



951 Pinewood Place  
West Kelowna, BC V1Z 3G7  
e-mail: info@peakenvironmental.ca  
Toll Free 1-877-518-7325 (PEAK)  
Fax: (250) 769-0884



# **ASBESTOS CONTAINING BUILDING MATERIALS ASSESSMENT REPORT**

## ***FIELD ELEMENTARY SCHOOL***

**201 Kicking Horse Road  
Field, BC**

**Prepared for:**

***School District No. 6 (Rocky Mountain)***

Operations Department  
620 4th Street  
Invermere, BC V0A 1K0

**Prepared by:**

***Peak Environmental Ltd.***

951 Pinewood Place  
West Kelowna, BC V1Z 3G7  
*File: 1640 Field Elementary School R01*

**Submitted:**

December 18, 2011

On-site survey for this December 18, 2011 report was completed on February 2009. All observations and conditions herein are respective to this / these date(s) and to dates listed in the Revision History.

---

**PEAK ENVIRONMENTAL LTD.**  
250-862-0971 / 1-877-518-7325 (PEAK) Toll Free

## Table of Contents

<b>1.0 Executive Summary .....</b>	<b>1</b>
1.1 Project Scope .....	1
1.2 Results and Recommendations .....	1
1.2.1 Results .....	1
1.2.2 Recommendations .....	2
<b>2.0 Project Scope .....</b>	<b>3</b>
2.1 Inclusions .....	3
2.2 Exclusions .....	3
<b>3.0 Recommendations for Using this Asbestos Inventory Report .....</b>	<b>4</b>
3.1 Intended Audience .....	4
3.1.1 School Board Administration / Operations Staff .....	4
3.1.2 Custodial Staff .....	4
3.1.3 Contractors .....	4
3.2 Recommendations for Use .....	4
3.2.1 Prior to Renovation/Demolition Activities .....	4
3.2.2 Immediate and Priority 1 Removal .....	5
3.2.3 In-Place Management .....	5
<b>4.0 Methodology .....</b>	<b>5</b>
4.1 Materials Inventory .....	5
4.2 Asbestos-Containing Materials .....	5
4.2.1 Building Inspection .....	5
4.2.2 Laboratory Analysis .....	8
4.2.3 Reporting and Removal Priority Classification .....	8
<b>5.0 Building Occupant Exposure Risk and Worker Protection Requirements .....</b>	<b>9</b>
<b>6.0 Areas of Restricted Entry Due to Poor Condition Asbestos Applications .....</b>	<b>9</b>
<b>7.0 Remedial Work .....</b>	<b>9</b>
7.1 Phased Removal Work .....	9
7.2 Management .....	10
7.2.1 All Asbestos-Containing Applications .....	10
7.2.2 Specific Asbestos-Containing Applications .....	10
<b>8.0 Limitations .....</b>	<b>11</b>

**School District No. 6 (Rocky Mountain)**  
**ASBESTOS CONTAINING BUILDING MATERIALS INVENTORY**

---

**Appendices**

<b>APPENDIX A ASBESTOS-CONTAINING MATERIALS Summary.....</b>	<b>A</b>
<b>APPENDIX B ASBESTOS LOCATION DRAWINGS.....</b>	<b>B</b>
<b>APPENDIX C ANALYTICAL BULK SAMPLE RESULTS .....</b>	<b>C</b>
<b>APPENDIX D PRIORITIZED ASBESTOS ABATEMENT SCHEDULE AND ABATEMENT BUDGET ESTIMATES (2011).....</b>	<b>D</b>
<b>CONTRACTOR SIGN-OFF SHEET.....</b>	<b>E</b>

***Report Revision History***

<b>Version</b>	<b>Issue Date</b>	<b>Change Description</b>	<b>Submitted by</b>
1	12/18/11	Initial Report	Peak Environmental Ltd.

## **1.0 EXECUTIVE SUMMARY**

### **1.1 Project Scope**

Peak Environmental Ltd. was retained by School District No. 6 (Rocky Mountain) to perform an assessment and review of various buildings for asbestos-containing building materials. The purpose of this survey was to collect samples of building materials to determine their asbestos content, identify and record locations, and provide quantities, remediation cost estimates and associated building occupant risk regarding asbestos-containing materials located within each building. In addition to the list of asbestos-containing materials, an inventory of non-asbestos materials was also compiled in order to provide a record showing that all building materials were investigated for asbestos content. Obvious non-containing materials (*eg.* wood, metal, ceramic, concrete, *etc.*) were excluded from this inventory.

This is an occupied building survey, and as such, only non-destructive sampling methods were used in order to prevent any breaching of exterior membranes or the destruction of finished surfaces.

New additions or completely renovated sections (1990 or later) of buildings are not considered at risk for asbestos-containing materials and therefore were not included in the survey.

Please refer to [2.0 Project Scope](#) for a list of inclusions and exclusions for this Scope of Work.

Asbestos-containing building materials identified within the facility are noted on the attached summary sheets, spreadsheets and drawings. These documents should be reviewed to ascertain the exact location of asbestos applications (to the extent possible) within this building or buildings on this site.

### **1.2 Results and Recommendations**

#### **1.2.1 Results**

##### **ASBESTOS-CONTAINING AND SUSPECT MATERIALS IDENTIFIED IN FIELD ELEMENTARY SCHOOL:**

##### **Applications with High Friability:**

- None

##### **Applications with Moderate Friability:**

- Drywall Taping Compound (limited to original construction areas only)
- Exterior stucco

##### **Applications with Low Friability:**

- Asbestos-containing Vinyl Floor Tile
- Cement Asbestos Boards

##### **Applications with Immediate or Level 1 Priority Abatement Code:**

- None

##### **Suspect Applications - visually confirmed presence but not analyzed**

- None

**Potential (visually unconfirmed) applications** (in facilities or areas of a facility built prior to 1990):

floor leveling compound	HVAC Duct mastic
pipe flange gaskets	fire doors
window putty	boiler/tank insulation (internal)
mortar (brick or other)	chimney liner (internal)
vermiculite insulation which may be within concrete block walls concealed beneath newer application stucco materials	adhesives (eg. under flooring)
electrical insulation (wire insulation, arc insulating pads)	Tar and gravel roofing, roof felts, tar patching compounds and membranes

