

Project #: 13916

**ASBESTOS ASSESSMENT
Curtis House
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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AUGUST 2011

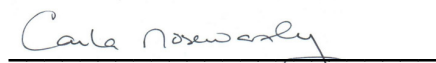
EXECUTIVE SUMMARY

ALL-TECH Environmental Services Limited conducted an Asbestos Assessment at Curtis House, 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:

- Seven (7) of the twenty-six (26) 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.*)
- One type of 1'x1' vinyl floor tile and three types of 9" x 9" vinyl floor tiles were sampled and found to contain between 2 – 3% Chrysotile asbestos.
- Two types of light fixture heat shields were sampled and found to contain 20% and 35% Chrysotile asbestos.
- Pipe fitting insulation was sampled and found to contain 7% 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

TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	ASBESTOS ASSESSMENT	1
2.1	Scope of Work.....	1
2.2	Methodology	2
2.3	Applicable Standards	2
2.4	Survey Findings	3
2.5	Recommendations	7
3.0	DISCLAIMER	8

LIST OF APPENDICES:

APPENDIX I -----	Photographs
APPENDIX II -----	Laboratory Asbestos Results
APPENDIX III -----	Asbestos Building Survey Information
APPENDIX IV -----	Floor Plans Showing Sampling Locations

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 Curtis House, 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-six (26) suspect asbestos bulk samples were collected from the building. Representative suspect asbestos bulk material samples from floors, wall finishes, pipe fitting insulation, tar sealants, ceiling tiles 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 seven (7) of the twenty-six (26) 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
Curtis House
Memorial University of Newfoundland
St. John's, NL**

Sample No.	Sample Description and Location	Asbestos Results
CU-1	1' x 1' Vinyl Floor Tile, grey with black, Room CU1C01	2% Chrysotile
	Mastic	None Detected
CU-2	9" x 9" Vinyl Floor Tile, beige with olive green, Room CU1C01	None Detected
	Mastic	None Detected
CU-3	1' x 1' Ceiling Tile, white, fissures, Room 1C01	None Detected
CU-4	2' x 2' Ceiling Tile, White, large pinholes, fissures Room 1C01	None Detected
CU-5	2' x 2' Ceiling Tile, white, pinhole, Room 1C01	None Detected
CU-6	1' x 1' Vinyl Floor Tile, white with brown, Room 1V01	None Detected
	Mastic	None Detected
CU-7	Light Fixture Heat Shield, Room CU102	35% Chrysotile

CU-8	Pipe Fitting Insulation, Room CU102	7% Chrysotile
CU-9	9" x 9" Vinyl Floor Tile, white with grey, Room CU1V02	None Detected
	Mastic	None Detected
CU-10	Light Fixture Heat Shield, Room CU108	20% Chrysotile
CU-11	Vinyl Sheet Flooring, Purple, Room CU109	None Detected
CU-12	Plaster, Room CU110	None Detected
CU-13	9" x 9" Vinyl Floor Tile, yellow with white, Room CU216	2% Chrysotile
CU-14	9" x 9" Vinyl Floor Tile, green with white, Room CU215	None Detected
	Mastic	None Detected
CU-15	9" x 9" Vinyl Floor Tile, blue with white, Room CU217	3% Chrysotile
	Mastic	None Detected
CU-16	9" x 9" Vinyl Floor Tile, Red with White, Room CU218	3% Chrysotile
CU-17	Plaster Room CU222	None Detected
CU-18	1' x 1' Vinyl Floor Tile, grey mix Room CU2C01	None Detected
	Mastic	None Detected
CU-19	Plaster Room CU225	None Detected
CU-20	Plaster Room CU325	None Detected
CU-21	Plaster Room CU322	None Detected
CU-22	Tar Sealant Room CU4C02	None Detected
CU-23	1' x 1' Vinyl Floor Tile, light brown with medium brown Room CU420	None Detected
	Mastic	None Detected

CU-24	Plaster Room CU422	None Detected
CU-25	1' x 1' Vinyl Floor Tile, grey stripe Room CU106	None Detected
	Mastic	None Detected
CU-26	1' x 1' Vinyl Floor Tile, blue Room CU105	None Detected
	None Detected	None Detected

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 7% Chrysotile asbestos (see sample CU-8 in Appendix II, Photographs 1, 2, Appendix I)

In addition, three rain water leaders were observed above ceiling tiles in the corridors on the 4th floor. These materials were too high to access, thus they were not sampled. As such, they must be considered to be asbestos containing until proven otherwise. (see Photograph 10, 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

A tar sealant on fiberglass linear pipe was observed above the ceiling tiles of the hallway CU4C02. One (1) sample of the sealant was collected and analyzed for as asbestos content using the PLM method of detection. The sample was identified as non-asbestos containing.

