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ASBESTOS CONTAINING MATERIALS SURVEY REPORT

Winnellie Warehouse

155 Coonawarra Road, Winnellie NT 0821

Report Number 680.10420-R01-ASR

18 October 2017

Department of the Attorney-General and Justice

Cnr Cavenagh and Bennett Street

Darwin, NT

GPO Box 470

Darwin, NT, 0801

Version: v1.0

ASBESTOS CONTAINING MATERIALS SURVEY REPORT

Winnellie Warehouse

155 Coonawarra Road, Winnellie NT 0821

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DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
680.10420-R01-v1.0	18 October 2017	Gemma Sheridan	Liam Munro	Liam Munro

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EXECUTIVE SUMMARY

SLR Consulting Australia Pty Ltd (SLR) was engaged by Leonie Smith of Department of the Attorney-General and Justice, on behalf of the Northern Territory Trustee to undertake an asbestos building materials survey of Winnellie Warehouse, 155 Coonawarra Road, Winnellie NT 0821. The survey was conducted by Liam Munro and Gemma Sheridan from SLR on 09 October 2017.

The following asbestos containing materials (ACM) were identified.

Warehouse

- Internal wall, Fibrous Cement - Ground Floor Bathroom
- Internal wall, Fibrous Cement - Ground Floor Toilet
- Hot water system, Insulation - Ground Floor Kitchenette
- Old combination safes x 2, Insulation - Ground Floor Storage room to rear, east
- Backing board , Zelemite - External Meter Box - east elevation
- Door seal, Woven Product - External Flammables cupboard - east elevation

All of the asbestos containing materials identified are in the asbestos register located in **Section 3.1** of this report.

The recommendations arising out of this Management survey/resurvey are:

1. **Friable asbestos (chrysotile)** was identified in the form of a woven cloth door seal to a disused flammable materials cupboard located outside the warehouse. According to the standard risk assessment criteria, this material is considered to be medium risk, however if disturbed, the material poses a serious risk to human health and should be prioritised for removal as soon as reasonably practicable. Access to this material should be restricted in the mean-time.
2. The following items were identified and assumed to contain friable asbestos which is encapsulated and therefore can be included in the management strategy adopted following the issue of an asbestos management plan:
    - Hot water system, Insulation - Ground Floor Kitchenette
    - Insulation to safes x 2, Insulation - Ground Floor Storage room to rear, east
3. **Section 3.2** of this report contains materials deemed to be non-ACM following either the sampling of the material or the similarity of the material to a sampled item. Those items that are assumed not to contain asbestos should still be sampled prior to any refurbishments or demolition. These items include:
    - External Roof - north elevation gable fascia, fibre cement sheet
4. Asbestos containing materials identified on-site that do not pose a significant risk to health may remain in situ and be managed with the aid of an asbestos management plan.

As required by Work Health and Safety Regulations (NT), a person with management or control of a workplace is obliged to comply with the requirements outlined in the Regulation as follows:

a. All asbestos or ACM at the workplace is identified and maintained in a register of asbestos containing materials;

b. All in situ ACM is clearly indicated and labelled;

c. Implementation of an Asbestos Management Plan; and

d. Ongoing review of the Asbestos Containing Materials Register and Asbestos Management Plan.

The list above is a summary/overview only and should not be relied on to accurately identify ACM. The locations and details of all items of known ACM at the property are documented in the Asbestos Register in Part 4 of this report.

In order to comply with the Work Health and Safety Regulations (NT), any action taken to control asbestos and ACM in the place of work, or in plant at the place of work, is to be recorded in the Asbestos Control Log attached in **Appendix A**.

Copies of NATA Laboratory Certificates for asbestos identification analysis are provided in **Appendix B**. Refer to **Appendix C** for Limitations of this survey. Relevant photographs taken during the inspection are provided in **Appendix D**.

1 BACKGROUND AND SCOPE

SLR Consulting Australia Pty Ltd (SLR) was requested by Leonie Smith of Department of the Attorney-General and Justice, on behalf of the Northern Territory Trustee to undertake an asbestos building materials survey of Winnellie Warehouse, 155 Coonawarra Road, Winnellie NT 0821 to ascertain the location, extent, type and condition of Asbestos Containing Materials (ACM). The survey was conducted on 09 October 2017 by Liam Munro and Gemma Sheridan from SLR.

1.1 Site Description

The site is located on the north side of Coonawarra road towards the east end. A Locality Map is presented in **Figure 1** for the purpose of this report, Coonawarra road is taken to run in an east-west direction, directly adjacent to the site.

The following information is known about the building:

- The building was a single storey warehouse constructed circa 1980's with toilets, storage and office areas.
- At the time of the survey the building was used as a storage warehouse for the public trustee and only occupied intermittently.
- The warehouse manager was present in the building at the time of the survey.
- The following buildings/areas were surveyed at the time of the inspection:
    - Entry office (including ceiling cavity)
    - Bathrooms (x2)
    - Kitchenette
    - Storage Room
    - Storage room to rear, east
    - External yard

Relevant photographs taken during the inspection are provided in **Appendix D**.