### ***1.2.2 Recommendations***

- Remove all materials designated Immediate or Priority 1 removal (listed in [Appendix D](#)) as per the schedule in [Appendix D](#)
- Priority 2 and 3 applications (and Priority 1 applications to the time of removal) should be managed in-place as outlined in [Phased Removal Work](#)
- Contractors performing work within this facility must review these documents prior to performing their work duties to ensure that asbestos applications are not inadvertently disturbed, resulting in the possible release of asbestos fibres into the ambient air
- Contractors working on this site must also complete the sign-off sheet attached to these documents, stating that they have reviewed the spreadsheets and drawings and are aware of the asbestos applications located within this facility
- Update the asbestos inventory report subsequent to all removal or other abatement activities

## **2.0 PROJECT SCOPE**

Peak Environmental Ltd. was retained by School District No. 6 (Rocky Mountain) to perform an assessment and review of various buildings for asbestos-containing building materials. The purpose of this survey was to identify, record locations, provide quantities, remediation cost estimates and associated building occupant risk regarding asbestos-containing materials located within each building. The following list defines the inclusions and exclusion of this Scope of Work:

### **2.1 Inclusions**

- A. Document and provide a complete [Materials Inventory](#) for all building materials which might be suspected of containing asbestos
- B. Collect and analyze bulk samples of all building materials suspected of containing asbestos
- C. Drill concrete block walls to determine presence of vermiculite insulation where exposed exterior block walls were visible
- D. Document all locations of confirmed asbestos containing applications (provided in a list format and marked on a floor plan)
- E. Provide an approximate cost of abatement (where the extent of the application can be ascertained). This cost includes the remediation activity by a contractor as well as management oversight of such activity; where the extent of the application cannot be determined without the use of destructive sampling methods, the application is listed, but without estimated abatement costs
- F. Provide a recommended removal schedule, and an Operations and Maintenance (O&M) Program categorized by application type
- G. Submit a Report detailing the results and recommendations of the asbestos inventory survey

### **2.2 Exclusions**

- A. The survey was limited to fixed buildings. Portables and underground systems on the grounds are not part of this survey
- B. Roofing materials are excluded as per exemptions listed in the [AHERA](#) Inspection Requirements
- C. Crawl spaces in School District No. 6 (Rocky Mountain) were previously abated during the 1990s. No detailed review of this abatement was included in this survey
- D. Ceiling spaces are included in this survey to the extent that the space is accessible without the need for destructive sampling
- E. New additions or renovations (1990 or later) are not included in this survey
- F. Areas / applications inaccessible without the use of destructive sampling, including, but not limited to:
  - i. possible concealed flooring (beneath newer flooring or carpet application)
  - ii. packing and gasketing materials in heating, boiler, ventilation and air-conditioning systems
  - iii. mastic associated with weatherproofing
  - iv. fire doors
  - v. inaccessible pipes and pipe fittings
  - vi. vermiculite within concrete block walls concealed beneath newer stucco applications

## 3.0 RECOMMENDATIONS FOR USING THIS ASBESTOS INVENTORY REPORT

### 3.1 Intended Audience

#### 3.1.1 School Board Administration / Operations Staff

- Maintain an awareness of the location, risk level and management requirements of all asbestos-containing materials in the facility
- Ensure that the asbestos inventory is updated subsequent to the removal of any asbestos-containing material
- Ensure that custodial staff are aware of the location of any asbestos-containing material
- Execute all activities for asbestos applications which are recommended for in-place management, including monitoring of the application's condition for any changes
- Effect and coordinate all recommended removal activities
- Ensure that all contractors working in the vicinity of any asbestos application are aware of the application (have the contractor sign the Contractor Sign-off Sheet), and arrange for the removal or other recommended abatement method of any asbestos-containing material that could be damaged by the contractor's activities

#### 3.1.2 Custodial Staff

- Maintain an awareness of asbestos-containing applications within the facility, and of any special care or procedure required to handle (or avoid) these applications
- Immediately report any visible changes or damage to asbestos-containing materials to Operations

#### 3.1.3 Contractors

- Review this report and be aware of any asbestos-containing materials located in areas where construction/demolition/renovation activities are to be carried out
- Sign the [Contractor Sign-off Sheet](#) at the end of this Report

### 3.2 Recommendations for Use

#### 3.2.1 Prior to Renovation/Demolition Activities

Step	Location in Report
1. Review Rooms for asbestos content	<a href="#">Appendix B</a> (Location Drawings)
2. Review Legend for possible applications not shown plan	<a href="#">Appendix B</a> (Location Drawings)
3. Verify applications in affected rooms & any application listed as occurring 'throughout'	<a href="#">Appendix D</a> (Spreadsheet)
4. Refer to list of Potential Applications to determine which additional non-verified applications may be present	<a href="#">Suspect Applications</a>
5. Update Report after all abatement initiatives	

### **3.2.2 Immediate and Priority 1 Removal**

Step	Location in Report
1. Review list of materials recommended for Immediate or Priority 1 removal	<a href="#">Immediate &amp; Priority 1 Removal</a>
2. Identify rooms that contain these materials and have been designated for Immediate or Priority 1 removal*	<a href="#">Appendix D</a> (Spreadsheet)
3. Locate the affected rooms on the drawing	<a href="#">Appendix B</a> (Location Drawings)
4. Determine the approximate cost for removal/reapplication	<a href="#">Appendix B</a> (Location Drawings)
5. Update Report after all abatement initiatives	

\*To manage these materials in-place until removed, see *In-Place Management* below

### **3.2.3 In-Place Management**

Step	Location in Report
1. Review list of all asbestos-containing materials in the facility	<a href="#">Appendix A</a> (Asbestos materials)
2. Identify the removal priority for each material by location	<a href="#">Appendix D</a> (Spreadsheet)
3. If removal priority is 2 or 3, these materials can be managed in-place until removed due to renovation or demolition.	<a href="#">7.2.1</a> (Management) <a href="#">Appendix A</a> (Asbestos materials)
4. Identify in-place management recommendations and also if there are any concerns specific to the application	
5. Locate rooms on the drawing to determine locations and extents of each application to be managed in-place	<a href="#">Appendix B</a> (Location Drawings)

## **4.0 METHODOLOGY**

### **4.1 Materials Inventory**

A complete inventory was carried out to record any materials which might be suspected of containing asbestos. The intent of this inventory is to assure staff and contractors that all visible and accessible materials have been inspected and identified as asbestos-containing or non-containing. New application ceiling tiles, vinyl flooring applications and stucco identified as being circa 1990, were considered to be non-asbestos with no verification samples collected, but were included in the inventory (as non-containing). Materials obviously not asbestos-containing (*eg.* wood, metal, ceramic, concrete, *etc.*) were excluded from the inventory.

