PICKFORD & RHYDER CONSULTING PTY LTD
ABN 17 105 546 076
Occupational Hygiene Measurements and Solutions. NATA Accredited.

PO Box 1422 Lane Cove 1595
Rear - 244 Burns Bay Road Lane Cove NSW Australia
Phone: (02) 9418 9151
Fax: (02) 9418 9150

Asbestos Management Plan

Macquarie University
8-12 University Avenue, Macquarie University
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Preface

Asbestos is naturally occurring silicate minerals found in the surface of the earth, which have been extensively used commercially in the construction industry. Asbestos Containing Material (ACM) is now a prohibited substance as it has been linked with a range of diseases, such as mesothelioma, asbestosis and lung cancer, that are often slow to develop but in many cases are terminal.

"the Contractor" is committed to the health & safety of all workers and members of the public who may be exposed to ACM due to the work we carry out on this worksite.

This Asbestos Management Plan (AMP) details how the asbestos management requirements for Macquarie University will be implemented and managed on site by "the Contractor"

The aim of this AMP is to ensure that health and safety risks associated with the project are properly managed.

The following Legislation, Regulations and Codes of Practice have been used in the preparation of this AMP:

- Work Health and Safety Act 2011;
- Work Health and Safety Regulations 2011;
- Code of Practice for The Safe Removal of Asbestos [SafeWork NSW: (September 2016)];
- Code of Practice for How to Management and Control of Asbestos in Workplaces [SafeWork NSW: (September 2016)];
- Managing Asbestos in or on soil [WorkCover NSW: (March 2014)];
- Protection of the Environment Operations (Waste) Regulations 2014.

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1.0 DEFINITIONS

Term	Definition
Airborne asbestos:	Any fibres of asbestos small enough to be made airborne. For the purposes of monitoring airborne asbestos fibres, only respirable fibres are counted.
Asbestos:	The fibrous form of those mineral silicates belonging to the serpentine or amphibole groups of rock-forming minerals, including actinolite, amosite (brown asbestos), anthophyllite, chrysotile (white asbestos), crocidolite (blue asbestos) and, tremolite, or any mixture containing one or more of the mineral silicates belonging to the serpentine and amphibole groups.
Asbestos-containing material (ACM):	Any material, object, product or debris that contains asbestos.
Asbestos Register:	A register recording the date on which the asbestos or ACM was identified and the location, type and condition of the asbestos or ACM. Alternatively, the register is to state that no asbestos or ACM is identified at the workplace.
Asbestos Related Work:	Work undertaken in connection with a work process in which exposure to asbestos may occur and includes any work process involving the use, application, removal, mixing or other handling of asbestos or asbestos containing material.
Asbestos Removalist:	A person conducting a business or undertaking who carries out asbestos removal work.
Bonded or non-friable asbestos material:	Materials that contain asbestos in a bonded matrix (may consist of Portland cement or various resin/binders) and cannot be crushed by hand when dry.
Competent person:	A person possessing adequate qualifications, such as suitable training and sufficient knowledge, experience and skill, for the safe performance of the specific work.
The contractor	The organisation awarded the contract to carry out agreed scope of works.
Control Level:	The airborne concentration of a particular substance which, if exceeded, indicates a need to implement a control, action or other requirement. Control levels are generally set at no more than half the national exposure standard for the substance. Control levels are occupational hygiene 'best practice', and are not health-based standards
Control Monitoring:	Means air monitoring, using static or positional instrumentation to measure the level of airborne asbestos fibres in an area during work on ACM. Control monitoring is designed to assist in assessing the effectiveness of control measures. Its results are not representative of actual occupational exposures, and should not be used for that purpose.
Dust and debris:	Visible particles, fragments or chunks of material, large and heavy enough to have settled in the work area, that are likely to have originated from ACM.
Exposure pathway:	The physical course a chemical or pollutant takes from its source to the organism exposed.
Friable Asbestos:	ACM which, when dry, is/may, become crumbled, pulverised or reduced to powder by hand pressure NOTE: This may include ACMs that have been subjected to conditions that leave them in a state where they meet the definition, such as weathering, physical damage, water damage etc. Hierarchy of hazard control measures are taken to minimise risk to the lowest level reasonably practicable in the descending order of elimination, substitution, engineering controls, administrative controls, and PPE.
License:	A license granted by SafeWork (NSW) to carry on the business of licensed work under the Work Health and Safety Regulation, 2011.
Licensed work:	Means work carried out under a license, as follows: • Class A License – can remove any amount or quantity of asbestos or ACM, including • any amount of friable asbestos or ACM

