: If the signage has been damaged or degraded it should be reinstated to meet the requirements of this procedure, as soon as reasonably practicable.

Procedure 02. Capping maintenance

Area Effected:	Areas subject to capping (as detailed in **Appendix A** of the RAP 2022).
Responsibility:	Site Manager (or delegate).
Objective:	Maintenance of capping as per final design. All works are to comply Councils AMP, asbestos codes of practice and standards.
Procedure:	Capping is to be maintained in accordance with final design. The capping structure must comprise of those materials outlined within the final design.
Inspection frequency:	Annually or after extreme weather events or erosion activities.
Inspection/reporting:	Capping inspections should be reported in accordance with **Procedure 06**.
Actions:	If the capping cover is damaged or degraded it should be reinstated to meet the requirements of the final design. Works should be undertaken in accordance with **Procedure 05**.

Procedure 03. Interim grounds maintenance works

Area effected: The nominated areas of the site.

Responsibility: Site Manager (or delegate).

Objective: To protect the health and safety of workers where grounds maintenance works are required on the site. All works are to comply Council's AMP, codes of practice and standards.

Procedure: Grounds maintenance works shall only be undertaken when absolutely necessary and all measures should be undertaken to maintain vegetation cover across the site. Any interim ground maintenance shall be undertaken in accordance with the following measures.

Supervision and Standard of Works

All works involving the interim grounds maintenance must be undertaken in accordance with relevant Council and Safework NSW provisions including:

- The workers should provide a safe work method statement providing reference to the AMP. This shall be reviewed and authorised by the Site Manager (or delegate) or any future land owner
- If uncovered during grounds maintenance, residual soil materials are to be kept contained at all times
- Provide appropriate decontamination facilities to allow the safe removal and storage of PPE

In the site areas requiring asbestos controls all workers potentially exposed to impacted materials are required to wear appropriate levels of PPE. This shall include as a minimum:

- Disposable coveralls
- Appropriate respirator
- Head covering
- Over boots
- Gloves

Dust and Asbestos Control Measures

Dust control measures (such as damping down vegetation) shall be employed during grounds maintenance works, where necessary.

Where required, airborne fibre monitoring should be completed by a licensed asbestos assessor during grounds maintenance works (greater than 0.1 m bgl) in accordance with the *NOHSC:3003, Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd Edition, 2005* and analysed by a NATA accredited laboratory.

Grounds Vegetation Maintenance

For the areas requiring asbestos-related works controls (the maintenance areas which occur within the asbestos impacted areas on the existing AMP figure in Appendix A):

- Asbestos awareness training and site specific inductions to be completed by all grounds maintenance staff
- The areas that require mowing to be wet down with a sprayer from a water cart (dust suppression)
- Mowing within the defined asbestos impacted areas to be completed using remote controlled mowers
- Air monitoring is to be undertaken
- Machinery must be dust and debris free including all filters and wheel treads free before exiting areas of known asbestos impact

For the remaining areas of the site:

- Asbestos awareness training and site specific inductions to be completed by all grounds maintenance staff
- An initial site inspection of the site areas that require maintenance to be completed by an accredited licenced asbestos assessor
- Restrict access to areas where grounds maintenance is occurring
- Mow areas with enclosed cabs or remote mowers
- Limit excavation and disturbance of soil.

Frequency: During all interim grounds maintenance works.

Inspection/reporting: At the completion of any ground maintenance works, the grounds maintenance areas shall be inspected in accordance with the requirements of **Procedure 06**.

Actions: If the vegetation cover is insufficient post inspection, it should be reinstated to meet the requirements of this procedure.

Procedure 04. Subsurface works (breach of capping)

Area effected: The nominated area of the site.

Responsibility: Site Manager (or delegate).

Objective: To protect the health and safety of workers if subsurface works are required. All works are to comply Council's AMP, codes of practice and standards.

Procedure: Subsurface works (i.e. below the marker layer within capping areas) shall only be undertaken when absolutely necessary and all measures should be undertaken to maintain the integrity of the capping layer and vegetation layer including the geotextile fabric of the marker layer. Any subsurface works shall be undertaken in accordance with the following measures.

Supervision and Standard of Works

All subsurface works involving the disturbance of the capping material must be undertaken in accordance with relevant Council and Safework NSW provisions including:

- Wearing Personal Protective Equipment (PPE) (as described below)
- The workers should provide a safe work method statement providing reference to the AMP. This shall be reviewed and authorised by the Area Manager (or delegate) or any future land owner
- If uncovered, residual Fill materials located beneath marker layers0 are to be kept contained at all times
- Provide appropriate decontamination facilities to allow the safe removal and storage of PPE

All workers potentially exposed to impacted materials are required to wear appropriate levels of PPE. This shall include as a minimum:

- Disposable coveralls
- Appropriate respirator
- Head covering
- Over boots
- Gloves

Soils Management

In undertaking excavation works, 2 distinct soil types will require excavation. These include:

- Surface capping material with geotextile beneath; and
- Underlying potentially contaminated soils

These materials must be kept segregated during all stages of the works. Where materials become mixed at any stage, then the mixed materials shall be classified as contaminated soils. It is recommended

	that lining be placed under the areas used for the stockpiling to prevent potentially mixing with non-impacted soils, and impacted material is covered with plastic lining to prevent potential exposure. *Dust and Asbestos Control Measures* Dust control measures (such as damping down) shall be employed during all stages of subsurface works, where necessary. Airborne fibre monitoring should be completed by a licensed asbestos assessor during all excavation works that shall breach marker layers in accordance with the *NOHSC:3003, Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd Edition, 2005* and analysed by a NATA accredited laboratory. *Reinstatement of Capping and Vegetation* The capping is to be reinstated immediately at the cessation of any subsurface works. This shall include re-instatement of the geotextile marker layer in accordance with the specification provided in **Procedure 02**. Reinstatement should be validated by an appropriate environmental consultant. *New Structures* No structures are to be erected on top of capped areas without an assessment of risk.
Frequency:	During subsurface works.
Inspection/reporting:	At the completion of any subsurface works, the reinstatement of the capping material shall be inspected in accordance with the requirements of **Procedure 06**.
Actions:	A breach should be dealt with as soon as reasonably practicable. If the capping or vegetation cover is insufficient post inspection, it should be reinstated to meet the requirements of this procedure. Works should be undertaken in accordance with **Procedure 05**.

