ASBESTOS ANALYTICAL REPORT

Report Number 622.10968.00030-R01-v0.1-ANA-MackayOoralea

Client:	Central Queensland University - Rockhampton
Client Contact:	Grant Farrell
Client Address:	Bruce Highway, Rockhampton, QLD 4702
Date Sampled:	2-4 August 2017
Report Date:	17 August 2017
Site Address/ Location:	CQ University Campus - Mackay Ooralea
Test Methods:	Sample(s) examined under a Polarised Light Microscope including dispersion staining techniques, in accordance with AS 4964 and method AIP.01.03

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the APLAC mutual recognition arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

Results

Sample No.	Description	Analysis Result
5-842	Fibre cement	Organic Fibres
5-843	Fibre cement	Organic Fibres
5-844	Fibre cement	Organic Fibres
5-845	Fibre cement	Organic Fibres
5-846	Fibre cement	Organic Fibres
5-847	Fibre cement	Organic Fibres
5-848	Fibre cement	Organic Fibres
5-849	Fibre cement	Organic Fibres
5-850	Fibre cement	Organic Fibres
5-851	Fibre cement	Organic Fibres
5-852	Fibre cement	Organic Fibres
5-853	Fibre cement	Organic Fibres
5-854	Fibrous Material	SMF
5-855	Fibre cement	Organic Fibres
5-856	Fibre cement	Organic Fibres
5-857	Fibre cement	Organic Fibres
5-858	Fibre cement	Organic Fibres
5-859	Fibre cement	Organic Fibres
5-860	Fibre cement	Organic Fibres
5-861	Fibre cement	Organic Fibres
5-862	Fibre cement	Organic Fibres
5-863	Fibre cement	Organic Fibres
5-864	Fibre cement	Organic Fibres
5-865	Fibre cement	Organic Fibres
5-866	Fibre cement	Organic Fibres
5-867	Fibre cement	Organic Fibres
5-868	Fibre cement	Organic Fibres
5-869	Fibre cement	Organic Fibres
5-870	Fibre cement	Organic Fibres

Please direct correspondence to:

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5-871	Fibre cement	Organic Fibres
5-872	Fibre cement	Organic Fibres
5-873	Fibre cement	Organic Fibres
5-874	Fibre cement	Organic Fibres
5-875	Fibre cement	Organic Fibres
5-876	Fibre cement	Organic Fibres
5-877	Fibre cement	Organic Fibres
5-878	Fibre cement	Organic Fibres
5-879	Fibre cement	Organic Fibres
5-880	Fibre cement	Organic Fibres
5-881	Fibre cement	Organic Fibres
5-882	Fibre cement	Organic Fibres
5-883	Fibre cement	Organic Fibres

Fibre identification Legend

AMO	Amosite (brown/grey asbestos)	ORF	Organic Fibre
BIT	Bitumen	NAD	No Asbestos Detected
CHR	Chrysotile (white asbestos)	NFD	No Fibres Detected
CRO	Crocidolite (blue asbestos)	SMF	Synthetic Mineral Fibre
INS	Insulation	UMF	Unknown Mineral Fibres

Notes:

- Sampling was undertaken by SLR Consulting.
- The results contained within this report relate only to sample(s) submitted for testing.
- The report(s) and/or information produced by SLR Consulting Australia Pty Ltd should not be reproduced and/or presented/reviewed except in full.
- Even after disintegration of some bulk samples (eg bituminous materials and vinyl tiles/sheeting) detection of fibres may be difficult when using polarized light microscopy and dispersion staining techniques. This may be due to the matrix of the samples (uneven distribution) or fine fibres that are difficult to detect and positively identify.
- Detection Limit - 0.1 g/kg (AS 4964).
- An Independent Analytical Technique is Recommended for Vinyl Samples (i.e. Vinyl Floor Tiles).

Andrew Lynam
BEnvSc

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Limitations

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 Central Queensland University - Rockhampton and/or associated parties.

The analysis was undertaken by SLR Consulting, 2 Lincoln Street, Lane Cove NSW 2066 (NATA Accreditation No. 3130).

