

**REPORT  
TO  
THE HALTON DISTRICT SCHOOL BOARD**

**SURVEY AND ASSESSMENT OF  
ASBESTOS-CONTAINING MATERIALS  
PAUL A. FISHER PUBLIC SCHOOL  
BURLINGTON, ONTARIO**

**Prepared by:**

**DECOMMISSIONING CONSULTING SERVICES**

121 Granton Drive, Unit 11  
Richmond Hill, Ontario L4B 3N4  
CANADA

Tel: (905) 882-5984  
Fax: (905) 882-8962  
E-Mail: [engineers@dcsltd.ca](mailto:engineers@dcsltd.ca)  
Web Page: [www.dcsltd.ca](http://www.dcsltd.ca)

Revised August 2013

701931-000





121 Granton Drive, Unit 11  
Richmond Hill, Ontario  
Canada L4B 3N4

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701931-000

30 August 2013

Halton District School Board  
J. W. Singleton Education Centre  
2050 Guelph Line, P.O. Box 2005  
Burlington, Ontario  
L7R 3Z2

Attention: Mr. Terry De Medeiros  
Regional Supervisor, Facilities Maintenance

Re: **Revised Survey of Asbestos-containing Materials**  
**Paul A. Fisher Public School**  
**Burlington, Ontario**

Dear Mr. De Medeiros:

We are pleased to submit our revised report on the survey of asbestos-containing materials. This report has been updated to include information regarding the friability of asbestos-containing materials on the floor plan(s).

We trust that the enclosed is suitable for your current purposes. Please call if you have any questions.

Yours very truly,

**DECOMMISSIONING CONSULTING SERVICES**

A handwritten signature in black ink, appearing to read 'Rein Andre', is written over a light blue horizontal line.

**Rein Andre, B.A.**  
Manager, Hazardous Materials Group

Enc.

## EXECUTIVE SUMMARY

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Site inspections were carried out by DCS staff in November 1999 to determine the locations and assess the condition of friable materials and select non-friable materials at Paul A. Fisher Public School. Representative locations, including spaces above accessible suspended ceilings, were inspected throughout the facility, in a systematic, room-by-room manner.

Visual inspections and laboratory analyses of representative samples of suspect materials confirm that asbestos is present in the following applications:

- thermal insulation on cold water meter and pipe fittings in the Mechanical Room (Area 2); and
- thermal insulation suspected to be on rain drain piping in Areas 25, 26 and 27 (inaccessible due to height).

In addition, non-friable vinyl flooring and cement products suspected of containing asbestos are found in various locations throughout the building.

All thermal insulation, with the exception of glass fibre, should be assumed to contain asbestos unless a bulk sample analysis indicates otherwise.

The asbestos applications are generally in good condition. Items requiring corrective action were identified, communicated to the Board, and have been rectified.

No acoustic ceiling tile (non-friable) applications were found to contain asbestos.

Board staff and outside contractors who may work in close proximity to the friable asbestos-containing materials and who may disturb the material, must be advised of its presence. Inasmuch as asbestos is classified as a “designated substance” in Ontario, information on the presence of asbestos-containing materials is to be provided to prospective constructors on a project to be carried out in this building as part of the tendering information.

This report should be updated following any significant renovations or modifications to the facility.

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## 1.0 INTRODUCTION

Decommissioning Consulting Services Limited (DCS) was retained by The Halton District School Board to conduct a survey of the locations of friable asbestos-containing materials and select non-friable materials at Paul A. Fisher Public School, Burlington, Ontario and assess its condition. This information should be provided by the Board to staff and outside contractors who may disturb the materials, and to building occupants who are situated adjacent to the materials.

Asbestos has been widely used in buildings, both in friable applications (materials which can be easily crumbled such as pipe and tank insulation, sprayed-on fireproofing and acoustic and texture coat applications) and in non-friable manufactured products such as floor tile, fire-rated ceiling tile, gaskets, cement board, cement pipe, drywall joint compound and so on. Plaster applications (walls, ceilings, bulkheads, etc.) may also contain asbestos. The use of asbestos in friable applications was curtailed around the mid-1970s. Most buildings constructed prior to about 1975 contain some form of friable construction material with an asbestos content. The use of asbestos in non-friable products has not been banned in Ontario to date and is still being used in some new construction.

