Project #: 13916

ASBESTOS ASSESSMENT
R. Gushue Hall
Memorial University of Newfoundland
St. John's, NL

Prepared for:

Sheila Miller
Director, Department of Health and Safety
Memorial University of Newfoundland
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St. John's, NL
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Prepared by:

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August 2011

EXECUTIVE SUMMARY

ALL-TECH Environmental Services Limited conducted an Asbestos Assessment at R. Gushue Hall, located at Memorial University of Newfoundland (MUN), St. John's, NL. The objective of the assessment was to determine the presence of asbestos containing materials throughout the building. It was determined that:

- Eight (8) of the twenty-five (25) suspect asbestos samples collected contained asbestos greater than 1%. (*Newfoundland and Labrador Regulation 111/98, Asbestos Abatement Regulations, 1998 under the Occupational Health and Safety Act.)*

- Pipe fitting insulation was sampled and found to contain 40% Chrysotile asbestos.

- Tank insulation was sampled and found to contain 40% Chrysotile asbestos.

- 9" x 9" vinyl floor tiles sampled from various locations were found to contain between 3 – 8% Chrysotile asbestos.

- Transite panels were sampled and found to contain 45% Chrysotile asbestos.

- Light fixture heat shields were sampled and found to contain 25 - 35% Chrysotile asbestos.

This summary is not to be used alone. This report must be reviewed in its entirety.

Thank you,

Carla Noseworthy, C.E.T.
Environmental Consultant
ALL-TECH Environmental Services Limited

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1.0 INTRODUCTION

ALL-TECH Environmental Services Limited was contracted by Sheila Miller, Director – Department of Health and Safety, Memorial University of Newfoundland (MUN), to complete an Asbestos Assessment at R. Gushue Hall located at Memorial University of Newfoundland, St. John's, NL. The purpose of the assessment was to identify the presence of asbestos containing materials located throughout the building. The assessment was conducted in August 2011.

2.0 ASBESTOS ASSESSMENT

Asbestos is a general term which is used to describe a group of fibrous mineral silicates. The six major types of asbestos are; chrysotile (white asbestos), crocidolite (blue), amosite (brown), anthophyllite, tremolite and actinolite. Commercially, asbestos has been used widely in such applications as fireproofing, textiles, friction products, reinforcing materials (i.e. cement pipes, sheets) and insulation (both thermal and acoustic).

Asbestos materials can be found in one of two forms; friable or non-friable. Friable asbestos material refers to material that when dry, can be crumbled, pulverized or reduced to a powder by hand pressure thus releasing fibers into the air. This type of asbestos material is hazardous due to its potential to become airborne if damaged or disturbed. Friable asbestos building products used in the past were sprayed acoustic & fire protection insulations, ceiling/wall finishes, drywall joint compounds, mechanical insulations on pipes, tanks, boilers, vessels, etc. Non-friable building products used in the past were vinyl floor tiles, gaskets, transite panels, and transite shingles. Non-friable materials if handled improperly during removal or renovations, such as cutting transite panels with an electrical tool, can cause high fiber release. Also, non-friable asbestos products can become friable if damaged through years of aging (water damage, general deterioration of materials, etc.).

Asbestos containing materials (ACM) can be properly managed and left in place depending on their location, condition, and friability. Non-friable materials receive less attention than friable materials due to the fact that the asbestos fibers in the non-friable material are bound or held tightly together, reducing the chance of fibers becoming airborne. This makes the non-friable products safer and easier to manage.

The mere presence of asbestos in building materials is not necessarily a problem; however, inhaling asbestos fibers can cause associated health problems. The hazards of asbestos exposure are directly related to the degree to which fibers are released (become airborne). Intact and undisturbed asbestos do not pose a health risk.

2.1 Scope of Work

Representative suspect asbestos containing materials were sampled from wall finishes, various types of flooring, and exterior finishes located throughout the building.

The asbestos assessment involved a visual investigation of representative building structures, wall & ceiling finishes, and flooring for the presence of asbestos materials. If these materials were suspected to contain asbestos, a bulk sample was collected of the representative material.

It should be noted that asbestos containing materials such as piping straight runs & fittings may be present behind existing drywall walls, ceilings, columns, shafts, etc. Since no destructive testing was performed during this assessment, additional care should be taken during renovations/demolition to ensure that no asbestos containing materials are to be disturbed.

2.2 Methodology

A total of twenty-five (25) suspect asbestos bulk samples were collected from the building. Representative suspect asbestos bulk material samples from floors, wall and ceiling finishes, ceiling tiles, pipe fitting insulation, tank insulation, cement boards and light fixture heat shields were carefully collected and placed into labeled sealable plastic bags and transported to the EMSL Analytical Inc. in New Jersey, USA, for Polarized Light Microscopy/ Dispersion Staining (PLM/DS) analysis. The EPA test method for bulk analysis (EPA/600/R-93/116) states in paragraph 2.2.2 that *"the detection limit for visual estimation is a function of the quantity of the sample analyzed, the nature of matrix interference, sample preparation, and fiber size and distribution. Asbestos may be detected in concentrations of less than one percent by area if sufficient material is analyzed. Samples may contain fibers too small to be resolved by PLM (< 0.25 µm in diameter) so detection of those fibers by this method may not be possible."*

2.3 Applicable Standards

The province defines Asbestos material as "material containing greater than 1% asbestos by dry weight." Materials identified as ACM must be managed, handled and disposed of as per the Newfoundland and Labrador Regulation 111/98*, Asbestos Abatement Regulations, 1998* under the *Occupational Health and Safety Act* (O.C. 98-730).