Term	Definition
	• any amount of ACD • any amount of non-friable ACM • Class B License – Can remove any amount or quantity of non-friable ACM and any amount of ACD associated with the removal of non-friable ACM • No License Required – Can remove up to 10m^2 of non-friable ACM and ACD.
Person with control:	Means, in relation to premises, a person who has control of premises used as a workplace. The person with control may be: • The owner of the premises; • A person, who has, under any contract or lease, an obligation to maintain or repair the premises; • A person who is occupying the premises; • A person who is able to make decisions about work undertaken at the premises; or • An employer at the premises.
Naturally occurring asbestos (NOA):	The natural geological occurrence of asbestos minerals found in association with geological deposits including rock, sediment or soil.
Respirable asbestos:	Is an asbestos fibre that: • is less than 3 microns (µm) wide • more than 5 microns (µm) long • has a length to width ratio of more than 3:1.
Worker	A person that carries out work in any capacity for a person conducting a business or undertaking, including work as: • an employee, or • a contractor or subcontractor, or • an employee of a contractor or subcontractor, or • an employee of a labour hire company who has been assigned to work in the person's business or undertaking, or • an outworker, or • an apprentice or trainee, or • a student gaining work experience, or • a volunteer, or • a person of a prescribed class.

2.0 IDENTIFICATION OF THE ASBESTOS RISK

"The Contractor" has been contracted to (i.e. scope of works):

- Site establishment and protection of adjoining property where required;
- Protection, diversion and/or temporary establishment of services and infrastructure as required;
- Erection of perimeter fencing, hoarding, gantry, scaffolding and site accommodation;
- Establishment of temporary access and pedestrian arrangements;
- Tree removal
- Demolition of C2, C3, E1, Security Building C1a, decommissioned sub-station and capping/ augmentation of redundant services
- Demolition of the service tunnel within the footprint of the 8 – 12 building

Asbestos Containing Materials (ACM) has been identified in both the building(s) (refer to the HAZMAT Report - EIS, E29775Krpt-HAZ, Nov 2016) and in one location where the ground to be disturbed for civil works (Refer to Environmental Report - EIS, REF: E29775Krpt-DRAFT-rev2, Nov 2016).

An environmental survey has discovered friable ACM in one location onsite (Refer to **Appendix A – Site Plan** (DWG-XX)). The Asbestos Register for the building(s) to be demolished also details the type, condition &

amount of the ACM that will need to be removed (Refer to **Appendix E – Asbestos Register**). Whilst these known areas will be remediated in accordance with the risk management process, the possibility still remains for friable or non-friable ACM to be uncovered during ongoing works. Accordingly, all workers (due to their position and/or there is a likelihood of contact with asbestos onsite) are provided with specific Asbestos Awareness training, and so are able to provide a competent evaluation as to whether materials uncovered are friable or non-friable ACM.

When a building material, dust, debris, powder or similar substance is suspected of containing asbestos, works in that area will cease immediately. A sample shall be taken by a competent person and placed in an airtight container, appropriately labelled and immediately dispatched to The appointed occupational hygiene service provider for analysis.

Where further locations of friable or non-friable ACM is discovered, "the Contractor" will control the sequent risk according the human health risk and amend the Site Plan (Refer to **Appendix A – Site Plan**) and the Asbestos Register **Appendix E – Asbestos Register**) accordingly.

2.1. HUMAN HEALTH RISK

The human health risk is based on exposure to a potential hazard and is defined as:-

Risk = Hazard x Exposure.

The presence of asbestos is a health hazard, because asbestos has the potential to cause harm to humans. For a human health risk to exist there must also be an exposure pathway by which persons are exposed to respirable asbestos fibres. Thus, asbestos cannot pose a risk simply by being present; a risk can only exist when there is also a complete exposure pathway.

Consequently, risk can be removed or managed by removal/management of the hazard and/or removal/management of the exposure pathway.

The principal exposure pathway for asbestos is via inhalation of 'respirable' asbestos fibres. 'Respirable' asbestos fibres are broadly defined as fibres less than three micrometres in width, and greater than five micrometres in length (with a length to width ratio of greater than 3:1). Asbestos fragments and fibre bundles of larger size than the above dimensions are not classed as respirable.

Therefore, for a risk to exist it is necessary for respirable asbestos fibres to be present and for these to be respired or be capable of being respired. Further, where respirable asbestos fibres are present, the magnitude of risk will be dependent upon the concentration of airborne asbestos fibres actually respired by a person and the duration of exposure.

Asbestos related diseases only occur when significant amounts of airborne asbestos fibres are respired over a considerable period of time. In other words, the likelihood of a disease occurring depends on the amount of exposure to airborne asbestos fibres and the duration of exposure.

Asbestos related diseases are believed not to have occurred as the result of acute, (i.e. short term) exposure to low concentrations of airborne asbestos fibres. Scientific evidence suggests that exposure to significant concentrations of airborne asbestos fibres for many years of a working life may lead to various asbestos related diseases.