In the event of renovations, modifications or demolition, it is possible that friable asbestos-containing materials (such as insulation on piping and sprayed fireproofing in chases, behind walls and above suspended plaster ceilings) may be encountered in locations that are presently inaccessible. Confirmatory testing of any such materials could be undertaken as the need arises or the materials can be assumed to contain asbestos based on findings in adjacent areas.

Information presented in this report is to be provided to:

- i) any Board employees who may work in close proximity to, and thereby potentially disturb any asbestos-containing materials;
- ii) any prospective contractors bidding on, or undertaking any work with the potential to disturb asbestos-containing material; and
- iii) any tenants or lessees of the school facilities, at or adjacent to, the location of the asbestos-containing material.

## **2.0 ASSESSMENT**

During the survey, the technician assesses the condition of all friable materials. Assessment involves the evaluation of a number of factors, including:

- asbestos content;
- physical damage;
- water damage;
- accessibility;
- adjacent activity, vibrations;
- air distribution system (air plenum); and
- friability.

Recommendations for appropriate corrective measures are based on findings of the assessment and consist primarily of either repair or removal (and replacement) of the asbestos-containing materials. Additional items which can be undertaken upon completion of the assessment are prioritization of recommended corrective actions and provision of budget estimates of costs and duration for the remedial work.

Refer to Appendix D for a description of assessment methodology.

## **2.1 RESULTS**

A summary of the recommended corrective actions at Paul A. Fisher Public School, including drawings showing the locations of the recommended corrective actions, were forwarded to the Board upon completion of the survey and assessment. These deficiencies have since been rectified by qualified asbestos remediation contractors under the Board's direction.

The Board has an Asbestos Management Program in place, applicable to all facilities known to contain friable asbestos-containing material, with provision for:

- i) periodic reassessment of asbestos applications;
- ii) notification of all parties who may potentially disturb asbestos-containing materials of its location (maintenance staff, custodians, outside contractors, etc.);

- iii) use of prescribed procedures during any work which could involve disturbance of asbestos materials; and
- iv) training of staff who could be involved in asbestos-related work (pipe repairs, for example).



## **3.0 SURVEY**

### **3.1 METHODOLOGY**

Site inspections were carried out by DCS staff in November 1999 to determine the locations of friable materials and acoustic tiles in the building. All accessible areas, including spaces above accessible suspended ceilings, were inspected throughout the facility.

Bulk samples of material suspected of containing asbestos were collected by DCS staff during the course of the site inspection and were forwarded to EMSL Analytical Inc. (EMSL) and/or Chatfield Technical Consulting Limited (Chatfield) for analysis. Both labs hold a current Certificate of Accreditation for Bulk Asbestos Fibre Analysis under the Voluntary Accreditation Program (NVLAP). Determination of the locations of asbestos-containing materials were made based on results of bulk sample analysis, and on visual observations and physical characteristics of the applications at each inspection location.

### **3.2 RESULTS**

On the basis of the survey work carried out, we report that asbestos is present in Paul A. Fisher Public School in the following applications:

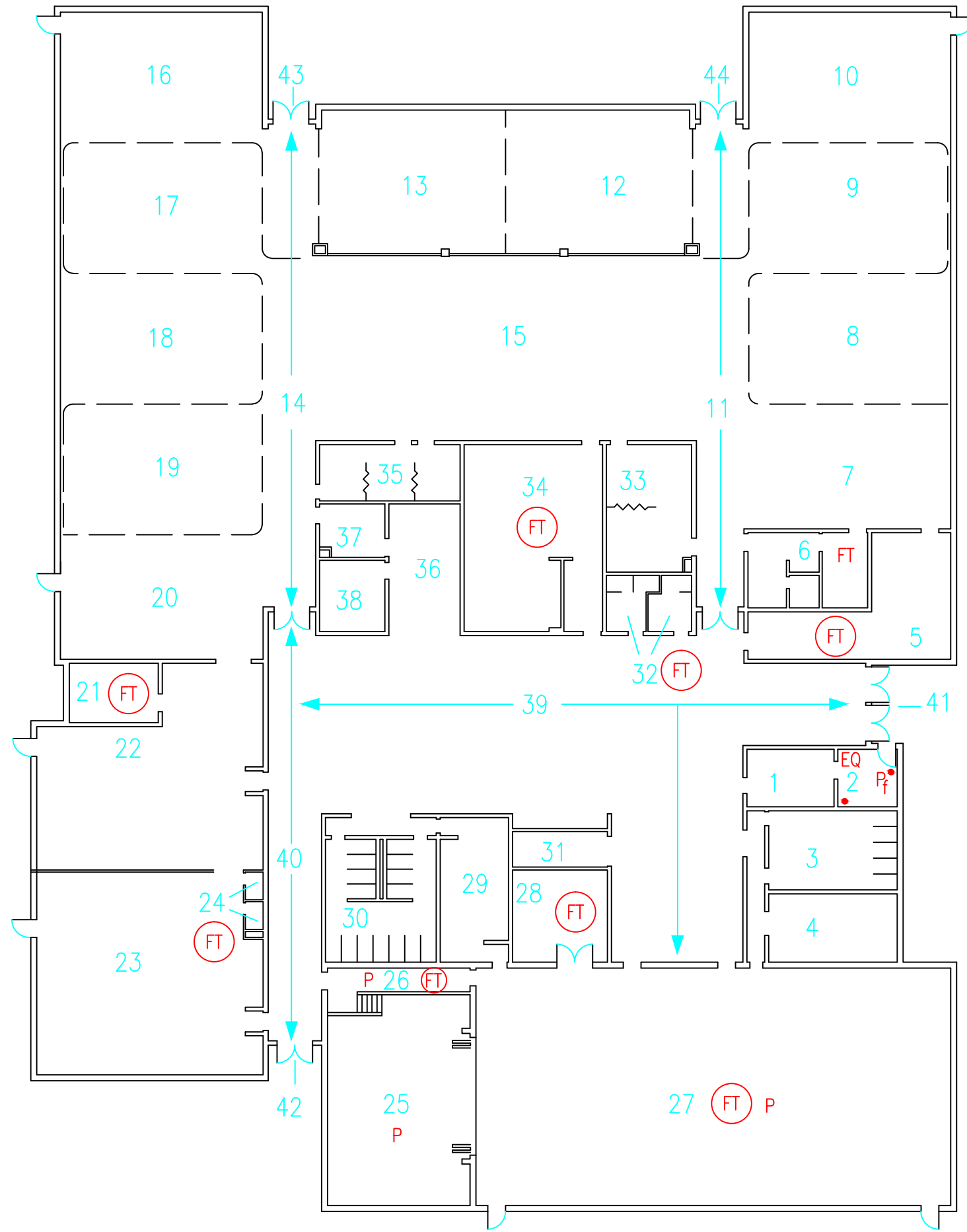
- thermal insulation on cold water meter and pipe fittings in the Mechanical Room (Area 2); and
- thermal insulation suspected to be on rain drain piping in Areas 25, 26 and 27 (inaccessible due to height).

Locations of friable asbestos-containing materials and vinyl flooring suspected of containing asbestos are identified on the attached floor plan(s). Locations of non-friable asbestos cement products are identified in the room-by-room summary sheets.

A summary of the results of laboratory analysis of bulk samples is presented in Table 3.1. The laboratory reports are provided in Appendix C. An abbreviated summary of the locations of friable asbestos-containing materials is presented in Appendix B.

# **APPENDIX A**

## **FLOOR PLANS**



**LEGEND:**

- 1 FUNCTIONAL SPACE
- THROUGHOUT FUNCTIONAL SPACE
- \* ABOVE CEILING ASSEMBLY
- P ASBESTOS ON PIPING (FRIABLE)
- P<sub>f</sub> ASBESTOS ON PIPE FITTINGS ONLY (FRIABLE)
- EQ ASBESTOS ON MECHANICAL EQUIPMENT (FRIABLE)
- FT SUSPECT ASBESTOS FLOOR TILE (NON-FRIABLE)

**NOTES:**

1.

**REVISIONS:**

No.	Date:	By:	Revisions

**REFERENCE:**

1.



