



FINAL
ASBESTOS MANAGEMENT
PROGRAM AUDIT

Lakehead University, Thunder Bay, Ontario

Prepared for:

Lakehead University
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Attention: Dr. Brian Stevenson
President and Vice Chancellor

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1.0 INTRODUCTION AND SCOPE

Lakehead University (LU) retained Pinchin Ltd. (Pinchin) to conduct an assessment and audit of the Asbestos Management Program (AMP) currently in place at Lakehead University, Thunder Bay, Ontario.

The assessment was performed to compare the AMP with the requirements of the Occupational Health and Safety Act, specifically O.Reg. 278/05, Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations (O.Reg. 278/05, the Regulation). In addition to the requirements of the Regulation, the AMP was compared to Pinchin's understanding of best management practices in the industry, and includes an opinion whether University building users are being exposed to elevated levels of asbestos during their daily activities.

2.0 PRIMARY RECOMMENDATIONS

Pinchin recommends the following based on our review of the documentation provided, site observations, and interviews with LU staff. Secondary recommendations regarding best practices are provided in Section 4, Findings.

1. Determine if the settled dust present in the buildings with asbestos-containing sprayed fireproofing (Centennial Building, University Centre and Ryan Building), is an asbestos-containing material. Testing should be conducted using the PLM method mandated by Ontario Regulation 278/05, and analysis should be performed by an NVLAP or AIHA accredited laboratory. Positive results should be confirmed by Chatfield Technical Consulting, as Eric Chatfield, based in Mississauga, is one of the world's leading experts in this field. Pinchin recommends that at least 3 samples be obtained per HVAC zone in each of the buildings with asbestos-containing sprayed fireproofing.
2. Review existing records from the past two years and monitor over the next year to determine the rate and frequency of delamination of the sprayed fireproofing in the three sprayed buildings (University Centre, Centennial Building, and Ryan Building) that has fallen into common areas where the delaminated material could be disturbed by the building occupants. The purpose of this recommendation is to determine if further action is warranted due to falling material and to prioritize the areas where any action should take place.
3. Perform air monitoring in the sprayed asbestos buildings to determine airborne asbestos fibre concentrations during normal use of the buildings. This is a concern of some occupants who would like to be ensured that their workplace is safe. Air monitoring should be performed during all types of activities, during normal working hours, and



analyzed by the EPA Level II method by Transmission Electron Microscopy. The results should be compared to the typical concentrations reported in buildings, as stated in the Ontario Royal Commission on asbestos in buildings and similar studies. Pinchin recommends that at least 1 sample be obtained per HVAC zone in each of the buildings with asbestos-containing sprayed fireproofing.

4. Document the current long and short term strategies and plans for the management and abatement of asbestos on the campus. Currently the University performs the following:
 - Monitors the condition of the material and performs an update audit annually;
 - Addresses areas of concern as they are identified during the annual audits;
 - Addresses areas of concern as they arise during day to day operations; and
 - Complete abatements as part of major projects within renovations and renewals.

This will assist Physical Plant in their planning, and communicate to the University community the timelines, priorities and costs of asbestos abatement on campus. Additionally the University should document how to handle the long term deterioration of the sprayed fireproofing in the three sprayed buildings. Ideally a long term (20 to 30 year) time line will be developed for the removal of the sprayed fireproofing and other friable asbestos from all University buildings.

5. The AMP should be re-written to apply to all departments that could contact or work closely with the asbestos. Currently the AMP only applies to Physical Plant staff, and some departments on campus are not required to comply. The authority of the Asbestos Coordinator should be expanded to all groups covered by the revised AMP.
6. Revise the AMP to completely document all of the procedures and policies that are being used on the campus. The current document does not form a complete record of all aspects of asbestos management that are currently being used at LU.

3.0 CONCLUSION REGARDING OCCUPANT EXPOSURE

In terms of general occupant exposure to asbestos, the campus falls into two clear categories, those buildings with asbestos-containing sprayed fireproofing (among other asbestos materials also present) and those buildings with a mixture of friable and non-friable asbestos, but no sprayed fireproofing applied to the building structure.