2.2. HEALTH IMPLICATIONS

The three most common forms of asbestos disease include:

Asbestosis:

Asbestosis is a chronic chest disease that is caused by inhalation of high concentrations of asbestos fibres. The condition can develop 10 to 20 years after initial exposure. Asbestos fibres initially damage cell membranes in the lungs and, as a result, the lung tissue becomes hardened and scarred.
Shortness of breath after exercise is usually the first symptom of asbestosis. Other symptoms include persistent coughing, chest pain, phlegm, lung infections, pulmonary hypertension and heart failure.

Lung cancer:

Lung Cancer is a cancer that can form with the bronchial tubes and alveoli of the lungs.
An irritative cough with increasing sputum is the first symptom of lung cancer, followed by blood tinged sputum, coughing up blood, chest pains and chest infections.

Mesothelioma:

Mesothelioma is a cancer of the lung lining. It can take 30 to 45 years to develop after initial exposure. A dull, aching chest pain and shortness of breath are the early symptoms, followed by abdominal pain, abdominal swelling and loss of weight.

Smokers are at a higher risk of developing disease when exposed to airborne asbestos fibres. All medical concern must be referred to a qualified medical practitioner for investigations and diagnosis.

3.0 ASSESSMENT & CONTROL OF THE ASBESTOS RISK

Whilst every effort has been taken to locate the presence of ACM the situation still remains that in the situation that when friable or non-friable ACM is encountered un-expectantly a documented risk assessment is to be carried out to define the hazards, associated risk rating, controls that can be implemented to eliminate or minimise the risks and the residual risk rating using the "the Contractor" Risk Management Form, (Refer to **APPENDIX B – General Risk Management Form**).

The risk assessment is to be carried out by a competent person, and the controls identified need to be consistent with the hierarchy of control. The hierarchy of controls aims to eliminate the risk in the first place, and works down through controls to PPE. It is as follows:

1. **Eliminating** the risk (for example, removing the asbestos)
2. **Substituting** for the risk, **isolating** the risk or applying **engineering** controls (for example, enclosing, encapsulation, sealing or using certain tools)
3. Using **administrative** controls (for example, safe work practices)
4. Using **PPE**.

Depending on the risks identified, a combination of the above control methods may be required to adequately control and manage the friable or non-friable ACM hazard.

There are four main methods by which asbestos will be managed:

1. **Leave and Monitor** – Can be used when friable or non-friable ACM are stable and not prone to damage/disturbance.
2. **Encapsulate/seal** – Can be used on stable friable or non-friable ACM that are stable but have elements that are prone to damage. Encapsulating/sealing is a surface treatment that forms a barrier over the damage prone areas. This method cannot be used if the control will create significant disturbance to the asbestos fibres.
3. **Enclosure** – Can be used on relatively stable friable or non-friable ACM that have elements that are prone to damage. This method involves containing the asbestos within a sealed area.
4. **Removal** – Can be used on unstable friable or non-friable ACM that is prone to damage. This method completely eliminates the hazard but is often not economically viable.

(**Note**: Methods 1 to 3 are feasible options for asbestos contaminated soils that are found on an EPA approved site where contaminated soils can be 'Capped & Contained". Method 4 will be utilise for all buildings scheduled for demolition.)

Un-expected finds within soils are likely to take one of two forms:

1. Earth material containing non-friable ACM contaminants
2. Older buried materials manufactured with or containing non-friable asbestos (e.g. asbestos cement sheets, etc.)

Whereas un-expected finds of ACM with the building will be:

1. Friable insulation ACM within non accessible building cavities
2. Non-friable ACM such mastic, floor covering, cement sheeting etc.

The aim of the "the Contractor" work process is to principally to stock pile soils contaminated with non-friable ACM and later "Capped & Contain" either within landscape structures and/or beneath building structures. These locations will be secure, legislative compliant and recorded within the Asbestos Register.

Friable asbestos contaminated soils will be removed from site along with ACM that has been identified within the buildings scheduled for demolition.

For any friable asbestos material encountered that is suspected to be friable, The appointed occupational hygiene service provider will be consulted and a Class A Asbestos Removal License holder will be subcontracted to undertake the removal works.

Various Safe Work Method Statements (SWMSs) have been developed to control and eliminate/minimise the risks associated with these work processes, and are attached in **APPENDIX C – Safe Work Method Statements**. These SWMSs are to be reviewed and modified to suit specific site conditions and should be thoroughly analysed for suitability prior to implementation.

In addition to the asbestos awareness training, workers who are carrying out removal of asbestos contaminated soils are to have completed either friable or non-friable removal courses through an accredited registered training organisation. A record of these personnel is available in the "the Contractor" Training / Qualifications Register.

This training gives all relevant workers a basic understanding of how asbestos can be identified, the health implications associated with friable or non-friable ACM, and how these risks can be managed. All staff are consulted during the development of the risk analysis and also during the development of the subsequent SMWS, if applicable.

Where un-expected ACM finds occur both the Site Plan and the Asbestos Register is to be updated to detail their locations and approximately amounts.