### **4.2 Asbestos-Containing Materials**

#### **4.2.1 Building Inspection**

This is an occupied building survey, and as such, samples of suspect asbestos-containing building materials were collected from areas in a manner minimizing damage to finished surfaces. Surface materials were not disturbed in order to ascertain the absence of possible concealed layers (*ie.* floor sheeting was not pulled up to determine if older layers of flooring were concealed underneath). Please refer to the individual building applications ([Section 7.2.2](#)) for additional details pertaining to the specific material.



All rooms of the facility were entered and inspected (unless specified in [Appendix B](#) as non-accessible).

- i. Materials suspected of containing asbestos were then determined to be friable or non-friable. [WorkSafeBC's proposed amendments](#) define friable as 'asbestos-containing material that is crumbled or powdered or can be crumbled or powdered by hand pressure'
- ii. 'Homogeneous areas' were identified for each suspect application. A homogeneous area is defined as an area containing material that is 'uniform in texture, colour, date of application, and identical in every other way'
- iii. Each suspect application was then placed into one of the following categories as defined by [AHERA](#):  
  
Surfacing Material: defined as material that is sprayed on, troweled on, or otherwise applied to surfaces (structural members, walls, ceilings, etc.) for acoustical, decorative, fireproofing, or other purposes  
  
Thermal System Insulation: defined as material applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain, or water condensation, or for other purposes  
  
Miscellaneous: defined as materials which do not fall into the above two categories - typically ceiling tiles and flooring applications
- iv. A physical assessment was then carried out for each suspect application to determine:
  - condition
  - potential for future disturbance

The above listed assessments were then used to rank each suspect application for [removal priority](#) or abatement category.

Inaccessible applications which should be considered prior to demolition or renovation activities are listed separately in this Report (eg. window caulking, packing and gasketing, etc.).

### *Drywall Taping Compound, Plaster and Stipple Ceiling Texture*

Representative samples were collected and analyzed for asbestos content for each of these applications identified in the building. For any facility where multiple samples of an application returned both containing and non-containing results, all similar applications should be considered asbestos-containing. In order to prevent the possible release of asbestos fibres into the ambient air, additional samples should be analyzed prior to beginning work which may impact any application which returned inconsistent asbestos-content results.

For any facility having pre-1990 additions or renovations, representative sampling was carried out in each addition/renovation area that was of a different age from the rest of the facility (homogeneous area). Post 1990 additions/renovations were not included in the survey.

### *Vinyl Flooring and Ceiling Tiles*

Samples of vinyl flooring and ceiling tiles were collected based on visible size, color and pattern. Flooring and ceiling tile applications with the same surface coloring and patterns were considered a homogeneous application throughout the building. Representative samples of each unique application were collected and analyzed for asbestos content.

**Carpeting was not lifted to check for flooring underneath except in cases where carpeting was already damaged and lifting.** Concealed asbestos flooring applications may be present under carpeting, new application vinyl sheeting or wood subflooring materials. Inspection and sampling for concealed flooring applications should be performed prior to renovation activities which may impact concealed applications.

### *Concrete Block Walls*

Concrete block walls were drilled and inspected for the presence of vermiculite insulation as part of this asbestos material inventory.

Any samples recorded as 'non-asbestos-containing vermiculite' or 'no vermiculite' (recorded in Appendix D), should be considered inconclusive rather than negative. There are two scenarios which must be considered when vermiculite insulation sampling yields such results:

1. No asbestos found in vermiculite insulation sample(s)
  - a. As with any asbestos-containing or asbestos-contaminated material, the only way to ascertain the amount of asbestos present is to have the material tested. Bulk sampling is reliable only when over 1% of the material is asbestos. 'Non-asbestos-containing' results from bulk samples can therefore be falsely reassuring when less than 1% of the sample is asbestos. However, disturbing contaminated vermiculite with less than 1% asbestos can still result in hazardous concentrations of airborne asbestos fibres. NIOSH recommends workers consult Occupational Safety and Health Administration (OSHA) asbestos standards for general industry and construction (29 CFR 1910.1001 and 1926.1101) when work will involve vermiculite that is known or presumed to be contaminated with asbestos. Relevant information can be found on the [OSHA web site](#)
  - b. Asbestos fibres in vermiculite insulation tend to settle to the lower layers over time. If sampling was carried out using vermiculite from upper layers, 'non-asbestos-containing' results or very low concentrations can be misleading
2. Vermiculite insulation not found in block wall cavity
  - a. Not all channels inside block walls are uniformly filled with vermiculite insulation, and some channels may not be filled at all. Sampling an empty channel does not guarantee that all channels / blocks are empty
  - b. Blockages within channels can cause vermiculite insulation to get caught above these ledges. If sampling is carried out below such a blockage, the presence of vermiculite can be missed

It is recommended that in spite of possible inconclusive findings of vermiculite sampling, any disturbance to block walls due to demolition or renovation activities be preceded by: a) determining if the block wall was initially an exterior wall, and b) carrying out additional sampling on the wall(s) to be disturbed. Original structure block walls are delineated on the floor plan. This is only an estimation of the walls' location and extent, and should be used as an approximate reference only. No drilling of interior block walls was performed to ascertain if newer interior walls, which may have formerly been exterior walls, contain asbestos. Drilling of interior walls should also be performed prior to renovation activities which may impact concealed vermiculite applications.