Friable Acoustic Texture Coats and Plaster Finishes

Plaster finishes were observed throughout the building during the assessment. Six (6) 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 CU-12, CU-17, CU-19, CU-20, CU-21, CU-24 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' and 2' x 4' ceiling tiles were observed in select areas of the building during the assessment. Three (3) 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 CU-3, CU-4, CU-5 in Appendix II).

Vinyl Sheet/Linoleum Flooring

Vinyl sheet/linoleum flooring was identified during the assessment of the building. 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 samples CU-11 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. One (1) of the six (6) samples was identified as containing 2% Chrysotile asbestos. Its associated mastic was identified as non-asbestos containing. The blue and white vinyl floor tiles in Room CU105 were not sampled due to difficulty of sample collection. As such, these tiles should be considered to be asbestos containing until proven otherwise. (See samples CU-1, CU-6, CU-18, CU-23, CU-25, CU-26 in Appendix II, Photographs 3, 4, Appendix I)

Six (6) samples of 9" x 9" vinyl floor tiles were sampled and analyzed for asbestos content using the PLM method of detection. Three (3) of the six (6) samples were identified as containing 2 – 3% Chrysotile asbestos. Their associated mastics were identified as non-asbestos containing. (See samples CU-2, CU-9, CU-13, CU-14, CU-15, CU-16 in Appendix II, Photographs 5 - 7, Appendix I)

Non-Friable Transite Panels, Sheeting and Shingles

Asbestos containing transite paneling was not observed in the building during the assessment.

Non-Friable Transite Piping

Transite piping was not observed during the assessment.

Electrical Wiring/ Lighting

Two types of light fixture heat shields were observed throughout the building. Two (2) samples were collected and analyzed for asbestos content using the PLM method of detection and found to contain 20% and 35% Chrysotile asbestos (see samples CU-7 and CU-10 in Appendix II, see photographs 8, 9 in Appendix I).

Roofing Materials

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

Other Materials

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

No other materials suspected of containing asbestos were observed during the 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

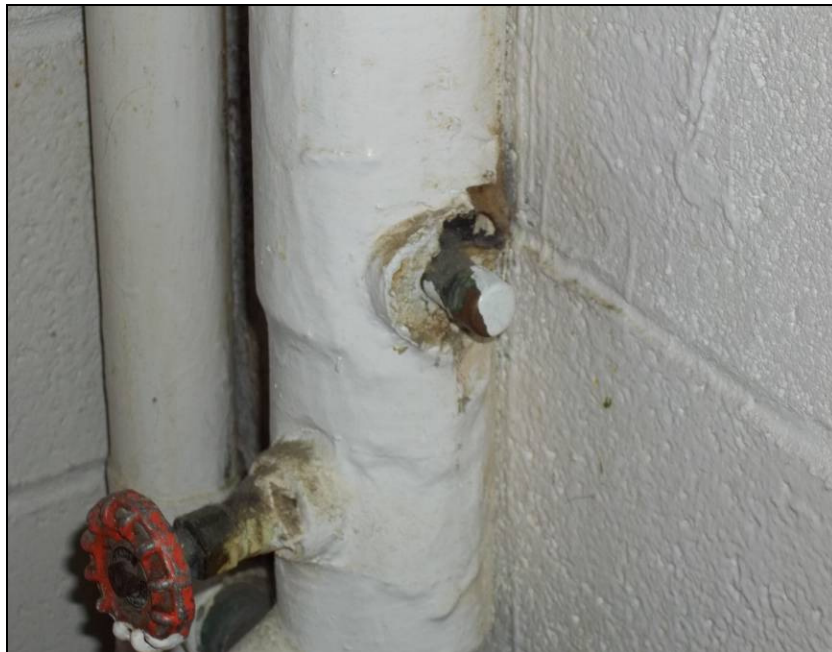
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Orven Newhook, B.Sc.
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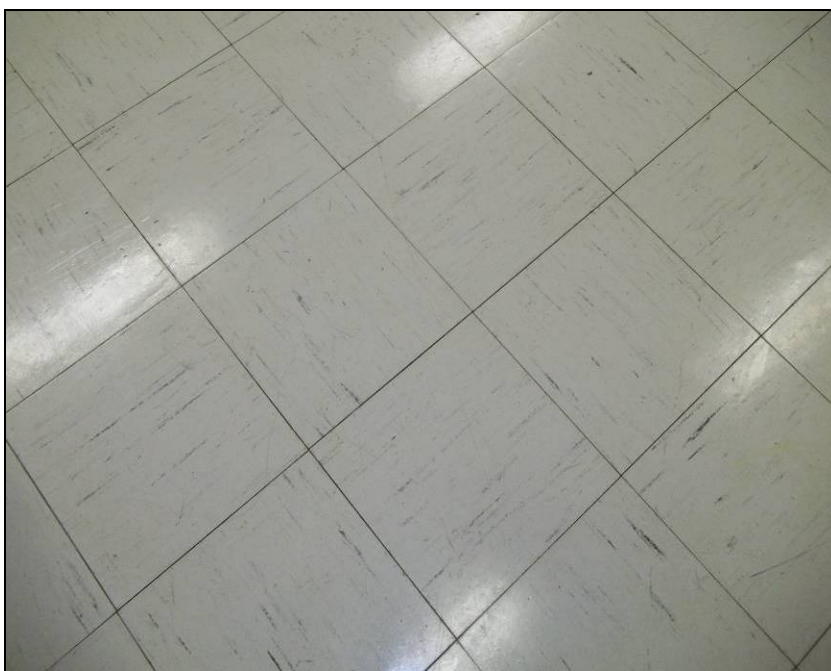
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APPENDIX I
PHOTOGRAPHS OF ASBESTOS CONTAINING MATERIALS