Procedure 05. Repair of capping material

Area Effected:	The nominated area of the site.
Responsibility:	Area Manager (or delegate).
Objective:	Repair of capping to reinstate as per final design. All works are to comply Councils AMP, codes of practice and standards.
Procedure:	Any breaches in the site capping shall be repaired within one day of notification to Council wherever practical. Where the capping cannot be repaired within this timeframe, the area of the breach shall be delineated by site fencing and signage until repair works are undertaken. All repair works shall be undertaken in accordance with **Procedure 02**.
Frequency:	Damage to surface capping layer on the site.
Inspection/reporting:	An inspection in accordance with **Procedure 06** shall be undertaken at completion of the repairs.

Procedure 06. Site inspections

Area Effected: All sites with asbestos contamination or Asbestos Containing Materials.

Responsibility: Site Manager (or delegate).

Objective: To check the continued integrity of the capping and other asbestos control measures such as exclusion fencing. The inspection should be completed by either a person who has appropriate Asbestos Training, in consultation with an Environmental Specialist/Licensed Asbestos Assessor or a person recognised as being appropriately competent in the field of contaminated sites with specific experience and training in identification and management of asbestos in soils. All works are to comply Council's AMP, codes of practice and standards.

Procedure: An inspection of the area shall be undertaken and include as a minimum:

- Inspection of the integrity of exclusion fencing and signage
- Inspection of the integrity of the capping, where present
- Inspection of any areas of apparent subsurface disturbance to assess potential of breaching of capping layer or exposure of asbestos contaminated fill
- Inspection of any bare areas

Where an area of potential breaching of the capping and vegetation layer is observed, the inspector shall don PPE in accordance with the requirements of **Procedure 03**. Where the breach is confirmed, the area shall be clearly marked by the placement of survey flag or barrier tape, fencing or otherwise. Repairing the breach shall be undertaken in accordance with **Procedures 02** and **03**.

Frequency: Every three months and as otherwise required by **Procedures 01** to **05**. Frequency of three-monthly inspections shall be reviewed for appropriateness or adequacy every 12 months with consideration of any incidents, results of inspections and ongoing site use.

Inspection/Reporting: Inspections shall be reported in accordance with **Procedure 07**.

Example Site Inspection Checklist

Date of Inspection:	
Locations:	
Job Reference:	
Primary Inspector:	
Role of Primary Inspector:	
Other Inspector (s):	
General Observations	

Inspection Items	**Findings Yes/No/NA**	**Comments**	**Actions**
1. Are work areas clean and tidy?			
2. Are access ways, walkways, entrances and exits clear of obstructions and trip hazards?			
3. Is the ground cover including grass in good condition?			
4. Is any evidence of uncontrolled ground disturbance present? Ie digging, erosion etc			
5. Is all signage at the site unobstructed, clean, legible and undamaged?			
6. Is all exclusion fencing intact and in good condition?			
7. Is the capping layer to geotextile marker layer in good condition, free of scouring/erosion or damage?			
8. Does the capping layer appear to be maintained in accordance with final designs?			
9. Is any visible suspected asbestos containing material present to the site surface?			
10. Additional Items for Consideration			

Procedure 07. Reporting inspections

Area Effected: All sites with asbestos contamination or Asbestos Containing Materials.

Responsibility: Site Manager (or delegate).

Objective: To provide results of inspections in a clear and concise format and to allow comparison to site management requirements.

Procedure:

Reporting

Council or any future landowners should ensure that inspection reports are prepared by an appropriately qualified person or an Environmental Consultant should be engaged. The nominated person shall prepare reports summarising each respective inspection event completed under this AMP. Each report shall contain details of the following:

- Date of inspection
- Site observations during inspection
- Notes of activities undertaken during inspection
- Assessment of vegetation across capped areas
- Assessment of capping across capped areas
- Any relevant recommendations for future monitoring or implementation of the LTEMP/AMP

A copy of each inspection should be held by Council or any future land owners.

Assessment

Any breaches in the capping must be clearly identified in the inspection report. Any breaches rectified, necessitating the inspection and inspection report shall be noted in the report.

Frequency: Within three days of the completion of an inspection event.

Inspection/Reporting: Copies of all inspection/reports should be held by Council or any future land owners.

Procedure 08. Waste storage

Area Effected: All sites with asbestos contamination or Asbestos Containing Materials.

Responsibility: Site Manager (or delegate).

Objective: To ensure safe management and disposal of asbestos waste materials. All works are to comply Councils AMP, codes of practice and standards.

Procedure: Ensure that asbestos waste is contained and labelled in accordance with the GHS before the waste is removed from the asbestos impacted area.

If personal protective equipment used in asbestos-related work is to be removed from the work area for disposal, it also must be sealed within a container, which is decontaminated and labelled to indicate the presence of the asbestos in accordance with the WHS Regulations and disposed of at a licensed waste facility as soon as reasonably practicable.