Also, the Province of Newfoundland and Labrador have set standards for exposure to airborne asbestos fibres to as low as is reasonably achievable (ALARA) but in any case shall not exceed Threshold Limit Values (TLVs) as published by the American Conference of Governmental Industrial Hygienists (ACGIH) and are primarily used for the occupational exposure to employees and workers who from day to day come in contact with asbestos. ACGIH guidelines state the airborne asbestos limit as follows:

- Asbestos (all forms) 0.1 fibres per cubic centimetre (f/cc) as determined by air sampling following the NIOSH 7400 Asbestos and Other Fibres by Phase Contrast Microscopy.

The *Newfoundland Asbestos Abatement Regulations 111/98* requires that all employers, building owners and principal contractors follow this Regulation when handling or using asbestos in their workplace. This Regulation applies to every workplace covered under the Occupational Health and Safety Legislation where asbestos or materials containing asbestos, is likely to be handled, dealt with, disturbed or removed and includes every project, project owner, contractor, employer and employee engaged in or on the project. An owner/contractor to whom this Regulation applies shall take every reasonable precaution to ensure that every worker who is not an employee of the owner/contractor and who works in the workplace of the owner/contractor is protected and every such worker shall comply with the requirements of this Regulation.

2.4 Survey Findings

Laboratory analysis confirmed that eight (8) of the twenty-five (25) bulk samples collected from the building contained asbestos greater than 1%. Table 1.0 below illustrates the results of this sampling. ***See Appendix II - Laboratory Asbestos Results.***

Table 1.0
Summary of Suspect Asbestos Containing Materials Tested
R. Gushue Hall
Memorial University of Newfoundland
St. John's, NL

Sample No.	Sample Description and Location	Asbestos Results
DH-1	1' x 1' Vinyl Floor Tile, cream mix Room DH1000	None Detected
	Mastic	None Detected
DH-2	1' x 1' Vinyl Floor Tile , brown mix Room DH1000	None Detected
	Mastic	None Detected
DH-3	Vinyl Sheet Flooring, grey/beige mix with sparkles Room DH1C03	None Detected
	Mastic	None Detected
DH-4	Vinyl Sheet Flooring, pink mix Room DH1001	None Detected
	Mastic	None Detected
DH-5	Vinyl Sheet Flooring, blue mix Room DH1001A	None Detected
	Mastic	None Detected

Sample No.	Sample Description and Location	Asbestos Results
DH-6	Plaster Room DH1001A	None Detected
DH-7	1’ x 1’ Vinyl Floor Tile, olive mix Room DH1000	None Detected
	Mastic (insufficient material)	--
DH-8	1’ x 1’ Vinyl Floor Tile, white with black Room DH1012	None Detected
	Mastic	None Detected
DH-9	1’ x 1’ Ceiling Tile, fissures, Room DH1012	None Detected
DH-10	**Transite panels DH1011**	**45% Chrysotile**
DH-11	Plaster Skim Coat Room DH1006	None Detected
	Plaster Base Coat	None Detected
DH-12	Firestop Room DH1008	None Detected
DH-13	1’ x 1’ Vinyl Floor Tile, grey mix Elevator	None Detected
	Mastic	None Detected
DH-14	Plaster, Room DH2C02	None Detected
DH-15	Texture Coat Room DH2C01	None Detected
DH-16	**9” x 9” Vinyl Floor Tile, brown with white Room DH2001**	**8% Chrysotile**
	Mastic	None Detected
DH-17	Vinyl Sheet Flooring, Brown Room DH2002	None Detected
	Mastic	None Detected
DH-18	**9” x 9” Vinyl Floor Tile, dark brown with white Room DH2006B**	**3% Chrysotile**
	Mastic	None Detected
DH-19	**Light Fixture Heat Shield, Thick Layer Room DH2006B**	**25% Chrysotile**

Sample No.	Sample Description and Location	Asbestos Results
DH-20	**Light Fixture Heat Shield, Thin Layer Room DH2006B**	**30% Chrysotile**
DH-21	**Light Fixture Heat Shield Room DH0S01**	**35% Chrysotile**
DH-22	1' x 1' Ceiling Tile, fissures Room DH0S01	None Detected
DH-23	1' x 1' Vinyl Floor Tile, light brown Room DH-004A	None Detected
	Mastic	None Detected
DH-24	**Pipe Fitting Insulation Room DH-004A**	**40% Chrysotile**
DH-25	**Tank Insulation Room DH-004A**	**40% Chrysotile**

Mechanical and Pipe Material

Pipe fitting insulation which could potentially contain asbestos was observed in select areas throughout the building during this assessment. Samples were collected and analyzed for asbestos content using the PLM method of detection and found to contain 40% Chrysotile asbestos (see sample DH-24 in Appendix II, Photograph 1, Appendix I)

Tank insulation which could potentially contain asbestos was observed in a mechanical room within the building during this assessment. A sample was collected and analyzed for asbestos content using the PLM method of detection and found to contain 40% Chrysotile asbestos (see sample DH-25 in Appendix II, Photograph 2, Appendix I)

During the assessment it was observed that linear pipe insulation was fiberglass material. However, linear pipe insulation in Room DH1011 was inaccessible for either sample collection or a visual inspection. Thus, it must be considered to be asbestos containing until proven otherwise. (see Photograph 3, Appendix I)

However, it should be noted that asbestos containing pipe insulation may be located behind fixed wall cavities and ceiling plenums that were inaccessible at the time of assessment. During demolition precautionary measures must be taken to avoid disturbing any potential ACM in these areas.