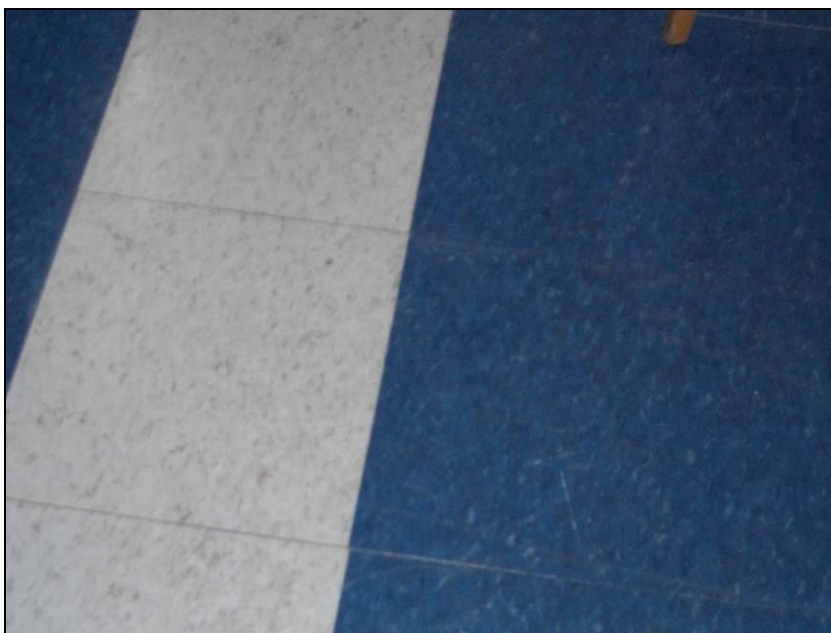


Photographs 1, 2: Room CU106. Pipe fitting insulation in poor condition

Consultant: Carla Noseworthy, CET ALL-TECH Environmental	Building: Curtis House Memorial University of Newfoundland St. John's, NL	Date: August 17, 2011
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Photograph 3: Sample CU-1, grey with black 1 x 1' vinyl floor tile.

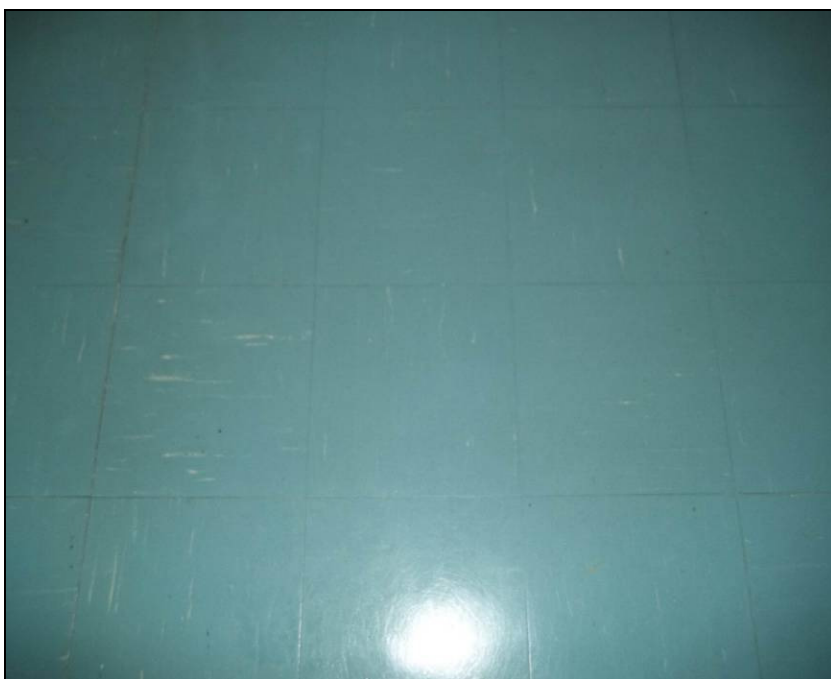


Photograph 4: Blue and white vinyl floor tiles in Room CU105 were not sampled due to sample collection difficulty. These tiles must be considered to be asbestos containing until proven otherwise.