Figure 1 Site Location – 155 Coonawarra road

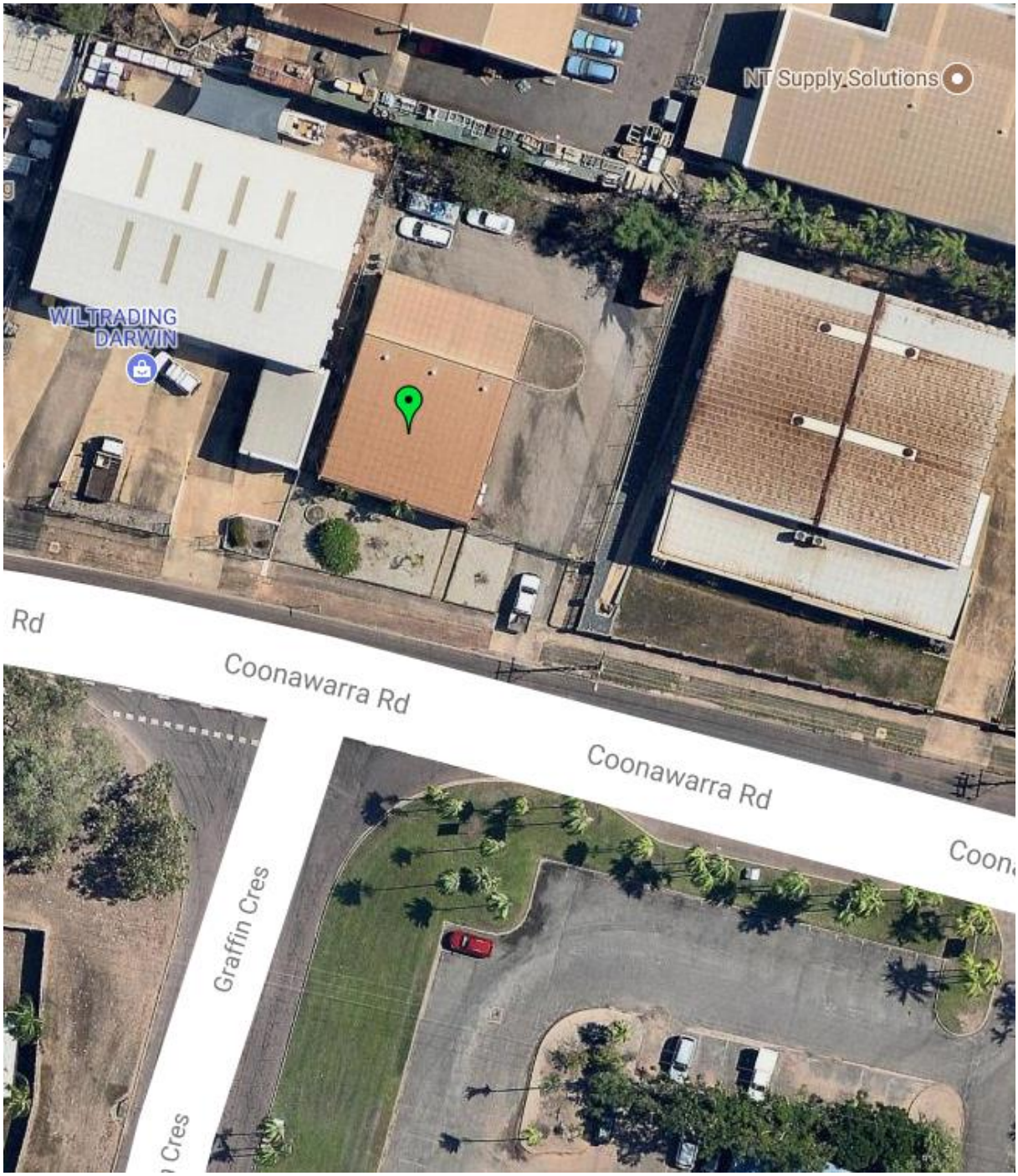


Image courtesy of NearMap

1.2 Survey Strategy

Asbestos material surveys are undertaken considering a risk management approach, in accordance with best practice. The survey was conducted in a manner which conforms with the Work Health and Safety Regulations (NT) and WHS Code of Practice How to Safely Remove Asbestos 2011.

The purpose of this survey is to locate, as far as reasonably practicable, the presence, type and extent of any suspect ACM in the building(s), to assess their condition, provide a suitable risk assessment/rating and recommended control actions based on the condition of the materials at the time of the survey. As this is not an intrusive, demolition or refurbishment style survey, findings must not be deemed absolute. A demolition/refurbishment style survey is to be conducted prior to such works commencing as described in AS2601 (2001) The Demolition of Structures and outlined in state WHS Code of Practice: Demolition Work (2015): Refer to Appendix C for limitations.

1.3 Methodology

Asbestos material surveys are undertaken considering a risk management approach, in accordance with best practice, State Legislation and Safe Work Australia NOHSC Guidance. The survey was conducted in a manner which conforms with the Work Health and Safety Regulations (NT) and WHS Code of Practice How to Safely Remove Asbestos 2011.

Asbestos containing materials presumed or identified through visual and/or analytical characterisation were performed and reported in this report and documented in the Asbestos Containing Materials Register (ACMR) for the Site (provided in Appendix A).

The assessment was conducted on the basis of the condition, type and location of the materials at the time of inspection. The scope of this investigation did not allow intrusive sampling techniques to be undertaken, and consequently the register may have limitations as a reference document for the purposes of renovation or demolition.

Sample collection was performed in a non-destructive and non-invasive manner by competent persons. Presumptions, based on knowledge and experience, that inaccessible areas may contain asbestos materials may also be made and stated within the register.

The survey consisted of a visual inspection with limited sampling/analysis of materials undertaken by a trained and experienced surveyor. Materials are assumed to contain asbestos where:

- Laboratory analysis has confirmed the presence of asbestos in a visually similar material; or
- Materials visually appear to be asbestos containing but no sample was collected, for example due to access restraints.

Samples are typically collected using a hand tool or core borer. Hand drills and other tools are used where required. Power tools were not used during the survey.