For the buildings without sprayed fireproofing we conclude that asbestos exposure is within the regulated limits and should be at typical background levels for these types of facilities. Access to asbestos materials seems to be well controlled and conducted by competent, trained staff.



For the three buildings with sprayed fireproofing the conclusion is less clear. Based on the air monitoring conducted, our observations, and our experience in similar buildings, day to day airborne asbestos levels should not be elevated. However, the combination of the aging sprayed fireproofing and the metal linear ceiling system (Douglas Ceilings) is problematic and will become more so as time goes on. The age of the sprayed fireproofing in these buildings means that LU will face an increasingly expensive and potentially hazardous situation, which will need to be resolved.

4.0 AUDIT FINDINGS

Sections 5 and 8 of the Regulation describes the requirements for the management of asbestos-containing materials (ACM) in buildings by the Owner. Section 10 of the Regulation applies to construction and Sections 12 to 18 and 21 discuss abatement and administrative procedures. Compliance with each of the major requirements sections from the Regulation are discussed in the following sections, along with recommended best practices if applicable.

4.1 Maintenance of a Record of the Location of Asbestos

Regulatory Requirement

Section 8(3)(a) - Maintain a record (asbestos assessment report) on the premises showing the location of all ACM. The report shall include information on the location of ACM, whether it is friable/non-friable, the condition of the material and the type of asbestos.

Current Procedures

LU maintains the location of asbestos on an on-line database (HMIS), access to which is purchased on an annual basis from Pinchin. The data in the database is maintained by the LU Asbestos Coordinator and the current standing offer consultant. One hard copy is maintained in Physical Plant, and necessary Physical Plant staff have passwords and access to the database. Staff are trained in the use of the database and are generally able to access it as needed. LU is in compliance with this regulatory requirement.

Best Industry Practice Recommendation

HMIS data could be modified to ensure data entry is being done correctly. Some sprayed fireproofing is noted on ceilings rather than the building structure. It does not appear that the re-assessments are always documented as completely as they could be.

4.2 Notification of Occupiers

Regulatory Requirement

Section 8(3)(b) - Notify the occupier(s) of the building or space of the information in the record.



Current Procedures

LU has several tenants that would be classified as Occupiers under the Regulation. Though it appears that the Occupiers are aware of the location of asbestos on their premises, this awareness is mainly through being informed by Physical Plant that maintenance or construction activities involving asbestos-containing material will be taking place. Pinchin recommends that a formal notification process be put in place and that this process be included in a revised AMP. This is to ensure that tenants are fully aware of their responsibilities as employers under the Regulation. It is unclear if LU is completely in compliance with this recommendation.

Best Industry Practice Recommendation

Develop template letters to use to inform Occupiers. Template letters could be included as an Appendix in the AMP and provided annually to tenants. These update letters could also include comment on the results of the yearly condition audits as applicable to their space.

4.3 Advise Employers Hired by the Owner of the Information in the Record

Regulatory Requirement

Section 8(3)(c) - Advise employers hired by the owner of the information in the record if the work may disturb or is performed in close proximity to the ACM.

Current Procedures

LU hires a number of contractors and other firms to perform maintenance across the facilities. These firms are notified by the LU Physical Plant staff (usually lead hands or managers) responsible for scoping the work and making sure it is performed properly. Outside of Physical Plant it is less clear how other employers are engaged and informed. It is unclear if LU is completely in compliance with this requirement. Pinchin recommends that a formal notification process be put in place for employers across all departments, and for all contracted services that could access the ACM, and that this process be included in a revised AMP.

Best Industry Practice Recommendation

Develop template letters to use to inform contractors or other employers. Template letters could be included as an Appendix in the AMP and provided annually to contractors with standing offers.

4.4 Advising LU Workers of the Information in the Record Regarding the Location of Asbestos

Regulatory Requirement

Sections 5(2) and 8(3)(d) - Advise all workers employed by the owner who may disturb (or be in close proximity) to ACM (friable and non-friable) of the information in the record.