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Photograph 5: Sample CU-13, yellow with white 9" x 9" vinyl floor tile.



Photograph 6: Sample CU-15, blue with white 9" x 9" vinyl floor tile.

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Photograph 7: Sample CU-16, red with white 9" x 9" vinyl floor tile.



Photograph 8: Sample CU-7, damaged light fixture heat shield.

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Photograph 9: Sample CU-10, damaged light fixture heat shield.



Photograph 10: One of three rain water leaders observed in the building. These were too high to access for sampling. As such, they must be considered to be asbestos containing until proven otherwise.

<p>Consultant: Carla Noseworthy, CET ALL-TECH Environmental</p>	<p>Building: Curtis House Memorial University of Newfoundland St. John's, NL</p>	<p>Date: August 17, 2011</p>
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APPENDIX II
LABORATORY ASBESTOS RESULTS

**EMSL Analytical, Inc.**

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Received: 08/18/11 9:30 AM
EMSL Order: 041122496

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Project: 13916-CURTIS

Phone: (709) 754-4146

EMSL Proj:
Analysis Date: 8/19/2011

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
CU1-Floor Tile 041122496-0001	1X1 VFT/GREY WITH BLACK/CU1C01	White Non-Fibrous Heterogeneous		98% Non-fibrous (other)	2% Chrysotile
CU1-Mastic 041122496-0001A	1X1 VFT/GREY WITH BLACK/CU1C01	Black Non-Fibrous Heterogeneous	5% Cellulose	95% Non-fibrous (other)	None Detected
CU2-Floor Tile 041122496-0002	9X9 VFT/BEIGE WITH OLIVE GREEN/CU1C01	Tan Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
CU2-Mastic 041122496-0002A	9X9 VFT/BEIGE WITH OLIVE GREEN/CU1C01	Tan Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
CU3 041122496-0003	1X1 CT/WHITE FISSURES/CU1C0 1	Gray/White Fibrous Homogeneous	90% Min. Wool	10% Non-fibrous (other)	None Detected
CU4 041122496-0004	2X2 CT/WHITE LARGE PH/FISSURE/CU1 C01	Tan/White Fibrous Homogeneous	50% Cellulose 20% Min. Wool	30% Non-fibrous (other)	None Detected

Initial report from 08/19/2011 17:46:26

Analyst(s)

Anne Paul (34)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-Q, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
CU5 041122496-0005	2X2 CT/WHITE PINHOLE/CU1C01	Tan Non-Fibrous Homogeneous	50% Cellulose 20% Min. Wood	30% Non-fibrous (other)	None Detected
CU6-Floor Tile 041122496-0006	1X1 VFT/WHITE WITH BROWN/CU1V01	White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
CU6-Mastic 041122496-0006A	1X1 VFT/WHITE WITH BROWN/CU1V01	Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
CU7 041122496-0007	LIGHT FIXTURE HEAT SHIELD/CU102	Tan/White Non-Fibrous Homogeneous		65% Non-fibrous (other)	35% Chrysotile
CU8 041122496-0008	PIPE FITTING INSULATION/CU1 02	Non-Fibrous Homogeneous		93% Non-fibrous (other)	7% Chrysotile
CU9-Floor Tile 041122496-0009	9X9 VFT/WHITE WITH GREAY/CU1V02	White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
CU9-Mastic 041122496-0009A	9X9 VFT/WHITE WITH GREAY/CU1V02	Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
CU10 041122496-0010	LIGHT FIXTURE HEAT SHIELD/CU108	Tan Non-Fibrous Homogeneous	10% Cellulose	70% Non-fibrous (other)	20% Chrysotile
CU11 041122496-0011	VSF/PURPLE/CU1 09	Purple Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
CU12 041122496-0012	PLASTER/CU110	Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
This is not plaster it is joint compound.					
CU13 041122496-0013	9X9 VFT/MUSTARD YELLOW WITH WHITE/CU216	Tan Non-Fibrous Homogeneous		98% Non-fibrous (other)	2% Chrysotile
CU14-Floor Tile 041122496-0014	9X9 VFT/GREEN WITH WHITE/CU215	Green Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected

Initial report from 08/19/2011 17:46:26

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
CU14-Mastic 041122496-0014A	9X9 VFT/GREEN WITH WHITE/CU215	Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
CU15-Floor Tile 041122496-0015	9X9 VFT/BLUE WITH WHITE/CU217	Non-Fibrous Heterogeneous		97% Non-fibrous (other)	3% Chrysotile
CU15-Mastic 041122496-0015A	9X9 VFT/BLUE WITH WHITE/CU217	Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
CU16 041122496-0016	9X9 VFT/RED WITH WHITE/CU218	Red Non-Fibrous Heterogeneous		97% Non-fibrous (other)	3% Chrysotile
CU17 041122496-0017	PLASTER/UC222	White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
CU18-Floor Tile 041122496-0018	1X1 VFT/GREY MIX/CU2C01	Blue Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected

Initial report from 08/19/2011 17:46:26

Analyst(s)

Anne Paul (34)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036

**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

Customer ID: +ATES44D
Customer PO:
Received: 08/18/11 9:30 AM
EMSL Order: 041122496

Fax:
Project: 13916-CURTIS

Phone: (709) 754-4146

EMSL Proj:
Analysis Date: 8/19/2011

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
CU18-Mastic 041122496-0018A	1X1 VFT/GREY MIX/CU2C01	Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
CU19 041122496-0019	PLASTER/CU225	Tan Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
Cannot separate layers					
CU20 041122496-0020	PLASTER/CU325	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
CU21 041122496-0021	PLASTER/CU322	Tan Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
CU22 041122496-0022	TAR SEALANT/CU4C0 2	Black Non-Fibrous Homogeneous	50% Cellulose	50% Non-fibrous (other)	None Detected
CU23-Floor Tile 041122496-0023	1X1 VFT/LIGHT BROWN WITH MED BROWN/CU420	Tan Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected

Initial report from 08/19/2011 17:46:26

Analyst(s)

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or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-Q, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036

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

Customer ID: +ATES44D
Customer PO:
Received: 08/18/11 9:30 AM
EMSL Order: 041122496

Fax:
Project: 13916-CURTIS

Phone: (709) 754-4146

EMSL Proj:
Analysis Date: 8/19/2011

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
CU23-Mastic 041122496-0023A	1X1 VFT/LIGHT BROWN WITH MED BROWN/CU420	Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
CU24 041122496-0024	PLASTER/CU422	Tan Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
CU25-Floor Tile 041122496-0025	1X1 VFT/GREY STRIPE/CU106	Tan Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
CU25-Mastic 041122496-0025A	1X1 VFT/GREY STRIPE/CU106	Black Non-Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected

Initial report from 08/19/2011 17:46:26

Analyst(s)

Anne Paul (34)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10672, NJ DEP 03036

**EMSL Analytical, Inc.**

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

Customer ID: ATE544D
Customer PO:
Received: 08/24/11 11:57 AM
EMSL Order: 041122992

Fax:
Project: 13916/CURTIS

Phone: (709) 754-4146

EMSL Proj:
Analysis Date: 8/24/2011

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
CU26-Floor Tile 041122992-0001	- 1 X 1 VT - BLUE - CU105	Blue Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
CU26-Mastic 041122992-0001A	- 1 X 1 VT - BLUE - CU105	Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected

Initial report from 08/24/2011 23:23:34

Analyst(s)

Chris Little (2)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036

APPENDIX III
ASBESTOS BUILDING SURVEY INFORMATION

Asbestos Bldg Survey Information -- Curtis House

Room #	Bldg. System	Component	Material Type	Access	Conditions				Quantity	Sample No.	Sample Location	Sample Description	Result
					Good	Fair	Poor	Sprayed					
CU-0S01			Pipe Fitting Insulation	A	X				4	CU8		Grey Insulation	7% Chrysotile
CU-1C01			Vinyl floor Tile	A	X				~ 432 ft ²	CU1	Floor	1' x 1' White w/ Grey Tile	2% Chrysotile
CU-1C01			Pipe Fitting Insulation	A	X				1	CU8		Grey Insulation	7% Chrysotile
CU-1V01			Vinyl floor Tile	A	X				~ 10 ft ²	CU1		1' x 1' White w/ Grey Tile	2% Chrysotile
CU-1S01			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-1S02			Vinyl floor Tile	A	X				~ 10 ft ²	CU1		1' x 1' White w/ Grey Tile	2% Chrysotile
CU-100			Vinyl floor Tile	A	X				~ 285 ft ²	CU1		1' x 1' White w/ Grey Tile	2% Chrysotile
CU-100			Light Fixture Heat Shield	A	X		X		2	CU10		Grey Insulation	35% Chrysotile
CU-102			Pipe Fitting Insulation	A	X				5	CU8		Grey Insulation	7% Chrysotile
CU-102			Light Fixture Heat Shield	A		X			8	CU7	Ceiling	Grey Insulation	35% Chrysotile
CU-105			² Vinyl Floor Tile	A	X				~ 250 ft ²				
CU-106			Pipe Fitting Insulation	A		X			11	CU8		Grey Insulation	7% Chrysotile
CU-106			Pipe Fitting Insulation	A			X		1	CU8		Grey Insulation	7% Chrysotile
CU-108			Vinyl floor Tile	A	X				~ 165 ft ²	CU1		1' x 1' White w/ Grey Tile	2% Chrysotile
CU-108			Light Fixture Heat Shield	A			X		1	CU10	Ceiling	Grey Insulation	20% Chrysotile
CU-109			Light Fixture Heat Shield	A			X		3	CU7		Grey Insulation	35% Chrysotile
CU-113			Pipe Fitting Insulation	A	X				6	CU8		Grey Insulation	7% Chrysotile
CU-114			Light Fixture Heat Shield	A	X				1	CU10		Grey Insulation	20% Chrysotile
CU-200			Vinyl floor Tile	A	X				~ 160 ft ²	CU15		Blue with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-200			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-201			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-201			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-202			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-203			Vinyl floor Tile	A	X				~ 160 ft ²	CU16		Red with White 9" x 9" vinyl Floor Tile	3% Chrysotile