HALTON DISTRICT SCHOOL BOARD  
 PAUL A. FISHER PUBLIC SCHOOL  
 LOCATION OF ASBESTOS CONTAINING MATERIALS  
 FIRST FLOOR

Drawn By: J.B.S.	Approved By: R.A.	Project No: 701931-000
Date: JULY 2013	Scale: N.T.S	Drawing No: 701931-000-1

## **APPENDIX B**

### **BUILDING ASSESSMENT SURVEY FOR ASBESTOS-CONTAINING MATERIALS**

SUMMARY OF BUILDING ASSESSMENT

**BUILDING NAME:** Paul A. Fisher Public School

**DATE:** Nov 8/99 **CONSULTANT:** DCS Ltd

Level	Area	Usage	Notes	Condition	Risk Rating
1	2	Mechanical	Asbestos-containing insulation on pipe fittings and cold water meter below ceiling	Good	3(Low)
1	25	Music Rm	Suspect asbestos-containing insulation on rain water leader straights and fittings at ceiling height (inaccessible due to height)	Good	3(Low)
1	26	Hallway	Suspect asbestos-containing insulation on rain water leader straights at ceiling height (inaccessible due to height)	Good	3(Low)
1	27	Gym	Suspect asbestos-containing insulation on rain water leader straights and fittings at ceiling height (inaccessible due to height)	Good	3(Low)
1	41	Entrance	Asbestos cement board soffit (15" x 12')		
1	42	Entrance	Asbestos cement board soffit (15" x 7')		
1	43	Entrance	Asbestos cement board soffit (16" x 7')		
1	44	Entrance	Asbestos cement board soffit (16" x 7')		
		Vinyl tiles	Refer to Floor Plan for locations of suspect vinyl flooring		
		Plaster/Drywall	Review prior to renovations		

**BUILDING ASSESSMENT SURVEY FOR ASBESTOS CONTAINING MATERIALS**

**BUILDING NAME:** Paul A. Fisher Public School

Functional space identification:	Level 1	Area 2	Usage Mechanical	Physical size (ft)	width 10	length 10	height 9	floor area 100
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Date: Nov 8/99 Consultant: DCS Ltd Consultant Job #: 47022 Inspector: G. Rogers

Component Of the Room Assembly	Asbestos Content	Location Within Space	Description c/w Quantity (ft, sq ft, qty)	Friable or Non-Friable	Condition (see Fin #1)	Risk Rating (see Fin #2)
Floor Concrete		All				
Walls Masonry		All				
Ceiling T-bar	None Detected	All				
Mechanical (Piping- specify Dia.) Small (<4 in) fittings only Medium (4-6 in) fittings only	25 to 50%C 50 to 75%C	Below ceiling	10 to 20 pipe fittings 5 to 10 pipe fittings	friable	Good	3(Low)
Fireproofing (Sprayed)						
Other Cold water meter insulation	25 to 50%C	Below ceiling		friable	Good	3(Low)

Notes and Comments:  
Asbestos-containing insulation on pipe fittings and cold water meter below ceiling

Good 3(Low)

Footnote #1- Good = intact Fair = minor damage Poor = significant damage.  
Footnote #2-High Potential = (1) Moderate Potential = (2) Low Potential = (3) No Risk, Review Prior to Renovation = (4)

**BUILDING ASSESSMENT SURVEY FOR ASBESTOS CONTAINING MATERIALS**

**BUILDING NAME:** Paul A. Fisher Public School

	Level	Area	Usage	width	length	height	floor area
Functional space identification:	1	25	Music Rm	Physical size (ft)	25	35	875

Date: Nov 8/99 Consultant: DCS Ltd Consultant Job #: 47022 Inspector: G. Rogers

Component Of the Room Assembly	Asbestos Content	Location Within Space	Description chw Quantity (ft, sq ft, qty)	Friable or Non-Friable	Condition (see Ptn #1)	Risk Rating (see Ptn #2)
Floor Carpet		All				
Walls Masonry		All				
Ceiling Open Ceiling		All				
Mechanical (Piping- specify Dia.) Large (>8 In) straights & fittings	Suspect ACM	Below ceiling	<5 pipe fittings 10 to 50 ft pipe straights	Friable	Good	3(Low)
Fireproofing (Sprayed)						
Other						

**Notes and Comments:**  
Suspect asbestos-containing insulation on rain water leader straights and fittings at ceiling height (Inaccessible due to height)

Good      3(Low)

Footnote #1- Good = Intact Fair = minor damage Poor = significant damage.  
Footnote #2-High Potential = (1) Moderate Potential = (2) Low Potential = (3) No Risk, Review Prior to Renovation = (4)

**BUILDING ASSESSMENT SURVEY FOR ASBESTOS CONTAINING MATERIALS**

**BUILDING NAME:** Paul A. Fisher Public School

Functional space Identification:	Level	Area	Usage	Physical size (ft)	width	length	height	floor area
	1	41	Entrance					