Small representative samples were collected from materials presumed to contain asbestos (where not previously identified). Samples collected are representative of the material sampled, individually identified, transported, analysed and reported in accordance with Guidelines, relevant Statutory Regulations, Codes of Practice and SLR in-house Work Instructions and procedures. Samples were submitted to a NATA certified laboratory for confirmation analysis by stereo microscope and polarised light microscopy (PLM) with dispersion staining techniques.

Notably, with some asbestos containing bulk material it can be very difficult, or impossible, to detect the presence of asbestos using the polarised light microscopy analytical method, even after ashing or disintegration of samples. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or attributed to the fact that, very fine fibres have been distributed individually throughout the materials. Some materials, such as vinyl tiles, may require further analysis via X-ray diffraction or Scanning Electron Microscopy.

The ACMR consists of relevant information gathered on site, assessment of risk and recommendations for ongoing management of in situ asbestos materials. Reference to photographs, where available, is made in the register along with sample identification and analysis results, where applicable. Sample analysis results from preceding assessments may be referenced in the ACMR (refer to previous survey reports for analytical test results where reference is made to previous sample data).

1.4 Exclusions

Certain areas of the building were inaccessible at the time of the inspection. This includes areas/materials that were inaccessible due to being "live electrical" or "moving parts" equipment. **Table 1** lists those areas/materials that were inaccessible.

Table 1 Inaccessible Areas and/or Materials

Location	Explanation
Warehouse, External Roof - north elevation	No access due to roof height
Kitchenette	Internal lining to hot water system
Storage room to rear, east	Internal lining to old combination safes

Additionally, and unless specifically noted, the survey did not cover

- Wall/ceiling panelling behind laminations/coverings.
- Concealed floor coverings beneath carpet or superficial floor coverings.
- Fuses within "live" electrical panelling. Fuses of a certain age may contain asbestos containing flashguards.
- Hidden and/or inaccessible locations such as in or under concrete slabs, in or under vinyl/linoleum/carpet, wall cavities, hidden storage areas and the like. If the vinyl or linoleum is tested, this does not necessarily mean that the resin/glue is included in the analysis.
- Lift wells and inaccessible/unidentified shafts, cavities and the like.
- Air conditioning, heating, mechanical, electrical or other equipment.
- General exterior ground surfaces and subsurface areas eg asbestos in fill/soil.
- Materials dumped, hidden, or otherwise placed in locations which one could not reasonably anticipate.
- Materials other than normal building fabric, materials in laboratories or special purpose facilities and building materials that cannot be reasonably and safely assessed without assistance.

2 SURVEY RESULTS

The results of the asbestos survey are presented in a tabular format. **Section 3.1** details all of the ACM identified. **Section 3.2** shows all of the non-asbestos containing materials as determined during laboratory analysis.

To assist with the interpretation of the results the following legend provides detailed meaning of abbreviations and terms that may appear in the tables.

Legend

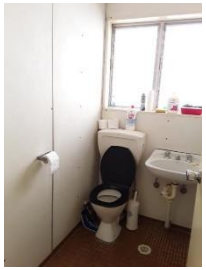
Internal/ External	Refers to the location of the material in relation to the structure. Eg Eaves would be External of the building; Kitchen would be internal of the building.
Floor	Refers to the floor level on which the material is located.
Specific location	Refers to the precise location of the material within a room eg Room 1 - infill panel below window on southern wall.
Material	Refers to the type of material identified e.g. vinyl tile, fibre cement sheeting, fibrous insulation, etc. Material does not refer to the use or application of the material. This is covered in 'Application'.
Application	Refers to the use or application of the material e.g. floor covering, soffit lining, pipe lagging, etc.
Photograph	Refers to the photograph reference number located in the appendices.
Approximate Extent	Usually refers to the surface area or length of the material expressed as either square metres (m^2) or linear metres (Lin m). The dimension is an estimate only and should not be relied upon as an exact measure.
Results of Analysis	Refers to the type of asbestos identified during laboratory analysis. There are three main commercial asbestos types: chrysotile (CH-white), amosite (A-brown or grey), and crocidolite (C-blue). The term NAD which appears only in the non-asbestos register; means no asbestos was detected during laboratory analysis. Materials shown as 'Similar to……' have not been sampled but appear the same as other materials previously sampled. 'Suspect' refers to those materials not sampled (perhaps for safety reasons) and which are not similar to previously sampled materials. 'Assumed' refers to those materials not sampled (perhaps for safety/access reasons) and which exhibit similar properties to other materials identified/sampled.
Risk of Disturbance	Refers to frequency of disturbance ***High:*** *The material is located in frequently accessible areas with potential for disturbance* ***Medium:*** *The material is prone to mechanical disturbance due to routine building activity and/or maintenance* ***Low:*** *Routine accessibility is unlikely to cause significant deterioration, the material is located in areas with minimal or no disturbance potential or the material is adequately sealed* ***NA:*** *Not Applicable where Analysis indicates No Asbestos Detected*
Overall Condition / Deterioration	Refers to the physical state or condition of the material. Good - material shows no, or very minor, sign of damage and/or deterioration Fair - material shows signs of minor damage and/or deterioration Poor - material shows sign of significant damaged and/or deterioration or the material is partly or wholly unserviceable for its intended use. Very Poor - High damage/visible debris.
Friability of Asbestos	Friable or Non Friable
Sealed / Surface Treatments	Refers to whether or not the material is encapsulated with a sealant such as paint, wall paper, etc. concealing its exposed surfaces. Sealed - Non-friable composite asbestos/encapsulated cement. Sealed- Enclosed sprays/lagging/board. Partially Sealed - Bare AIB or encapsulated lagging/spray. Unsealed - Unsealed lagging/spray/loose asbestos.