Room #	Bldg. System	Component	Material Type	Access	Conditions				Quantity	Sample No.	Sample Location	Sample Description	Result
					Good	Fair	Poor	Sprayed					
CU-204			Vinyl floor Tile	A	X				~ 160 ft ²	CU15		Blue with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-204			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-205			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-205			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-206			Light Fixture Heat Shield	A			X		2	CU10		Grey Insulation	20% Chrysotile
CU-208			Vinyl floor Tile	A	X				~ 160 ft ²	CU16		Red with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-208			Light Fixture Heat Shield	A			X		2	CU10		Grey Insulation	20% Chrysotile
CU-209			Vinyl floor Tile	A	X				~ 160 ft ²	CU15		Blue with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-209			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-210			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-210			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-211			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-212			Vinyl floor Tile	A	X				~ 160 ft ²	CU16		Red with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-212			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-213			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-213			Vinyl floor Tile	A	X				~ 160 ft ²	CU15		Blue with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-214			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-214			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-215			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-216			Vinyl floor Tile	A	X				~ 160 ft ²	CU13	Floor	Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-216			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-217			Vinyl floor Tile	A	X				~ 160 ft ²	CU15	Floor	Blue with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-217			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-218			Vinyl floor Tile	A	X				~ 160 ft ²	CU16	Floor	Red with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-218			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile

Room #	Bldg. System	Component	Material Type	Access	Conditions				Quantity	Sample No.	Sample Location	Sample Description	Result
					Good	Fair	Poor	Sprayed					
CU-220			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-220			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-222			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-225			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-300			Vinyl floor Tile	A	X				~ 160 ft ²	CU15		Blue with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-300			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-301			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-301			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-302			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-303			Vinyl floor Tile	A	X				~ 160 ft ²	CU16		Red with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-303			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-304			Vinyl floor Tile	A	X				~ 160 ft ²	CU15		Blue with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-304			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-305			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-305			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-306			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-308			Vinyl floor Tile	A	X				~ 160 ft ²	CU16		Red with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-308			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-309			Vinyl floor Tile	A	X				~ 160 ft ²	CU15		Blue with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-309			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-310			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-310			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-311			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-312			Vinyl floor Tile	A	X				~ 160 ft ²	CU16		Red with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-312			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile

Room #	Bldg. System	Component	Material Type	Access	Conditions				Quantity	Sample No.	Sample Location	Sample Description	Result
					Good	Fair	Poor	Sprayed					
CU-313			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-314			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-314			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-316			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-316			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-317			Vinyl floor Tile	A	X				~ 160 ft ²	CU15		Blue with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-317			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-318			Vinyl floor Tile	A	X				~ 160 ft ²	CU16		Red with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-318			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-319			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-320			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-320			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU4C02			¹ Rain Water Leader	C	X				3	-	-	-	-
CU-400			Vinyl floor Tile	A	X				~ 160 ft ²	CU15		Blue with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-400			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-401			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-401			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-402			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-403			Vinyl floor Tile	A	X				~ 160 ft ²	CU16		Red with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-403			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-403			Pipe Fitting Insulation	A	X				1	CU8		Grey Insulation	7% Chrysotile
CU-404			Vinyl floor Tile	A	X				~ 160 ft ²	CU15		Blue with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-404			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-405			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-405			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile

Room #	Bldg. System	Component	Material Type	Access	Conditions				Quantity	Sample No.	Sample Location	Sample Description	Result
					Good	Fair	Poor	Sprayed					
CU-408			Vinyl floor Tile	A	X				~ 160 ft ²	CU16		Red with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-408			Light Fixture Heat Shield	A			X		2	CU10		Grey Insulation	20% Chrysotile
CU-408			Pipe Fitting Insulation	A	X				1	CU8		Grey Insulation	7% Chrysotile
CU-409			Vinyl floor Tile	A	X				~ 160 ft ²	CU15		Blue with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-409			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-410			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-410			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-411			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-412			Vinyl floor Tile	A	X				~ 160 ft ²	CU16		Red with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-412			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-413			Vinyl floor Tile	A	X				~ 160 ft ²	CU15		Blue with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-413			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-414			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-414			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-415			Vinyl floor Tile	A	X				~ 160 ft ²	CU16		Red with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-415			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-416			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-416			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-417			Vinyl floor Tile	A	X				~ 160 ft ²	CU15		Blue with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-417			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-418			Vinyl floor Tile	A	X				~ 160 ft ²	CU16		Red with White 9" x 9" vinyl Floor Tile	3% Chrysotile
CU-418			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-419			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-420			Vinyl floor Tile	A	X				~ 160 ft ²	CU13		Yellow with White 9" x 9" vinyl Floor Tile	2% Chrysotile
CU-420			Light Fixture Heat Shield	A			X		1	CU10		Grey Insulation	20% Chrysotile
CU-422			Light Fixture Heat	A			X		1	CU10		Grey Insulation	20% Chrysotile

No Access was available to the following rooms: CU-0001, CU-105A, CU-105B

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 Suspect Asbestos Containing Material - inaccessible for sampling. Visual only

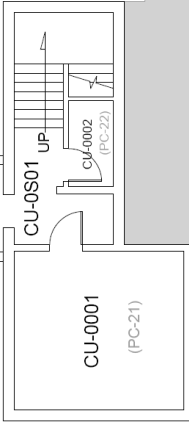
² Suspect Asbestos Containing vinyl floor tile - not sampled due to difficulty with sample collection.