3.1. GENERAL PROCEDURE (SOILS)

In general the following procedure is to be followed for the excavation/shaping of soils/landforms on-site that have been assessed as containing friable and/or non-friable ACM. This procedure is intended as a guide only; it is important that site conditions and the job to be undertaken are reviewed through the use of a risk analysis.

3.1.1 UN-EXPECTANT DISCOVERY OF ASBESTOS CONTAMINATED SOILS (FRIABLE OR NON-FRIABLE ACM)

All hazards and controls are to be incorporated into the SWMS developed for the task.

1. All workers have been inducted to the site and where required (due to their position and/or there is a likelihood of contact with asbestos onsite) are provided with specific Asbestos Awareness training, enabling them to provide a competent evaluation as to whether materials uncovered are asbestos or asbestos containing materials, how to handle safety and suitable control measures. Workers qualifications and details shall be recorded as per standard "the Contractor" operating procedures.
2. All workers are to be inducted into relevant SWMS prior to undertaking the related task including:
   - Water sprays may be required to reduce airborne dust levels
   - Excavation works undertaken with caution, excavator buckets and the new surface of soil inspected for friable or non-friable ACM
3. Work is to be stopped where friable or non-friable ACM is identified in areas not previously recognised as containing asbestos contamination.
4. Boundaries of contamination to be established by competent person (i.e. an "asbestos awareness trained/assessed person"). The fence encircling a location containing asbestos contaminated soils is to consist of waist height hi-vis bunting (tied between star pickets) fencing. It is to be maintained and appropriately sign posted for the duration of the removal.
5. Contaminated area to be isolated using visual delineation (e.g. Plastic barrier boards, star pickets and bunting, etc.) to prevent un-authorised access to area.
6. Warning signage to be erected, conforming to AS 1319, to identify presence of asbestos in the area (Refer to **APPENDIX D - Asbestos Conforming Signs**).

7. A sample of material is to be taken by a trained, competent person. Sample to be sent to the appointed occupational hygiene service provider for testing and analysis. The sample is to be labelled with the following information to enable efficient and effective remedial actions to be implemented:
   - Name and location of the earth, structure, plant or equipment from which the sample was taken,
   - Exact location of the sampled material giving sequential location number from the Asbestos Register,
   - Date sampled,
   - Name and telephone number of the person who took the sample.

   OR

8. It may be presumed and stated that the material is friable or non-friable ACM. From this point forward, the material must be treated as friable or non-friable ACM until it is removed and a clearance certificate issued.
9. Record findings in the site's Asbestos Register, including results of testing.

3.1.2 OFF-SITE REMOVAL OF ASBESTOS CONTAMINATED SOILS (FRIABLE ACM)

No friable ACM is to be stockpiled for on-site disposal. All friable ACM is to be disposed of at a licensed Waste Disposal Facility. The following steps are to be followed if a positive identification for asbestos is returned or the area being excavated/formed has been previously identified on the Site Plan as containing friable ACM:

1. Perform a site specific risk analysis and develop appropriate SWMS, detailing controls and measures; implement controls identified. As minimum a radius of 2 metres horizontally and 0.5 metres vertically below of soil is to be to be removed, quarantined and considered as "contaminated soil" and assigned to off-site removal (**Note**: the depth of soils removed underneath the point of contamination can be reduced where natural soil/rock is found).
2. Where it is identified that friable asbestos contamination is present a Class A asbestos removal license holder is to be appointed to conduct the removal work. Where friable asbestos is present only a licensed asbestos assessor may undertake risk assessments, air-monitoring and issue clearance certificates for removal work.
3. All personnel involved in the removal are to be inducted into specifically developed SWMS. In addition to this the workers involved in friable asbestos removal work must hold current certification in relation to the approved friable removal course.
4. All personnel to be issued with PPE, as determined in the SWMS, prior to entering contaminated area. All Contaminated PPE to be decontaminated or disposed of as asbestos contaminated waste prior to exiting contaminated zone
5. Friable ACM will be removed and disposed of as bulk disposal of contaminated soils. Quantities of contaminated soils are to be "wetted down" and placed into truck bodies/skips etc that are leak-proof. Once the truck body/skips etc contain a full payload and prior to exiting the removal zone.
6. Water misting is to be used as required throughout removal operations to ensure dust is suppressed
7. No high speed abrasive or pneumatic tools to be used during removal operations
8. Trucks, plant and machinery exiting the removal zone are to be decontaminated prior to exit. Plant operators are to remain within their cabin of their Truck (with their air-conditioner positioned on "recycle air") whilst within the removal zones.
9. All waste to be disposed of at a licensed asbestos waste disposal site and recorded on truck tipping register.
10. Personnel involved in removal are to ensure all machinery, tools and PPE is disposed of and/or cleaned prior to exiting removal zone. Any water, rags or other materials used during clean-up are to be treated and disposed of as asbestos containing materials in sealed, minimum 200µm thickness, new, non-recycled plastic bags.
11. After completion of removal works, a Licensed Asbestos Assessor is to issue a clearance certificate prior to the removal of any barriers, signage or other controls.
12. Upon receipt of the clearance certificate, barriers and signage are to be removed and normal works to recommence.