<table>
<tr><td>Outcome of Risk or exposure risk assessment</td><td>The Material Assessment score is calculated by adding the parameters above. The potential for releasing fibres is detailed below.
<table>
<tr><th>Material Assessment Score</th><th>Fibre Release Potential</th></tr>
<tr><td>10 or higher</td><td>High</td></tr>
<tr><td>7 – 9</td><td>Medium</td></tr>
<tr><td>5 – 6</td><td>Low</td></tr>
<tr><td>4 or lower</td><td>Very Low</td></tr>
</table>
The material assessment looks at the type and condition of the ACM and the ease with which it will release fibres if disturbed. It does not take into account occupancy or activities within the area, including periodic maintenance works.
Removal Recommended: Engage appropriately qualified persons (i.e. licensed asbestos removal contractor) to remove and dispose of the ACM under controlled conditions in accordance with relevant state specific Removal Code of Practice.
Repair / encapsulation Recommended: Repair or encapsulate (e.g. paint) or enclose the ACM to minimise deterioration until such time that the ACM is removed
Suitable for Continual Use: ACM may remain in situ provided appropriate management controls are adopted, the material is appropriately labelled and re-assessed every 12 months or earlier, where a risk assessment indicates the need for reassessment or the ACM has been disturbed or removed.
NA: Not Applicable where Analysis indicates No Asbestos Detected</td></tr>
<tr><td>Recommended control Actions</td><td>Refers to the recommended controls / actions required to ensure the identified asbestos materials are managed as per the legislative requirements.</td></tr>
<tr><td>Labels Affixed</td><td>Yes/No or NA - Not Applicable where Analysis indicates No Asbestos Detected</td></tr>
<tr><td>Additional Comments</td><td>Refers to any other relevant comments that may assist with the future management of the material.</td></tr>
<tr><td>Next Inspection Date</td><td>Determined by the Risk Assessment or NA - Not Applicable where Analysis indicates No Asbestos Detected.</td></tr>
</table>

3 ASBESTOS CONTAINING MATERIALS REGISTER

3.1 Asbestos Register

The following table is a register of all identified ACM on site, confirmed through analysis or assumed materials deemed to be homogenous or consistent in appearance and manufacture to similar samples collected/analysed. This Summary of ACM should be read in conjunction with all sections of this report.

Sample No./ Visual observation	Photo	Location			Analysis	Risk assessment						Additional information		
		Int / Ext Floor Specific Location	Material Application	Extent	Result	Risk of Disturbance	Overall Condition / deterioration	Friability of Asbestos	Sealed/ Surface Treatments	Outcome of Risk or Exposure Risk Assessment	Recommended Control Actions	Labels Affixed	Additional Comments	Next Inspection due date
WIN-003		Warehouse Ground Floor Bathroom	Internal wall, Fibrous Cement	14m²	Chrysotile	Low	Good	Non Friable	Composite materials that are sealed by nature (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes, EBB)	Very Low	Manage and Label	No	Tilux to all walls	09/10/22
Similar to WIN-003		Warehouse Ground Floor Toilet	Internal wall, Fibrous Cement	12m²	Chrysotile	Low	Good	Non Friable	Composite materials that are sealed by nature (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes, EBB)	Very Low	Manage and Label	No	Tilux to all walls	09/10/22

Sample No./ Visual observation	Photo	Location			Analysis	Risk assessment						Additional information		
		Int / Ext Floor Specific Location	Material Application	Extent	Result	Risk of Disturbance	Overall Condition / deterioration	Friability of Asbestos	Sealed/ Surface Treatments	Outcome of Risk or Exposure Risk Assessment	Recommended Control Actions	Labels Affixed	Additional Comments	Next Inspection due date
Assumed		Warehouse Ground Floor Kitchenette	Hot water system, Insulation	<1m²	Assumed Asbestos	N/A	Good	Friable	Enclosed Insulation (lagging, sprays, loose asbestos, mattresses, packing)	Medium	Manage and Label	No	Material is encapsulated in the body of the object – assumed to contain asbestos based on previous experience with similar materials	09/10/22
Assumed		Warehouse Ground Floor Storage room to rear, east	Old Combination safes x 2, Insulation	8m²	Assumed Asbestos	N/A	Good	Friable	Enclosed Insulation (lagging, sprays, loose asbestos, mattresses, packing)	Medium	Manage and Label	No	Material is encapsulated in the body of the object – assumed to contain asbestos based on previous experience with similar materials	09/10/22
Assumed		Warehouse External Meter Box - east elevation	Backing board , Zelemite	<1m²	Assumed Asbestos	Low	Good	Non Friable	Composite materials that are sealed by nature (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes, EBB)	Low	Manage and Label	No	Not sampled due to live electrical parts – Assumed to contain asbestos based on previous experience with similar materials	09/10/22

Sample No./ Visual observation	Photo	Location			Analysis	Risk assessment						Additional information		
		Int / Ext Floor Specific Location	Material Application	Extent	Result	Risk of Disturbance	Overall Condition / deterioration	Friability of Asbestos	Sealed/ Surface Treatments	Outcome of Risk or Exposure Risk Assessment	Recommended Control Actions	Labels Affixed	Additional Comments	Next Inspection due date
WIN-005		Warehouse External Flammables cupboard - east elevation	Door seal, Woven Product	8lin m	Chrysotile	High	Very Poor	Friable	Unsealed AIB, millboard; Unsealed asbestos textiles, gaskets; Encapsulated Insulations (lagging, loose sprays)	Medium	Remove	No	Door to cupboard is ajar and the woven seal is exposed	09/10/22

Notes:

- The Asbestos Containing Materials Register should be read in conjunction with all sections of this report.
- All other similar occurrences of the ACMs identified in the summary table above should be assumed to contain asbestos, and treated accordingly, unless sampling and analysis confirms otherwise.
- Certificate of analysis/test results are detailed in **Appendix B** of this report.