Date: Nov 8/99 Consultant: DCS Ltd Consultant Job #: 47022 Inspector: G. Rogers

Component Of the Room Assembly	Asbestos Content	Location Within Space	Description c/w Quantity (ft, sq ft, qty)	Friable or Non-Friable	Condition (see Flt #1)	Risk Rating (see Flt #2)
Floor						
Walls						
Ceiling						
Mechanical (Piping- specify Dia.)						
Fireproofing (Sprayed)						
Other						

Notes and Comments:  
Asbestos cement board soffit (15' x 12')

Footnote #1- Good = intact Fair = minor damage Poor = significant damage  
Footnote #2- High Potential = (1) Moderate Potential = (2) Low Potential = (3) No Risk, Review Prior to Renovation = (4)



**BUILDING ASSESSMENT SURVEY FOR ASBESTOS CONTAINING MATERIALS**

**BUILDING NAME:**

**Paul A. Fisher Public School**

Functional space identification:	Level 1	Area 25	Usage Hallway	Physical size (ft)	width 5	length 25	height 20	floor area 125
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Date: Nov 8/99    Consultant: DCS Ltd    Consultant Job #: 47022    Inspector: G. Rogers

Component Of the Room Assembly	Asbestos Content	Location Within Space	Description c/w Quantity (ft, sq ft, qty)	Friable or Non-Friable	Condition (see Pin #1)	Risk Rating (see Pin #2)
Floor    V.Tile	Suspect ACM	All	100 to 500 sq ft	non friable	Good	3(Low)
Walls    Masonry		All				
Ceiling    Open Ceiling		All				
Mechanical (Piping- specify Dia.) Large straights only	Suspect ACM	Below ceiling	<10 ft pipe straights	friable	Good	3(Low)
Fireproofing (Sprayed)						
Other						

**Notes and Comments:**  
Suspect asbestos-containing insulation on rain water leader straights at ceiling height (inaccessible due to height)

Good    3(Low)

Footnote #1- Good = intact    Fair = minor damage    Poor = significant damage.  
Footnote #2-High Potential = (1)    Moderate Potential = (2)    Low Potential = (3)    No Risk, Review Prior to Renovation = (4)

**BUILDING ASSESSMENT SURVEY FOR ASBESTOS CONTAINING MATERIALS**

**BUILDING NAME:** Paul A. Fisher Public School

Functional space identification:	Level 1	Area 27	Usage Gym	Physical size (ft)	width 40	length 80	height 20	floor area 3200
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Date: Nov 8/99 Consultant: DCS Ltd Consultant Job #: 47022 Inspector: G. Rogers

Component Of the Room Assembly	Asbestos Content	Location Within Space	Description c/w Quantity (ft, sq ft, qty)	Friable or Non-Friable	Condition (see Ftn #1)	Risk Rating (see Ftn #2)
Floor V.Tile	Suspect ACM	All	>1000 sq ft	non friable	Good	3(Low)
Walls Masonry		All				
Ceiling Open Ceiling		All				
Mechanical (Piping- specify Dia.) Large (>8 in) straights & fittings	Suspect ACM	Below ceiling	<5 pipe fittings 10 to 50 ft pipe straights	friable	Good	3(Low)
Fireproofing (Sprayed)						
Other						

**Notes and Comments:**  
Suspect asbestos-containing insulation on rain water leader straights and fittings at ceiling height (inaccessible due to height)

Good      3(Low)

Footnote #1- Good = Intact Fair = minor damage Poor = significant damage.  
Footnote #2-High Potential = (1) Moderate Potential = (2) Low Potential = (3) No Risk, Review Prior to Renovation = (4)

**BUILDING ASSESSMENT SURVEY FOR ASBESTOS CONTAINING MATERIALS**

**BUILDING NAME:**

**Paul A. Fisher Public School**

	Level	Area	Usage	width	length	height	floor area
Functional space identification:	1	42	Entrance	Physical size (ft)			

Date: Nov 8/99      Consultant: DCS Ltd      Consultant Job #: 47022      Inspector: G. Rogers

Component Of the Room Assembly	Asbestos Content	Location Within Space	Description chr Quantity (ft, sq ft, qty)	Friable or Non-Friable	Condition (see Ptn #1)	Risk Rating (see Ptn #2)
Floor						
Walls						
Ceiling						
Mechanical (Piping- specify Dia.)						
Fireproofing (Sprayed)						
Other						