Acoustic and Thermal Insulating Products

Firestop material suspected to contain asbestos was sampled and analyzed for asbestos content using the PLM method of detection. This material was found to be non-asbestos containing. (see sample DH-12 in Appendix II)

Friable Acoustic Texture Coats and Plaster Finishes

Plaster finishes were observed throughout the building during the assessment. Three (3) samples of this material were sampled and analyzed for asbestos content using the PLM method of detection. All samples were identified as non-asbestos containing. (See samples DH-6, DH-11, DH-14, in Appendix II).

Texture coat finishes were observed in select locations within the building during the assessment. One (1) sample was collected and analyzed for asbestos content using the PLM method of detection. The sample was identified as non-asbestos containing. (See sample DH-15 in Appendix II).

Friable Acoustic and Thermal Fireproofing Products

Sprayed acoustic or sprayed fireproofing was not observed during the assessment.

Friable Ceiling Tiles / Ceiling Tile Adhesives

1' x 1' ceiling tiles were observed in select areas of the building during the assessment. Two (2) samples of these materials were collected and analyzed for asbestos content using the PLM method of detection. All samples were identified as non-asbestos containing. (see samples DH-9, DH-22 in Appendix II).

2' x 4' ceiling tiles were observed in select areas of the building during the assessment. These tiles were observed to have a date stamp located on the back of the tile, indicating the manufacturing date. Based on this date, they were not suspected to contain asbestos.

Vinyl Sheet/Linoleum Flooring

Vinyl sheet/linoleum flooring which could potentially contain asbestos was identified during the assessment. Four (4) samples of sheet flooring were sampled and analyzed for asbestos content using the PLM method of detection. All samples of the flooring were identified as non-asbestos containing. (see samples DH-3, DH-4, DH-7, DH-8 in Appendix II)

Non-Friable Vinyl Floor Tiles/ Floor Tile Adhesives

Vinyl floor tiles which could potentially contain asbestos were identified during the assessment. Six (6) samples of 1' x 1' vinyl floor tiles were sampled and analyzed for asbestos content using the PLM method of detection. All samples of the tiles were identified as non-asbestos containing. (see samples DH-1, DH-2, DH-5, DH-13, DH-17, DH-23 in Appendix II)

Two (2) samples of 9" x 9" vinyl floor tiles were sampled and analyzed for asbestos content using the PLM method of detection. Both of the samples were identified as containing between 3 and 8% Chrysotile asbestos. Their associated mastics were identified as non-asbestos containing. (see samples DH-16, DH-18, in Appendix II, Photographs 4, 5 in Appendix I)

Non-Friable Transite Panels, Sheeting and Shingles

Suspect asbestos containing transite paneling was observed as a portion of the drop ceiling in Room DH1011. Samples of this material were collected and analyzed for asbestos content using the PLM method of detection. The sample was identified as containing 45% Chrysotile asbestos. (see sample DH-10 in Appendix II, Photograph 6, in Appendix I)

Non-Friable Transite Piping

Transite piping was not observed during the assessment.

Electrical Wiring/ Lighting

Three types of a light fixture heat shield were observed throughout the building. Samples were collected and analyzed for asbestos content using the PLM method of detection. These samples were found to contain between 25 – 35% Chrysotile asbestos (see samples DH-19, DH-20, DH-21 in Appendix II, see Photographs 7, 8 in Appendix I).

Roofing Materials

Access to the roof was not available at the time of the assessment.

Other Materials

A fire-rated door manufactured by Weststeel Products Ltd. was observed in Room DH1004. Such doors have been known to contain asbestos within the door. The door could not be sampled for asbestos content, thus it must be considered to be asbestos containing until proven otherwise. (see Photograph 9, Appendix I)

Window caulking, interior or exterior, was not sampled during this assessment.

2.5 Recommendations

The assessment identified that numerous materials contained a concentration of asbestos equal to or greater than 1% by dry weight. According to regulations, the owner of any building/ residence is required to implement and maintain specific health and safety measures, therefore the following recommendations are provided:

- All materials listed in fair and/or poor condition are to be repaired or removed immediately. See APPENDIX III – Asbestos Building Survey Information for materials condition and locations.

- Ensure that prior to and during any major renovations/demolition extreme caution is implemented to make certain that asbestos containing materials are not disturbed. It should be noted that asbestos containing materials may be concealed behind fixed walls/ceiling plenums and under existing sub-floors.

- Ensure that when disturbing asbestos materials, the asbestos removal contractor follows all federal and provincial regulations in accordance to the Newfoundland and Labrador Regulation 111/98.