3.2 Non Asbestos Containing Materials

The following table is a register of all identified non-asbestos containing materials on site, confirmed through analysis.

Sample No./ Visual Observation	Photo	Location			Analysis
		Int / Ext Floor Specific Location	Material Application	Extent	Result
WIN-002		Warehouse Ground Floor Entry office	Floor, Vinyl Products	12m²	NAD

Sample No./ Visual Observation	Photo	Location			Analysis
		Int / Ext Floor Specific Location	Material Application	Extent	Result
WIN-004		Warehouse Ground Floor Storage room (and throughout)	Mastic joints to expansion gaps in floor, Bituminous Product	50lin m	NAD

Sample No./ Visual Observation	Photo	Location			Analysis
		Int / Ext Floor Specific Location	Material Application	Extent	Result
WIN-001		Warehouse External Roof - south elevation	Eaves lining, Fibrous Cement	12m²	NAD
Similar to WIN-001		Warehouse External Roof - north elevation	Gable fascia, Fibrous Cement	12m²	NAD

Notes:

- The Asbestos Containing Materials Register should be read in conjunction with all sections of this report.

- Certificate of analysis/test results are detailed in **Appendix B** of this report.

4 DISCUSSION AND RECOMMENDATIONS

As previously detailed in the Scope Section 2, SLR was appointed to complete a survey and assessment of Winnellie Warehouse, 155 Coonawarra Road, Winnellie NT 0821 with regards to the identification of ACM. The extent of the inspection and samples collected for subsequent analysis was completed in order to confirm, as far as reasonably practicable, the location, condition and risk presented by ACM remaining in-situ (and was based on the level of access available).

Further to the completion of the on-site investigation and collection/analysis of samples, there are detailed site/work-specific requirements and precautions that must be taken in the management, control and removal of ACM. In addition to those listed on the Asbestos Containing Materials Register, the following are some general recommendations and precautions that should be considered. Detailed documents, which may include, Scope of Works, Safe Work Method Statements and Risk Assessments, should be prepared to appropriately address health and safety issues associated with specific work and site conditions.

It is also a requirement as per Regulation 429 an Asbestos Management Plan must be prepared if Asbestos or ACM has been identified or assumed present, or likely to be present from time to time in a workplace.

4.1 Site Specific Recommendations

- Friable asbestos (chrysotile) was identified in the form of a woven cloth door seal to a disused flammable materials cupboard located outside the warehouse. This material is considered to be high risk and should be prioritised for removal as soon as reasonably practicable. Access to this material should be restricted in the mean-time.
- The following items were identified and assumed to contain friable asbestos which is encapsulated and therefore can be included in the management strategy adopted following the issue of an asbestos management plan (these items receive a medium risk score due to the unidentified nature of assumed asbestos):
    - Hot water system, Insulation - Ground Floor Kitchenette
    - Insulation to safes x 2, Insulation - Ground Floor Storage room to rear, east
- **Section 3.2** of this report contains materials deemed to be non-ACM following either the sampling of the material or the similarity of the material to a sampled item. Those items that are assumed not to contain asbestos should still be sampled prior to any refurbishments or demolition. These items include:
- External Roof - north elevation gable fascia, fibre cement sheet
- Asbestos containing materials identified on-site that do not pose a significant risk to health may remain in situ and be managed with the aid of an asbestos management plan.
- The ceiling cavity of the Entry Office area was inspected and found to contain synthetic mineral fibre insulation (yellow batts) which can irritate the skin and respiratory system following exposure. Appropriate PPE should be utilised when personnel are accessing the ceiling cavity.

4.2 General Recommendations

- This document should be held as an Asbestos Register of the areas inspected and updated every 5 years or earlier where ACM have been disturbed or a risk assessment indicates the need for re-assessment. All occupiers of the workplace are to be provided with a copy of this register and all updates to it.
- If any material that may contain asbestos is found on site that is not included within the register, the material should be sent for identification and expert advice sought. The material should be assumed to contain asbestos in the interim.

- As a precautionary measure, all materials, which may contain asbestos, should be assumed to contain asbestos and treated appropriately until sampling and analysis confirms otherwise.
- In order to comply with the Work Health and Safety Regulations (NT), any action taken to control asbestos and ACM in the place of work, or in plant at the place of work, is to be recorded in the Asbestos Control Log attached in **Appendix A**.
- Any areas of the workplace that contain ACM including plant, equipment and components should be signposted with appropriate warning signs to ensure that asbestos is not unknowingly disturbed without the correct precautions being taken. These signs should be placed at all the main entrances to the work areas where asbestos is present and should conform with Australian Standard 1319-1994 Safety Signs for the Occupational Environment.
- If asbestos materials become significantly damaged, weathered and/or produce visible dust or significant debris, then health and safety management works are likely to be required. A suitably qualified and experienced consultant, such as SLR, can advise and assist in carrying out such works.
- Prior to renovation or demolition works a refurbishment/demolition asbestos building materials survey should be undertaken by a suitable qualified and experience consultancy, such as SLR. A Refurbishment and/or Demolition Survey is required under the WHS Code of Practice: Demolition Work (2015) and AS2601 (2001): The Demolition of Structures.