3.1.3 ON- SITE DISPOSAL OF ASBESTOS CONTAMINATED SOILS (NON-FRIABLE ACM)

The following steps are to be followed if contaminated soils are intended to be remediated, temporary stockpile and permanently buried onsite:

1. Perform a site specific risk analysis and develop appropriate SWMS, detailing controls and measures; including temporary stock piles and permanent burial locations. The appointed occupational hygiene service provider can provide further recommendations with regards to burial and/or remediation of non-friable ACM contaminated soil.

   Where temporary stockpiles are used, these should be designed and managed according to a documented risk assessment. Risk controls are to address:

   - The location of the stockpile; to avoid it being relocated and social/environmental impacts.
   - Delineation/signage of the Stockpile area.
   - Dust mitigation arising from the stockpile itself (water/plastic etc) and mobile equipment that are dumping onto the pile or removing it to the permanent contaminant areas/sites.
   - Un-controlled spreading/movement of asbestos contaminated soils (i.e. in transit from the source to the stockpile, from out of the temporary stockpile area etc).
   - Clearance inspection of the temporary stockpile footprint once removed.

2. To minimise the amount of soils confirmed as contaminated with asbestos, two (2) temporary stockpiles are to be established with an adjacent “Tipping Inspection Area” (TIA). The temporary stockpiles are to be clearly delineation and labelled to indicate whether or not they are “Clean” or “Contaminated”. When established inside the construction zone the fence encircling the temporary stockpile area is to consist of a waist height hi-vis bunting (tied between star pickets) fencing that is maintained and appropriately sign posted until the stockpiles are removed and the area is cleared by a Licensed Asbestos Assessor. If the temporary stockpile area is outside of the construction zone then the stockpiles should be encircled by temporary wire fencing of approximately 2 metres high and appropriately sign posted.

   Soils that are extracted are to be spread out moist on the TIA to a thickness no greater than 100mm and visual inspected by a competent person using a rake to check throughout the material being inspected. Where any portion of the soil being inspected contains the presence of ACM the whole amount is to be pushed up onto the “contaminated” stockpile. To minimise the amount of soils classified as “contaminated” it is recommended that loads of soils (to be remediated) are taken from a single area and not mixed with soils from other locations before being inspected.

   Where non-friable ACM is identified during civil works, a radius of 1 metre horizontally and 0.2 metres vertically below of soil is to be to be removed, quarantined and considered as “contaminated soil” and assigned to the “contaminated” temporary stockpile (**Note**: the depth of soils removed underneath the point of contamination can be reduced where natural soil/rock is found).

   Note: Where deemed necessary by the accredited environmental auditor the temporary stockpile labelled as “Clean” is to be validated as clean fill by the appointed Occupational Hygiene Consultant sampling at a minimum ratio of 14 samples per 1000m^3 for the presence of ACM contamination. The sampling is to be in accordance with the National Environmental Protection Measure (NEPM) and samples analysed in accordance with AS 4964-2004: - ‘Method for the qualitative identification of asbestos in bulk samples.

3. Permanent onsite disposal locations are to nominated and form part of the redevelopment and landscaping design. Controls are to address:

   - Methods of encasement (i.e. use of geotextile and capping etc)
   - Future disturbance risk (i.e. redevelopment, installation of services etc)

   In cases where hard covers are not feasible, the required depth of clean fill depends on the potential for disturbance during future land use. A geotextile barrier (i.e. woven plastic-polymer mat or sheet) is to separate the buried asbestos containing material from clean material and to alert the presence of a hazard.

   The depth of a barrier must be decided on a case-by-case basis. A minimum of one (1) meter is required for clean fill above asbestos contaminated soils where grass landscaping is going to be planted.

Whereas, a clean fill thickness of two (2) meters is to be used where services are expected to be buried above other than where a legislative easement is required. Where a legislative easement is required the outer edges from burial is not to encroach within one (1) meter from a 45 degree angle from the base of the easement toe. No burial is to exist under an easement without approval from the respective regulatory body.

4. A Class B asbestos removal license holder is to be appointed to supervise the removal work, stockpiling and permanent onsite disposal of asbestos contaminated soils.