- Retain a copy of this report on-site for future reference of friable and non-friable asbestos products.

- Provide asbestos air monitoring and inspection during the removal of asbestos to ensure that all government guidelines and regulations are followed throughout the removal process.

3.0 DISCLAIMER

This report was prepared by ALL-TECH Environmental Services Limited for the sole benefit of our client Ms. Sheila Miller. The information in the report is based on information provided or obtained by ALL-TECH. The report is based on ALL-TECH's best judgment with the information provided at the time of the assessment. Any use and/or conclusions used by any third party, is the responsibility of that third party. ALL-TECH accepts no liability and/or damages occurred by any third party that uses information obtained in this report.

If you have any questions regarding this report, please do not hesitate to call me at (709) 754-4146.

Thank You,

Carla Noseworthy, CET
Environmental Consultant
ALL-TECH Environmental Services Limited

Reviewed by:

Orven Newhook, B.Sc.
Project Manager
ALL-TECH Environmental Services Limited

APPENDIX I

PHOTOGRAPHS OF ASBESTOS CONTAINING MATERIALS

Photograph 1: Pipe fitting insulation in DH1010, above the ceiling tile, in poor condition.

Photograph 2: Tank insulation in Room DH004A/004, in fair condition.

Consultant:	**Building:**	**Date**:
Carla Noseworthy, CET ALL-TECH Environmental	R. Gushue Hall Memorial University of Newfoundland St. John's, NL	August 22, 2011

Photograph 3: Suspect linear pipe insulation in Room HD1011. The piping was too high to access for sample collection or visual inspection.

Photograph 4: Asbestos containing 9" x 9" vinyl floor tile, in fair condition (sample DH-16).

Consultant:	**Building:**	**Date**:
Carla Noseworthy, CET ALL-TECH Environmental	R. Gushue Hall Memorial University of Newfoundland St. John's, NL	August 22, 2011

Photograph 5: Asbestos containing 9” x 9” vinyl floor tile, in fair condition (sample DH-18).

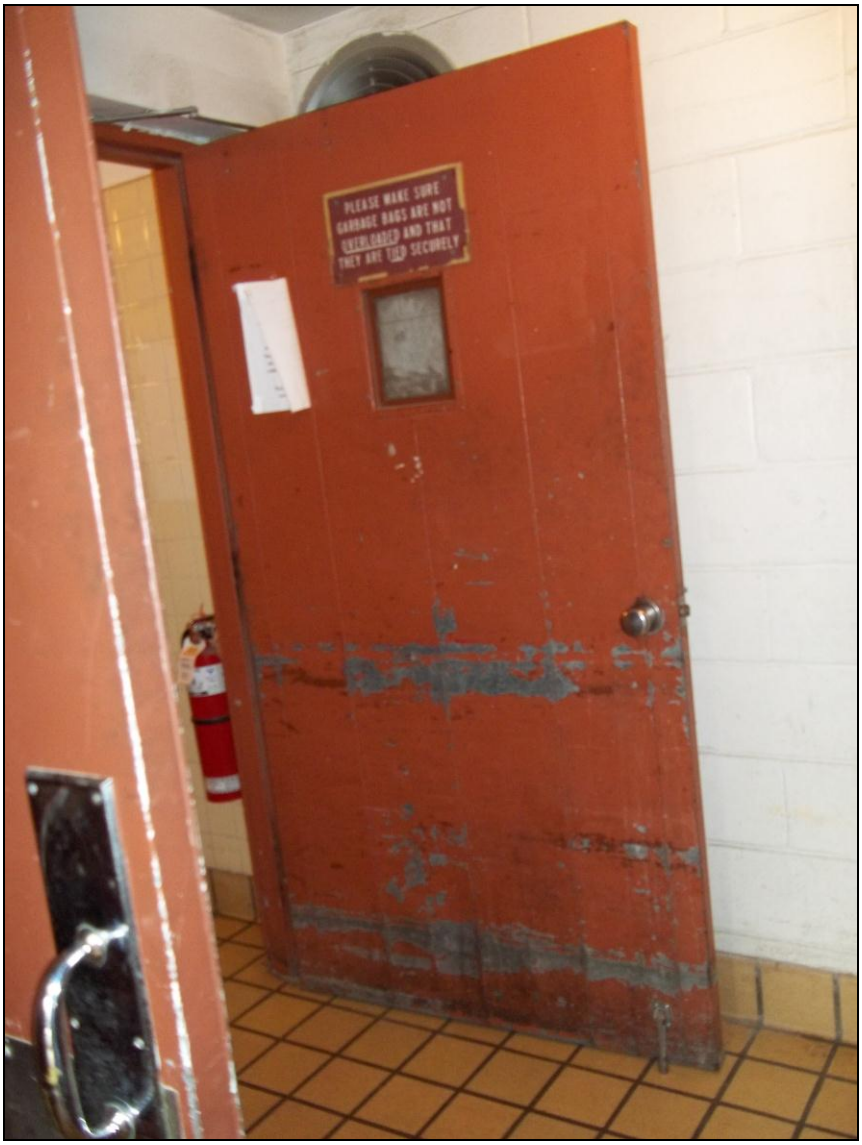
Photograph 6: Transite panels as the ceiling in Room DH1011, in poor condition (sample DH-10)

Consultant:	**Building:**	**Date**:
Carla Noseworthy, CET ALL-TECH Environmental	R. Gushue Hall Memorial University of Newfoundland St. John’s, NL	August 22, 2011

Photograph 7: Samples DH-19 and DH-20 as found in Room DH2006. The shield contained two layers, both were found to be asbestos containing.