At the completion of asbestos removal work, the tools and equipment must be decontaminated, placed in sealed, labelled containers and if necessary, disposed of as asbestos waste.

Asbestos waste must be transported and disposed of in accordance with the relevant state or territory Environment Protection Authority (EPA) requirements. Asbestos waste can only be disposed of at a site licensed by the EPA and it must never be disposed of in the general waste system.

Frequency Inspections: All waste should be disposed of as soon as reasonably practicable.

Inspection/Reporting: Copies of all inspection(s) should be held by Council or any future land owners.

Procedure 09. Unexpected finds

Area Effected: All areas of the site.

Responsibility: Site Manager (or delegate), any future land owner, or third-parties undertaking works in accordance with existing easements.

Objective: To ensure that a protocol has been provided should unexpected materials be found at the site. All works are to comply Councils AMP, codes of practice and standards.

Procedure: Unexpected situations may entail:

- The discovery of asbestos containing materials in an area of the site where it has not previously been identified.
- The uncovering of greater amounts of ground contamination than presently known.
- The uncovering of types of contamination that are presently unknown.

Details of the procedures that will be adopted in the event of these occurrences are defined below:

If unexpected materials are identified, all works should be ceased and Council or the future land owner should be contacted immediately.

The location, form, volume, type and chemical characteristics of the material will need to be assessed by an appropriate person.

The proposed strategy to deal with the characterised material should be undertaken by an appropriate qualified person or Environmental Consultant and should be assessed and dealt with in accordance with the legislation and guidance detailed in Section 2.2 of the AMP.

Frequency: Upon identification.

Inspection/Reporting: Copies of all unexpected finds, assessment of finds and actions to deal with the finds should be reported and copies held by Council or any future land owners.

Procedure 10. Non-compliance with AMP

Area Effected: All sites with asbestos contamination or Asbestos Containing Materials.

Responsibility: Site Manager (or delegate) or any future land owner.

Objective: To ensure that the AMP is implemented as intended.

Procedure: Non-compliance with the intent and procedures of the AMP may occur during the implementation of the AMP.

Such non compliances may include such events as:

- Missing, or lateness, in undertaking inspection event.
- Breaches of required controls on site or during handling of ACM, or
- Councils AMP, regulations, codes of practice or standards

Where non-compliance is identified by a responsible person(s) or organisation (e.g. EPA, regulatory authority), they shall inform Council of the non-compliance in writing. Council shall have the responsibility of informing the non-complying parties in writing of the non-compliance. The non-complying party will be required to rectify the non-conformity as soon as possible, as per the requirements if the relevant procedure(s) where non-compliance has occurred. Details of the action taken to rectify the non-compliance shall be provided to Council.

Where non-compliance cannot be rectified, then the AMP will require to be reviewed as per the requirements of the review **Procedures 12** and **13**.

Frequency: As required.

Inspection/Reporting: Copies of non-compliance notifications and rectifications should be held by Council or any future land owners.

Procedure 11. Record keeping

Area Effected:	All sites with asbestos contamination or Asbestos Containing Materials.
Responsibility:	Site Manager (or delegate) or any future land owner.
Objective:	Records of the implementation of the AMP are to be retained by Council or any other future landowner. All works are to comply Councils AMP, codes of practice and standards.
Procedure:	Council shall be responsible for the maintenance of all documents relating to the implementation of the AMP. This shall include monitoring reports, additional assessments and any relevant correspondence between Council and /or other parties (e.g. contractors, environmental consultant etc.).
Frequency:	Annually as a minimum, or as required.
Inspection/Reporting:	All records shall be retained by Council or any other future landowner for a period of at least seven (7) years and/or as otherwise required.

Procedure 12. Review of AMP implementation

Area Effected: All sites with asbestos contamination or Asbestos Containing Materials.

Responsibility: HSE Environmental Specialist/HSE Auditor or any future land owner.

Objective: Council shall undertake a review of the implementation of the AMP. The review shall be undertaken by either a person who has appropriate Asbestos Training, in consultation with an Environmental Specialist/Environmental Manager or a person recognised as being appropriately competent in the field of contaminated sites, as per the criteria provided in the *National Environment Protection (Assessment of Site Contamination) Measure 1999*, NEPC 2013. All works are to comply Council's AMP, codes of practice and standards.

Procedure: Specific tasks that will be undertaken by the reviewer include:

- Review of inspection reports generated by Council to ensure it meets the intended scope of the AMP.
- Liaison with Council as required in interpreting the requirements of the AMP.

Where non-compliance is detected during the review process undertaken by the reviewer, then the non-compliance shall be informed as per **Procedure 10**.

The review/updates to the AMP should also include changes to the areas of known contamination (such as those in **Appendix A**).

Frequency of Review: Annually. In addition, it should be reviewed and updated accordingly upon the completion of the following milestones.

- Unexpected Finds (**Procedure 09**)
- Updates to contamination status of sites
- Vacation of site
- Change in Council representative
- As required to reflect changes in relevant legislation

Inspection/Reporting: All AMP reviews shall be retained by Council and any other future land owner for a period of at least seven (7) years or as otherwise required

Procedure 13. Review of AMP – Site and/or land ownership changes

Area Effected: All sites with asbestos contamination or Asbestos Containing Materials.

Responsibility: HSE Environmental Specialist or any future land owner.

Objective: The AMP requires review to ensure its continued appropriateness to be used on the site.

Procedure: Council shall undertake a review of the AMP if a review is warranted (e.g. change in site ownership). The review shall consider:

- The frequency of inspections required
- Any non-compliance with the AMP that have been unable to be resolved
- Any changes in state or national environmental protection or occupational legislation or guidelines that impact any part of the AMP, or
- Proposed changes in land use of the site or adjoining sites

Where a review identifies items, which require modification or addition to the AMP, then a revision of the AMP shall be published and made available.

