

REPORT TO SYESUN PTY LTD

ON

INTERIM ASBESTOS MANAGEMENT PLAN

FOR

FLOWER POWER GARDEN CENTRE

AT

277 MONA VALE ROAD, TERREY HILLS, NSW

Date: 6 April 2022

Ref: E34278PHrpt4-AMP

JKEnvironments www.jkenvironments.com.au

T: +61 2 9888 5000 JK Environments Pty Ltd ABN 90 633 911 403





Report prepared by:

Todd Hore

Senior Associate | Environmental Engineer

Report reviewed by:

湘

Vittal Boggaram

Principal Associate | Environmental Scientist

For and on behalf of JKE PO BOX 976 NORTH RYDE BC NSW 1670

DOCUMENT REVISION RECORD

Report Reference	Report Status	Report Date
E34278PHrpt4-AMP	Final Report	6 April 2022



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Abbreviations

Asbestos Containing Material	ACM
Asbestos Fines/Fibrous Asbestos	AF/FA
Asbestos Management Plan	AMP
Asbestos Removal Control Plan	ARCP
Detailed Site Investigation	DSI
Environment Protection Authority	EPA
Fibre Cement Fragment(s)	FCF
High Efficiency Particulate Air	НЕРА
JK Environments	JKE
Licensed Asbestos Assessor	LAA
Long-term Environmental Management Plan	LTEMP
Map Grid of Australia	MGA
National Association of Testing Authorities	NATA
Preliminary Environmental Site Assessment	PESA
Person Conducting a Business or Undertaking	PCBU
Protection of the Environment Operations	POEO
Personal Protective Equipment	PPE
Preliminary Site Investigation	PSI
Remediation Action Plan	RAP
Work Health and Safety	WHS
Work Health and Safety Plan	WHSP

Units

MetresmMetres below ground levelmBGLMilligrams per Kilogrammg/kgMicronμmPercentage weight / weight% w/w



1 INTRODUCTION

Syesun Pty Ltd ('the client') commissioned JK Environments (JKE) to prepare an interim Asbestos Management Plan (AMP) for the on-going use and operation of Flower Power Garden Centre at 277 Mona Vale Road, Terrey Hills, NSW. This AMP is required to address the client obligation under the Work Health and Safety Regulation 2017 (NSW)¹ and Work Health and Safety Act 2011 (NSW)². Clause 429 of the WHS Regulation 2017 requires that a person with management or control of a workplace where asbestos containing material (ACM) is identified must ensure that an AMP is prepared for the workplace.

The site location is shown on Figure 1 and the site boundaries are shown on Figure 2 attached in Appendix A.

The AMP is to be implemented for normal day to day use of the site as a garden centre. The AMP is not intended to apply to construction activities or remediation of the site. A construction phase AMP should be prepared and implemented during any major works involving soil disturbance.

JKE has previously undertaken several phases of investigation at the site. The investigations identified the occurrence of Asbestos Fines/Friable Asbestos (AF/FA) and bonded ACM in fill/soil. A summary of this information is presented in Section 2.

This AMP has been developed specifically to outline the necessary requirements for the management of asbestos in soil (fill) during normal site operations (garden centre) by managing and minimising asbestos related health risks to personnel, subcontractors and the general public working at or visiting the site. The AMP has been prepared generally in accordance with the requirements of SafeWork NSW and reflects the known site conditions relating to asbestos in fill soil.

1.1 Objectives

The aim of the AMP is to outline the procedures to be implemented in order to effectively manage the asbestos-impacted fill identified at the site in accordance with relevant Codes of Practice and Work Health and Safety (WHS) legislation.

The objectives of the AMP are to:

- Protect the health of site users including: personnel, sub-contractors and the general public;
- Outline the known extent of asbestos-impacted fill at the site;
- Outline the ongoing management requirements during the normal garden centre operations to minimise the risk of exposure to asbestos and potential health effects to site users;
- Outline the responsibilities of maintaining the requirements of this AMP;
- Outline the appropriate control measures to be implemented in the event that any intrusive works are required at the site;
- Outline the safe work procedures to manage works within asbestos impacted areas; and
- Document procedures for asbestos waste handling and transport.

² NSW Government, (2011). Work Health and Safety Act 2011 (NSW). (referred to as WHS Act 2011)



¹ NSW Government, (2017). Work Health and Safety Regulation 2017 (NSW). (referred to as WHS Regulation 2017)



1.2 Scope of Work

The scope of work included review of the existing JKE site information, and preparation of the AMP.

The scope of work was undertaken with reference to the WHS Regulation 2017 and the Safe Work Australia Codes of Practice: How to Manage and Control Asbestos in the Workplace (2020)³; and How to Safely Remove Asbestos (2020)⁴. Other guidelines and legislation/regulations have been referenced throughout the AMP where applicable.

⁴ Safe Work Australia (2020). Code of Practice How to Safely Remove Asbestos. (referred to as CoP How to Safely Remove Asbestos) (July 2020)



³ Safe Work Australia (2020). Code of Practice How to Manage and Control Asbestos in the Workplace. (referred to as CoP How to Manage and Control Asbestos in the Workplace) (July 2020)



2 SITE DETAILS

2.1 Site Identification

Table 2-1: Site Identification

Current Site Owner (certificate of title):	Syesun Pty Limited
Site Address:	277 Mona Vale Road (also known as 62 Myoora Road), Terrey Hills, NSW
Lot & Deposited Plan:	Lot 4 in DP 737411
Current Land Use:	Garden Centre
Proposed Land Use:	Garden Centre
Local Government Authority:	Northern Beaches Council
Current Zoning:	RU4 Primary Production Small Lots
Site Area (m²) (approx.):	28,000
Geographical Location	Latitude: -33.686399
(decimal degrees) (approx.):	Longitude: 151.225561
Site Location Plan	Figure 1
Site Plan:	Figure 2

2.2 Summary of Previous Investigations

JKE has previously undertaken a Preliminary Site Investigation (PSI) at the site. (ref: E24278PHrpt)⁵ and a Detailed Site Investigation (DSI) (ref: E27318PHrpt)⁶ was also undertaken to address the recommendations of the PSI.

The PSI included an assessment of the site history, a walkover site inspection and soil sampling from 10 boreholes (see Figures 2 and 3).

The PSI identified that the site has historically been used for agricultural and horticultural activities from around the mid-1900s onwards. An above-ground storage tank (AST) was also observed during the site inspection. It was noted that agricultural/horticultural activities are listed in Table 1 of the SEPP55 Planning Guidelines as activities that may cause contamination. This triggered a need for a DSI under the purview of SEPP55.

⁶ JKE (2022). Report to Syesun Pty Ltd on Detailed (Stage 1) Site Investigation for Proposed Garden Centre Redevelopment at 277 Mona Vale Road, Terrey Hills, NSW. (Ref: E24278PHrpt, dated 25 January 2022) (referred to as DSI)



⁵ JKE (2021). Report to Syesun Pty Ltd on Preliminary (Stage 1) Site Investigation for Proposed Garden Centre Redevelopment at 277 Mona Vale Road, Terrey Hills, NSW. (Ref: E24278PHrpt, dated 28 October 2021) (referred to as PSI)



The DSI included a review of the PSI, soil sampling from 30 location, groundwater sampling from three locations and Hazardous Ground Gas (HGG) sampling from two locations (see Figures 2 and 3).