5 LEGISLATION, GUIDELINES AND REGULATIONS

- Work Health and Safety Act 2011
- Work Health and Safety Regulations 2011
- Code of Practice: How to Safely Remove Asbestos [Safe Work Australia (2011)]
- Code of Practice: How to Manage and Control Asbestos in the Workplace [Safe Work Australia (2011)]
- Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition [National Occupational Health and Safety Commission: 3003 (2005)]
- AS/NZS 1716-2012 - Respiratory Protective Devices
- AS/NZS 1715-2009 - Selection, Use and Maintenance of Respiratory Protective Devices
- AS 2601-2001 - The Demolition of Structures
- AS 1319-1994 Safety Signs for the Occupational Environment

Appendix A

Asbestos Control Log

ASBESTOS CONTROL LOG

To comply with the WHS Code of Practice How to Safely Remove Asbestos 2011, all actions taken to control asbestos and ACM are to be recorded in the table below. It is recommended that similar details also be recorded for any other asbestos materials identified.

NAME	COMPANY	DATE	ASBESTOS MATERIAL RELATED WORK UNDERTAKEN (Include any assessment concerning asbestos that took place before the work was carried out)	REFERENCE NUMBER (Include sample numbers, report numbers, quote number and/or purchase order number etc)
Liam Munro	SLR Consulting Australia Pty Ltd	9/10/2017	Asbestos Building Materials Survey	Report No 680.10420-R01-v1.0\ASR

Appendix B
Certificate of Analysis

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

SLR Consulting (NT)
GPO Box 654
Darwin
NT 0801

Attention:	Liam Munro
Report	567074-AID
Project Name	WINELLIE ASB SURVEY
Project ID	680.10420
Received Date	Oct 10, 2017
Date Reported	Oct 17, 2017

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w).The examination of large sample sizes(500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction.The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA(friable asbestos) and AF(asbestos fines) then applies where they are able to be quantified by gravimetric procedures.This quantitative screening is not generally applicable to FF(free fibres) and results of Trace Analysis are referred. *NOTE: NATA News March 2014, p.7, states in relation to AS4964: "This is a qualitative method with a nominal reporting limit of 0.01%" and that currently in Australia "there is no validated method available for the quantification of asbestos". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk).* *This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the Western Australia Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, 2009, including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil, June 2011.*

Project Name WINELLIE ASB SURVEY
Project ID 680.10420
Date Sampled Oct 09, 2017
Report 567074-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
WIN_001	17-Oc11587	Oct 09, 2017	Approximate Sample 2g / 150x160x5mm Sample consisted of: a) Swab. b) Fibre cement fragments.	No asbestos detected. Organic fibre detected.
WIN_002	17-Oc11588	Oct 09, 2017	Approximate Sample 61g / 150x160x10mm Sample consisted of: a) Swab. b) Light brown brittle vinyl fragment.	No asbestos detected. Organic fibre detected.
WIN_003	17-Oc11589	Oct 09, 2017	Approximate Sample 2g / 150x150x10mm Sample consisted of: a) Swab. b) Fibre cement fragments.	Chrysotile asbestos detected. Organic fibre detected.
WIN_004	17-Oc11590	Oct 09, 2017	Approximate Sample 3g / 60x6x4mm Sample consisted of: Soft grey mastic material.	No asbestos detected. Organic fibre detected.
WIN_005	17-Oc11591	Oct 09, 2017	Approximate Sample 15g / 12x85x4mm Sample consisted of: Woven insulation material.	Chrysotile asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Perth	Oct 11, 2017	Indefinite

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Company Name: SLR Consulting (NT)
Address: GPO Box 654
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NT 0801

Project Name: WINELLIE ASB SURVEY
Project ID: 680.10420

Order No.:
Report #: 567074
Phone: +61 2 9428 8100
Fax:

Received: Oct 10, 2017 1:15 PM
Due: Oct 17, 2017
Priority: 5 Day
Contact Name: Liam Munro

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail						Asbestos Absence /Presence
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	WIN_001	Oct 09, 2017		Building Materials	S17-Oc11587	X
2	WIN_002	Oct 09, 2017		Building Materials	S17-Oc11588	X
3	WIN_003	Oct 09, 2017		Building Materials	S17-Oc11589	X
4	WIN_004	Oct 09, 2017		Building Materials	S17-Oc11590	X
5	WIN_005	Oct 09, 2017		Building Materials	S17-Oc11591	X
Test Counts						5

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

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

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

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substatntial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Edward Rowley	Asbestos Analyst (WA)

Authorised by:

Rhys Thomas	Senior Analyst-Asbestos (WA)

Glenn Jackson
National Operations Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested
* Indicates NATA accreditation does not cover the performance of this service
Uncertainty data is available on request

Appendix C
Limitations

Surveys are conducted in a conscientious and professional manner. The nature of the task and the likely disproportion between any damage or loss which might arise from the work or reports prepared, and the cost of our services, is such that SLR cannot guarantee that all asbestos building materials have been identified and/or addressed.

Due to the possibility of renovations and additions to the building(s) over time, ACM may have been concealed (for example behind new walls, flooring, ceilings, within boxing, etc.); such areas were inaccessible during the inspection. It is recommended that prior to any refurbishment/demolition works at the site that a full destructive asbestos building materials refurbishment/demolition survey is undertaken by a suitably qualified and experienced consultancy, such as SLR. An intrusive survey is required under AS 2601 (2001) The Demolition of Structures. If any materials reasonably suspected of containing asbestos are found on site, which are not identified within this report, the client's independent consultant, SLR, should be contacted to complete additional confirmatory sampling and analysis as required.

A change in building use/nature of activities could affect the control actions recommended within this report and a re-survey may be required.

Thus, while we carry out the work to the best of our ability, we totally exclude any loss or damages which may arise from services we have provided to Department of the Attorney-General and Justice and/or associated parties.