Photograph 8: Sample DH-21, of an exposed light fixture heat shield, in poor condition.

Consultant:	Building:	Date:
Carla Noseworthy, CET ALL-TECH Environmental	R. Gushue Hall Memorial University of Newfoundland St. John's, NL	August 22, 2011



Photograph 9: Fire rated door, suspected to have asbestos material within the door. Considered to be asbestos containing until proven otherwise.

Consultant:	Building:	Date:
Carla Noseworthy, CET ALL-TECH Environmental	R. Gushue Hall Memorial University of Newfoundland St. John's, NL	August 22, 2011

APPENDIX II

LABORATORY ASBESTOS RESULTS

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone: (800) 220-3675 Fax: (856) 786-5974 Email: cinnaslab@EMSL.com

Attn: **Carla Noseworthy**
All-Tech Environmental Services Limited
151 Crosbie Road
Suite 402
St. John's, NL A1B 4B4

Fax: Phone: (709) 754-4146
Project: **13916 Dining Hall**

Customer ID: ATES44D
Customer PO:
Received: 06/25/11 9:10 AM
EMSL Order: 041123126

EMSL Proj:
Analysis Date: 6/26/2011

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos			Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**		**% Non-Fibrous**	**% Type**
DH 1-Floor Tile 041123126-0001	DH1000 - 1X1 VT-CREAM MIX	Cream Non-Fibrous Heterogeneous			100% Non-fibrous (other)	**None Detected**
DH 1-Mastic 041123126-0001A	DH1000 - 1X1 VT-CREAM MIX	Black Non-Fibrous Homogeneous			100% Non-fibrous (other)	**None Detected**
DH 2-Floor Tile 041123126-0002	DH1000 - 1X1 VT-BROWN MIX	Brown Non-Fibrous Heterogeneous			100% Non-fibrous (other)	**None Detected**
DH 2-Mastic 041123126-0002A	DH1000 - 1X1 VT-BROWN MIX	Black Non-Fibrous Homogeneous			100% Non-fibrous (other)	**None Detected**
DH 3-VSF 041123126-0003	DH1C03 - VSF-GREY-BEIGE MIX W/SPARKLES	Gray/Beige Fibrous Heterogeneous	15%	Cellulose	85% Non-fibrous (other)	**None Detected**
DH 3-Mastic 041123126-0003A	DH1C03 - VSF-GREY-BEIGE MIX W/SPARKLES	Clear Fibrous Heterogeneous	6% 2%	Cellulose Synthetic	90% Non-fibrous (other)	**None Detected**

Initial report from 06/26/2011 09:36:42

Analyst(s)

Nancy Stalter (37)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone: (800) 220-3675 Fax: (856) 786-5974 Email: cinnaslab@EMSL.com

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			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
DH 4-VSF 041123126-0004	DH1001 - VSF-PINK MIX	Pink Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
DH 4-Mastic 041123126-0004A	DH1001 - VSF-PINK MIX	Yellow Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (other)	**None Detected**
DH 5-VSF 041123126-0005	DH1001A - VSF-BLUE MIX	Blue Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
DH 5-Mastic 041123126-0005A	DH1001A - VSF-BLUE MIX	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
DH 6 041123126-0006	DH1001A - PLASTER	Gray Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
DH 7-Floor Tile 041123126-0007	DH1000 SERVING AREA - 1X1 VT-OLIVE MIX	Olive Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**

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			Non-Asbestos			Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**		**% Non-Fibrous**	**% Type**
DH 7-Mastic 041123126-0007A	DH1000 SERVING AREA - 1X1 VT-OLIVE MIX					**Insufficient Material**
DH 8-Floor Tile 041123126-0008	DH1012 - 1X1 VT- WHITE W/BLACK	White Non-Fibrous Heterogeneous			100% Non-fibrous (other)	**None Detected**
DH 8-Mastic 041123126-0008A	DH1012 - 1X1 VT- WHITE W/BLACK	Black Non-Fibrous Homogeneous			100% Non-fibrous (other)	**None Detected**
DH 9 041123126-0009	DH1012 - 1X1 CT- FISSURES	White Fibrous Heterogeneous	70%	Min. Wool	30% Non-fibrous (other)	**None Detected**
DH 10 041123126-0010	DH1011 - TRANSITE	Gray/White Fibrous Heterogeneous			55% Non-fibrous (other)	**45% Chrysotile**
DH 11-Skim Coat 041123126-0011	DH1006 - PLASTER	White Non-Fibrous Homogeneous			100% Non-fibrous (other)	**None Detected**