At the time of the inspection, the majority of site was occupied by a plant nursery, landscape/garden centre and a café.

Fill was encountered at the surface or beneath the pavement in all boreholes, except BH113 and BH116, and extended to depths of approximately 0.2m to 4.5m below ground level (BGL). The fill typically comprised silty gravelly sand/gravelly silty sand, silty sand and silty clayey sand/silty sandy clay with inclusions of igneous and ironstone gravel, ash, slag and building rubble (brick, concrete, AC, glass and tile fragments). During the PSI/DSI, fill was also found to contain organic material.

All of the soil analysis results were less than the Site Assessment Criteria (SAC), with the exception of asbestos. We note that asbestos was detected at concentrations that exceeded the SAC in fill samples from BH101 and BH128. Asbestos was also detected at concentrations less than the SAC in fill samples from BH104, BH106, BH110 and TP127. We note that the asbestos in BH106 was encountered in the top 100mm and, therefore, exceeded the SAC. The asbestos impact would be limited vertically to the depth of fill and appears to extend horizontally across the entire site. The asbestos was primarily in the form of Asbestos Fines/Friable Asbestos (AF/FA), is considered to be friable and represents a greater risk to human receptors compared to the bonded ACM.

There was no visible asbestos at the ground surface and only limited samples containing asbestos were from at or near the surface. On this basis, there is considered to be a low risk of a complete SPR-linkage at present in the current site configuration and risks from asbestos are likely to remain low whilst the fill remains undisturbed. Vehicle movements through unpaved areas may generate dust. The risk of exposure to asbestos could increase during excavation/disturbance of the fill if such activities are not managed appropriately.



3 ASBESTOS CONTAMINATION INFORMATION

3.1 Contamination Extent

The occurrence of asbestos at the site is sporadic in fill and appears to be associated with building and demolition waste inclusions within the soil matrix. Asbestos is widespread in fill/soil and, for the purpose of this AMP, is considered to extend across the entire site.

3.2 Exposure Pathways and Risk

The exposure pathway for asbestos is via inhalation of airborne asbestos fibres. Exposure to asbestos fibres poses a potential risk to human health. Asbestos does not migrate through soil and does not pose an ecological risk.

Asbestos fibres can range in size from 0.1 to 10 microns (μ m) (one tenth the size of a grain of sand) and are a potent particulate respiratory hazard. The small fibres gain relatively easy access to the lung airways and air sacs. Damage to the respiratory tract generally tends to be time/dose dependent. An individual exposed to high doses of asbestos for long periods of time will have an increased risk of developing asbestos related diseases. In addition, the effects of asbestos related diseases are usually not detectable for 1 to 30 years after the initial exposure. This is called the latency period, and is a distinguishing feature of asbestos related diseases.



4 ASBESTOS IN-GROUND REGISTER

Occurrences of identified ACM on or in ground (fill/soil) at the site is outlined in Table 4-1 below. The table includes remedial measures

Table 4-1: Potential (and/or known) Contamination Sources/AEC and Contaminants of Potential Concern

Date of JKE Fieldwork	Location	Remedial Measure / Treatment	Comment
November 2021	Asbestos was detected in the form of loose fibre bundles (AF/FA) in the BH101 (1.5-1.95m), BH104 (0-0.2m), BH106 (0-0.1m), BH110 (1-1.4m), TP127 (0.3-0.6m) and BH128 (0-0.3m) samples as shown on the attached Figure 3. ACM was also detected in the BH101 (1.5-1.95m) sample.	Fill to remain undisturbed. Regular inspections should be undertaken of existing ground coverings in accordance with Section 7.1 of this AMP.	There was no visible asbestos at the ground surface and only limited samples containing asbestos were from at or near the surface. On this basis, there is considered to be a low risk of a complete SPR-linkage at present in the current site configuration and risks from asbestos are likely to remain low whilst the fill remains undisturbed. We note that vehicle movement across unpaved areas may generate dust.



5 APPLICATION AND RESPONSIBILITIES OF THE AMP

5.1 Application of the AMP

This AMP shall apply from the date of issue. The AMP is intended to be implemented for normal day to day use of the site as a garden centre and any activities undertaken within the site by staff and/or contractors such as (e.g. grass cutting, landscaping, underground service maintenance), which could involve disturbance or exposure of asbestos in soils. The AMP is not intended to be a construction phase plan or apply to excavation of soil. A construction phase AMP should be prepared for any major earthworks (i.e. remediation, etc) proposed for the site.

Following completion of any major earthworks, remediation and/or redevelopment, an updated AMP or long-term environmental management plan (LTEMP) will be required to manage potential future disturbance of any retained asbestos-impacted soils for ongoing use of the site. An asbestos register should be maintained for any asbestos impacted fill retained on site under the LTEMP.

5.2 Responsibilities

5.2.1 Principal Contractor

Syesun (Flower Power) staff shall fulfil the responsibilities of the 'Principal Contractor' (Person Conducting a Business or Undertaking [PCBU]), as defined by SafeWork and is the party responsible for the day-to-day implementation of this AMP. It is noted that the Principal Contractor may appoint appropriately qualified competent person/s, subcontractors or sub-consultants to assist in fulfilling the requirements or the procedures outlined in this AMP. The Principal Contractor may appoint a Site Manager to be responsible for site activities.

In addition to the implementation of the AMP it will be the Principal Contractor's responsibility to:

- Take reasonable steps so that all site works and other related activities are undertaken in accordance with this AMP;
- Maintain all site records related to the implementation of the AMP;
- Take reasonable steps so sufficient information is provided to engage or direct all required parties, (i.e.
 competent persons, sub-contractors), to implement the requirements of the AMP other than those
 that are the direct responsibility of the Principal Contractor;
- Manage the implementation of any recommendation made by those parties in relation to work undertaken in accordance with the AMP;
- Inform, where required, the relevant regulatory authorities of any non-conformances with the
 procedures and requirements of the AMP in accordance with the procedures outlined in this
 document;
- Retain records of any contingency actions;
- Review the AMP records on completion of the project for completeness and update the records as necessary; and
- Recommend any modification to general documentation that would further improve the intended outcomes of this AMP.





5.2.2 Licensed Asbestos Removalist / Asbestos Contractor

The Asbestos Contractor will be responsible for undertaking all licensed asbestos removal work involving any asbestos impacted soils. The Asbestos Contractor will hold a Class A (friable) asbestos removal licence issued by SafeWork NSW. Their responsibilities include:

- Preparing a site-specific Asbestos Removal Control Plan (ARCP) prior to any licenced asbestos removal works being completed;
- Ensuring compliance with relevant legislation and the conditions of this AMP;
- Handling and management of ACM or asbestos impacted soils at the site in accordance with relevant legislation;
- Ensuring appropriate environmental and safety controls outlined in this AMP are maintained for the duration of the works; and
- Assisting all site sub-contractors, where required, in complying with relevant legislation and the procedures outlined in this AMP.