3.1.3.1 REMEDIATION OF ASBESTOS CONTAMINATED AREAS

5. All personnel involved in the handling of asbestos contaminated soils are to be inducted into specifically developed SWMS. In addition to this the following competencies are to be current.
    - All workers involved in handling fragments of non-friable asbestos constituting a total of greater than 10 square metres of fibro, must hold current certification showing that they have successfully completed the approved non-friable removal course.
6. All personnel to be issued with PPE, as determined in the SWMS, prior to entering contaminated area. All Contaminated PPE to be decontaminated or disposed of as asbestos contaminated waste prior to exiting contaminated zone.
7. Water misting is to be used as required throughout the handling operations to ensure dust is suppressed.
8. No high speed abrasive or pneumatic tools to be used during handling operations.
9. Personnel involved in removal are to ensure all machinery, tools and PPE is disposed of and/or cleaned prior to exiting removal zone. Any water, rags or other materials used during clean-up are to be treated and disposed of as asbestos containing materials in sealed, minimum 200µm thickness, new, non-recycled plastic bags.
10. After completion of removal works, a competent person or a Licensed Asbestos Assessor is to issue a clearance certificate prior to the removal of any barriers, signage or other controls.
11. Upon receipt of the clearance certificate, barriers and signage are to be removed and normal works to recommence.

3.1.3.2 MOVEMENT OF ASBESTOS CONTAMINATED SOILS ONSITE

12. Trucks, plant and machinery exiting the removal zone and temporary stockpile area are to be decontaminated prior to exit. Plant operators are to remain within their cabin of their Heavy Mobile Equipment (HME) / Truck (HV) (with their air-conditioner positioned on “recycle air”) whilst within these areas
13. The temporary stockpile is to be maintained in accordance with the Temporary Stockpile Risk Assessment.
14. The Asbestos Register is to be update to reflect the location/movement of asbestos contaminated soils.

3.1.3.3 PERMANENT BURIAL OF ASBESTOS CONTAMINATED SOILS

15. A competent person is to regularly inspect the preparation and the encapsulation sealing of a permanent burial location of asbestos contaminated soils.
16. The Asbestos Register is to be updated (including volume, GPS location etc).
17. A competent person to inspect every five (5) years the location of each burial site.

3.2. GENERAL PROCEDURE (BUILDINGS)

In general the following procedure is to be followed for the removal of asbestos containing materials within a building scheduled for demolition that have been assessed as containing non-friable ACM. This procedure is intended as a guide only; it is important that site conditions and the job to be undertaken are reviewed through the use of a risk analysis.

3.2.1 UN-EXPECTANT DISCOVERY OF BUILDING MATERIAL SUSPECTED TO BE CONTAINING ASBESTOS

1. All hazards and controls are to be incorporated into the SWMS developed for the task.
2. All workers have been inducted to the site and where required (due to their position and/or there is a likelihood of contact with asbestos onsite) are provided with specific Asbestos Awareness training, enabling them to provide a competent evaluation as to whether materials uncovered are asbestos or asbestos containing materials, how to handle safety and suitable control measures. Workers qualifications and details shall be recorded as per standard "the Contractor" operating procedures.
3. All workers are to be inducted into relevant SWMS prior to undertaking the related task.
4. Work is to be stopped where suspected friable or non-friable ACM is identified and not previously listed within the Asbestos Register.
5. The area to be isolated using visual delineation (i.e. Taping off access to the room etc.) to prevent un-authorised access to area.
6. Warning signage to be erected, conforming to AS 1319, to identify presence of asbestos in the area (Refer to **APPENDIX D - Asbestos Conforming Signs**).
7. A sample of material is to be taken by a trained, competent person. Sample to be sent to The appointed occupational hygiene service provider for testing and analysis. The sample is to be labelled with the following information to enable efficient and effective remedial actions to be implemented:
8. Name and location of the earth, structure, plant or equipment from which the sample was taken,
9. Exact location of the sampled material giving sequential location number from the Asbestos Register,
10. Date sampled,
11. Name and telephone number of the person who took the sample.

OR

12. Rather than submitting a material suspected to contain asbestos for analysis, it may be presumed and stated that the material is friable or non-friable ACM. From this point forward, the material must be treated as friable or non-friable ACM until it is removed and a clearance certificate issued.
13. Record findings in the site's Asbestos Register, including results of testing.

3.2.2 ASBESTOS REMOVAL OF ACM (FRIABLE OR NON-FRIABLE ACM)

The following steps are to be followed for the removal of all known ACM from a building prior to demolition:

1. Perform a site specific risk analysis and develop an appropriate SWMS, detailing controls and measures; implement controls identified.
2. All personnel involved in the removal are to be inducted into specifically developed SWMS. In addition to this the following competencies are to be current.
    - All workers involved in removing non-friable asbestos constituting a total of greater than 10 square metres of non-friable ACM, must hold current certification showing that they have successfully completed the approved non-friable removal course.
    - All workers involved in friable asbestos removal work must hold current certification in relation to the approved friable removal course.