Frequency of Review: If land use or land ownership changes, or a maximum of every 5 years.

Inspection/Reporting: All AMP reviews or revisions shall be retained by Council or future land owner.

Appendix C

Asbestos register

Asbestos Materials Register

Site Location:Walka Water Works - Scobies Lane, Oakhampton Heights NSW

Inspection Date: 23/09/2022

Consultant			Location / Description										Risk Assessment								Remediation Actions		
Inspection date	Reinspection Date	Consultant and Surveyor Reference	Building Ref	Space	Material description	Primary location	Secondary location	Application	Surface treatment	Photograph reference	Sample identification	Laboratory results	Friability	Material condition	Likelihood of disturbance	Risk	Control method	Labelling	Estimated quantity	Units	Comments	Date Actioned	Remediation Comments	Hygienist Comments
			Walka Water Works - Asbestos in soil located in various areas of the site																				
Asbestos containing materials																							
23-Sep-22		GHD	Walka Water Works	Ground surface	Asbestos in soil	Various areas of site documented within GHD 2022a and 2022b	Ground surface	Soil	Unsealed	-	Various see reports	Various see reports	Friable and non friable	Poor	High	Very High	Remediation	N/A	1	Item				
23-Sep-22		GHD	Walka Water Works	Below ground surface	Asbestos in soil	Various areas of site documented within GHD 2022a and 2022b	Below ground surface	Soil	Unsealed	-	Various see reports	Various see reports	Friable and non friable	Poor	High	Very High	Remediation	N/A	1	Item				

Asbestos Materials Register

Site Location: Walka Water Works - Scobies Lane, Oakhampton Heights NSW

Inspection Date: 16 August 2021

Consultant			Location / Description												Risk Assessment									Remediation Actions		
Inspection date	Reinspection Date	Consultant and Surveyor Reference	Building Ref	Space	Floor	Room	Material description	Primary location	Secondary location	Application	Surface treatment	Photograph reference	Sample identification	Laboratory results	Friability	Material condition	Likelihood of disturbance	Risk	Control method	Labelling	Estimated quantity	Units	Comments	Date Actioned	Remediation Comments	Hygienist Comments
Building Description			Walka Water Works - Former Power Station																							
Asbestos containing materials																										
16-Aug-21		GHD	Former power station footprint	External	Ground floor	Eastern portion	Fibre cement	Playground	Electrical Distribution Board (EDB)	Backing board	Sealed	2	Visual Observation	Presume to contain asbestos	Non-friable	Good	Low	Low	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	1	Item	EDB locked from public access.			