5.2.3 Licenced Asbestos Assessor

The Licensed Asbestos Assessor (LAA) is to provide advice on WHS issues for asbestos-related works (as required). The Licensed Asbestos Assessor will hold a NSW Asbestos Assessor Licence. The Licensed Asbestos Assessor will be responsible for:

- Undertaking airborne asbestos monitoring (if engaged to do so by the client);
- Undertaking asbestos clearance inspections (as required);
- Undertaking asbestos sampling and assessment (as required);
- Notifying their client with the results of any assessments in a timely manner;
- Providing advice and recommendations arising from monitoring and/or inspections (if engaged to do so by the client);
- Examining and providing comment on WHS documentation with respect asbestos assessment, management and control (if engaged to do so by the client); and
- Notifying the client of any observed or documented non-compliance with this AMP.

5.2.4 Site Workers and Subcontractors

All subcontractors are to be inducted onto the site and informed of their responsibilities in relation to this AMP as part of the induction. Signing of the site induction is to include agreement by the subcontractors to abide by the AMP requirements. Where necessary, subcontractors are also to be trained in accordance with the requirements of this document. All subcontractors must conduct their operations in accordance with this AMP as well as all applicable regulatory requirements.





6 ASBESTOS AWRENESS TRAINING AND LEGISLATIVE REQUIREMENTS

6.1 Asbestos Awareness Training

The principal contractor must arrange for all site workers that will conduct work potentially involving asbestos on the site to undergo appropriate asbestos awareness training (either formal or in-formal and site specific) to ensure that they are familiar with the risks posed and the procedures in place. The awareness training should include (as a minimum) a review of this AMP and an overview on the identification of asbestos.

6.2 Legislative Requirements and Regulations/Guidelines

All works must be undertaken with regards to (but not limited to) the following:

- Protection of the Environment Operations (POEO) Act 1997 (NSW);
- POEO (Waste) Regulation 2014 (NSW)
- Work Health and Safety Act 2011 (NSW);
- Work Health and Safety Regulation 2017 (NSW);
- Contaminated Land Management Act 1997 (NSW);
- CoP How to Manage and Control Asbestos in the Workplace;
- CoP How to Safely Remove Asbestos;
- National Occupational Health and Safety Commission (NOHSC), (2005). Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition (NOHSC:3003 [2005]);
- NOHSC, (2005). Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment 3rd Edition (NOHSC:3008 [1995]);
- AS/NZS 1715:2009 Selection, Use and Maintenance of Respiratory Protective Devices; and
- AS/NZS 1716:2012 Respiratory Protective Devices.

6.3 Non-Compliance with the AMP

Where a non-compliance with this AMP is identified, the Principal Contractor should be informed of the non-compliance. The Principal Contractor is to inform the non-complying party in writing of the non-compliance. The non-compliant party will be required to rectify the non-compliance as soon as possible.

Details of the action taken to rectify the non-compliance shall be provided to the Principal Contractor. Where a non-compliance cannot be rectified, the AMP is to be reviewed, and revised if required.

6.4 Review Timeframe

The principal contractor must ensure review of the AMP occurs at least once every two years. The review should be undertaken by a LAA or suitably qualified consultant with an aim to:

- Confirm that the AMP remains valid in the context of the current regulatory guidelines;
- Confirm the AMP remain adequate for managing the asbestos impacted fill at the site;
- Revise the AMP to reflect any changes in roles and responsibilities; and
- Revise the AMP to reflect any remediation of the site (i.e. removal or fill).





7 MANAGEMENT PLAN

The AMP is intended to apply to the normal day to use of the site as a garden centre. The following requirements must be implemented to ensure any potential asbestos exposure hazard is minimised during normal use of the site. For the purpose of this AMP, normal day to day use of the site is limited to include:

- Use of the site a as garden centre;
- Routine garden maintenance (i.e. lawn mowing, landscaping, etc.); and
- Shallow service installation or maintenance.

7.1 General Site Requirements and Inspections

The site should be regularly inspected by the principal contractor or their nominated competent person in order to minimise the potential asbestos exposure hazard. Visual inspections of the site surface should be carried out to ensure that the existing finishes (i.e. grass cover and pavements), are maintained adequately.

Arranging for regular inspections will be the responsibility of the Principal Contractor. Such inspections should occur on the following occasions:

- At three monthly intervals (e.g. a walkover of the entire site to inspect for visible, accessible ACM);
- After any period of prolonged heavy rain (e.g. a walkover of the site to inspect for erosion caused by heavy rainfall); and
- Whenever damage or disturbance has been reported (e.g. a walkover of the site to ensure that the site surface has not been disturbed by excessive public use).

Records of these inspections should be kept using the inspection checklist form provided in Appendix B.

7.1.1 General Non-Intrusive Works

General non-intrusive works (including routine maintenance gardening and landscaping) that do not involve soil disturbance can be undertaken without any contingency measures in place and do not require any specific management controls.

7.1.2 Minor Intrusive Earthworks

The below procedure should be followed in the event minor intrusive works are required at the site. The following does not include any geotechnical or structural advice. The procedures below include only those to minimise the risk of exposure associated with asbestos in fill. All fill at the site should be presumed to contain asbestos unless proven otherwise. The following procedures are to be implemented:

- Prior to the commencement of any works, a licenced asbestos assessor should be engaged to make an
 assessment of the level of asbestos management required. The management requirements will vary
 based on the extent and nature of the intrusive works, and must consider Personal Protective
 Equipment (PPE) requirements, requirements to use licensed asbestos removal contractors and/or air
 monitoring requirements;
- A specific WHS plan should be developed as outlined in Section 7.3;
- Establish a fenced work zone to limit access to the works area by other site users. The zone should carry appropriate signage to indicate that asbestos removal works are in progress;



- The topsoil/grass in landscaped areas can be removed (as required) and kept separate from the underlying material. Care should be taken to ensure that the soil in the root zone is not impacted by asbestos. Provided the material is safe, it can be re-used on-site if applicable. The suitability of re-use should be assessed by the LAA. Any surplus material should be assigned a waste classification and disposed of accordingly;
- Pavement from paved areas should be removed;
- Prior to excavation of the fill, the surrounding areas should be covered with builder's plastic, or a similar material, to minimise the transfer of contaminated dust and/or soil to the surrounding areas;
- A waste classification should be undertaken on the material to be excavated, for the purpose of assigning a waste classification for off-site disposal purposes;
- In the event that the excavated material is to be considered for on-site re-use, a suitable assessment strategy should be developed by a qualified environmental consultant to assess that the material to be re-used is suitable for that purpose (with regards to contamination). Material impacted by asbestos cannot be re-used on site;
- The excavation should then be completed to the required depth. All excavated material (as applicable) should be immediately transferred to a designated area in a suitable manner to reduce the spread of contaminated soil and associated dust. The material should be placed directly into a skip bin or truck. In the event that material needs to be stockpiled on site during the works, an appropriate barrier (e.g. builder's plastic) should be placed to avoid contact between the ground and the stockpile. The stockpiles should also be suitably bunded and covered to minimise run-off in the event of rainfall;
- Where contaminated material is removed from the site under an appropriate waste classification the
 excavation should be reinstated (as necessary) with suitable virgin excavated natural material (VENM)
 and/or new pavement;
- A surface clearance should be undertaken by a LAA for visible ACM; and
- The *Works Register* form (attached in Appendix C) should be filled out with a description of the works undertaken and a sketch of the area in which the works were completed. The form should be submitted to the principal contractor on completion of the works.