Current Procedures

LU provides annual re-fresher training to Physical Plant staff that includes use of the HMIS database and written notification of the contents of the Record. The Physical Plant staff are very familiar with the Record and the locations of asbestos, and in cases where they have questions or uncertainty they have additional resources in senior management and the Asbestos Coordinator. Outside of Physical Plant, staff in Technology Services and some housekeeping also attend the refresher training. LU is in compliance with this regulatory requirement.

Best Industry Practice Recommendation

Pinchin recommends that the training be documented in the AMP for consistency across all groups on campus that require it.

4.5 Establish and Maintain Worker Training Programs

Regulatory Requirement

Section 8(3)(e) - Establish and maintain worker training programs for employees that will disturb asbestos (training to include the health hazards of asbestos, protective equipment, hygiene practices and measures and procedures prescribed by the Regulation).

Current Procedures

As noted above LU provides annual re-fresher training to Physical Plant staff that includes use of the HMIS database and follows the requirements of the regulation. Newly hired staff in all departments attend a one day training session on the program. LU is in compliance with this regulatory requirement, but again, Pinchin recommends that the training be documented in the AMP for consistency across all groups on campus that require it.

4.6 Reassess the Condition of the ACM

Regulatory Requirement

Section 8(3)(f) and 8(5) - Reassess the condition of the ACM and update the asbestos assessment report at least annually or when new information is obtained.

Current Procedures

LU retains a third party consultant to re-assess the asbestos and update the HMIS database on an annual basis. The Asbestos Coordinator updates the database throughout the year as new information such as abatement projects, becomes available. LU is in compliance with this regulatory requirement, however Pinchin recommends that the procedures be documented in the AMP.



Due to the type of ceilings in the asbestos sprayed buildings, the observations of the condition of the sprayed fireproofing is often limited, so the condition of the fireproofing cannot be completely evaluated. This makes conclusions regarding the quantity and frequency of delamination difficult to determine.

Best Industry Practice Recommendation

Make better use of features in HMIS to document the re-assessments, and to store documents such as inspection reports and air monitoring.

4.7 Clean Up and Removal of Fallen Sprayed Fireproofing

Regulatory Requirement

Clean up and removal of fallen ACM, particularly sprayed fireproofing. This section of the regulation has several requirements as follows:

- Section 8(10)(a) - When friable sprayed fireproofing has fallen and is being disturbed so that exposure to the material is likely to occur the fallen material is to be cleaned up and removed.
- Section 8(10)(b) - If it is apparent that material will continue to fall because of the deterioration of the fireproofing, the owner shall repair, seal, remove or permanently enclose the fireproofing.
- Section 8(11) - The above does not apply if the fallen material is confined to an area that is above a closed false ceiling and not part of a return air plenum.

Commentary on the Risk of Asbestos Falling to Occupied Areas

The above requirements have been the source of considerable discussion at LU, and pose a significant challenge for the University. The University is faced with a difficult combination of circumstances regarding Section 8(11) and whether in the current situation the Ministry of Labour would consider the fallen material confined to a closed false ceiling.

1. The fireproofing is close to 50 years old in all three sprayed buildings, and though reportedly in good condition in most areas, there is without doubt some amount of deterioration occurring, which in our experience will increase as the buildings age.
2. The ceiling system is a metal linear ceiling (Douglas ceiling), consisting of relatively long sheet metal channels supported from the deck, with gaps between the channels. These gaps will catch large chunks of fireproofing but not would capture individual asbestos fibres or smaller pieces fallen from the fireproofing.



3. The original ceiling installation consisted of fibreglass panels on top of the metal channels, but over the life of the building the panels have been displaced or removed, and not restored.
4. At the junction between the concrete block walls there is small triangular opening into the ceiling plenum due to the irregular face of the block. It is possible to see delaminated sprayed fireproofing through the ceiling breaches. There have been at least 2 documented cases of chunks of fireproofing falling onto surfaces in rooms or offices, and visible chunks of fireproofing have been wedged between sections of the Douglas ceiling.
5. Many rooms have upward facing light valences mounted to the walls. With the openings to the ceiling plenum noted above at the ceiling/wall interface, there have been several cases of asbestos-containing dust found in the lights, and they are no longer being routinely cleaned or maintained. Reportedly a procedure is under development for the cleaning of the light fixtures.