Asbestos Materials Register

Site Location: Walka Water Works - Scobies Lane, Oakhampton Heights NSW

Inspection Date: 16 August 2021

Consultant			Location / Description												Risk Assessment										Remediation Actions		
Inspection date	Reinspection Date	Consultant and Surveyor Reference	Building Ref	Space	Floor	Room	Material description	Primary location	Secondary location	Application	Surface treatment	Photograph reference	Sample identification	Laboratory results	Friability	Material condition	Likelihood of disturbance	Risk	Control method	Labelling	Estimated quantity	Units	Comments	Date Actioned	Remediation Comments	Hygienist Comments
Building Description			Walka Water Works - Main pumphouse and infrastructure																								
Asbestos containing materials																											
~~3 Jan 08~~	~~16 Aug 21~~	~~GHD~~	~~Walka Water Works~~	~~External~~	~~Ground floor~~	~~Sand filter beds - Test pit 3~~	~~Fibre cement~~	~~Sand filter bed 2~~	~~Top of ground~~	~~Debris~~	~~Unsealed~~	~~21~~	~~Refer to A2~~	~~Chrysotile, crocidolite and amosite asbestos detected~~	~~Non-friable~~	~~Poor~~	~~Medium~~	~~High~~	~~Removal~~	~~N/A~~	~~2~~	~~Item~~	~~Fragments observed on concrete surface of former filter beds. See GHD, 2008 site figure for location.Area inaccessible to public.~~ ~~Test pit location identified in Appendix A Figure 4.1 (GHD, 2021).~~	31/03/2022	Surface fragments removed by JAC under asbestos removal conditions	Clearance report issued by GHD 6 May 2022
3-Jan-08	16-Aug-21	GHD	Walka Water Works	External	Ground floor	Former engineers residence	Corrugated fibre cement sheeting	Footing of former engineers residence	Top of ground	Debris	Unsealed	22	A6	Chrysotile asbestos detected	Non-friable	N/A	Low	Low	Defer. Monitor and maintain current condition	N/A	1	m2	Jaunary 2008 - Single fragement on ground. See GHD, 2008 site figure for location. August 2021 - Corrugated fibre cement sheeting had been removed. No evidence provided by council.	Unknown	August 2021 - Corrugated fibre cement sheeting had been removed. No evidence of removal supplied by council. Monitor location.	
3-Jan-08	16-Aug-21	GHD	Walka Water Works	External	Ground floor	Exterior of caretakers residence	Corrugated fibre cement sheeting	Southern exterior	Top of ground	Debris	Unsealed	-	A7	Chrysotile asbestos detected	Non-friable	N/A	Medium	Medium	Defer. Monitor and maintain current condition	N/A	-	m2	January 2008 - Unable to estimate quantity. Fragments of asbestos on ground. August 2021: Corrugated fibre cement sheeting not observed. Monitor location for unexpected finds.			
16-Aug-21		GHD	Walka Water Works	Internal	Ground floor	Main entrance	Fibre cement	Adjacent main access gate	Electrical Distribution Board (EDB)	Backing board	Sealed	11	Visual Observation	Presume to contain asbestos	Non-friable	Good	Low	Low	Removal or management	Labels required (not affixed or not sufficient)	1	Item	Maintain in current condition. Complete further assessment prior to removal or refurbitchment			
16-Aug-21		GHD	Walka Water Works	External	Ground floor	Eastern portion	Fibre cement	Adjacent eastern wall of pumphouse	Telstra pit	Insulating material	Sealed	14	Visual Observation	Presume to contain asbestos	Non-friable	Good	Medium	Low	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	1	Item	Maintain in current condition. Coordinate with telecommunication company for presence/absence of asbestos containing material.			
16-Aug-21		GHD	Walka Water Works	Internal	Ground floor	Main pumphouse	Moulded material	Top of eastern wall (throughout)	Gaskets	Insulating material	Sealed	-	Visual Observation	Presume to contain asbestos	Non-friable	Good	Low	Low	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	4	Item	Further assessment required prior to removal or refurbishment			
3-Jan-08	16-Aug-21	GHD	Walka Water Works	Internal	Ground floor	Main pumphouse	Fibre cement	Mens and womens toilet	Top of ceiling	Lining	Sealed	17	A4	Chrysotile asbestos detected	Non-friable	Good	Low	Low	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	20	m2	January 2008 - Good Condition. August 2021 - Ceiling lining remains in good conditions, continue to monitor and maintain.			
16-Aug-21		GHD	Walka Water Works	Internal	Ground floor	Main pumphouse	Millboard	Mens and womens toilet	Electrical Duct Heater (EDH)	Lining	Sealed	17	Visual Observation	Presume to contain asbestos	Friable	Unknown	Medium	High	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	10	m2	EDH inaccessible due to ground stability and height restrictions. *EDH condition is unknown, fiurther investigation is required as soon as possible. Do not reoccupy building / re-use the ducting prior to further investigation.			
16-Aug-21		GHD	Walka Water Works	Internal	Ground floor	Main pumphouse	Insulating material	Womens toilet	Hot water system	Insulating material	Sealed	17	Visual Observation	Presume to contain asbestos	Friable	Good	Low	Low	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	1	Item	Hot water system suggested to be installed during operations of power station (1950s). Maintain in current condition, complete further assessment prior to removal or refurbishment.			
16-Aug-21		GHD	Walka Water Works	Internal	Ground floor	Main pumphouse	Millboard	Museum	EDH	Lining	Sealed	-	Visual Observation	Presume to contain asbestos	Friable	Unknown	Medium	High	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	10	m2	EDH inaccessible due to height restrictions. *EDH condition is unknown, further investigation is required as soon as possible. Do not reoccupy building / re-use the ducting prior to further investigation.			
3-Jan-08	16-Aug-21	GHD	Walka Water Works	Internal	Ground floor	Main pumphouse	Fibre cement	Sub floor	Top of ground	Debris	Unsealed	-	A8	Chrysotile asbestos detected	Non-friable	Poor	Low	Medium	Enclosure	N/A	-	-	January 2008 - Unable to estimate quantity. Fragments of asbestos on ground. August 2021: The subfloor is inaccessible due to safety concerns, fibre cement was observed during the inspection.			
19-Nov-15	16-Aug-21	ESP	Walka Water Works	Internal	Ground floor	Main pumphouse	Fibre cement	Storage room	Electrical Distribution Board (EDB)	Backing board	Sealed	-	E46348	Chrysotile asbestos detected	Non-friable	Fair	Low	Medium	Removal	Not required	1	Item	August 2021: EDB not located during inspection. New EDB observed in storage room and main hall. No evidence has been supplied of removal by Council.			