7.1.3 Vehicle Movements in Unpaved Areas

As asbestos was encountered near the surface in vehicular access ways in the south section of the site, there is considered to be a risk that dust generated by vehicle movements. The wetting and dust control measures outlined in Sections 7.3.2.5 and 7.3.2.6 should be implemented in regularly trafficked areas during site operation.

Alternatively, a gravel or temporary pavement could be installed across vehicular access areas. In this case there would be a barrier and no exposure pathway to receptors. In this case non-intrusive works do not require any specific management controls.



7.2 ACM Find Procedure

7.2.1 During Site Inspections / Non-Intrusive Works

This procedure is applicable where the competent person deems there is <10m² of ACM (or presumed ACM).

If any ACM (or presumed ACM) is identified during site inspections and minor intrusive works, the competent person should remove the ACM in accordance with the CoP How to Safely Remove Asbestos (or subsequent amendments to this code of practice).

Where there is deemed to be >10m2 of ACM (or presumed ACM), the asbestos removal is to be undertaken by an appropriately licensed asbestos removalist (Class A) in accordance with the SafeWork Australia How to Safely Remove Asbestos Code of Practice (2020). Where removal of soil containing ACM is required, the soil material should be assigned a waste classification in accordance with the NSW EPA guidelines prior to disposal.

All ACM is to be disposed of appropriately to a suitably licensed facility and in accordance with Section 7.6.

The *Works Register* form (attached in Appendix C) is to be filled out with a description of the works undertaken and a sketch of the area in which the works were completed. The form should be submitted to the principal contractor on completion of the works.

The procedures above include only those to minimise the risk of exposure and cross contamination associated with contaminated fill. It is acknowledged that other requirements may also need to be considered on a job-specific basis.

7.2.2 Clearance Inspections/Certificates

Areas where >10m² of ACM (or presumed ACM), are encountered during minor intrusive works will be deemed to be an asbestos-impacted work area until a surface clearance is undertaken and a surface clearance certificate is provided by the LAA.

7.3 Site Management and Work Health and Safety (WHS)

It is the responsibility of persons with management or control of workplaces at the site to ensure that comprehensive health and safety programmes that comply with the requirements of the WHS Regulation and are appropriate for the activities undertaken at the site are implemented. Given the presence of asbestos at the site, additional protocols and procedures that address the specific hazards posed by the asbestos must be included in the overall health and safety plans implemented.

A job specific WHS plan should be developed prior to the commencement of any minor intrusive works at the site. The plan must consider the WHS requirements in the context of the current WHS framework, the contaminant of concern at the site and the task(s) to be performed.

The main exposure pathway that can lead to health effects from asbestos fibres is inhalation of respirable fibres. Consequently, workers who may be exposed to dust that has the potential to contain asbestos fibres





must wear appropriate respiratory protection. Furthermore, measures must be taken to ensure that dust or other material that may contain asbestos fibres is not carried out of the work area to areas where breathing protection would not ordinarily be considered a requirement.

7.3.1 Induction

It is understood that all personnel will be inducted onto the site and informed of their responsibilities in relation to this AMP as part of the induction. The induction is to include, but not be limited to, hazards specific to the site including asbestos, evacuation and emergency response plans, first aid provisions and providers, what to do in the case of asbestos finds, and any aspects of this AMP applicable to their specific tasks.

7.3.2 Asbestos Work Areas

All intrusive works will be deemed to occur within an asbestos work area and the following documents, as a minimum, shall be developed by the Principal Contractor (or the relevant subcontractors and provided to the Principal Contractor for approval):

- Safe Work Method Statements (SWMS) specific to individual tasks;
- Asbestos removal control plan (ARCP) (if required); and
- Emergency Response Plan.

The above documents are to comply with regulatory requirements, including the WHS Regulation 2017 and SafeWork NSW requirements.

The ARCP must include:

- Details of how the asbestos works (if required) will be carried out, including the method, tools, equipment and personal protective equipment to be used; and
- Details of the asbestos to be disturbed, including the known locations, type and condition of the asbestos and where it is to be removed from and disposed to.

The licensed Asbestos Contractor must retain the ARCP in accordance with the WHS Regulation 2017. It is recommended that the ARCP be prepared following the additional post-demolition investigation.

7.3.2.1 Personal Protective Equipment (PPE)

As a minimum, all personnel on site will be required to wear the following PPE during works in asbestos work areas unless otherwise outlined in task specific documentation:

- Steel-capped boots (preferably lace-less);
- Hard hat meeting relevant standards;
- High visibility clothing;
- Gloves;
- P2 rated disposable dust mask, or a half-face respirator fitted with an appropriate particulate filter in compliance with the relevant standards. Respiratory Protective Devices and be used in accordance with AS/NZS 1715:2009;
- Disposable coveralls that prevent tearing and penetration of asbestos fibres (e.g. coveralls type 5, category 3 per EN ISO 13982–1 or equivalent); and





- Disposable boot covers made of a material consistent with the disposable coveralls or:
 - Gumboots may be worn in the asbestos removal area if they are decontaminated upon exiting the asbestos removal area; or
 - o A separate set of work boot may be maintained in the asbestos work area.

Care should be taken to ensure PPE compatibility and that a suitable degree of worker comfort is maintained. Regardless of the PPE adopted, asbestos removal workers must undertake appropriate personal decontamination upon leaving the asbestos work area as outlined in the CoP How to Safely Remove Asbestos.

Other PPE shall be adopted as required by any task-based SWMS.

7.3.2.2 Isolation Barricading and Signage

The Asbestos Contractor will ensure that the necessary measures are in place for the effective exclusion of unauthorised persons to asbestos-impacted work area. The asbestos removal area is to be adequately isolated and must be signposted with warning signs, or labels, as appropriate to ensure personnel are not unknowingly exposed to asbestos when undertaking operational activities.

The location, type and positioning of signs and labels must be decided, or authorised, by a competent person. Asbestos warning signs must comply with the requirement of AS1319-1994 Safety Signs for the Occupational Environment and the CoP How to Manage and Control Asbestos in the Workplace, for size, illumination, location and maintenance. Warning signs may include some of the following examples:











In-text Figure A: Example signage

7.3.2.3 Restriction of Access to Asbestos Work Area

Access to asbestos-impacted work area(s) will be restricted to:

- Personnel engaged in the asbestos removal works;
- Other persons associated with the asbestos removal work such as the LAA; and
- Anyone allowed under the WHS Regulation 2017 or another law to be in the asbestos works area.