**Note:** In School District No. 6 (Rocky Mountain), it is possible that concrete block walls were concealed by brick or stucco applications on the school's exterior, and by drywall on the building's interior. In any such case, the occurrence of block walls would have been impossible to ascertain without removing the exterior membrane.

### *Known Asbestos-Containing Materials*

Visual identification of some materials was performed. Materials such as pre-1978 insulating cements, corrugated paper pipe insulation, asbestos pipe and cement boards are known to contain asbestos. If these materials were identified, they were noted as being asbestos-containing and no verification samples were collected.

### *Building Finishes and Membranes*

No sampling of building finishes or membranes was performed where sample collection would cause or create a leak or irreversible damage to the building, building finishes or systems. Examples of materials which are suspect but not sampled in order to avoid destruction or degradation of the building finish or membrane include (but are not limited to) exterior soffit stipple and exterior stucco. Stucco samples were collected only where the material was already crumbled or damaged.

#### **4.2.2 Laboratory Analysis**

Collected samples were sent to an accredited laboratory for analysis where they were analyzed using Polarized Light Microscopy (PLM) in accordance with the [NIOSH 9002](#) method which specifies a level of detection (LOD) of 1% or less to determine asbestos content. As outlined in [WorkSafeBC's proposed amendments](#), all materials other than vermiculite insulation containing 0.5 percent or greater of asbestos, and vermiculite insulation containing any asbestos, are considered to be asbestos-containing.

#### **4.2.3 Reporting and Removal Priority Classification**

All reference to 'friable' materials in this report include applications designated as having High or Mod friability. 'Low' friability is synonymous with 'non-friable'.

Removal Priority is assigned based on a matrix of multiple criteria including, but not limited to: application friability, visibility, condition and accessibility. Classification used in [Appendix D](#) are as follows:

Priority	Definition
Immediate	Application should be removed immediately (as soon as possible) because there is a distinct possibility of fibre release. The application should be abated or the area restricted (as specified for the particular application) till the time of abatement
1	Remove within one year due to the application's condition, location or the surrounding area's use; damage to the application is probable. The application should be abated or the area restricted (as specified for the particular application) till the time of abatement
2	Remove in conjunction with proposed building renovations or maintenance
3	Removal is only required prior to renovation or demolition activities

## **5.0 BUILDING OCCUPANT EXPOSURE RISK AND WORKER PROTECTION REQUIREMENTS**

Highly friable asbestos-containing materials, such as insulating cements, ceiling textures, mechanical insulation, vermiculite insulation and asbestos paper products pose the greatest risk of exposure to building occupants as they are easily crumbled by hand releasing airborne asbestos fibres when damaged or exposed. Low -friable materials, such as vinyl flooring and cement asbestos board pose a lesser risk as they are not easily crumbled by hand and must be broken or mechanically abraded to release asbestos fibres.

There is an increased risk of asbestos fibre release if asbestos applications are disturbed through renovation or maintenance activities that will abrade the material releasing asbestos fibres into the ambient air. There would also be an elevated risk of asbestos exposure through dry burnishing of vinyl floor sheeting or tile applications. Dry burnishing activities should not be performed on asbestos floor applications.

Moderate and highly friable asbestos applications located in un-controlled locations such as corridors or washrooms, or where located adjacent to air movement equipment or found to be in poor or damaged condition, have been prioritized for abatement. Any such applications located in areas where control and access is limited are scheduled for phased removal ([Appendix D](#)).

All remaining low-friable asbestos applications have been scheduled for removal in conjunction with planned building renovation or maintenance work or abatement prior to work, which may impact and damage the asbestos applications.

All asbestos applications identified in this report should be routinely inspected to ensure their condition has not deteriorated, resulting in the exposure of the asbestos application. Damaged and exposed asbestos applications should be immediately removed by a qualified asbestos abatement contractor.

**Currently there is no risk of exposure to airborne asbestos from asbestos applications located in this facility provided they remain intact and un-damaged.**

## **6.0 AREAS OF RESTRICTED ENTRY DUE TO POOR CONDITION ASBESTOS APPLICATIONS**

**Areas with poor condition asbestos or areas, which would require special entry procedures, were not noted in this facility.**

## **7.0 REMEDIAL WORK**

### **7.1 Phased Removal Work**

- All friable asbestos-containing applications located in un-controlled areas (corridors and washroom areas) should be scheduled for abatement. Due to the fact that these applications can be damaged without the knowledge of the maintenance department these applications should be routinely inspected for damage and delamination. Any damaged, delaminating or exposed asbestos materials should be removed, repaired or enclosed to prevent the possible release of asbestos fibres.
- All asbestos-containing materials should be removed in conjunction with planned building maintenance, abatement or renovation activities.

Removal phase categories are defined in [Priority](#) and [Appendix D](#).

## **7.2 Management**

### **7.2.1 All Asbestos-Containing Applications**

- All asbestos-containing applications remaining within this building should be managed in-place, prior to abatement, with bi-annual or quarterly inspections to ensure that their condition has not deteriorated, resulting in the possible release of asbestos fibres. Any materials showing signs of damage, delamination or exposed asbestos should be abated immediately.
- All applications identified in this report must be removed prior to any work that may impact asbestos applications resulting in the possible release of asbestos fibres.
- All applications identified as requiring Immediate or Priority 1 Abatement (as listed in [Appendix D](#)) should be scheduled for abatement and in the interim, be protected from further damage or degradation which could result in the release of asbestos fibres.
- Maintenance and custodial staff must be made aware of all identified asbestos-containing materials listed in this report, and should be trained in the safe handling of asbestos in accordance with WorkSafeBC regulations.

### **7.2.2 Specific Asbestos-Containing Applications**

All asbestos-containing applications listed below are subject to the management techniques outlined in [7.2.1](#), in addition to any details provided for the specific application.