Asbestos Materials Register

Site Location: Walka Water Works - Scobies Lane, Oakhampton Heights NSW

Inspection Date: 16 August 2021

Consultant			Location / Description												Risk Assessment									Remediation Actions		
Inspection date	Reinspection Date	Consultant and Surveyor Reference	Building Ref	Space	Floor	Room	Material description	Primary location	Secondary location	Application	Surface treatment	Photograph reference	Sample identification	Laboratory results	Friability	Material condition	Likelihood of disturbance	Risk	Control method	Labelling	Estimated quantity	Units	Comments	Date Actioned	Remediation Comments	Hygienist Comments
Building Description			Walka Water Works - Main pumphouse and infrastructure																							
19-Nov-15	16-Aug-21	ESP	Walka Water Works	Internal	Ground floor	Main pumphouse	Fibre cement	Kitchen, office, main entrance	Top of ceiling	Lining	Sealed	-	-	Presume to contain asbestos	Non-friable	Good	Low	Low	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	90	m2	Further assessment required prior to removal or refurbishment			
19-Nov-15	16-Aug-21	ESP	Walka Water Works	Internal	Ground floor	Main pumphouse	Moulded material	Internal lightswitches	Bakelite	Insulating material	Sealed	-	Visual Observation	Presume to contain asbestos	Non-friable	Good	Low	Low	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	10	Item	Further assessment required prior to removal or refurbishment.			
16-Aug-21		GHD	Walka Water Works	Internal	Ground floor	Main pumphouse	Woven material	Internal lightswitches (throughout)	Cables	Insulating material	Unsealed	18	Visual Observation	Presume to contain asbestos	Non-friable	Good	Low	Low	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	-	Lm	Unknown quanity of cable material. Woven cable material observed within office lightswitch. Further assessment required prior to removal or refurbishment.			
19-Nov-15	16-Aug-21	ESP	Walka Water Works	Internal	Ground floor	Main pumphouse	Moulded material	Function hall	Beneath south eastern grate	Conduit	Unsealed	19	Visual Observation	Presume to contain asbestos	Non-friable	Fair	Low	Low	Encapsulate (seal)	Labels required (not affixed or not sufficient)	1	Item	August 2021: Conduit remains in fair condition.			
16-Aug-21		GHD	Walka Water Works	Internal	First floor	Main pumphouse	Millboard	EDH	Internal lining	Insulating material	Sealed	20	Visual Observation	Presume to contain asbestos	Friable	Unknown	Medium	High	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	10	m2	EDH inaccessible due to ground stability and height restrictions. *EDH condition is unknown, further investigation is required as soon as possible. Do not reoccupy building / re-use the ducting prior to further investigation.			
16-Aug-21		GHD	Walka Water Works	Internal	First floor	Main pumphouse	Moulded material	Wall (throughout)	Gaskets	Insulating material	Sealed	15	Visual Observation	Presume to contain asbestos	Non-friable	Good	Low	Low	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	4	Item	Further assessment required prior to removal or refurbishment			
16-Aug-21		GHD	Walka Water Works	Internal	First floor	Main pumphouse	Moulded material	Metal pipes (throughout)	Gasket	Sealant material	Sealed	-	Visual Observation	Presume to contain asbestos	Non-friable	Good	Low	Low	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	8	Item	Further assessment required prior to removal or refurbishment			
16-Aug-21		GHD	Walka Water Works	Internal	Basement	Main pumphouse	Moulded material	Wall (throughout)	Gaskets	Insulating material	Sealed	-	Visual Observation	Presume to contain asbestos	Non-friable	Good	Low	Low	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	4	Item	Further assessment required prior to removal or refurbishment			
16-Aug-21		GHD	Walka Water Works	Internal	Garage	Main pumphouse	Fibre cement	Adjacent access gate	Electrical Distribution Board (EDB)	Backing board	Sealed	-	Visual Observation	Presume to contain asbestos	Non-friable	Good	Low	Low	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	4	Item	Further assessment required prior to removal or refurbishment			

Asbestos Materials Register

Site Location: Walka Water Works - Scobies Lane, Oakhampton Heights NSW

Inspection Date: 16 August 2021

Consultant			Location / Description												Risk Assessment									Remediation Actions		
Inspection date	Reinspection Date	Consultant and Surveyor Reference	Building Ref	Space	Floor	Room	Material description	Primary location	Secondary location	Application	Surface treatment	Photograph reference	Sample identification	Laboratory results	Friability	Material condition	Likelihood of disturbance	Risk	Control method	Labelling	Estimated quantity	Units	Comments	Date Actioned	Remediation Comments	Hygienist Comments
Building Description			Walka Water Works - Main pumphouse and infrastructure																							
Non-asbestos containing materials																										
3-Jan-08	16-Aug-21	GHD	Walka Water Works	Internal	Ground floor	Main pumphouse	Fibre cement	Shower room (accessed via muesum)	Top of ceiling	Lining	Sealed	16	A3	Chrysotile asbestos detected	N/A	N/A	N/A	N/A	N/A	N/A	40	m2	January 2008 - Ceiling damaged and in poor condition. One section collapsed. August 2021 - Ceiling lining observed to be removed.	Unknown	August 2021 - Ceiling has been removed. No evidence of removal supplied by Council.	
3-Jan-08		GHD	Walka Water Works	Internal	Basement	Main pumphouse	Fibre cement	Basement eastern wall	Infill panel	Lining	Unsealed	-	A5	No asbestos detected	N/A	Good	N/A	N/A	N/A	N/A	1	m2	No risk present.			
19-Nov-15		ESP	Walka Water Works	Internal	Ground floor	Main pumphouse	Fibre cement	Storage room	Fibre cement sheets	Lining	Unsealed	-	E46349	No asbestos detected	N/A	Good	N/A	N/A	N/A	N/A	10	m2	No risk present.			
16-Aug-21		GHD	Walka Water Works	External	Ground floor	Eastern portion	Sealant	Water meter box	Gasket	Sealant	Sealed	-	FC03	No asbestos detected	N/A	Fair	N/A	N/A	N/A	N/A	1	Lm	No risk present			
16-Aug-21		GHD	Walka Water Works	Internal	Ground floor	Main pumphouse	Vinyl cover (blue)	Kitchen	Top of ground	Floor covering	Sealed	-	FC05	No asbestos detected	N/A	Fair	N/A	N/A	N/A	N/A	15	m2	No risk present			
16-Aug-21		GHD	Walka Water Works	Internal	Ground floor	Main pumphouse	Dust	Shower room (accessed via muesum)	Top of ground	Dust	Unsealed	-	FC06	No asbestos detected	N/A	Poor	N/A	N/A	N/A	N/A	10	m2	No risk present.			
16-Aug-21		GHD	Walka Water Works	Internal	Basement	Main pumphouse	Woven material	Top of metal pipe	Lagging	Insulating material	Unsealed	-	FC07	No asbestos detected	N/A	Poor	N/A	N/A	N/A	N/A	1	Lm	No risk present.			
16-Aug-21		GHD	Walka Water Works	Internal	First floor	Main pumphouse	Woven material	EDH	Outer lining	Insulating material	Unsealed	-	FC09	No asbestos detected	N/A	Poor	N/A	N/A	N/A	N/A	2	m2	No risk present.			
19-Nov-15		ESP	Walka Water Works	Internal	First floor	Main pumphouse	Vinyl cover (black)	Top of floorboards	Vinyl tile	Lining	Unsealed	-	E46350	No asbestos detected	N/A	Good	N/A	N/A	N/A	N/A	50	m2	No risk present.			
19-Nov-15		ESP	Walka Water Works	Internal	Throughout	Main pumphouse	Mastic (throughout)	Window framing	Mastic	Sealant	Chalking	-	E46351	No asbestos detected	N/A	Good	N/A	N/A	N/A	N/A	50	m2	No risk present.			