Notes and Comments:  
Asbestos cement board soffit (16' x 7')

Footnote #1- Good = intact    Fair = minor damage    Poor = significant damage  
Footnote #2-High Potential = (1)    Moderate Potential = (2)    Low Potential = (3)    No Risk, Review Prior to Renovation = (4)

**BUILDING ASSESSMENT SURVEY FOR ASBESTOS CONTAINING MATERIALS**

**BUILDING NAME:**

**Paul A. Fisher Public School**

Functional space identification:	Level	Area	Usage	Physical size (ft)	width	length	height	floor area
	1	43	Entrance					

Date: Nov 8/99    Consultant: DCS Ltd    Consultant Job #: 47022    Inspector:

Component Of the Room Assembly	Asbestos Content	Location Within Space	Description c/w Quantity (ft, sq ft, qty)	Friable or Non-Friable	Condition (see Ftn #1)	Risk Rating (see Ftn #2)
Floor						
Walls						
Ceiling						
Mechanical (Piping- specify Dia.)						
Fireproofing (Sprayed)						
Other						

Notes and Comments:  
Asbestos cement board soffit (15" x 7')

Footnote #1- Good = intact    Fair = minor damage    Poor = significant damage.  
Footnote #2-High Potential = (1)    Moderate Potential = (2)    Low Potential = (3)    No Risk, Review Prior to Renovation = (4)

**BUILDING ASSESSMENT SURVEY FOR ASBESTOS CONTAINING MATERIALS**

**BUILDING NAME:**

**Paul A. Fisher Public School**

Functional space identification:	Level 1	Area 44	Usage Entrance	Physical size (ft)	width	length	height	floor area
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Date: Nov 8/99      Consultant: DCS Ltd      Consultant Job #: 47022      Inspector: G. Rogers

Component Of the Room Assembly	Asbestos Content	Location Within Space	Description c/w Quantity (ft, sq ft, qty)	Friable or Non-Friable	Condition (see Flt #1)	Risk Rating (see Flt #2)
Floor						
Walls						
Ceiling						
Mechanical (Piping- specify Dia.)						
Fireproofing (Sprayed)						
Other						

Notes and Comments:  
Asbestos cement board soffit (16" x 7")

Footnote #1- Good = Intact    Fair = minor damage    Poor = significant damage.  
Footnote #2- High Potential = (1)    Moderate Potential = (2)    Low Potential = (3)    No Risk, Review Prior to Renovation = (4)

**BUILDING ASSESSMENT SURVEY FOR ASBESTOS CONTAINING MATERIALS**

**BUILDING NAME:** Paul A. Fisher Public School

Functional space identification:	Level	Area	Usage	Physical size (ft)	width	length	height	floor area
			Vinyl Tiles					

Date: Nov 6/99 Consultant: DCS Ltd Consultant Job #: 47022 Inspector: G. Rogers

Component Of the Room Assembly	Asbestos Content	Location Within Space	Description of Quantity (ft, sq ft, qty)	Friable or Non-Friable	Condition (see Ftn #1)	Risk Rating (see Ftn #2)
Floor						
Walls						
Ceiling						
Mechanical (Piping- specify Dia.)						
Fireproofing (Sprayed)						
Other						

Notes and Comments:  
Refer to Floor Plan for locations of suspect vinyl flooring

Footnote #1- Good = intact Fair = minor damage Poor = significant damage  
Footnote #2-High Potential = (1) Moderate Potential = (2) Low Potential = (3) No Risk, Review Prior to Renovation = (4)

**BUILDING ASSESSMENT SURVEY FOR ASBESTOS CONTAINING MATERIALS**

**BUILDING NAME:** Paul A. Fisher Public School

Functional space identification:	Level	Area	Usage	Physical size (ft)	width	length	height	floor area
			Plaster/Drywall					

Date: Nov 8/99 Consultant: DCS Ltd Consultant Job #: 47022 Inspector: G. Rogers

Component Of the Room Assembly	Asbestos Content	Location Within Space	Description c/w Quantity (ft, sq ft, qty)	Friable or Non-Friable	Condition (see Fltn #1)	Risk Rating (see Fltn #2)
Floor						
Walls						
Ceiling						
Mechanical (Piping - specify Dia.)						
Fireproofing (Sprayed)						
Other						