All work conducted and reports produced by SLR Consulting are prepared for a particular Client's objective and are based on a specific scope, conditions and limitations, as agreed upon between SLR Consulting and the Client. Information and/or report(s) prepared by SLR Consulting 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 Consulting.

Before passing on to a third party any information and/or report(s) prepared by SLR Consulting, 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 Consulting.

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

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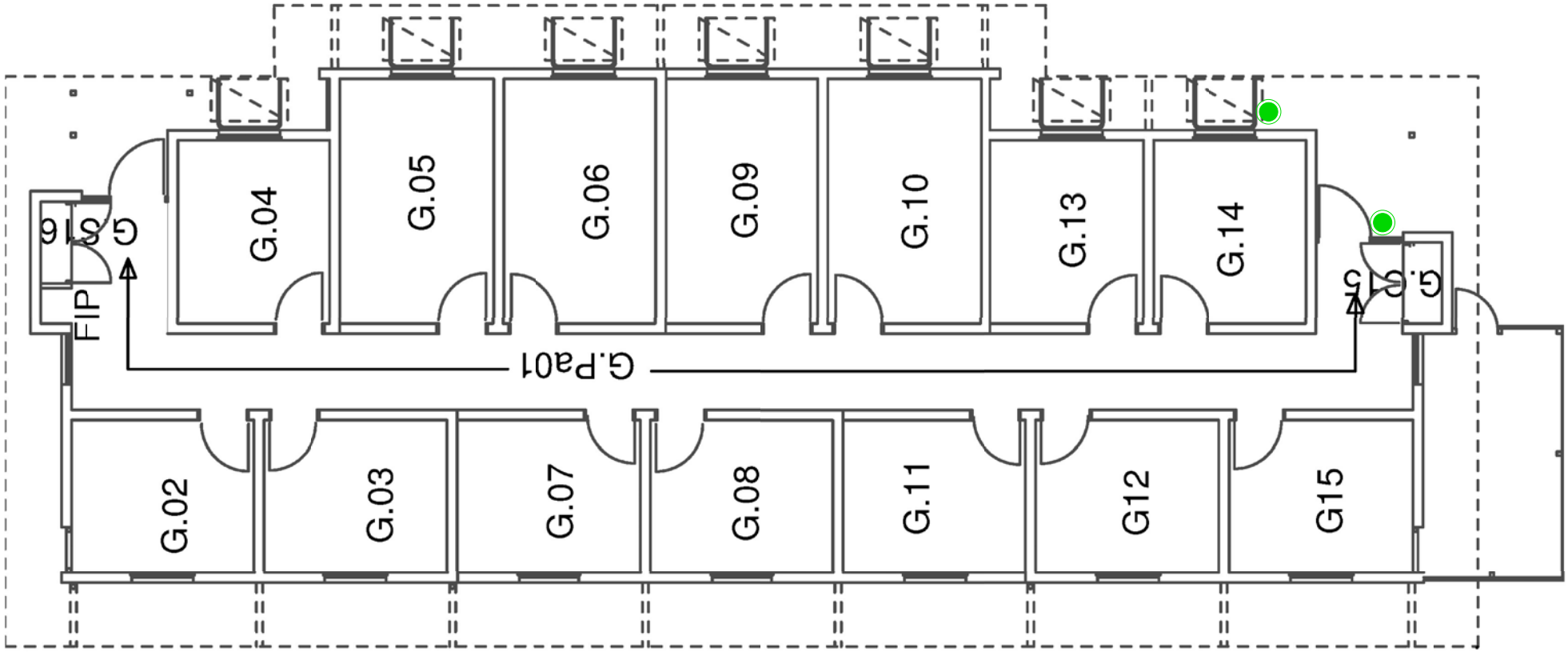
Appendix D
Photographs

No Asbestos Situations Identified.

Appendix E
Site Plan



NOT TO SCALE FOR DIAGRAMMATIC PURPOSES ONLY

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Building No:	722
Inspection Date:	2/08/17 - 4/08/17
Inspected By:	NC
Figure No.:	SLR62210968-722-01
Drawn By:	LF
Drawn Date:	07/9/17

CQ University Asbestos Audits

MACKAY OORALEA CAMPUS

Studio Office
Bruce Highway, Rockhampton
QLD 4702

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 2011(QLD), 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.