Asbestos Materials Register

Site Location: Walka Water Works - Scobies Lane, Oakhampton Heights NSW

Inspection Date: 16 August 2021

Consultant			Location / Description												Risk Assessment									Remediation Actions		
Inspection date	Reinspection Date	Consultant and Surveyor Reference	Building Ref	Space	Floor	Room	Material description	Primary location	Secondary location	Application	Surface treatment	Photograph reference	Sample identification	Laboratory results	Friability	Material condition	Likelihood of disturbance	Risk	Control method	Labelling	Estimated quantity	Units	Comments	Date Actioned	Remediation Comments	Hygienist Comments
Building Description			Walka Water Works - Amenites Building																							
Asbestos containing materials																										
3-Oct-13	16/08/2021	PES	Walka Water Works	Internal	Ground floor	Male and female toilets	Fibre cement	Toilet cubicles	Ceiling lining	Lining	Sealed	6	WWW1	Chrysotile and amosite asbestos detected	Non-friable	Good	Low	Low	Defer. Monitor and maintain current condition	Labels required (not affixed or not sufficient)	10	m2	August 2021: Ceiling lining of male and female toilet were observed to be in good condition			
Non asbestos containing materials																										
3-Oct-13		PES	Walka Water Works	Internal	Ground floor	Male and female toilets	Compressed cement sheeting	Toilet cubicles	Partion walls	Lining	Sealed	-	WWW2	No asbestos detected	N/A	Good	N/A	N/A	N/A	N/A	10	m2	No risk is present.			
19-Nov-15		ESP	Walka Water Works	External	Ground floor	Exterior throughout	Fibre cement	Eave lining	Throughout	Lining	Sealed	-	E46181	No asbestos detected	N/A	Good	N/A	N/A	N/A	N/A	2	Item	No risk is present.			

Asbestos Materials Register

Site Location: Walka Water Works - Scobies Lane, Oakhampton Heights NSW

Inspection Date: 16 August 2021, 15 February 2022

Consultant			Location / Description												Risk Assessment										Remediation Actions		
Inspection date	Reinspection Date	Consultant and Surveyor Reference	Building Ref	Space	Floor	Room	Material description	Primary location	Secondary location	Application	Surface treatment	Photograph reference	Sample identification	Laboratory results	Friability	Material condition	Likelihood of disturbance	Risk	Control method	Labelling	Estimated quantity	Units	Photo Reference	Comments	Date Actioned	Remediation Comments	Hygienist Comments
Building Description			Walka Water Works - Caretakers residence																								
Asbestos containing materials																											
~~16-Aug-21~~		~~GHD~~	~~Walka Water Works~~	~~External~~	~~Ground floor~~	~~Caretakers Residence (northern exterior)~~	~~Fibre cement~~	~~Access road / driveway~~	~~Top of ground~~	~~Debris~~	~~Unsealed~~	~~24~~	~~FC12~~	~~Chrysotile, amosite and crocidolite asbestos detected~~	~~Non friable~~	~~Poor~~	~~High~~	~~Very high~~	~~Removal~~	~~N/A~~	~~>10~~	~~Item~~		Following removal, further finds are to be managed under an unexpected finds protocol.	31-Mar-22	Removed fragments by JAC under asbestos removal conditions	Clearance report issued 6 May 2022 by GHD
Non asbestos containing materials																											
15-Feb-22		GHD	Walka Water Works	External	Ground floor	Caretakers Residence	Fibre cement	Verandah	Bullnose infill panel (south end)	Lining	Sealed	-	S01	No asbestos detected	N/A	Good	N/A	N/A	N/A	N/A	2	m2		No risk is present.			
15-Feb-22		GHD	Walka Water Works	Internal	Ground floor	Caretakers Residence	Vinyl flooring	Kitchen	Floor lining	Flooring	Sealed	-	S02	No asbestos detected	N/A	Good	N/A	N/A	N/A	N/A	10	m2		No risk is present.			
15-Feb-22		GHD	Walka Water Works	External	Ground floor	Caretakers Residence	Fibre cement	Garden shed in yard	Infill panel to rear of shed wall	Lining	Unsealed	-	S03	No asbestos detected	N/A	Good	N/A	N/A	N/A	N/A	1	m2		No risk is present.			
15-Feb-22		GHD	Walka Water Works	External	Ground floor	Caretakers Residence	Insulating panel	External meter box	Insualting electrical backing board	Lining	Sealed	-	Visual observation	No asbestos detected	N/A	Good	N/A	N/A	N/A	N/A	1	m2		Newer style backing board. No asbestos suspected.			
3-Oct-13		PES	Walka Water Works	External	Ground floor	Caretakers Residence	Fibre cement	Verandah	Bullnose infill panel	Lining	Sealed	-	WWW3	No asbestos detected	N/A	Good	N/A	N/A	N/A	N/A	2	m2		No risk is present.			
3-Oct-13		PES	Walka Water Works	Internal	Ground floor	Caretakers Residence	Fibre cement	Bathroom wall	Upper infill panel (throughout)	Lining	Sealed	-	WWW4	No asbestos detected	N/A	Good	N/A	N/A	N/A	N/A	10	m2		No risk is present.			
3-Jan-08		PES	Walka Water Works	External	Ground floor	Exterior throughout	Fibre cement	Eave lining	Throughout	Lining	Sealed	-	-	No asbestos detected	N/A	Good	N/A	N/A	N/A	Not required	2	Item		No risk is present.			