Notes and Comments:  
Review prior to renovations

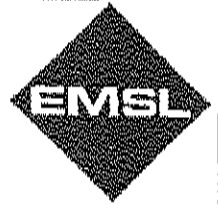
Footnote #1 - Good = intact Fair = minor damage Poor = significant damage.  
Footnote #2 - High Potential = (1) Moderate Potential = (2) Low Potential = (3) No Risk, Review Prior to Renovation = (4)

# **APPENDIX C**

## **LABORATORY REPORTS**

**EMSL ANALYTICAL INC. AND  
CHATFIELD TECHNICAL CONSULTING LIMITED**





Attn.: Rein Andre

Decommissioning Consulting Services Limited

121 Granton Dr

Unit 11

Richmond Hill, ONT L4B 3N4

Friday, November 19, 1999

Ref Number: BU994272

## POLARIZED LIGHT MICROSCOPY (PLM) - POINT COUNT

Performed by EPA 600/R-93/116 Method\*

Project: 47022 / Paul Fisher P.S.

Sample	Location	Appearance	Sample Treatment	ASBESTOS		NON-ASBESTOS	
				%	Type	%	Fibrous
#1	custodian office 2x4 ft SCT	Grey Fibrous Homogeneous	Teased		None Detected	30.0% Cellulose 5.0% Min. Wool	65.0% Matrix
#2	mechanical room domestic hot water filling insulation	Grey Fibrous Homogeneous	Teased	29.0%	Chrysotile		71.0% Matrix
#3	mechanical room cold water meter insulation	Grey Fibrous Homogeneous	Teased	36.0%	Chrysotile		64.0% Matrix
#4	mechanical room cold water meter pipe	Grey Fibrous Homogeneous	Teased	67.0%	Chrysotile		33.0% Matrix
#5	gym storage 2x4 ft SCT	Grey Fibrous Homogeneous	Teased		None Detected	30.0% Cellulose 20.0% Min. Wool	50.0% Matrix

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

\* NY samples analyzed by ELAP 198.1 Method.

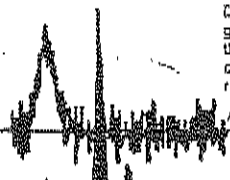
Note: Analytical Sensitivity is < 0.5% Asbestos

Rhonda Scherer  
Analyst

Approved  
Signatory

Disclaimers: PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Thus negative PLM results cannot be guaranteed. EMSL suggests that samples reported as <1% or none detected be tested with either SEM or TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Laboratory is not responsible for the accuracy of results when requested to physically separate and analyze layered samples.

Analysis performed by EMSL Buffalo (NVLAP Air and Bulk #200056, NYSDOH ELAP# 11608)



## **APPENDIX D**

### **ASSESSMENT METHODOLOGY**

## APPENDIX D

### ASSESSMENT METHODOLOGY

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An assessment of the condition of asbestos-containing building materials involves the evaluation by the technician of a number of factors including:

- 1. GENERAL CONDITION:** The condition of the asbestos-containing materials may indicate the possibility of fibres being released to the area and the potential for future fibre release. An assessment of the condition of the material depends upon a combination of the quality of the installation, adhesion of the material to the underlying substrate, cohesion of the material to itself, deterioration, vandalism and/or damage.

<b>Good:</b>	No damage
<b>Fair:</b>	Minor damage
<b>Poor:</b>	Major damage with fallen debris

- 2. WATER DAMAGE:** Water can dislodge, delaminate and disturb friable asbestos materials that are otherwise in good condition. Note that damage may not be obvious but delayed, massive failure can occur due to added water weight, delamination of application from substrate and a breaking down of material binding compounds. Also, water can carry fibres as a slurry to other areas where evaporation will leave a collection of fibres that can become re-entrained (re-suspended) in air. **Presence of water damage is noted as Yes or No.**

- 3. ACCESSIBILITY:** If the asbestos material can be reached, it is accessible and subject to accidental or intentional contact and damage. Material which is accessible is most likely to be disturbed in the future either by accident or intentionally and, therefore, this factor is one of the most important indicators of exposure potential. The proximity of the friable material to heating, ventilation, lighting and plumbing systems requiring maintenance or repair also indicates accessibility.

**Easy access:** less than nine feet high in public and high traffic areas.

**Limited access:** above nine feet high or low traffic areas.

**Restricted access:** areas secured and normally serving maintenance and custodial staff.

**No access:** behind mechanical barriers such as ceiling systems, gypsum board, bulkheads, etc., except at hatches or entrance points.