7.3.2.4 Decontamination

When exiting the asbestos work area, which is to be via the one entry/exit point, each person is to undertake personal decontamination. Personal decontamination involves the following:





- Rinsing boots in the bucket filled with detergent solution at the entry/exit point to remove residual soil from the boots, or alternatively, wiping down with a wet rag;
- Removing overalls, gloves and then respirator and placing in appropriate plastic bags within the
 provided disposal bin located at the entry/exit point. For privacy this can be undertaken in a designated
 decontamination area surrounded by black plastic at the entry/exit point; and
- Thoroughly washing of hands (including under nails) with water and detergent.

This procedure should comply with Table 3 Personal Decontamination as presented in the CoP How to Safely Remove Asbestos. A water supply for decontamination purposes is to be maintained at the entry/exit point at all times.

With respect to any plant or equipment used in the asbestos work area, these are to be appropriately decontaminated at the edge of the asbestos removal area on a designated area overlain with geofabric. Excavators and other plant (e.g. piling rigs etc.) are to be inspected and clods of soil are to be removed. Where deemed necessary, plant can also be wetted down with a fine mist/water spray. The amount of water generated from these decontamination activities is not expected to be significant and hence will infiltrate into the surface. However, if the volume of water used causes surface migration then the exclusion zone is to be bunded to an appropriate height to prevent water migrating outside the exclusion zone. In this regard changes to the delineated exclusion areas and other entry/exit points within the site and hence any changes to the decontamination point are to be made aware to site personnel by the Principal Contractor.

Any water collected as part of the above decontamination works (or asbestos works more generally) is to be placed in a suitable leak-proof receptacle and disposed of as asbestos containing waste by a suitable licensed liquid waste contractor.

Any other equipment (e.g. shovels) leaving the exclusion zone are to be decontaminated. Where possible this should be done with a detergent solution within the exclusion zone. If not possible to decontaminate equipment, then the equipment must be sealed in a suitable container until it is next used for asbestos removal purposes. Such containers must be appropriately labelled to warn of the asbestos risk and the exterior of the container decontaminated prior to it leaving the asbestos removal area.

7.3.2.5 Wet Method During Works

A constant low-pressure water supply is required for wetting down asbestos-impacted soils. This may be achieved via mains water fitted to a garden hose with a pistol grip (i.e. fogging nozzle). Should potable water be used, Sydney Water should be contacted prior to commencement to establish whether any further approvals are required in the context of the current water restrictions.

7.3.2.6 Dust Control / Management

It is important to mitigate risk through appropriate dust control measures where asbestos-impacted fill is being managed during disturbance, and that such measures are adhered to. The following is provided as a guide to control dust during earthworks and whilst soils remain exposed at the ground surface:

- Erection of dust screens around the perimeter of the site;
- Dampening with water of the proposed excavation area prior to commencement of excavation;





- Prior to movement of stockpiled soils, dampening with water across the stockpile surface;
- During soil movement the materials should be kept sufficiently damp to minimise the emission of dust;
- Ceasing works during periods of high winds;
- If trucks are required to enter the asbestos work area, the wheels of the trucks and the sides of the body should be washed down before the truck leaves the asbestos work area. Alternatively, geofabric should be placed over trafficable areas to minimise the potential for cross-contamination; and
- Securely covering all loads entering or exiting the site.

The exposed fill/excavation surface should be continually monitored and the surface wet down as drying occurs. This process should continue until the remediation works is complete and the areas are successfully validated.

Water used for dust suppression is to be only the minimum required to prevent dust generation and must not to be allowed to escape the confines of the works areas. If dust is unable to be appropriately managed at any time, works are to cease until the dust is sufficiently suppressed.

7.3.2.7 Stockpile Management

Any temporary stockpiles must be kept damp (not flooded) and covered by secured heavy duty plastic (200µm) or geofabric as soon as practical. Stockpiles should not remain exposed/uncovered overnight or during periods where site works have ceased.

All stockpiles should be appropriately bunded. All stockpiles must be maintained within the asbestos-impacted zone (i.e. as opposed to within an area that has been cleared of asbestos) and managed accordingly. Where a stockpile is removed from an area, the ground surface beneath the stockpile must undergo a surface clearance inspection.

7.3.2.8 Air Monitoring

During all works in asbestos work areas, airborne asbestos fibre monitoring is to be undertaken by the Licensed Asbestos Assessor (or an appropriate subcontractor) using calibrated portable air sampling pumps. Monitoring locations shall be determined by the LAA and shall include at least four locations positioned at the site boundary (or asbestos work area boundary). At the end of each monitoring period, the pump and attached filter will be collected and analysed at a NATA-accredited laboratory.

Air monitoring works shall be conducted in accordance with NOHSC Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition (NOHSC:3003 [2005]). The results of air monitoring are to be made available prior to the commencement of work on the following business day (with exception to weekend monitoring). Daily air monitoring reports will be displayed in the site office the following business day and shall be able to be produced upon request.

The following action levels will be applied upon receipt of daily results:

 Reading of less than 0.01 fibres/mL – control measures in place are working effectively, site works to continue;



- Reading between 0.01 and 0.02 fibres/mL a review of control measures shall be completed in the work area; and
- Reading greater than 0.02 fibres/mL works shall cease until the cause of contamination is identified and rectified and SafeWork shall also be notified.

7.4 Emergency Preparedness and Response

The following procedure will be followed in the event that asbestos impacted soils at the site are unintentionally accessed for any reason:

- Stop the activity or process that has led to access of impacted soil;
- Assess the hazards associated with the exposure of the impacted material and implement appropriate
 procedures to address the hazards;
- Collect and secure any impacted soil that may remain exposed and stockpile securely so that it is protected from casual access;
- Review the activity or process that led to access of the impacted soil and revise procedures or actions accordingly to prevent a reoccurrence; and
- Review and revise the AMP to reflect any changes that have to be made to prevent a reoccurrence.

7.5 Unexpected Finds Protocol

It is acknowledged that ground conditions between previous sampling points may vary, and further hazards may arise from unexpected sources and/or in unexpected locations during site works. The nature of any residual hazards which may be present at the site are generally detectable through visual (e.g. friable types of asbestos) or olfactory (e.g. stained soil or hydrocarbon odours in soil) means. In the event of an unexpected find, work in the area should cease and a suitably qualified contaminated land consultant contacted to inspect the find and provide further advice.

A process should be documented to address the find to the satisfaction of the Principal Contractor.

7.6 Off-Site Disposal and Waste Management

If any fill / soil is to be excavated for off-site disposal it should be classified in accordance with EPA guidelines (NSW EPA 2014). Waste must be managed in accordance with the provisions of the *Protection of the Environment (Waste) Regulation 2014*.

7.7 Asbestos Waste Management

7.7.1 Asbestos Waste (consumables and ACM fragments)

All asbestos waste, including ACM fragments, excess fill, used disposable coveralls, respirators, plastic sheeting and items deemed contaminated with asbestos are to be kept damp until they can be placed in double-sealed, 200µm thick plastic sheeting, asbestos waste bags or another suitable receptacle. The sealed waste shall be appropriately labelled as containing asbestos and removed from site as soon as practicable.