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			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
DH 11-Base Coat *041123126-0011A*	DH1006 - PLASTER	Tan Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
DH 12 *041123126-0012*	DH1008 - FIRESTOP	Gray Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
DH 13-Floor Tile *041123126-0013*	ELEVATOR - 1X1 VT-GREY MIX	Gray Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
DH 13-Mastic *041123126-0013A*	ELEVATOR - 1X1 VT-GREY MIX	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
DH 14 *041123126-0014*	DH2C02 - PLASTER	Cream Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
DH 15 *041123126-0015*	DH2C01 - TEXTURE COAT	White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**

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EMSL Order: 041123126

EMSL Proj:
Analysis Date: 8/26/2011

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Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
DH 16-Floor Tile 041123126-0016	DH2001 - 9X9 VT-BROWN W/WHITE	Brown Fibrous Heterogeneous		92% Non-fibrous (other)	8% Chrysotile
DH 16-Mastic 041123126-0016A	DH2001 - 9X9 VT-BROWN W/WHITE	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
DH 17-VSF 041123126-0017	DH2002 - VSF-BROWN	Brown Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
DH 17-Mastic 041123126-0017A	DH2002 - VSF-BROWN	Cream Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
DH 18-Floor Tile 041123126-0018	DH2006B - 9X9 VT-DK BROWN W/WHITE	Brown Non-Fibrous Heterogeneous		97% Non-fibrous (other)	3% Chrysotile
DH 18-Mastic 041123126-0018A	DH2006B - 9X9 VT-DK BROWN W/WHITE	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Initial report from 08/26/2011 09:38:42

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EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone: (800) 220-3675 Fax: (856) 786-5974 Email: cinnaablab@EMSL.com

Attn: **Carla Noseworthy**
All-Tech Environmental Services Limited
151 Crosbie Road
Suite 402
St. John's, NL A1B 4B4

Fax: Phone: (709) 754-4146
Project: **13916 Dining Hall**

Customer ID: ATES44D
Customer PO:
Received: 06/25/11 9:10 AM
EMSL Order: 041123126

EMSL Proj:
Analysis Date: 6/26/2011

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos			Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**		**% Non-Fibrous**	**% Type**
DH 19 041123126-0019	DH2006B - LIGHT FIXTURE HEAT SHIELD-THICK	Gray/Silver Fibrous Heterogeneous	45%	Cellulose	30% Non-fibrous (other)	**25% Chrysotile**
DH 20 041123126-0020	DH2006B - LIGHT FIXTURE HEAT SHIELD-THIN	Gray/Silver Fibrous Heterogeneous	25%	Cellulose	45% Non-fibrous (other)	**30% Chrysotile**
DH 21 041123126-0021	DH0501 - LIGHT FIXTURE HEAT SHIELD	Gray/Silver Fibrous Heterogeneous			65% Non-fibrous (other)	**35% Chrysotile**
DH 22 041123126-0022	DH0501 - 1X1 CT-FISSURES	White Fibrous Heterogeneous	80%	Min. Wool	20% Non-fibrous (other)	**None Detected**
DH 23-Floor Tile 041123126-0023	MECHANICAL ROOM - 1X1 VT-LIGHT BROWN	White Non-Fibrous Heterogeneous	Suggest TEM		100% Non-fibrous (other)	**None Detected**
DH 23-Mastic 041123126-0023A	MECHANICAL ROOM - 1X1 VT-LIGHT BROWN	Black Non-Fibrous Homogeneous			100% Non-fibrous (other)	**None Detected**

Initial report from 06/26/2011 09:36:42

Analyst(s)
Nancy Stiffer (37)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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All-Tech Environmental Services Limited
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Fax: Phone: (709) 754-4146
Project: **13916 Dining Hall**

Customer ID: ATES44D
Customer PO:
Received: 08/25/11 9:10 AM
EMSL Order: 041123126

EMSL Proj:
Analysis Date: 8/26/2011

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
DH 24 *041123126-0024*	MECHANICAL ROOM - PIPE FITTING INSULATION	Gray Fibrous Heterogeneous		60% Non-fibrous (other)	**40% Chrysotile**
DH 25 *041123126-0025*	MECHANICAL ROOM - TANK INSULATION	Fibrous Heterogeneous		60% Non-fibrous (other)	**40% Chrysotile**

Initial report from 08/26/2011 09:38:42

Analyst(s)
Nancy Stalter (37)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

THIS IS THE LAST PAGE OF THE REPORT.