Where potentially ACM are identified these are normally reported on to the best of the consultant's ability. Analysis is not normally included and there is no guarantee that all such materials have been identified and/or addressed.

Those materials that have been deemed not to contain asbestos due to their similarity to other materials should be sampled prior to any refurbishment or removal of the material. These materials are listed in **Section 3.2** of this report.

All work conducted and reports produced by SLR are prepared for a particular Client's objective and are based on a specific scope, conditions and limitations, as agreed upon between SLR and the Client. Information and/or report(s) prepared by SLR may therefore not be suitable for any use other than the intended objective. No parties other than the Client should use any information and/or report(s) without first conferring with SLR.

Before passing on to a third party any information and/or report(s) prepared by SLR, the Client is to inform fully the third party of the objective and scope, and all limitations and conditions, including any other relevant information which applies to the information and/or report(s) prepared by SLR.

It is the responsibility of third parties to investigate fully to their satisfaction if any information and/or report(s) prepared by SLR are suitable for a specific objective.

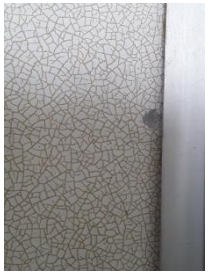
The report(s) and/or information produced by SLR should not be reproduced and/or presented/reviewed except in full.

Materials other than asbestos are generally outside the scope as identification can require specialised analysis/inspection techniques.

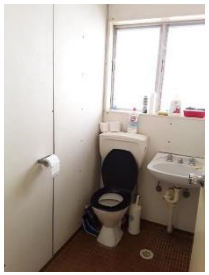
Settled dust is generally not sampled or commented on. Settled dust may contain asbestos, particularly if it is in the vicinity of ACM or areas where ACM have been removed.

Appendix D
Photographs

Location:	Warehouse, Ground Floor Bathroom	Material Application	Internal wall, Fibrous Cement	Extent:	14 m²	Sample Number	WIN-003

Main Photo	Close Up Photo			Material Score
		Product Type	Asbestos reinforced composites etc. (1)	
		Condition	Good (0)	2
		Surface Treatment	Composite materials that are sealed by nature (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes, EBB) (0)	Risk
		Asbestos Type	Chrysotile (1)	Very Low
		Recommendation:	Manage and Label	

Location:	Warehouse, Ground Floor Toilet	Material Application	Internal wall, Fibrous Cement	Extent:	12 m²	Sample Number	Similar to WIN-003

Main Photo	Close Up Photo			Material Score
		Product Type	Asbestos reinforced composites etc. (1)	
		Condition	Good (0)	2
		Surface Treatment	Composite materials that are sealed by nature (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes, EBB) (0)	Risk
		Asbestos Type	Chrysotile (1)	Very Low
		Recommendation:	Manage and Label	

Location:	Warehouse, Ground Floor Kitchenette	Material Application	Hot water system, Insulation	Extent:	<1 m²	Sample Number	Assumed

Main Photo	Close Up Photo			Material Score
		Product Type	Thermal insulation, sprayed asbestos, loose asbestos etc. (3)	
		Condition	Good (0)	7
		Surface Treatment	Enclosed Insulation (lagging, sprays, loose asbestos, mattresses, packing) (1)	Risk
		Asbestos Type	Assumed Asbestos (3)	Medium
		Recommendation:	Manage and Label	

Location:	Warehouse, Ground Floor Storage room to rear, east	Material Application	Old combination safes x 2, Insulation	Extent:	8 m²	Sample Number	Assumed

Main Photo	Close Up Photo			Material Score
		Product Type	Thermal insulation, sprayed asbestos, loose asbestos etc. (3)	
		Condition	Good (0)	7
		Surface Treatment	Enclosed Insulation (lagging, sprays, loose asbestos, mattresses, packing) (1)	Risk
		Asbestos Type	Assumed Asbestos (3)	Medium
		Recommendation:	Manage and Label	

Location:	Warehouse, External Meter Box - east elevation	Material Application	Backing board , Zelemite	Extent:	<1 m²	Sample Number	Assumed

Main Photo	Close Up Photo			Material Score
		Product Type	Asbestos insulating board, millboards, gaskets & ropes etc. (2)	
		Condition	Good (0)	5
		Surface Treatment	Composite materials that are sealed by nature (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes, EBB) (0)	Risk
		Asbestos Type	Assumed Asbestos (3)	Low
		Recommendation:	Manage and Label	

Location:	Warehouse, External Flammables cupboard - east elevation	Material Application	Door seal, Woven Product	Extent:	8 lin m	Sample Number	WIN-005

Main Photo	Close Up Photo			Material Score
		Product Type	Asbestos insulating board, millboards, gaskets & ropes etc. (2)	
		Condition	Very Poor (3)	8
		Surface Treatment	Unsealed AIB, millboard; Unsealed asbestos textiles, gaskets; Encapsulated Insulations (lagging, loose sprays) (2)	Risk
		Asbestos Type	Chrysotile (1)	Medium
		Recommendation:	Remove	

Appendix E
Site Plan

SITE PLAN

No drawings are available

Appendix F
General Information

ASBESTOS

Asbestos: Description, Properties and Uses

Asbestos is the generic term given to a group of naturally occurring fibrous minerals, based on hydrated silicates, which are found in various rock formations. Differing ratios of oxygen, hydrogen, sodium, iron, magnesium and calcium elements account for several different types of asbestos minerals, the most common varieties being Amosite (brown asbestos), Chrysotile (white asbestos), Crocidolite (blue asbestos). Other types include Anthophyllite, Actinolite and Tremolite.