The consequence of these factors in these 50 year-old buildings is that there may be asbestos fibres fallen to occupied areas of the buildings. The testing to-date has shown some evidence of this risk. At least 2 samples of settled dust on common building surfaces (a desk and a bookshelf), analyzed using the MOL prescribed Polarized Light Microscopy (PLM) Method, have shown a content of greater than 0.5%, which is the MOL definition of an asbestos-containing material. The results are reported in a very precise fashion (0.5 to 1%) and the PLM method is known to have difficulty quantifying the amount of asbestos in low percentage dust samples, which leads us to question these results. However, the significance of these findings cannot be understated, as it is not known if this is an isolated phenomenon or if this asbestos-containing dust might be present throughout the buildings.

Current Procedures

To determine compliance with the regulation, we will examine each of the three requirements separately:

When friable sprayed fireproofing has fallen and is being disturbed so that exposure to the material is likely to occur the fallen material is to be cleaned up and removed Section 8(10)(a)

The large pieces of material that have fallen and are being disturbed have typically fallen through the ceiling and into the occupied areas. In all cases LU clean up the fallen material and adjacent space following proper procedures. Any work taking place above ceiling follows Type 2 procedures for the most part, though we understand that sometimes ceilings are entered with reduced procedures for observation purposes. Generally LU is in compliance with this requirement in regard to the large pieces of fireproofing falling into occupied spaces.



The presence of dust that is classified as an asbestos-containing material under the regulation is problematic. The historical dust and debris in the light valences is being considered asbestos-containing, and cleaning staff are not disturbing it at the moment. It is not clear that other staff have been advised to not disturb the lights. LU does not know if the two samples of settled dust on common surfaces are typical or not, and additional testing is needed to make this determination. Additional testing should be performed to ensure building occupants that the dust in their work places is not a regulated material. This should be combined with additional air monitoring to reassure building occupants that the air in the building is safe while performing their normal activities.

If it is apparent that material will continue to fall because of the deterioration of the fireproofing, the owner shall repair, seal, remove or permanently enclose the fireproofing Section 8(10)(b)

For this section of the Regulation to apply, the asbestos-containing sprayed fireproofing has to continue to fall and be disturbed. Material fallen onto the top of the ceiling will not be disturbed by normal building operations, even when it is visible to occupants through gaps in the Douglas ceiling. The problem occurs where there are breaches in the Douglas ceilings, in which case the debris can fall into occupied areas and be disturbed. There are two types of breaches in the ceiling: at the junction of the ceiling and the block walls, and where the fibreglass barrier is no longer present. LU has no records of the frequency of debris falling to surfaces below the ceiling line, but there is anecdotal evidence that this can happen on occasion, in the order of once or twice a year. Ideally LU would be able to close all of the breaches, but this is time consuming and expensive given the large amount of effort required to remove portions of the Douglas ceiling.

TGCL have provided a draft procedure (TGCL, June 15, 2015) to assess the fireproofing and repair the ceiling. Though we feel that the procedure could use more elaboration and refinement, we generally agree with their recommended approach. However, the approach is quite time consuming and expensive, and Pinchin recommends that further data be gathered on the frequency and extent of fallen material, combined with more air monitoring to assess the hazard, before proceeding with the TGCL program.

TGCL recommended in an April 27, 2015 email that the following communication be performed:

- Advise LU maintenance and custodial staff that they may encounter fallen asbestos-containing SFP in areas that have been identified in the building asbestos database.
- Advise occupants of areas where there is identified AC SFP in their ceiling space, that they may encounter fallen SFP.
- Provide occupants with clear instructions on procedures to be followed if they encounter suspected ACM.
- Prepare a standard procedure for work that will disturb materials in light valences in CB.