3. Where the Non-friable asbestos being removed is greater than 10 m^2 or the ACM is friable an Asbestos Removal Control Plan (ARCP) is to be in place, prior to the removal works commencing. The ARCP is to address:
    - How the asbestos removal will be carried out
    - Method to be used
    - Tools and equipment to be used
    - Personal protective equipment to be used
    - The asbestos to be removed, including the location, type and condition of the asbestos
4. All personnel to be issued with PPE, as determined in the SWMS, prior to entering asbestos removal area. All Contaminated PPE to be decontaminated or disposed of as asbestos contaminated waste prior to exiting the asbestos removal area.
5. According to the risk assessment outcome ACM will be removed as either:

    Bulk disposal
    Quantities of removed ACM are to be:

    - placed into a double lined with minimum 200µm thickness, new, non-recycled plastic sheeting
    - Transported securely (non-friable asbestos) or transported in a sealed container (friable asbestos), and;
    - Disposed as asbestos waste at a licensed waste depot.

    OR

    Bagged
    Non-friable ACM is to be;
    - Double bagged and sealed in minimum thickness 200 µm plastic bags;
    - Appropriately labelled as asbestos waste (stored securely in a labelled container/bulk waste bin etc);
    - Transported securely (non-friable asbestos) or transported in a sealed container (friable asbestos), and;
    - Disposed as asbestos waste at a licensed waste depot.

6. Water misting is to be used as required throughout removal operations to ensure dust is suppressed and during the bagging/containment process.
7. No high speed abrasive or pneumatic tools to be used during removal operations
8. All waste is to be disposed of, as soon as practicable, at a licensed asbestos waste disposal site and recorded on truck tipping register. Report all quantities greater than 10 m^2 or 100kg to the NSW Environment Protection Authority (EPA) prior to transporting.
9. Personnel involved in removal are to ensure all machinery, tools and PPE is disposed of and/or cleaned prior to exiting removal area. Any water, rags or other materials used during clean-up are to be treated and disposed of as asbestos containing materials in sealed, minimum 200µm thickness, new, non-recycled plastic bags.
10. After completion of removal works, a competent person or a Licensed Asbestos Assessor is to issue a clearance certificate prior to the removal of any barriers, signage or other controls.
11. Upon receipt of the clearance certificate, barriers and signage are to be removed and normal works to recommence.

4.0 CLEARANCE INSPECTION

A clearance inspection of the asbestos removal area once asbestos removal work is completed is to be undertaken by:

- An independent licensed asbestos assessor where works require removal by a Class A licensed asbestos removalist; or
- An independent competent person for removal work involving more than 10 m^2 of non-friable asbestos.

The clearance inspection will verify that the area is safe for normal use, includes visual inspection and may include air monitoring. Clearance certificates must be issued by the person conducting the clearance inspection before the asbestos removal area is re-occupied. Clearance certificates must not be issued unless the asbestos removal area and the area immediately surrounding it:

- Are free from visible asbestos contamination
- Where air monitoring was undertaken as part of the clearance inspection, the monitoring shows asbestos below 0.01 fibres/ml.

Clearance certificates must be in writing and must state that:

- No visible asbestos residue was found from the asbestos removal area or in the vicinity of the area where work was carried out
- Air monitoring results (if air monitoring was used), the airborne asbestos fibre level was less than 0.01 asbestos fibres/ml.

5.0 EMERGENCY AND INCIDENT PROCEDURE

All asbestos related incidents occurring onsite are to be recorded on the “the Contractor” Incident Report Form, (Refer to APPENDIX F). This report clearly defines the incident that occurred, the incidents specific details, and any remedial actions required.

All asbestos related incidents or emergencies are also to be included in the site’s Asbestos Register.

Emergencies involving asbestos can be split into two main categories:

1. Air monitoring devices return a reading of higher than 0.01 fibres/mL, and
2. Suspected asbestos or ACM material is uncovered onsite.

“the Contractor” has developed an emergency response plan flowchart that can be followed in the event of an asbestos related incident. (Refer to APPENDIX G).

6.0 SPECIFIC WHS RESPONSIBILITIES

The Head Contractor along with its Directors and Senior Managers are ultimately responsible for ensuring as reasonably practicable that this Asbestos Management Plan is resourced to enable it to be implemented and maintained on site.

Whilst the monitoring of the plan is senior management responsibility, line management along with site supervisors/workers must also be committed to working in accordance with this plan to ensure its full and efficient implementation. It is important that the consultation of this plan occur in accordance with “the Contractor” established consultation arrangements and processes.

The following specific responsibilities are in addition to “the Contractor” general Work Health & Safety responsibilities outlined “the Contractor” Work Health & Safety Management System.

Specific Project Manager’s responsibilities include:

- Ensure that no asbestos related work is undertaken onsite without workers being inducted onto an endorse Safe Work Method Statement (SWMS).
- Induct all workers that work is to cease immediately in circumstances where suspected asbestos containing material is discovered (in areas where asbestos contamination is not already known and/or being controlled by an endorsed SWMS) until a competent person confirms the presents of asbestos, assessed the risk and controls are implemented.
- Ensure that exposure to airborne asbestos is as low as reasonably practicable and does not exceed the exposure standard for asbestos.