#### **7.2.2.1 Friable Applications**

##### **DRYWALL TAPING COMPOUND**

- For facilities where drywall taping compound samples have been confirmed to contain asbestos, all drywall taping compound used should be considered as asbestos-containing until confirmed otherwise. Areas renovated or added post- 1990 can be exempted

##### **STUCCO**

- Stucco may become damaged due to age and through school yard activities and should be regularly monitored for damage

#### **7.2.2.2 Non-Friable Applications**

##### **CEMENT ASBESTOS BOARD**

- Typically located on a building's exterior under windows, or inside on walls/ceilings. See [7.2.1](#). Items which may abrade or damage the board should not be hung on the boards, nor stored against them

##### **VINYL ASBESTOS FLOORING (FOAM CORE, SHEETING OR TILE)**

- Dry burnishing activities should not be performed on asbestos floor applications

## **8.0 LIMITATIONS**

This report is for the purpose of asbestos identification only. All observations were recorded at the time of the initial site inspection. Instances may occur where changes in condition and resultant building occupant risk have occurred from the time of the initial inspection to the submission of this report. Peak Environmental Ltd. accepts no liability for such changes and resultant change in exposure risk to building occupants.

Site conditions and building construction may have not permitted the complete inspection of some void spaces. These spaces may contain asbestos applications not identified in this report. Any suspect materials located within void spaces should be inspected and/or tested to determine if they are asbestos-containing.

There was limited inspection of sub-flooring applications located beneath carpeting and vinyl flooring materials, occurring only where lifting the covering flooring / carpet would not result in damage. Furthermore, such sub-flooring inspections were only triggered by anecdotal information from staff regarding the presence of a sub-floor, or where there was a visible difference in flooring levels that prompted further investigation. Where a second layer of vinyl flooring material was discovered, samples were collected to determine their asbestos content. No inspection of sub-flooring applications was performed once a structural member was discovered (i.e. wood or concrete). There is a possibility that subsequent asbestos flooring applications, not identified in this report, may be located beneath carpeting, false floors or a covering layer of non-asbestos flooring. Any suspect materials sandwiched between multiple flooring layers should be inspected or tested to determine if they are asbestos-containing.



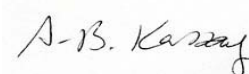
Stephen Ferguson, ASCT.  
President

AHERA Building Insp. Cert:  
(State of MT) CABI-11-043  
Cell: 250-862-0971  
[steve@peakenvironmental.ca](mailto:steve@peakenvironmental.ca)



Kathy Nuszdorfer, PMP  
Project Manager

AHERA Building Insp. Cert:  
(State of MT) CABI-11-038  
[kathy@peakenvironmental.ca](mailto:kathy@peakenvironmental.ca)



A. Bonnie Kassay  
Field Technician  
[bonnie@peakenvironmental.ca](mailto:bonnie@peakenvironmental.ca)

### **1640 - Field Elementary School R01 Asbestos Inventory Report 12/18/2011**

This report has been prepared for the sole use of School District No. 6 (Rocky Mountain). The conclusions and recommendations presented in this report are the best judgment of the author. In the event that this report is provided to a third party without the written consent of Peak Environmental Ltd., any use that a third party makes of this report, or any reliance on the decisions made based on this report, are the sole responsibility of that third party. Peak Environmental Ltd. accepts no responsibility for damages, should any occur, that are suffered by any third party as a result of decisions made or actions taken based on this report.

## **APPENDIX A**

# **ASBESTOS-CONTAINING MATERIALS SUMMARY**

**School District No. 6 (Rocky Mountain)**  
**ASBESTOS CONTAINING BUILDING MATERIALS INVENTORY**

---

The following asbestos applications have been identified within Field Elementary School. The attached asbestos location drawings and spreadsheets should be reviewed for the exact location of all known asbestos applications within this facility (to the extent possible).

**APPLICATIONS WITH HIGH FRIABILITY**

- None

**APPLICATIONS WITH MODERATE FRIABILITY**

- Drywall Taping Compound (limited to original construction areas only)
- Exterior stucco

**APPLICATIONS WITH LOW FRIABILITY**

- Asbestos-containing Vinyl Floor Tile is present in the facility
- Cement asbestos boards were located in the facility

**SUSPECT APPLICATIONS (visually confirmed presence but not analyzed)**

- None

**POTENTIAL (VISUALLY UNCONFIRMED) APPLICATIONS**

Due to the non-destructive nature of the sampling technique used, the following applications, though not visually confirmed, are potentially present in facilities or areas of a facility built prior to 1990. Prior to any renovation or demolition activity which would disturb such applications, destructive sampling should be carried out to ascertain their absence, or if present, they should be analyzed for asbestos content.


floor leveling compound	HVAC Duct mastic
packing and gasketing material (valves)	fire doors
window putty	boiler/tank insulation (internal)
heat shield gasket	chimney liner (internal)
mortar (brick or other)	adhesives (eg. under flooring)
electrical insulation (wire insulation, arc insulating pads)	roof tar & tar paper



## **APPENDIX B**

# **ASBESTOS LOCATION DRAWINGS**

FIELD ELEMENTARY



**PEAK ENVIRONMENTAL LTD.**


951 Pinewood Place  
West Kelowna, BC V1Z 3G7  
1-877-518-PEAK (7325)  
[info@peakenvironmental.ca](mailto:info@peakenvironmental.ca)

**Project No.: 1640**

Title:

**ASBESTOS  
CONTAINING  
BUILDING  
MATERIAL  
LOCATIONS**

Owner:



**SCHOOL  
DISTRICT NO 6  
(ROCKY MOUNTAIN)**

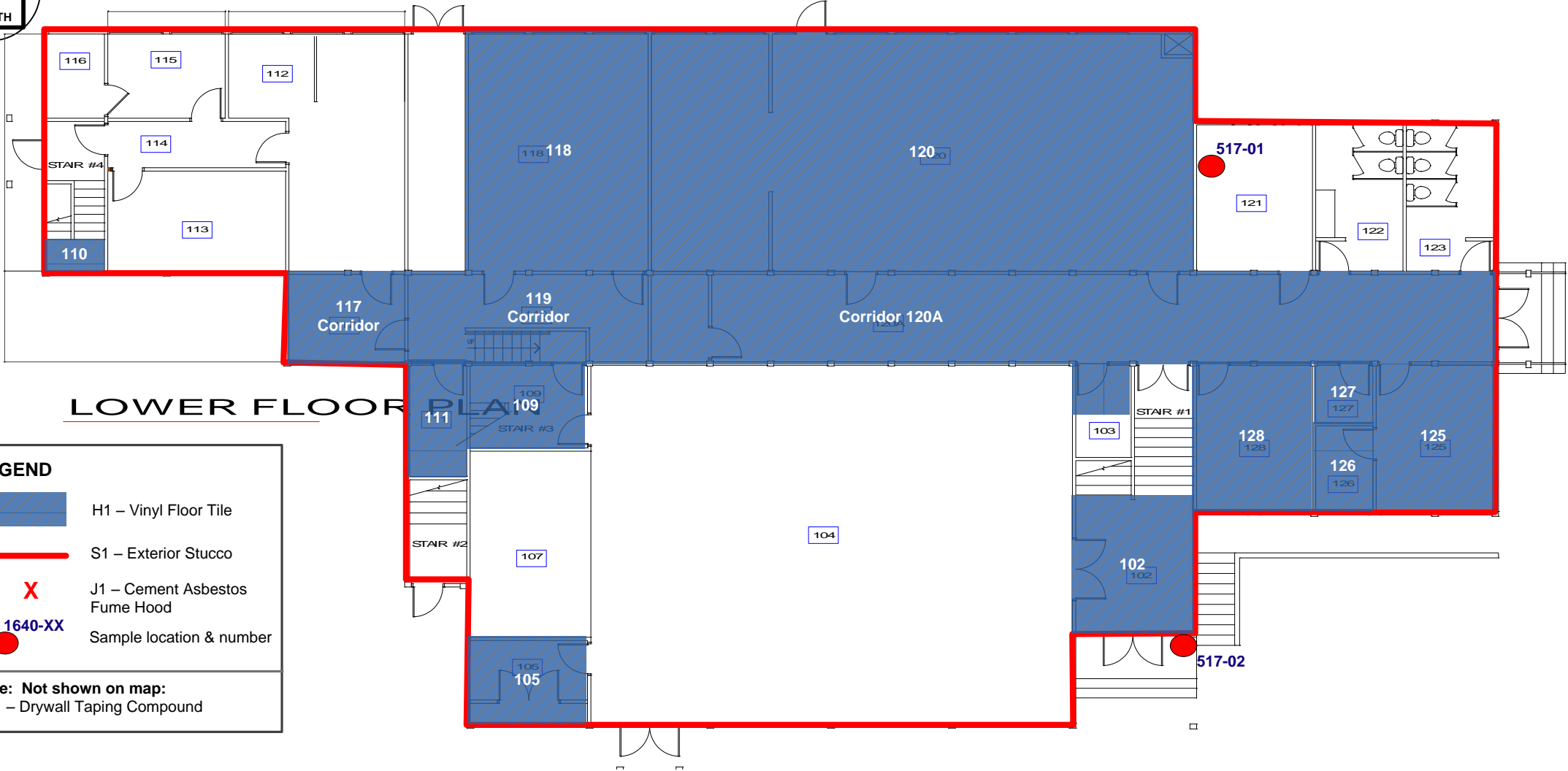
**OPERATIONS**  
620 4<sup>th</sup> Street  
Invermere, BC  
V0A 1K0

Date: MAY 2011

Revision:

Scale: NTS

Drawn by: K. Nuszdorfer




**FIELD ELEMENTARY**



951 Pinewood Place  
West Kelowna, BC V1Z 3G7  
1-877-518-PEAK (7325)  
[info@peakenvironmental.ca](mailto:info@peakenvironmental.ca)