- Continue to provide asbestos awareness sessions to proactively address occupant concerns.

The above actions have all been completed, with the worker notifications taking place in training sessions. The light valence cleaning procedure was completed in the fall, and minor revisions are being made at the present time.

Pinchin believes that LU currently complies with the regulatory requirements, but careful monitoring is required to ensure continued compliance and to be able to demonstrate that there is no exposure to airborne asbestos. This is a situation that may well continue to deteriorate.

The above does not apply if the fallen material is confined to an area that is above a closed false ceiling and not part of a return air plenum Section 8(11)

This section applies for the Ryan building, as the closed false ceiling in this building is not a return air plenum. In CB and UC the closed false ceiling is a return air plenum and this section will not apply. For the Ryan building the effect of this section is that a significant amount of fallen fireproofing could be located on top of the ceiling, and no requirement for abatement would be triggered. However, due to the presence of the Douglas ceiling in many areas, this exemption may not be a practical option.

Best Industry Practice Recommendation

The ceiling entry and observation procedures should be documented in the AMP for Type 2 ceiling entry in the three sprayed buildings.

LU should perform a record search to attempt to determine how frequently there have been incidents of sprayed fireproofing falling into the occupied spaces, and how many times staff have noted material wedged in the gaps in the Douglas ceiling. This should be monitored on an ongoing basis for at least a year before implementing the draft procedure recommended by True Grit Consulting Ltd. (TGCL) in their June 3, 2015 letter. The Joint Health and Safety Committee should be involved in this on-going assessment. Before the procedure is implemented, it should be reviewed and refined. The 25% fallen material trigger for further action seems arbitrary, and should be verified, and a definition of a "breach" in the ceiling should be defined.

Additional dust analysis should be performed by accredited laboratories only. Any results stating that the dust is an asbestos-containing material should be verified by Chatfield Technical Consulting.

Additional air monitoring should be performed and analyzed using the most sensitive method, Transmission Electron Microscope (TEM) using the EPA Level II method, which provides an account of all fibre sizes, and a determination of their asbestos content. The Phase Contrast Microscope method used in air sampling tests to-date does not distinguish asbestos fibres from non-asbestos fibres and cannot identify thin asbestos fibres. It is also very imprecise at the very low concentrations expected in buildings.



Pinchin does not agree with the current criteria for interpretation in use at the present time. To the best of our knowledge no North American agency has set a risk-based threshold for the “acceptable” concentration of asbestos fibres for general occupants in buildings. We recommend that the TEM asbestos air sampling results be interpreted against the data given in the Ontario Royal Commission on Matters of Health and Safety Arising from the Use of Asbestos in Ontario (1984) and the Health Effects Institute publication, Asbestos in Public and Commercial Buildings (1991).

4.8 Actions to be taken prior to construction

Regulatory Requirement

Before requesting tenders, arranging, or contracting for construction, alteration or repair, the owner will do the following:

- Section 10(2) - Examine the work area to determine if any asbestos materials will be disturbed.
- Section 10(4) - Have a report prepared describing the type of asbestos, the condition of the material, and whether it is friable or non-friable.
- Section 10(4) - Prepare drawings, plans or specifications showing the locations of the material.

Current Procedures

LU typically has a hazardous building materials report prepared, with drawings and specifications for contractors, prior to the bid. Generally LU is in compliance with the regulation, though in one of the two sets of documents examined they do not appear to report the condition of the material to the contractors as required. Additionally, details of materials concealed above ceilings are not provided; however contractors are warned that asbestos-containing materials will be present. Again condition cannot be reported as the assessor does not appear to have entered the ceiling.

Best Industry Practice Recommendation

Conduct a more intrusive assessment of the ceiling spaces and provide better information to the contractors to reduce bid costs.

4.9 Classification of Work as Type 1, Type 2 and Type 3

Regulatory Requirement

Sections 12 to 18 - The University needs to comply with the Regulation’s requirements for work classification and work procedures when the work is performed by their own staff and contractors.



