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<b>Project Location:</b>	<b>York University 4700 Keele Street, Toronto, Ontario</b>	<b>Client Project No.:</b>	<b>N/A</b>
<b>Project Description:</b>	<b>Ceiling Tile Asbestos Abatement</b>	<b>ECOH Project No.:</b>	<b>11754</b>
<b>Report Date:</b>	<b>December 21, 2006</b>	<b>Report No.:</b>	<b>GEN-01 Pg 1 of 3</b>

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ECOH Management Inc. (ECOH) was retained by High Point Environmental Inc. (High Point) to provide inspections and air monitoring services during asbestos abatement work at York University, located at 4700 Keele Street, Toronto, Ontario. The scope of work includes the removal of asbestos-containing lay-in acoustic ceiling tiles from several York University buildings. High Point has been retained by York University to perform the abatement work in accordance with all Regulatory requirements and contract specifications.

The removal of 7.5 square meters (approximately 80.7 square feet), or more, of asbestos-containing lay-in acoustic ceiling tiles is classified as a Type 2 asbestos operation under Ontario Regulation 278/05, *Asbestos on Construction Projects and in Buildings and Repair Operations* – made under the Occupational Health and Safety Act. As a project-specific proactive measure, specifications require the removal of any quantity of asbestos-containing lay-in acoustic ceiling tiles to be completed following Type 2 asbestos safety precautions.

### **Pre-Removal Inspections:**

1. The requirements for site isolation and work procedures in each work area are discussed with the High Point supervisor at the beginning of each shift.
2. Prior to commencing any asbestos removal work, the enclosures and work areas are inspected for integrity and compliance with required asbestos safety precautions and project specifications. The visual inspection ensures that all health and safety facilities have been adequately established and that all equipment, tools and supplies are on-site and working properly.
3. The pre-contamination inspection for Type 2 asbestos work must reveal the following health & safety measures and precautions:
  - a. National Institute of Occupational Safety and Health (NIOSH) approved respirator, suitable for the type of asbestos work being completed, is mandatory and must be worn by all people entering the asbestos work area.

The removal of asbestos-containing lay-in acoustic ceiling tiles, where no asbestos debris is suspected on the top of the tiles (i.e. from a different asbestos material) requires an air purifying half-mask respirator with N-100, R-100 or P-100 particulate filters, or better.

The removal of asbestos-containing lay-in acoustic ceiling tiles, where asbestos debris is suspected on the top of the tiles (i.e. from a different asbestos material) requires an air purifying full-mask respirator with N-100, R-100 or P-100 particulate filters, or better.
  - b. Protective clothing is required and shall be made of material that does not readily retain nor permit penetration of asbestos fibres, shall have a head and fully body covering and fit snugly at the ankles, wrists and neck, and shall include suitable footwear.
  - c. The spread of dust from the work area shall be controlled by measures appropriate for the asbestos work being completed, and shall include a full enclosure of polyethylene sheeting. The polyethylene enclosure shall be layered on all surfaces within the work area, which may



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include walls, floors, and any other objects that will remain in the work area (i.e. furniture, stored materials, office supplies, etc.).

- d. Clearly visible signs warning of an asbestos dust hazard must be present on-site and distributed in sufficient numbers.
  - e. Mechanical ventilation systems serving the work area shall be disabled and ventilation ducts, to and from the work area, must be sealed.
  - f. Facilities for washing hands and face shall be made available to people leaving the work area.
4. Only when all health & safety measures and precautions have been established to the satisfaction of ECOH Management Inc., shall verbal authorization be provided to proceed with abatement work.
  5. Deviation from any of the proceeding health & safety measures and precautions will be detailed in daily inspection reports.

#### **General Work Procedures:**

6. The requirements for removal work procedures are discussed with the High Point supervisor at the beginning of each shift.
7. Visual inspections may be completed during the course of removal work to observe work procedures. Visual inspections during Type 2 asbestos removal work must reveal the following:
  - a. Eating, drinking, chewing or smoking shall not be permitted in the work area.
  - b. Compressed air must not be used to clean up and remove dust from any surface.
  - c. Only persons wearing protective clothing and suitable respiratory protection shall enter the work area after abatement work has commenced.
  - d. Water containing a wetting agent shall be used to control the spread of dust and fibres.
  - e. ACM scheduled for removal shall be thoroughly wetted before and during removal (unless wetting creates a hazard or cause damage).
  - f. Workers leaving the work area shall decontaminate their protective clothing using a vacuum equipped with a HEPA filter, or by damp wiping, before removing the protective clothing. If the protective clothing will not be reused, place it in a suitable asbestos waste container.
  - g. Protective clothing shall be repaired or replaced if torn.
  - h. Asbestos waste shall be kept wet until it can be placed into disposal bags. Waste shall be cleaned up and removed frequently and at regular intervals during the removal work. All waste is to be double bagged, and independently sealed, prior to leaving the work site. All waste, when removed from the work area, shall be taken immediately to the waste bin.
  - i. The integrity of the enclosure shall be maintained at all times. Defects in the enclosure and/or perimeter seals must be repaired immediately and no other work shall be carried out in the work area until the repair work is completed.



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j. Negative air pressure within the work area should be created and maintained by installing a ventilation system equipped with a HEPA filtered exhaust unit and/or HEPA filtered vacuum units.

8. Deviation from any of the proceeding work procedures will be detailed in daily inspection reports.

### **Asbestos Air Monitoring Methodology**

9. Subsequent to a visual inspection by ECO Management Inc., to ensure a standard level of cleanliness has been achieved, air sampling will be performed within the work enclosure.
10. Air samples are collected using a constant-flow high volume air-sampling pump. The sampling equipment is calibrated prior to, and subsequent to sample collection, with a primary standard electronic bubblemeter or a DryCal® DC-Lite primary flow meter (using a filter cassette in-line) at a target flow rate of 15 litres/minute.
11. Samples are collected on a mixed cellulose ester (MCE) membrane filter with 0.8-micrometer pore size and 25-millimeter diameter. The filter was mounted inside a three-piece filter cassette with a two-inch cowl.
12. Analysis of the air samples is performed on-site shortly following completion of air sample collection using procedures specified in the National Institute for Occupational Safety and Health (NIOSH) Manual of Analytical Methods, Method 7400, Issue 2: Asbestos and other Fibres by Phase Contrast Microscopy (PCM) (August 15, 1994), using the asbestos fibre counting rules. This analysis method is prescribed by Ontario Regulation 278/05.

Please note: This method does not differentiate between asbestos and non-asbestos particulates. All particles longer than 5 micrometres and with length-to-width ratios of 3-to-1 or greater are included in the count. Therefore if fibreglass, cellulose, or gypsum particulates are present, the PCM method will overestimate the true asbestos concentration.

13. ECO Management Inc. has established 0.04 fibres per cubic centimetre (F/cc) as a maximum acceptable concentration for air samples collected.
14. Details of air monitoring results will be provided in daily inspection reports

If you have any questions, please do not hesitate to contact your Health & Safety representative for additional project-related information.

### **ECO Management Inc.**

Environmental Consulting & Occupational Health