In schools, the behaviour of the student population should be considered in evaluation of accessibility. For example, students involved in sport activities may accidentally cause damage to the material on the walls and ceilings of gymnasiums. Material that is easily accessible is also subject to damage by vandalism. The presence of damage is the most obvious indicator for accessibility.

4. **ACTIVITIES/MOVEMENT (CONTACT, AIR MOVEMENT, VIBRATION):** This factor combines the effects of general causes that may result in contact or damage to friable material. These causes include air movement, building vibration from machinery or any other source, and activity levels of students or building workers. This factor is also an indication of future exposure potential. **Activity is normally noted as Low, Moderate or Heavy.**
5. **AIR PLENUM (DIRECT AIRSTREAM):** Friable asbestos-containing material within an air plenum or in an air stream, if undisturbed, has a low potential of contaminating the building's environment. However, it must be considered since contamination of large areas may result from contact or damage during maintenance, repairs or renovations. **This condition is normally noted as Yes or No.**
6. **ASBESTOS CONTENT (TYPE AND PERCENT):** While all asbestos materials present an exposure potential, those with a high percentage of asbestos can release more fibres. The regulations require that the form of asbestos must be reported individually; Chrysotile, Amosite, Crocidolite and Amphibole other than Amosite and Crocidolite (Actinolite, Anthophyllite and Tremolite), as well as the amount as a percentage; none detected, less than 1%, 1 to 5%, 5 to 25%, 25 to 50%, 50 to 75%, and more than 75%.
7. **FRIABILITY:** The term friable is applied to material that can be crumbled, pulverized, or reduced to powder in the hand. In order to evaluate the material in question, it should be touched, although a visual evaluation may be made based on knowledge of standard applications. The asbestos-containing material can vary in degree of friability:

**Very friable:** spray-applied fibrous fireproofing, damaged cementitious applications and thermal insulation.

**Moderately friable:** undamaged spray-applied cementitious fireproofing and various acoustic applications.

**Somewhat friable:** undamaged trowel-applied and preformed thermal insulation.

**Non-friable:** material that, when dry, cannot be crumbled, pulverized or powdered by hand pressure, i.e., manufactured products.

The more friable the material, the greater the potential for asbestos fibre release.

*The Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations* made under the *Occupational Health and Safety Act*, R.R.O. 1990, O.Reg. 838, as amended by O.Reg. 510/92, requires that fallen material be cleaned up and corrective measures be undertaken where material will continue to deteriorate and fall. Recommendations for appropriate corrective measures are based on evaluation of the above-defined factors and are consistent with the requirements of the Regulation. The Board may choose to undertake additional work based on past experience or Board policy.

Repair of thermal insulation usually consists of the application of canvas and lagging (encapsulant) to seal areas of damage. This option is selected where damage to a section of insulation is limited and of a minor nature (such that repair activities are not likely to cause a significant disturbance to the underlying friable material) and is not likely to recur due to its accessibility.

Repair of spray-on materials, fireproofing and acoustic, usually involves the application of encapsulant to limited areas of degraded or damaged materials to seal loose edges. Note that existing materials must have sufficient strength to support the added weight of the repair.

Removal of friable thermal insulation or spray-applied material is recommended as the corrective action in areas where: the asbestos-containing material is damaged beyond repair; repair would result in disturbing as much fibre as removal; there is insufficient strength to support a repair; repeat damage cannot be easily avoided, or planned alterations or renovations would result in major disturbance.

In addition to repair and removal, other corrective actions which may be recommended include:

- cleaning of asbestos-containing debris using a HEPA vacuum and/or wet wiping of the contaminated surface;
- sealing exposed ends of insulation with canvas and encapsulant;
- shielding sections of insulation which are highly accessible to further damage; and
- enclosure of friable asbestos applications with gypsum board or metal cladding to provide protection.

Corrective actions are prioritized as requiring either immediate (priority 1) or short-term (priority 2) attention based on hazard potential.

**PRIORITY 1:** Applications in poor general condition with easy access and subject to recurrent potential damage, including material subject to the effects of air movement, vibration and material which has fallen onto surfaces.

**PRIORITY 2:** Applications which may have minor damage with limited or restricted access or materials in good condition but with easy access.