Current Procedures

From staff interviews, LU appears to correctly classify work. However the classification of various common work types, such as ceiling entry for observation purposes in the sprayed buildings, is not documented in the AMP, though it is in a separate flow chart provided by TGCL. One concern is the modification or cleaning of HVAC systems, including rigid ductwork, which is classified as a Type 3 operation by the Regulation. We are not clear from staff interviews that this requirement is always being followed; however the work appear to be undertaken infrequently.

LU has a separate modified procedure under Section 23 of the Regulation (which allows Owners to vary regulatory procedures with certain conditions) for the changing of air filters in the HVAC units. They are also developing a housekeeping procedure for areas where asbestos dust or debris may be present, such as the light valences.

Best Industry Practice Recommendation

LU should document their procedures in the AMP and ensure they have a clear set of standards for all types of asbestos work, particularly cleaning and modifying ductwork, ceiling entry, and emergency procedures in the event of a spill.

4.10 Respirator Program

Regulatory Requirement

Section 13 - Employees who work with asbestos have a number of requirements regarding respiratory protection, which can be summarized as having a respirator program.

Current Procedures

Respirator training and fit testing is performed annually for all Physical Plant employees who are required to wear a respirator. It is less clear the employees in the other departments, such as Technology Services, are tested and trained as frequently. They are however invited to the training, but the Asbestos Coordinator does not have the power to enforce attendance. LU complies with this requirement.

Best Industry Practice Recommendation

The respirator program should be documented in the AMP, and should be enforced for all applicable departments.



4.11 Clearance Air Testing

Regulatory Requirement

Section 18(8) - Clearance air testing must be performed following Type 3 abatement, the results must be posted within 24 hours in a conspicuous place at the workplace, and these must be provided to the Joint Health and Safety Committee for the workplace. The records must be retained for a year.

Current Procedures

Clearance air testing is performed after all Type 3 projects; however, the results are not posted publicly as required. LU does not comply with this requirement. The procedure for doing this should be documented in the AMP and followed.

Best Industry Practice Recommendation

The AMP should document all LU policies for air monitoring, such as when air monitoring is performed around Type 3 work, Glove Bag work or Type 2 work. Type of air monitoring in each situation should be provided, along with minimal acceptable laboratory standards.

4.12 Submission of the Annual Asbestos Work Record to the MOL

Regulatory Requirement

Section 21 - Employees who perform Type 2 and 3 work with asbestos shall have an Asbestos Work Report submitted annually to the Ministry of Labour.

Current Procedures

Reportedly LU complies with this requirement according to the interviews conducted. Pinchin did not perform a detailed audit of this requirement.

5.0 AUDIT METHODOLOGY

The audit was conducted by comparing the written asbestos management program and the daily procedures used by LU staff to the specific requirements of Ontario Regulation 278/05, the Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations. Regulation 278/05 prescribes in detail the requirements for day to day management of asbestos in buildings. There are other Ontario regulations impacting or regarding asbestos, but they primarily deal with industrial facilities or waste handling and disposal.

Additionally, the AMP and procedures were compared to Pinchin's understanding of industry best practices. Where possible we have made comments for possible improvements or efficiencies.



6.0 LIST OF DOCUMENTS REVIEWED AND STAFF INTERVIEWED

As part of our audit, Robert Thomas of Pinchin visited the LU campus on January 6 and 7, 2015. At that time, meetings were held with the following staff and committees:

- Dr. Brian Stevenson, President & Vice Chancellor
- Internal Relations Committee
- Ursula McDonald, Health & Safety Officer
- Health and Safety Committee
- True Grit Consulting Ltd., Ina Chomyshyn, Director of Hygiene Services and Jacquie Elvish, Corporate Health & Safety Officer
- Hugh Briggs, Director of Physical Plant
- Kathy Pozihun, VP Finance and Administration
- Shanon Arnold, Manager, Space and Capital Planning
- Dr. Mary Louise Hill, Department of Geology
- Dr. Lionel Catalan, Chair, Department of Chemical Engineering
- Maintenance and Housekeeping Staff
- Kevin Schlyter, Planning & Construction Manager
- Bernie Blake, Chief Information Officer, Technology Services Centre
- Dale Dubinsky, DRD Construction Services
- Walter Keating, Keating Insulation
- Jason Villeneuve, Villeneuve Mechanical