The immense popularity of asbestos as a building material is attributed to its near unique properties of fire resistance, high abrasion resistance and superb acoustical characteristics coupled with its relatively low cost. Prior to 1973, asbestos was the material of choice for fire proofing, thermal insulation, sound insulation and abrasion resistance. It was used as a spray-on insulation of ceilings and steel girders; as a thermal insulation of boilers, pipes, ducts, air conditioning units, etc; as an abrasion resistant filler in floor tiles, vinyl sheet floor coverings, roofing and siding shingles; as a flexible, though resistant joining compound and filler of textured paints and gaskets; as the bulking material with the best wear characteristics for automobile brake shoes and in countless domestic appliances such as toasters, grills, dishwashers, refrigerators, ovens, clothes dryers, electric blankets, hair dryers, etc.

Asbestos: Health Effects

Many asbestos bearing materials or products are of no significant health risk whatsoever when used in the normal course of events. A health risk exists when asbestos fibres are released into the air and when that air is inhaled into the lungs. Even then, it appears that most people exposed to relatively small amounts of asbestos do not develop any related health problems. There is however no “safe” level of asbestos exposure since the risk is dependent on numerous factors including the time since exposure, exposure duration and concentration, asbestos type, the attributes of the particular individual and environmental factors such as exposure to cigarette smoke and other airborne pollutants.

There are three main diseases associated with airborne asbestos fibres:

Asbestosis - A fibrosis (or scarring) of the lung associated with relatively massive exposure to asbestos.

Lung Cancer - Indistinguishable from that caused by smoking and a common cause of death. The risk of lung cancer is much higher when there is exposure to both cigarette smoking and to airborne asbestos.

Mesothelioma - A cancer of the chest and abdominal lining, it is specific to asbestos exposure.

A feature of these diseases is that symptoms take a long time to appear, generally 5 to 40 years. Once symptoms are evident the disease progresses rapidly.

There is some evidence that Chrysotile asbestos is less carcinogenic than Amosite, and that Amosite is less carcinogenic than Crocidolite in causing mesothelioma, but the evidence is less clear for lung cancer.

Measurement of Airborne Asbestos Fibres

The Work Health and Safety Regulations (NT), and the Safe Work Australia Asbestos Codes of Practice & Guidance Note set the maximum allowable time weighted average for all forms of asbestos at 0.1 fibre/mL of air.

Air monitoring is used to determine airborne fibre levels. SLR is NATA certified for Asbestos Fibre Counting and Volume Measurement to carry out such monitoring.

The Safe Work Australia Code of Practice How to Safely Remove Asbestos 2011 states that air monitoring should be performed whenever Asbestos Containing Materials (ACM) are being removed, to ensure the control measures are effective.

The onus to provide a safe environment rests with persons in control of a business or undertaking, persons with management or control and persons carrying out demolition or refurbishment work. To meet these obligations it is recommended that SLR be engaged by the site controller, or their representative, and not an asbestos removal contractor as there could be a conflict of interest in the latter arrangement.

Asbestos Survey

Asbestos surveys are undertaken to identify any asbestos materials/hazards and assess the risk associated with the material/hazard.

Surveys are conducted through visual inspection by experienced personnel. During the inspection material samples are taken as appropriate for analysis.

Limitations

Due to the nature of the task all asbestos surveys are limited. Since asbestos can occur in so many forms and in so many locations, and as there is no instrument to detect asbestos, it is never possible to guarantee all asbestos has been identified. Access is usually restricted, and there may be asbestos hidden behind walls or other structures. Building plans are of great assistance to consultants undertaking surveys.

Asbestos Register

An asbestos register is a record of the location, type and condition of all asbestos containing products identified in a building. Under the Safe Work Australia Codes of Practice and the legislation, any place of work constructed prior to 31 December 2003 must have an Asbestos Register. A SLR Asbestos Survey Report includes an asbestos register.

Registers must be maintained and changes in the condition or extent of any asbestos present should be recorded. Registers should also detail the next review date, at present annually since the condition of asbestos materials, legislation, guidelines and standards change.

Management Plan

An asbestos management plan is required where asbestos materials have been identified and are to remain on site. The plan would normally be a component in the overall Hazard Management Plan for the site.

Control Options

Asbestos judged to constitute a health risk should be removed, enclosed or encapsulated by an approved asbestos contractor.

Enclosure

This involves the installation of a permanent, solid, non-porous, impervious barrier between the asbestos material and the surrounding environment. Examples include building boxes around steam pipes etc. A suspended ceiling is not permanent and, since occasional access is necessary above a suspended ceiling, enclosure is negated. Furthermore, many suspended ceilings act as return air plenums so enclosure is impossible.

Encapsulation

Encapsulation involves coating the material with a sealant. Good sealants penetrate through the asbestos material to the substrate. The encapsulating substance then hardens and binds all the asbestos fibres into a solid matrix. This is usually a short to medium term management option.

Removal

Removal is not without hazards to the occupants of the building. If not strictly controlled, the removal process can result in increased fibre counts in other areas. Technical competence, experience and integrity are of prime importance in evaluating asbestos removal plans.

We advise clients to work within the usual practised time frames of the experienced asbestos removal companies under strict supervision by a qualified person. Pressing for quicker turnaround times may result in low quality workmanship and unnecessary asbestos risk. Building owners may be in part responsible for risks created by the removal Contractor due to carelessness or negligence.

An independent consultant such as SLR, experienced in the supervision of asbestos removal, should be retained to act on the client's behalf.

Clearance Inspection

A clearance inspection must be conducted at the completion of asbestos removal works. The clearance inspection may include airborne asbestos monitoring and/or sampling/analysis of materials and should be completed by a suitably qualified and experienced consultant, such as SLR.