Asbestos Materials Register

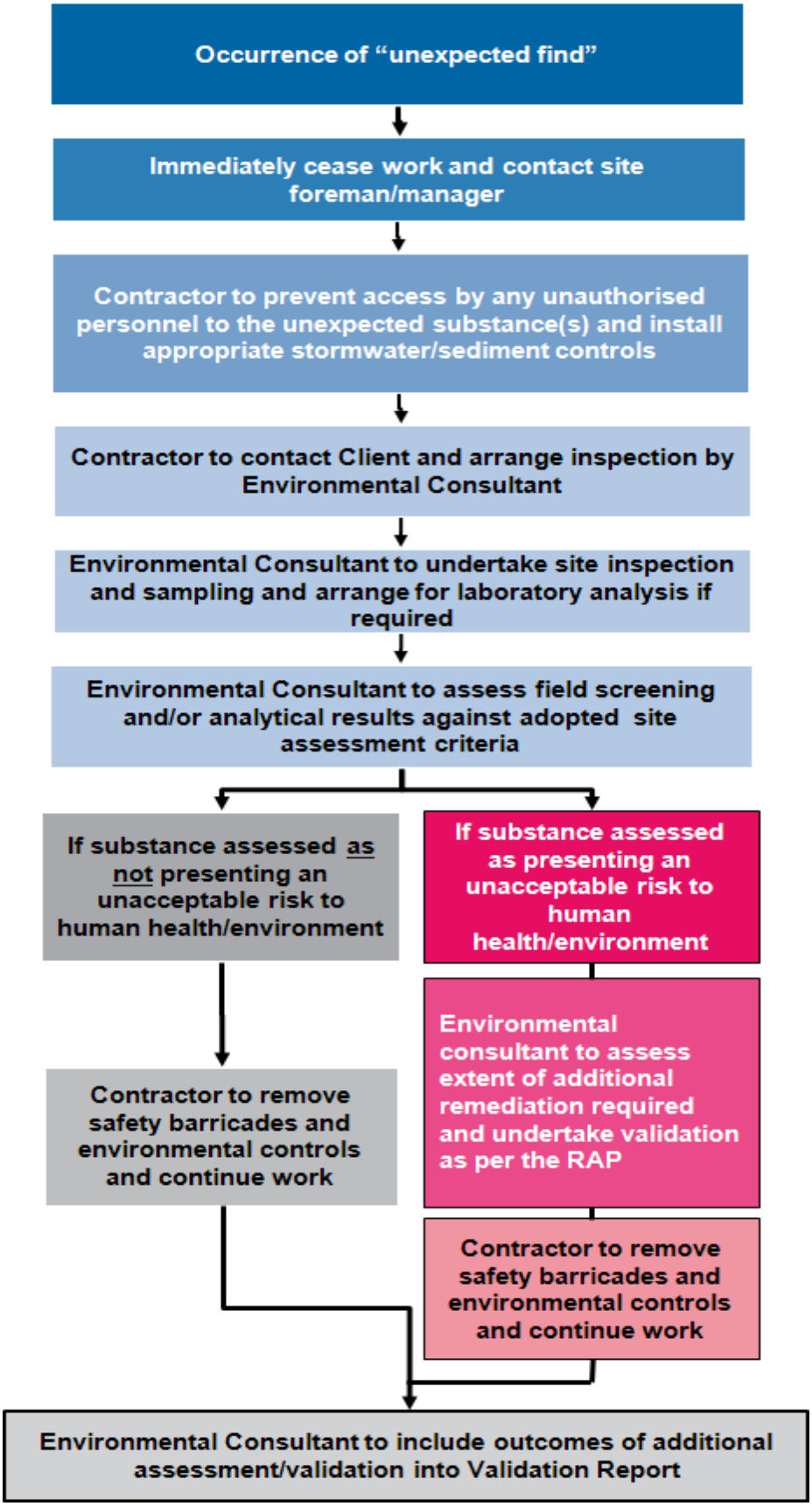
Site Location: Walka Water Works - Scobies Lane, Oakhampton Heights NSW

Inspection Date: 16 August 2021

Consultant			Location / Description												Risk Assessment									Remediation Actions		
Inspection date	Reinspection Date	Consultant and Surveyor Reference	Building Ref	Space	Floor	Room	Material description	Primary location	Secondary location	Application	Surface treatment	Photograph reference	Sample identification	Laboratory results	Friability	Material condition	Likelihood of disturbance	Risk	Control method	Labelling	Estimated quantity	Units	Comments	Date Actioned	Remediation Comments	Hygienist Comments
Building Description			Walka Water Works - Community land																							
Asbestos containing materials																										
3-Jan-08	16-Aug-21	GHD	Walka Water Works	External	Ground floor	Reservior	Fibre cement conduit	Western boundary	Top of ground	Conduit	Unsealed	-	A8	Chrysotile asbestos detected	Non-friable	Fair	Low	Medium	Removal	N/A	1	Item	January 2008 - One metre protruding from ground, Unable to quantify material underground. August 2021 - Unable to locate pipe. No evidence of removal supplied by council.			
3-Jan-08	16-Aug-21	GHD	Walka Water Works	External	Ground floor	Reservior	Fibre cement conduit	Eastern boundary	Stockpiled material	Conduit	Unsealed	-	A10	Chrysotile asbestos detected	Non-friable	Fair	Low	Medium	Removal	N/A	1	Item	August 2021 - Unable to locate stockpile. No evidence of removal supplied by council.			

Appendix C

Unexpected Finds Protocol



Unexpected finds decision process