- Ensuring that a Competent Person is available to conduct a site specific risk analysis and develop appropriate SWMS, detailing controls and measures; implement controls for identified or assumed asbestos.
- Where a substance is suspected to be asbestos containing (and not accepted to be asbestos containing) a sample is to be collected by a competent person and forwarded to the appointed occupational hygiene service provider for analysis/reporting.
- Establish and maintain an up-to-date site specific Asbestos Register that is readily accessible to workers, H&S Representatives, statutory persons and other persons required to undertake work onsite.
- Ensure that all workers have been inducted to the site and where required (i.e. workers that are likely to come in contact with asbestos onsite) are provided with specific Asbestos Awareness training.
- Maintain appropriate records onsite (i.e. training, licenses etc)
- Prohibit the use of high pressure water/spray or compressed air on asbestos and apply risk management controls on the use of other plant/equipment at to avoid the release of airborne asbestos.
- Ensure that appropriately licensed Asbestos Removalist are appointed where required; including ensuring that the Asbestos Removal Supervisor (Class A) is present at the removal area whenever work is being carried out or readily available (Class B) whenever work is being carried out.
- Ensure that where a licensed asbestos removal is being carried out that a documented “Asbestos Removal Control Plan” has been obtained and communicated to relevant workers/persons onsite.
- Ensure that the worksite is secured at all times along with the labelling/display of appropriate risk based asbestos signage.
- Ensure that all waste leaving site is labelled in accordance with the GHS and that records at obtained to verify that it has been disposed at a site authorized to accept asbestos waste.
- Ensure that “Clearance Certificates” have been receipted prior to areas that are subject to work carried out under the supervision a licensed asbestos removalist are re-occupied.
- Comply with all statutory and company incident notification requirements.
- Ensure that no asbestos worker is permitted to commence work with facial hair (i.e. stubble, hair growth that is present around the seal zone of a respirator) or deep skin folds unless provided with a Powered Air Purifying Respirator (PAPR).
- Provide appropriate protective clothing and equipment, hygiene procedures and personal decontamination facilities; and
- Prepare, complete, and submit documents for obtaining necessary approvals.

Worker specific responsibilities include:

- Do not commence any form of asbestos related work without first;
    - Successfully completing the site induction
    - Successfully completing Asbestos Awareness Training
    - Being inducted and signing onto an endorse SWMS for the work to be undertaken; and
    - Putting on PPE as required by the SWMS
- Stop work and report all visual sightings of suspected asbestos containing materials (in ground) to their supervisor in work areas not known for its asbestos contamination.
- Where required to wear a negative pressure respirator (i.e. disposal, cartridge etc) shave prior to the commencement of the shift.

Work, Health & Safety Manager specific responsibilities include:

- Continually, make aware Directors, Senior Management and Line Management of any relevant statutory, Codes of Practice and Community Standards (i.e. Australian Standards etc) changes addressing “the Contractor” asbestos related activities.

- Maintain a record of all persons who have been potential exposed to asbestos.
- Implement such systems and/or processes to ensure that onsite asbestos management systems are in place and operational at all times (i.e. audits, inspection, incident investigations etc).
- Where pre-employment medical assessments for asbestos workers are undertaken ensure that they incorporate lung function testing, lung X-ray and facial fit testing for respiratory protection.

7.0 ASBESTOS MANAGEMENT PLAN AND REGISTER REVIEW

Both this Asbestos Management Plan (AMP) and the site Asbestos Register (AR) are to be reviewed at regular intervals by a competent person to ensure their ongoing relevance to the works being undertaken.

The AR is to be reviewed a minimum of once per five years and if any of the following situations occur:

- The AMP is reviewed,
- Further asbestos or ACM is identified in the workplace,
- Asbestos is removed from or disturbed, sealed or enclosed at the workplace.

The AMP must also be review at interviews not exceeding once per five years to ensure the information in the plan is up to date, or if any of the following situations occur:

- There is a review of the asbestos register or control measures,
- Asbestos is removed from or disturbed, sealed or enclosed at the workplace,
- The plan is no longer adequate for managing asbestos or ACM at the workplace,
- A “Health and Safety Representative” requests a review.

APPENDIX A - SITE PLAN (DWG-XX)
[The Contractor will provide/insert the Site Plan detailing the locations where friable or non-friable ACM has been discovered/found]

APPENDIX B - RISK MANAGEMENT FORM (GENERIC)
[The Contractor will provide/insert the organisation generic Risk Assessment Form]

APPENDIX C - SAFE WORK METHOD STATEMENTS
[The Contractor will provide/insert all SWMS Statements that are to be used]

APPENDIX D - ASBESTOS CONFORMING SIGNS
[The Contractor will provide/insert images of signs that will be used onsite]

APPENDIX E - ASBESTOS REGISTER
[The Contractor will provide/insert the Asbestos Register]

APPENDIX F - INCIDENT REPORT FORM
[The Contractor will provide/insert the organisation's Incident Report Forms]

APPENDIX G - EMERGENCY RESPONSE PLAN