Asbestos waste shall not be allowed to accumulate excessively within the work area and shall be bagged or placed in appropriate receptacles as the work proceeds.

Controlled wetting of waste shall be used to eliminate asbestos dust emission during bag sealing or in case of subsequent rupture of a bag. Bags and sheeting which have contained asbestos material shall not be reused, and bags and sheeting marked as asbestos waste shall not be used for any other purpose.

Asbestos waste bags shall not be filled more than half full, in order to minimise the risk of bag tearing / splitting and to assist in manual handling of bags. The neck end of each bag shall be twisted tightly, folded over and the neck secured in the folded position with wire ties, adhesive tape or another effective method. Sealed asbestos waste shall be detailed clean of any visible asbestos residue before being removed from the asbestos removal area.

All drums or bins used for the storage and disposal of asbestos waste are to be in a good condition, with lids and rims in good working order, and free of hazardous residues. The drums or bins should be lined with plastic (minimum 200µm thickness), and labels warning of the asbestos waste should be placed on the top and side of each drum or bin, with the words, 'Danger: Asbestos. Do not break seal' (or similar). If the drum or bin is to be re-used, the asbestos waste must be packed and sealed so that when the drum or bin is emptied there is no residual asbestos contamination.

Controlled wetting of the waste should be used to reduce asbestos dust emissions. Where possible, the drums or bins should be placed in the asbestos work area before asbestos work begins. The drums or bins should have their rims sealed and their outer surfaces wet wiped and inspected before they are removed 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. Routes for moving the waste from the asbestos work area to the waste drums or bins should be designated prior to the commencement of each task. Drums or bins used to store asbestos waste should be stored in a secure location within the site when they are not in use.

If the volume or size of the asbestos waste cannot be contained in asbestos waste bags, drums or bins, a waste skip, vehicle tray or similar container that is in good condition can be utilised. The asbestos should be sealed in double-lined, heavy duty polyethylene sheeting (minimum 200µm thickness) or double bagged before it is placed in the skip, tray or similar container. Non-friable asbestos waste may be placed directly into a skip or vehicle tray that has been double-lined with polyethylene sheeting, provided it is kept damp to minimise the generation of airborne asbestos.

Once the skip, tray or similar container is full, its contents should be completely sealed with the polythene sheeting. If the skip is emptied at a waste disposal site, waste disposal procedures which prevent the tearing of the polythene lining should be developed. If asbestos waste cannot be disposed of immediately, the skip may be used for storing the asbestos waste on site over a period of time, provided that the contents are secured (i.e. using a lockable lid or locating the skip in a secure area) to prevent unauthorised access.

Current requirements for asbestos waste disposal must be adhered to and copies of asbestos waste disposal certificates / receipts must be provided.



7.7.2 Loading, Transport and Disposal of Asbestos Waste (consumables and ACM/soil)

A waste classification is required for any waste soil containing asbestos, in accordance with the Waste Classification Guidelines 2014. Once the waste classification is complete, a waste classification report is to be prepared. Asbestos waste can only be disposed of to a waste facility licensed by the NSW EPA to receive asbestos waste. The nominated landfill should be contacted to obtain the required approvals prior to commencement of excavation and or loading of asbestos waste.

Part 7 of the POEO Waste Regulation set outs the requirements for the transportation and management of asbestos waste and Clause 79 of the POEO Waste Regulation requires waste transporters to provide information to the NSW EPA regarding the movement of any load in NSW of more than 10m² of asbestos sheeting, or 100 kilograms of asbestos waste. To fulfil these legal obligations, asbestos waste transporters must use WasteLocate.

Clause 78 of the POEO Waste Regulation requires that a person who transport asbestos waste must ensure that:

- Any part of any vehicle in which the person transports the waste is covered, and leak-proof, during the transportation; and
- If the waste consists of bonded asbestos material—it is securely packaged during the transportation;
 and
- If the waste consists of friable asbestos material—it is kept in a sealed container during transportation;
 and
- If the waste consists of asbestos-contaminated soils—it is wetted down.



8 DOCUMENTATION REQUIREMENTS

Documentation is to be maintained by each relevant party and provided to other relevant parties as necessary. The documentation relevant to each party is discussed in the following subsections:

8.1 Principal Contractor Requirements

The Principal Contractor (or their nominated subcontractor) is to maintain (or prepare, where relevant) the documentation outlined below:

- Any licences and approvals required for the works which are the responsibility of the Principal Contractor to provide;
- All asbestos awareness training records and registers;
- Tracking of asbestos waste from cradle-to-grave is required by the Principal Contractor. For waste
 materials disposed off-site, this will require the documentation of an appropriate tracking register
 outlining all dates/times of waste movements, registration numbers of vehicles, a summary of any
 waste classification relating to the waste, the tonnage of each load of waste, load characteristics,
 destination, waste docket (i.e. the weighbridge docket from the landfill) number and tracking number;
- Records of any non-compliance or implementation of contingency actions;
- All surface clearance documentation and any air monitoring results; and
- Incident reports.

8.2 Licensed Asbestos Removalist/Asbestos Contractor

The Asbestos Contractor is to provide the following documentation to the Principal Contractor prior to remediation/construction:

- ARCP and SWMS/WHSP;
- All surface clearance documentation and air monitoring results by LAA; and
- Any records in relation to unexpected finds or non-compliance with the AMP.

8.3 Licensed Asbestos Assessor

The LAA is to provide the following documents to the Asbestos Contractor:

- Asbestos air monitoring records;
- Clearance certificates;
- Any other laboratory reports for additional testing (if undertaken); and
- Written notices of any non-compliance with the AMP.

8.4 Environmental Consultant

The Environmental Consultant is to prepare / obtain the following documents:

- Waste classification reports, including records of sampling and analysis; and
- Finds of additional asbestos reports.

8.4.1 Competent Person/s

The competent person is to prepare and document the site inspections and associated works records.





9 LIMITATIONS

- The AMP was prepared based on investigation data from boreholes drilled during previous site investigation. Where additional data is collected as part of the site remediation/validation process, this data must be appropriately considered in the context of the AMP and the AMP must be updated where required;
- JKE accepts no responsibility for any unidentified contamination issues at the site. Any unexpected problems/subsurface features that may be encountered during future development or maintenance works should be inspected by an environmental consultant as soon as possible;
- Previous use of this site may have involved excavation for the foundations of buildings, services, and similar facilities. In addition, unrecorded excavation and burial of material may have occurred on the site. Backfilling of excavations could have been undertaken with potentially contaminated material that may be discovered in discrete, isolated locations across the site during future work;
- This report has been prepared based on site conditions which existed at the time of the due diligence investigation and subsequent validation assessment; scope of work and limitations outlined in the JKE proposal; and terms of contract between JKE and the client (as applicable);
- Subsurface soil and rock conditions encountered between investigation locations may be found to be different from those expected. Groundwater conditions may also vary, especially after climatic changes;
- The preparation of this report has been undertaken in accordance with accepted practice for environmental consultants, with reference to applicable environmental regulatory authority and industry standards, guidelines and the assessment criteria outlined in the report;
- Where information has been provided by third parties, JKE has not undertaken any verification process, except where specifically stated in the report;
- JKE has not undertaken any assessment of off-site areas that may be potential contamination sources
 or may have been impacted by site contamination, except where specifically stated in the report;
- JKE have not and will not make any determination regarding finances associated with the site;
- Additional investigation work may be required in the event of changes to the proposed development or land use. JKE should be contacted immediately in such circumstances;
- Material considered to be suitable from a geotechnical point of view may be unsatisfactory from a soil contamination viewpoint, and vice versa; and
- This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose.