APPENDIX III

ASBESTOS BUILDING SURVEY INFORMATION

Asbestos Bldg Survey Information

Room #	Bldg. System	Component	Material Type	Access	Conditions				Quantity	Sample No.	Sample Location	Sample Description	Result
					Good	Fair	Poor	Sprayed					
DH-0S01			Light Fixture Heat Shield	A			X		1	DH21	Room 0S01, Ceiling	Grey Insulation	35% Chrysotile
DH-004, 004A			Pipe Fitting Insulation	A, B, C	X				~20	DH24	Room 004, Floor	Grey Insulation	40% Chrysotile
DH-004, 004A			Tank Insulation	A		X			~ 500 gal	Dh25	Room 004, Floor	Grey Insulation	40% Chrysotile
DH-1001			Pipe Fitting Insulation	C			X		1	DH24		Grey Insulation	40% Chrysotile
DH-1001A			Pipe Fitting Insulation	C			X		1	DH24		Grey Insulation	40% Chrysotile
DH-1002			Pipe Fitting Insulation	A	X				2	DH24		Grey Insulation	40% Chrysotile
DH-1011			Transite	A			X		~ 10 ft^2	DH10	Room 1011, Ceiling	Grey Cement-like Board	45% Chrysotile
DH-1011			Pipe Fitting Insulation	A		X			2	DH24		Grey Insulation	40% Chrysotile
DH-1011			[1]Linear Pipe Insulation	A	X				~ 20 ft				
DH-1C02			Pipe Fitting Insulation	A			X		3, below ceiling tile	DH24		Grey Insulation	40% Chrysotile
DH-1C02			Pipe Fitting Insulation	C	X				11, above ceiling tile	DH24		Grey Insulation	40% Chrysotile
DH-1009			Pipe Fitting Insulation	A	X				3	DH24		Grey Insulation	40% Chrysotile
DH-1010			Pipe Fitting Insulation	C	X				3	DH24		Grey Insulation	40% Chrysotile
DH-1010			Pipe Fitting Insulation	C			X		4	DH24		Grey Insulation	40% Chrysotile
DH-1008			[2]Fire Rated Door	A	X								
DH-1002A			Pipe Fitting Insulation	C	X				2	DH24		Grey Insulation	40% Chrysotile
DH-2001			Vinyl Floor Tile	A	X				~ 110 ft^2	DH16	Room 2001, Floor	9" x 9" Vinyl Floor Tile, brown with white	8% Chrysotile
DH-2006B			Vinyl Floor Tile	A		X			~ 50 ft^2	DH18	Room 2006B, Floor	9" x 9" Vinyl Floor Tile, dark brown with white	3% Chrysotile
DH-2006B			Light Fixture Heat Shield, thick layer	A	X				2	DH19	Room 2006B, Ceiling	Grey Insulation	25% Chrysotile
DH-2006B			Light Fixture Heat Shield, thin layer	A	X				2	DH20	Room 2006B, Ceiling	Grey Insulation	30% Chrysotile

No Access was available to the following rooms: DH-0002, DH-0003,DH-1000A, DH-1000B, DH-2002A, DH-2005

Access: *A* - Areas within reach from the floor. *B* - Frequently entered maintenance areas floor level. *C* - exposed / concealed above 8 ft, crawl space, etc. *D* - Inaccessible

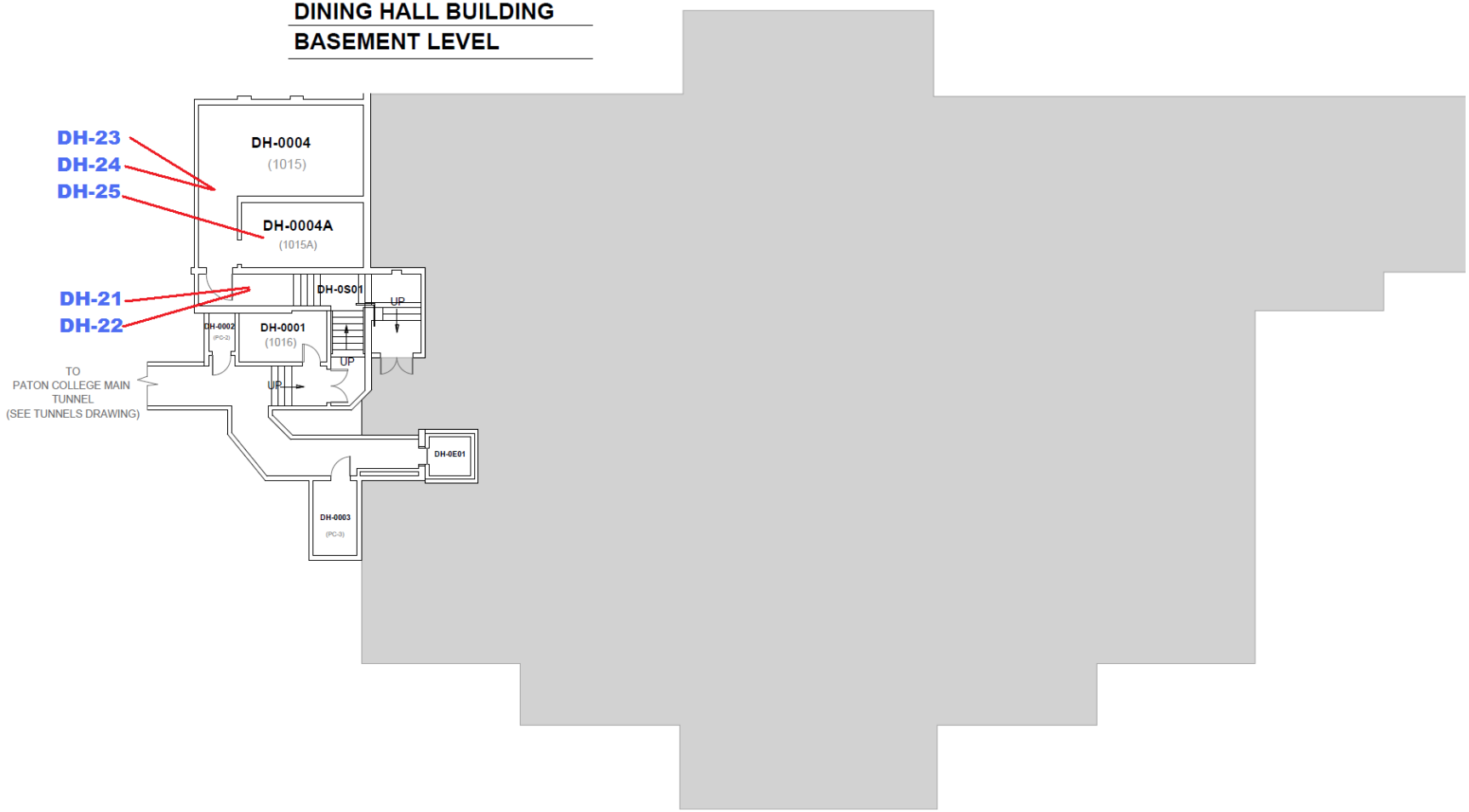
[1] Unable to access due to height. Suspect asbestos containing until proven otherwise.