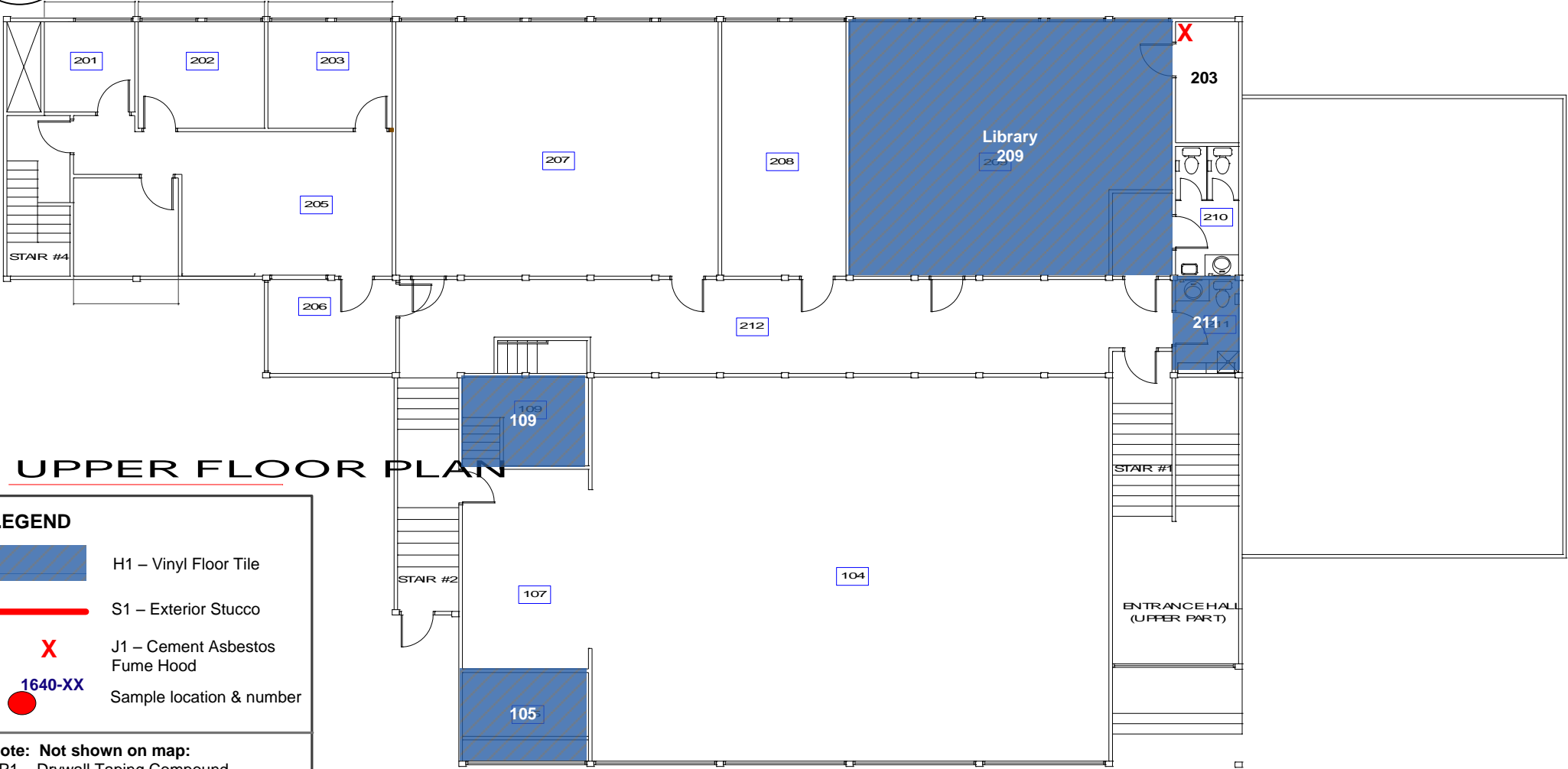
**Project No.: 1640**

**Title:**  
**ASBESTOS  
CONTAINING  
BUILDING  
MATERIAL  
LOCATIONS**





**Owner:**  
  
**SCHOOL  
DISTRICT NO 6  
(ROCKY MOUNTAIN)**

**OPERATIONS**  
620 4<sup>th</sup> Street  
Invermere, BC  
V0A 1K0

**Date:** MAY 2011  
**Revision:**  
**Scale:** NTS  
**Drawn by:** K. Nuszdorfer



**LEGEND**

-  H1 – Vinyl Floor Tile
-  S1 – Exterior Stucco
-  J1 – Cement Asbestos Fume Hood
-  1640-XX Sample location & number

**Note: Not shown on map:**  
- P1 – Drywall Taping Compound

## **APPENDIX C**

# **ANALYTICAL BULK SAMPLE RESULTS**

## Asbestos Bulk Sample Screen Results

**Project**                **6288**

**Client Name:**        **Peak Earth Environmental - Misc. Bulks 2006**

**NO.   DATE            SAMPLE INFORMATION**

NO.	DATE	SAMPLE INFORMATION				MATERIAL TYPE	ASBESTOS PRESENT*
33	03-Mar-2006	Proj # 517-01	S/D # 6	Field Elementary	Furnace Room	P1 - Drywall Filler	Yes Chrysotile (1-10%)
34	03-Mar-2006	Proj # 517-02	S/D # 6	Field Elementary	Exterior at Main Entrance	S1 - Exterior Stucco	No Actinolite (1-10%)

Total Number of samples: 2

\* No = None Detected or <1% Asbestos present in the

Report printed on 08-Mar-2006  
Page 2 of 2

**Pacific Environmental Consulting & Occupational Hygiene Services**

**APPENDIX D**  
**PRIORITIZED ASBESTOS ABATEMENT SCHEDULE**  
**AND ABATEMENT BUDGET ESTIMATES (2011)**

ASBESTOS CONTAINING MATERIAL LOCATIONS  
AND PRIORITIZED ABATEMENT COST ESTIMATES

12/17/2011

BUILDING AND FUNCTIONAL AREA		APPLICATION							ABATEMENT		REAPPLICATION		TOTAL	REMOVAL PRIORITY	FOOT NOTE	
ROOM #	ROOM DESCRIPTION	CODE	DESCRIPTION	VIS	CONDITION	ACCESS	FRIABILITY	QUANTITY	UNIT	RATE	COST	RATE	COST			COST
FIELD ELEMENTARY SCHOOL																
102	Entry	H1	Floor Tile		Good	Mod	Low	170	SF	\$ 3.00	\$ 510.00	\$ 7.00	\$ 1,190.00	\$ 1,700.00	3	
103	Electrical	H1	Floor Tile		Good	Low	Low	50	SF	\$ 3.00	\$ 150.00	\$ 7.00	\$ 350.00	\$ 500.00	3	
105	Kitchen	H1	Floor Tile		Good	Mod	Low	95	SF	\$ 3.00	\$ 285.00	\$ 7.00	\$ 665.00	\$ 950.00	3	
109	Gym Equipment Room	H1	Floor Tile		Good	High	Low	95	SF	\$ 3.00	\$ 285.00	\$ 7.00	\$ 665.00	\$ 950.00	3	
110	Stairwell	H1	Floor Tile		Good	Mod	Low	20	SF	\$ 3.00	\$ 60.00	\$ 7.00	\$ 140.00	\$ 200.00	3	
111	Custodial	H1	Floor Tile		Good	Mod	Low	60	SF	\$ 3.00	\$ 180.00	\$ 7.00	\$ 420.00	\$ 600.00	3	
117	Corridor	H1	Floor Tile		Good	Mod	Low	100	SF	\$ 3.00	\$ 300.00	\$ 7.00	\$ 700.00	\$ 1,000.00	3	
118	Classroom	H1	Floor Tile		Good	Mod	Low	415	SF	\$ 3.00	\$ 1,245.00	\$ 7.00	\$ 2,905.00	\$ 4,150.00	3	
119	Corridor	H1	Floor Tile		Good	Mod	Low	165	SF	\$ 3.00	\$ 495.00	\$ 7.00	\$ 1,155.00	\$ 1,650.00	3	
120	Classroom	H1	Floor Tile		Good	Mod	Low	1265	SF	\$ 3.00	\$ 3,795.00	\$ 7.00	\$ 8,855.00	\$ 12,650.00	3	
120A	Corridor	H1	Floor Tile		Good	Mod	Low	660	SF	\$ 3.00	\$ 1,980.00	\$ 7.00	\$ 4,620.00	\$ 6,600.00	3	
125	Principals Office	H1	Floor Tile		Good	Mod	Low	175	SF	\$ 3.00	\$ 525.00	\$ 7.00	\$ 1,225.00	\$ 1,750.00	3	
126	Staff W/C	H1	Floor Tile		Good	Mod	Low	50	SF	\$ 3.00	\$ 150.00	\$ 7.00	\$ 350.00	\$ 500.00	3	
127	Copy Room	H1	Floor Tile		Good	Mod	Low	30	SF	\$ 3.00	\$ 90.00	\$ 7.00	\$ 210.00	\$ 300.00	3	
128	Staff room	H1	Floor Tile		Good	Mod	Low	170	SF	\$ 3.00	\$ 510.00	\$ 7.00	\$ 1,190.00	\$ 1,700.00	3	
203	Storage	J1	Asbestos Board		Good	High	Low	1	Unit	\$ 200.00	\$ 200.00	\$ 150.00	\$ 150.00	\$ 350.00	3	
209	Library	H1	Floor Tile		Good	Mod	Low	500	SF	\$ 3.00	\$ 1,500.00	\$ 7.00	\$ 3,500.00	\$ 5,000.00	3	
211	Storage	H1	Floor Tile		Good	High	Low	75	SF	\$ 3.00	\$ 225.00	\$ 7.00	\$ 525.00	\$ 750.00	3	
	Throughout	P1	Drywall Mud		Good	Mod	Mod		SF	\$ 2.50	\$ -	\$ 6.00	\$ -	\$ -	3	*1
	Exterior Stucco	S1	Stucco		Good	High	Mod		SF	\$ 4.00	\$ -	\$ -	\$ -	\$ -	2	*1