Important Information About This Report

These notes have been prepared by JKE to assist with the assessment and interpretation of this report.

The Report is based on a Unique Set of Project Specific Factors

This report has been prepared in response to specific project requirements as stated in the JKE proposal document which may have been limited by instructions from the client. This report should be reviewed, and if necessary, revised if any of the following occur:

- The proposed land use is altered;
- The defined subject site is increased or sub-divided;
- The proposed development details including size, configuration, location, orientation of the structures or landscaped areas are modified;
- The proposed development levels are altered, eg addition of basement levels; or
- Ownership of the site changes.

JKE will not accept any responsibility whatsoever for situations where one or more of the above factors have changed since completion of the investigation. If the subject site is sold, ownership of the investigation report should be transferred by JKE to the new site owners who will be informed of the conditions and limitations under which the investigation was undertaken. No person should apply an investigation for any purpose other than that originally intended without first conferring with the consultant.

Changes in Subsurface Conditions

Subsurface conditions are influenced by natural geological and hydrogeological process and human activities. Groundwater conditions are likely to vary over time with changes in climatic conditions and human activities within the catchment (e.g. water extraction for irrigation or industrial uses, subsurface waste water disposal, construction related dewatering). Soil and groundwater contaminant concentrations may also vary over time through contaminant migration, natural attenuation of organic contaminants, ongoing contaminating activities and placement or removal of fill material. The conclusions of an investigation report may have been affected by the above factors if a significant period of time has elapsed prior to commencement of the proposed development.

This Report is based on Professional Interpretations of Factual Data

Site investigations identify actual subsurface conditions at the actual sampling locations at the time of the investigation. Data obtained from the sampling and subsequent laboratory analyses, available site history information and published regional information is interpreted by geologists, engineers or environmental scientists and opinions are drawn about the overall subsurface conditions, the nature and extent of contamination, the likely impact on the proposed development and appropriate remediation measures.

Actual conditions may differ from those inferred, because no professional, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than an investigation indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to prevent the unanticipated, but steps can be taken to help minimise the impact. For this reason, site owners should retain the services of their consultants throughout the development stage of the project, to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

Investigation Limitations

Although information provided by a site investigation can reduce exposure to the risk of the presence of contamination, no environmental site investigation can eliminate the risk. Even a rigorous professional investigation may not detect all contamination on a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which showed no signs of contamination when sampled. Contaminant analysis cannot possibly cover every type of contaminant which may occur; only the most likely contaminants are screened.





Misinterpretation of Site Investigations by Design Professionals

Costly problems can occur when other design professionals develop plans based on misinterpretation of an investigation report. To minimise problems associated with misinterpretations, the environmental consultant should be retained to work with appropriate professionals to explain relevant findings and to review the adequacy of plans and specifications relevant to contamination issues.

Logs Should not be Separated from the Investigation Report

Borehole and test pit logs are prepared by environmental scientists, engineers or geologists based upon interpretation of field conditions and laboratory evaluation of field samples. Logs are normally provided in our reports and these should not be re-drawn for inclusion in site remediation or other design drawings, as subtle but significant drafting errors or omissions may occur in the transfer process. Photographic reproduction can eliminate this problem, however contractors can still misinterpret the logs during bid preparation if separated from the text of the investigation. If this occurs, delays, disputes and unanticipated costs may result. In all cases it is necessary to refer to the rest of the report to obtain a proper understanding of the investigation. Please note that logs with the 'Environmental Log' header are not suitable for geotechnical purposes as they have not been peer reviewed by a Senior Geotechnical Engineer.

To reduce the likelihood of borehole and test pit log misinterpretation, the complete investigation should be available to persons or organisations involved in the project, such as contractors, for their use. Denial of such access and disclaiming responsibility for the accuracy of subsurface information does not insulate an owner from the attendant liability. It is critical that the site owner provides all available site information to persons and organisations such as contractors.

Read Responsibility Clauses Closely

Because an environmental site investigation is based extensively on judgement and opinion, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, model clauses have been developed for use in written transmittals. These are definitive clauses designed to indicate consultant responsibility. Their use helps all parties involved recognise individual responsibilities and formulate appropriate action. Some of these definitive clauses are likely to appear in the environmental site investigation, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to any questions.