[2]Fire Rated Door manufactured by Weststeel Products Ltd. Must be considered to be asbestos containing until proven otherwise.

APPENDIX IV

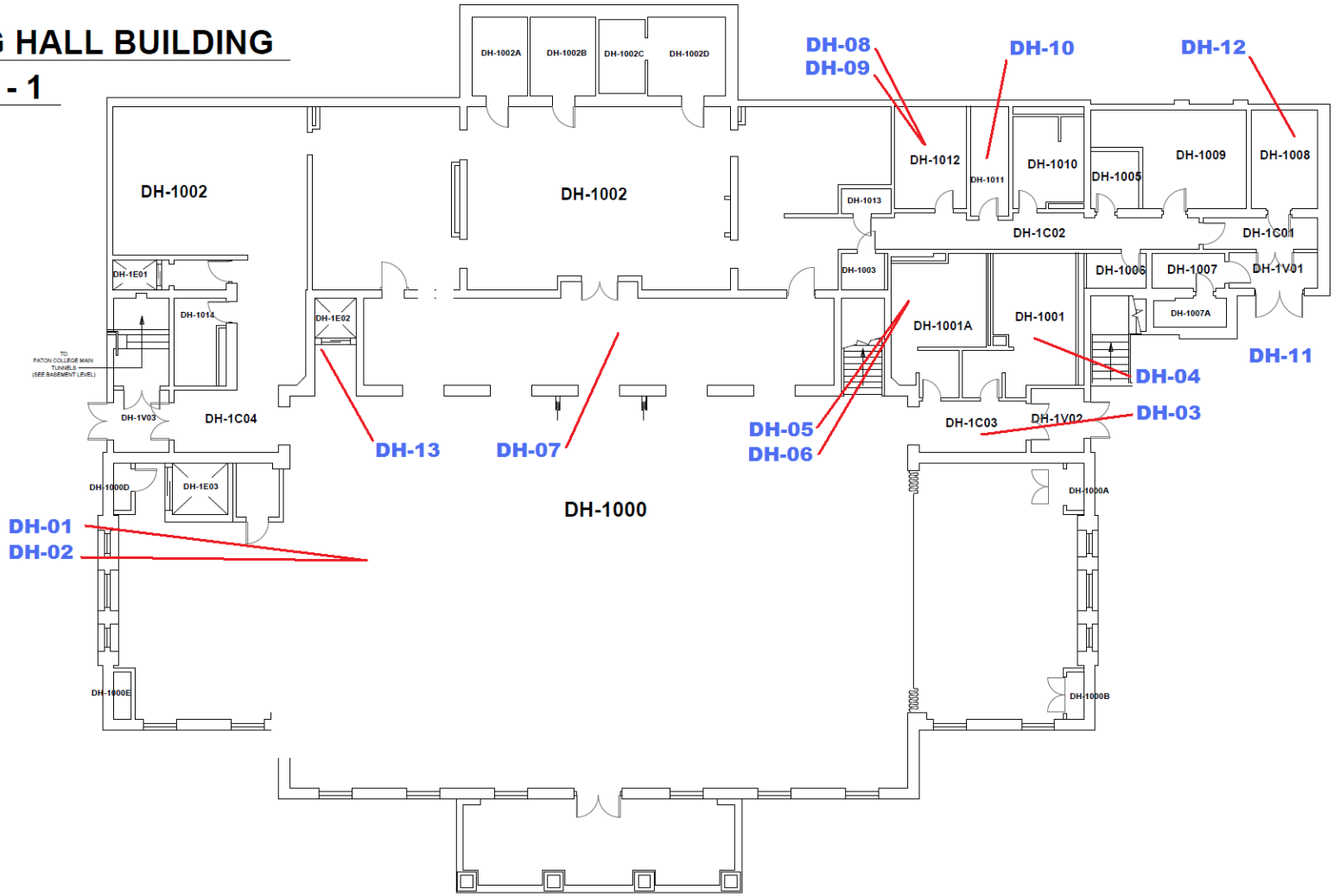
FLOOR PLANS SHOWING SAMPLING LOCATIONS

DINING HALL BUILDING
BASEMENT LEVEL



DINING HALL BUILDING

LEVEL - 1



DINING HALL BUILDING
LEVEL - 2