**IMMEDIATE ABATEMENT AND RE-APPLICATION COSTS** \$ -

**PRIORITY 1 RECOMMENDED ABATEMENT AND RE-APPLICATION COSTS** \$ -

**PRIORITY 2 RECOMMENDED ABATEMENT AND RE-APPLICATION COSTS** \$ -

**PRIORITY 3 RECOMMENDED ABATEMENT AND RE-APPLICATION COSTS** \$ 28,300.00

**TOTAL ABATEMENT AND RE-APPLICATION COSTS FOR THIS FACILITY**  
(excluding cement piping, stucco, drywall and suspect vermiculite) \$ 41,300.00

FOOT NOTES

\*1 Removal only prior to renovation or maintenance activities which could impact this asbestos application is recommended.

ASBESTOS CONTAINING MATERIAL LOCATIONS  
AND PRIORITIZED ABATEMENT COST ESTIMATES

12/17/2011

BUILDING AND FUNCTIONAL AREA		APPLICATION							ABATEMENT		REAPPLICATION		TOTAL	REMOVAL PRIORITY	FOOT NOTE
ROOM #	ROOM DESCRIPTION	CODE	DESCRIPTION	VIS	CONDITION	ACCESS	FRIABILITY	QUANTITY	UNIT	RATE	COST	RATE	COST	COST	

FIELD ELEMENTARY SCHOOL

GENERAL NOTES:

- Abatement and re-application costs are based on individual applications. Prices will vary depending upon timing and scope of work. It is recommended that revised budget numbers be prepared once an abatement scope of work is ascertained.
- Functional area numbers are representative of the survey drawings provided with this report and may not indicate actual room numbers. □
- Only known and visible asbestos materials are listed. There is a distinct possibility that asbestos materials may be present in wall, ceiling and floor void spaces not identified in this report. Any materials located in void spaces should be sampled for asbestos content prior to disturbance.
- This is an occupied building assessment for asbestos containing materials. No sampling of building membrane materials was conducted where such sampling could breach the water tightness of the building. Additionally, applications routinely sampled prior to building demolition were not assessed during this inspection; concealed flooring applications beneath flooring or sub-flooring covering materials where coring would be required to identify these concealed materials, were not sampled. A pre-demolition assessment should be performed prior to building demolition.

<b>FRIABILITY</b> HIGH (easily crumbled by hand) MOD (not easily crumbled by hand) LOW (tool or implement required to disturb)	<b>CONDITION</b> GOOD (no visible signs of disturbance) FAIR (visible signs of disturbance, no debris noted on ground) POOR (delamination/deterioration evident/imminent, may have debris on ground)	<b>VIS (VISIBILITY)</b> All applications Visible unless stated otherwise C - Concealed E - Encased
<b>ACCESSIBILITY</b> LOW (controlled, infrequent access; out of hand reach) MOD (controlled access or out of hand reach) HIGH (uncontrolled access and within hand reach)	<b>REMOVAL PRIORITY</b> <b>IMM</b> Immediate removal recommended. There is a distinct possibility of asbestos fibre release 1 Remove within one year due to this application's condition, location or the surrounding area's use; damage is probable. 2 Removal in conjunction with proposed building renovations or maintenance is recommended 3 Removal prior to renovation or demolition activities is recommended	

SURVEYED MATERIALS DESCRIPTIONS AND SAMPLE NUMBERS				
ID CODE AND VISUAL DESCRIPTION			SAMPLE No.	ASBESTOS CONTENT
H1	Vinyl Floor Tile	9X9" - Classroom 100	Not Sampled	Known Asbestos Application
J1	Cement Asbestos Board	Fume Hood - Classroom 203	Not Sampled	Known Asbestos Application
P1	Drywall Taping Compound	Furnace Room	517-01	Chrysotile 1-10%
S1	Exterior Wall Stucco	Fleck stucco on building exterior	517-02	Actinolite 1-10%



## CONTRACTOR SIGN-OFF SHEET

By signing below, you acknowledge that you have been informed as to the location of all known and suspected asbestos applications located within the facilities on this site. You the contractor will make every effort to direct your work duties so as to NOT disturb known asbestos or suspect asbestos applications. If through your work asbestos applications are to be disturbed or have been inadvertently disturbed, it is your responsibility to inform the maintenance staff who will then direct the clean-up or the removal of asbestos applications in way of your proposed renovation work.

**COMPANY NAME**

**SIGNATURE**

DATE \_\_\_\_\_

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.