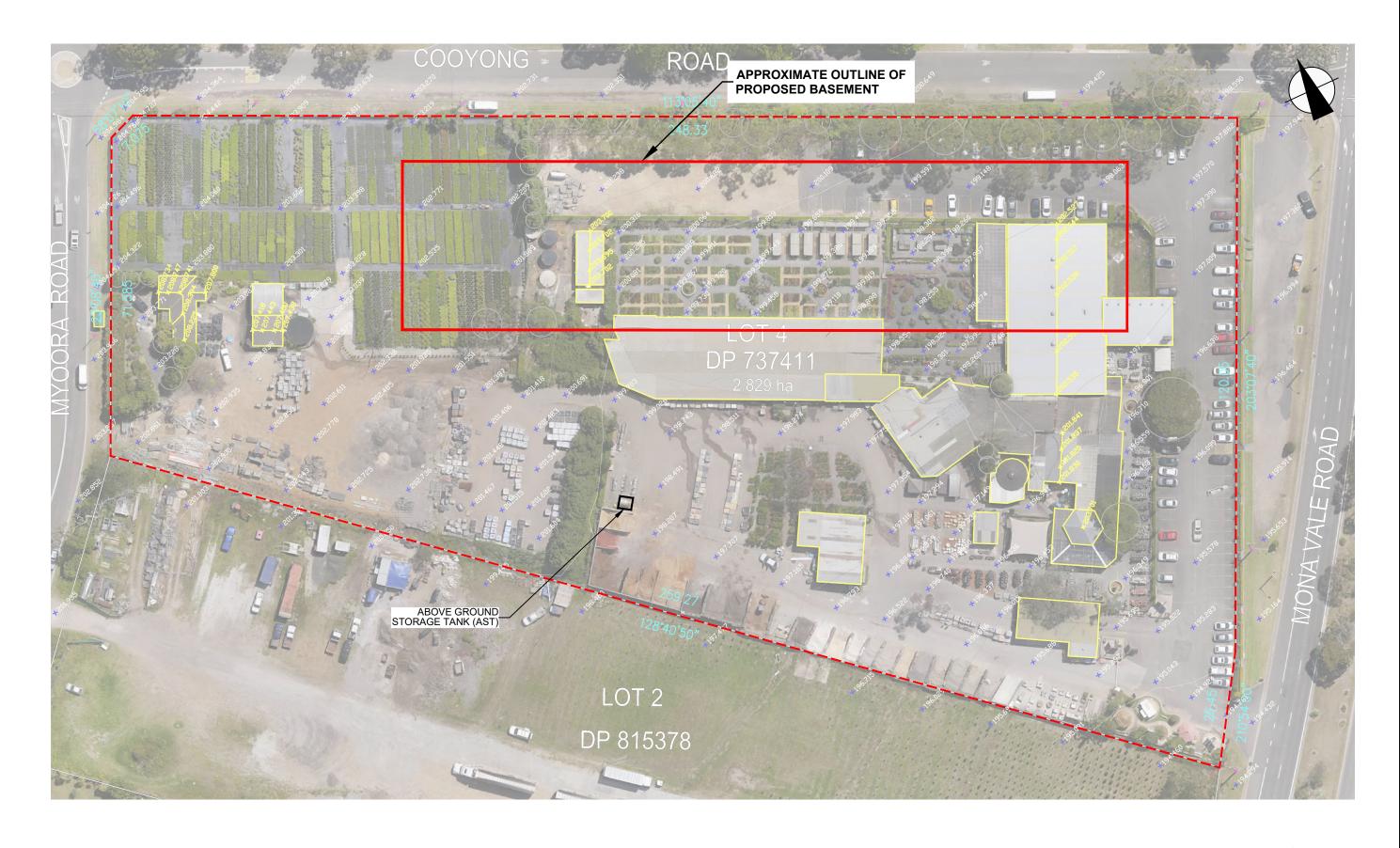
Appendix A: Report Figures



AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM **SITE LOCATION PLAN** Location: 277 MONA VALE ROAD, TERREY HILLS, NSW Project No: E34278PH **JK**Environments



This plan should be read in conjunction with the Environmental report.



LEGEND

APPROXIMATE SITE BOUNDARY

0 8 16 24 32 40

SCALE 1:800 @A3 METRES

This plan should be read in conjunction with the Environmental report.

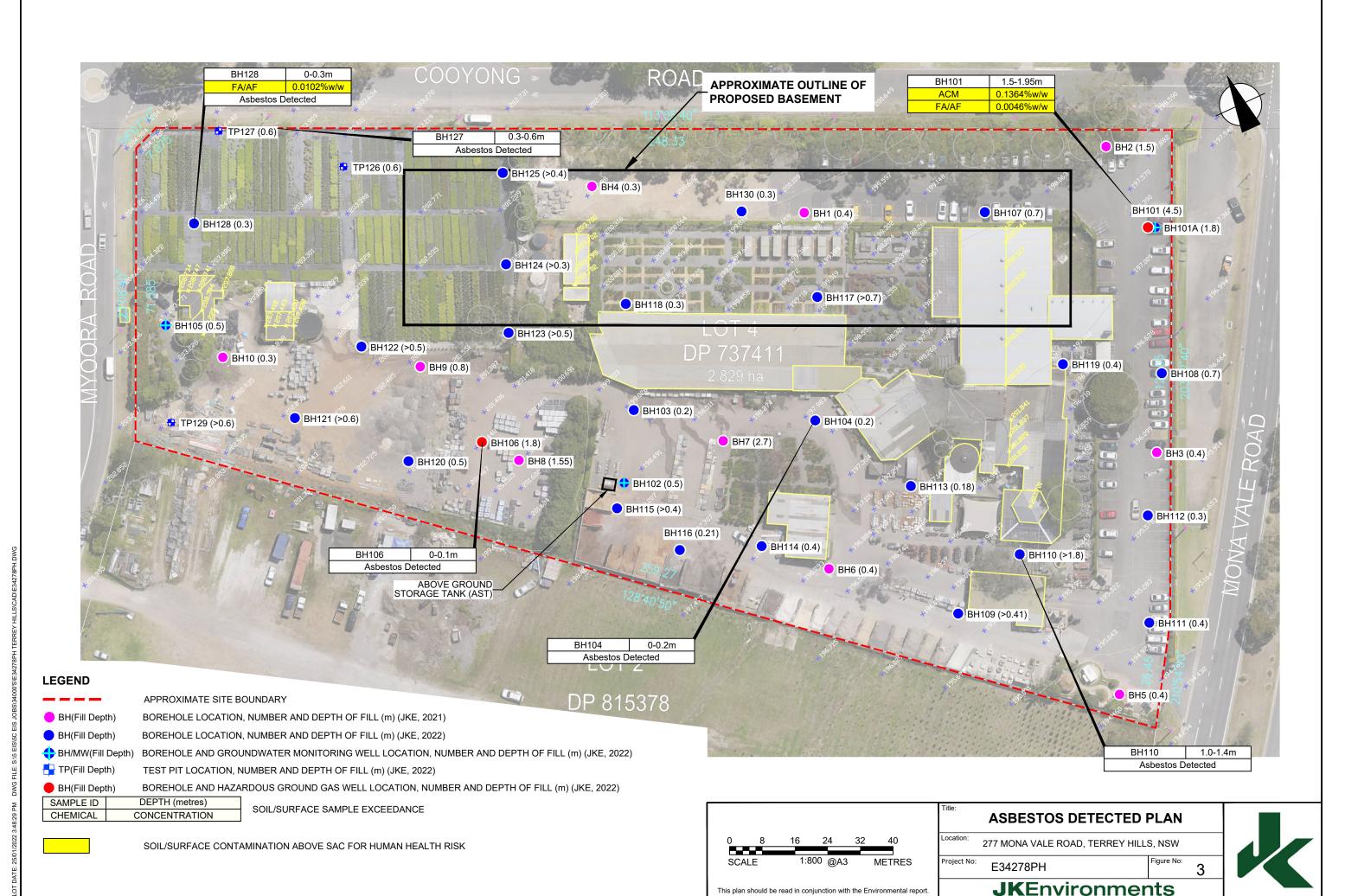
SITE PLAN

cation: 277 MONA VALE ROAD, TERREY HILLS, NSW

oject No: E34278PH Figure No: 2

JKEnvironments





This plan should be read in conjunction with the Environmental report.



Appendix B: Inspection Checklists



Inspection Checklists

Date:	
Inspector:	
Area of Inspection:	Landscaped areas: Yes / No
	Building areas: Yes / No
	Other areas (Specify):
Notes:	Were any areas of disturbance/damage observed: Yes / No
	Provide a description of the extent of damage/disturbance:
Corrective Actions:	Notify the Site Manager: Yes / No
Corrective Actions:	
	Document problem areas photographically: Yes / No
	Interim measures implemented: Yes / No (if yes, describe below)
	Contractor contacted to reinstate area to prior condition: Yes / No
	Corrective Action undertaken on (date):



Appendix C: Works Register Form



Works Register Form

Contractor:	
Date:	
Notes:	Works must be inspected by the principal contractor on completion.
Sketch of work area:	