The following documents were provided by LU for review:

- Training Handout for "Asbestos Awareness for Lakehead University Physical Plant Employees" Resource Centre for Occupational Health and Safety, Lakehead University, April 26, 2006
- List of employees trained on HMIS, handwritten, January 25, 2008
- Certificate of Analysis, Airborne concentrations of fibres, TGCL, December 3, 2014
- Cleaning of Room CB4009, Summary of Existing Conditions and Work to be Completed, TGCL, April 1, 2015, including bulk sample results for settled dust in CB4009



- Email from Ina Chomyshyn, TGCL to Shanon Arnold, CB4009 Clearance Inspection Report, April 20, 2015, included analytical certificates for air monitoring and bulk sample analysis of settled dust in CB4009
- Limited Surface Dust Sampling and Analysis for Asbestos Content, Rooms CB4007 and CB4013, Fourth Floor of the Centennial Building, TGCL, April 22, 2015
- Asbestos – Frequently Asked Questions, TGCL, April 2015 (from the LU web site)
- Draft Action Plans to Monitor and Address Concerns Related to Sprayed Fireproofing and Suspended Douglas Ceilings, Centennial, University Centre, and Ryan Buildings, TGCL, June 3, 2015
- Sample Asbestos and Respirator Awareness Training Session Letter, TGCL, June 11, 2015
- Request for Quotation, Asbestos Containing Materials – Removal, Lakehead University, August 17, 2015
- Asbestos Control Program, Lakehead University, August 2015
- Demolition & Abatement UC Building Renovation RFQ, Lakehead University, January 8, 2016
- Asbestos Decision Flowchart, TGCL, undated.
- Change of Record Spreadsheet, Lakehead University, undated.
- Asbestos and Respirator Awareness Session, Sample Agenda, TGCL, undated.
- Summary of Sampling Events in the Centennial Building (CB) at Lakehead University (LU) (December 2014 – present) TGCL, undated
- Photographs of the Centennial Building taken May 3 to 8, 2015, provided by Dr. Lionel Catalan
- Asbestos Record information recorded on HMIS, undated.

7.0 LIMITATIONS

Specific limitations related to the legal and financial and limitations to the scope of the current work are outlined in our proposal and the Authorization to Proceed which accompanied the proposal.

The work performed by Pinchin was conducted in accordance with generally accepted engineering or scientific practices current in this geographical area at the time the work was performed. No warranty is either expressed or implied by furnishing written reports or findings. The Client acknowledges that subsurface and concealed conditions may vary from those encountered or inspected. Pinchin can only comment on the environmental conditions observed on the dates the work was performed. The work is



limited to those materials or areas of concern identified by the Client or outlined in our proposal. Other areas of concern may exist but were not investigated or commented on within the scope of this assignment.

Pinchin makes no other representations whatsoever, including those concerning the legal significance of its findings or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issue, regulatory statutes are subject to interpretation and these interpretations may change over time. Pinchin accepts no responsibility for consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The liability of Pinchin or its staff will be limited to the lesser of the fees paid or actual damages incurred by the Client. Pinchin will not be responsible for any consequential or indirect damages. Pinchin is only liable for damages resulting from the negligence of Pinchin. All claims by the Client shall be deemed relinquished if not made within two years after last date of services provided.

Information provided by Pinchin is intended for Client use only. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law. Any use by a third party of reports or documents authored by Pinchin or any reliance by a third party on or decisions made by a third party based on the findings described in said documents, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

8.0 REFERENCES

The following legislation and documents were referenced in completing the assessment and this report:

1. Asbestos on Construction Projects and in Buildings and Repair Operations, Ontario Regulation 278/05.
2. Designated Substances, Ontario Regulation 490/09.

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Template: Master Report for Hazardous Materials Assessment Report (Management), Haz, January 1, 2016