APPENDIX IV
Floor Plans Showing Sampling Locations



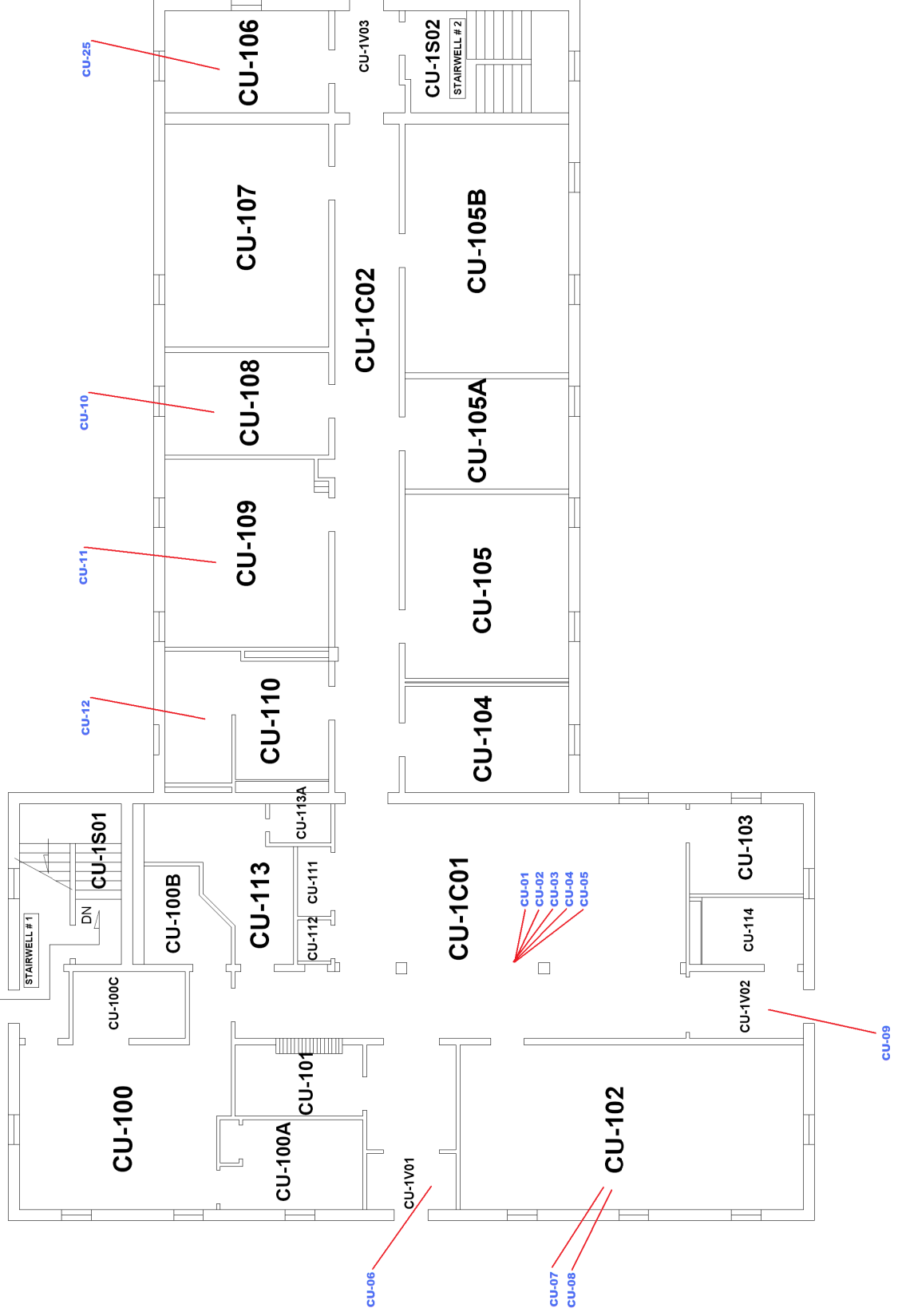
CURTIS HOUSE - BASEMENT LEVEL

CU-0V01

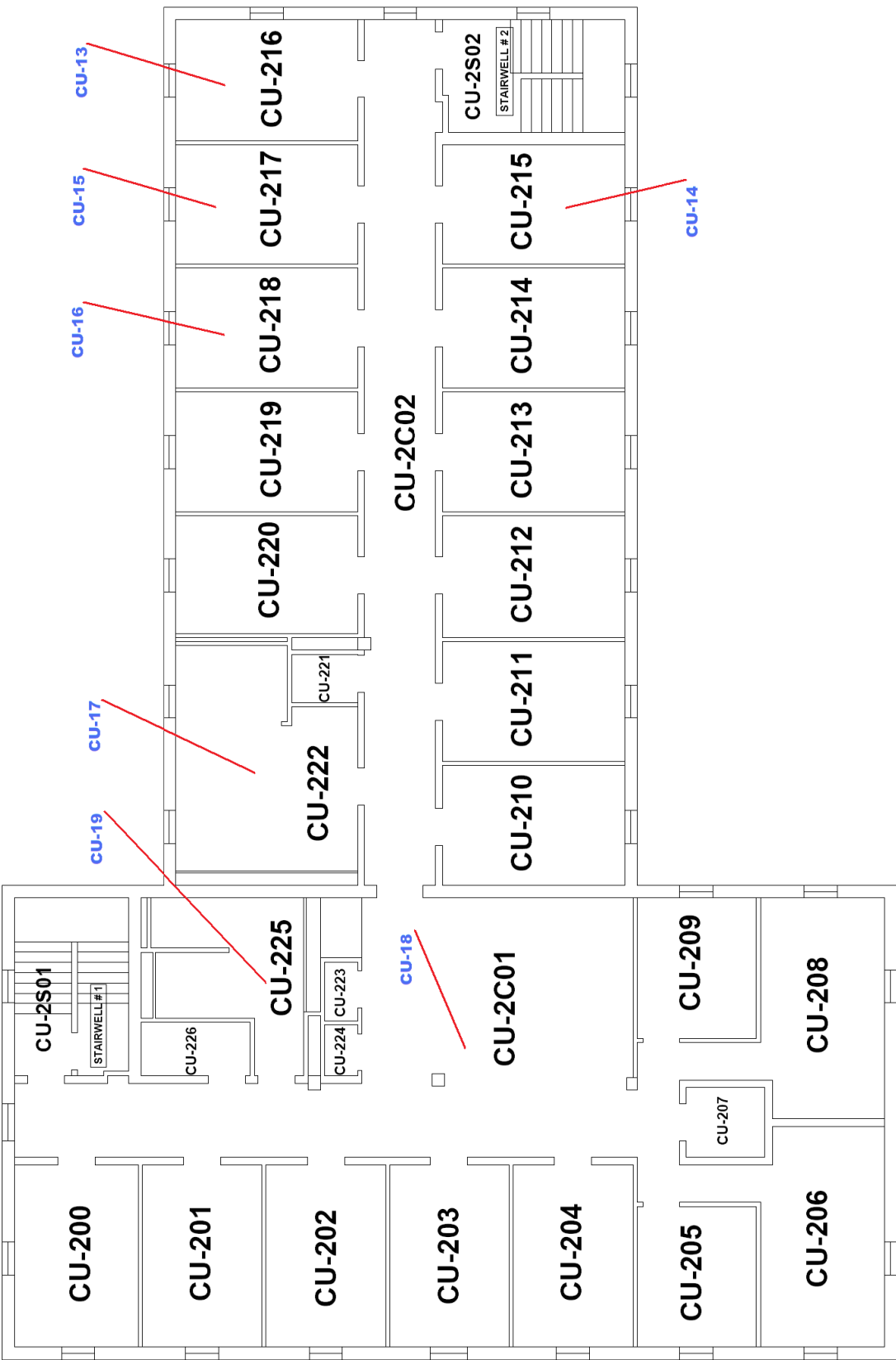


TO PATON COLLEGE
TUNNEL

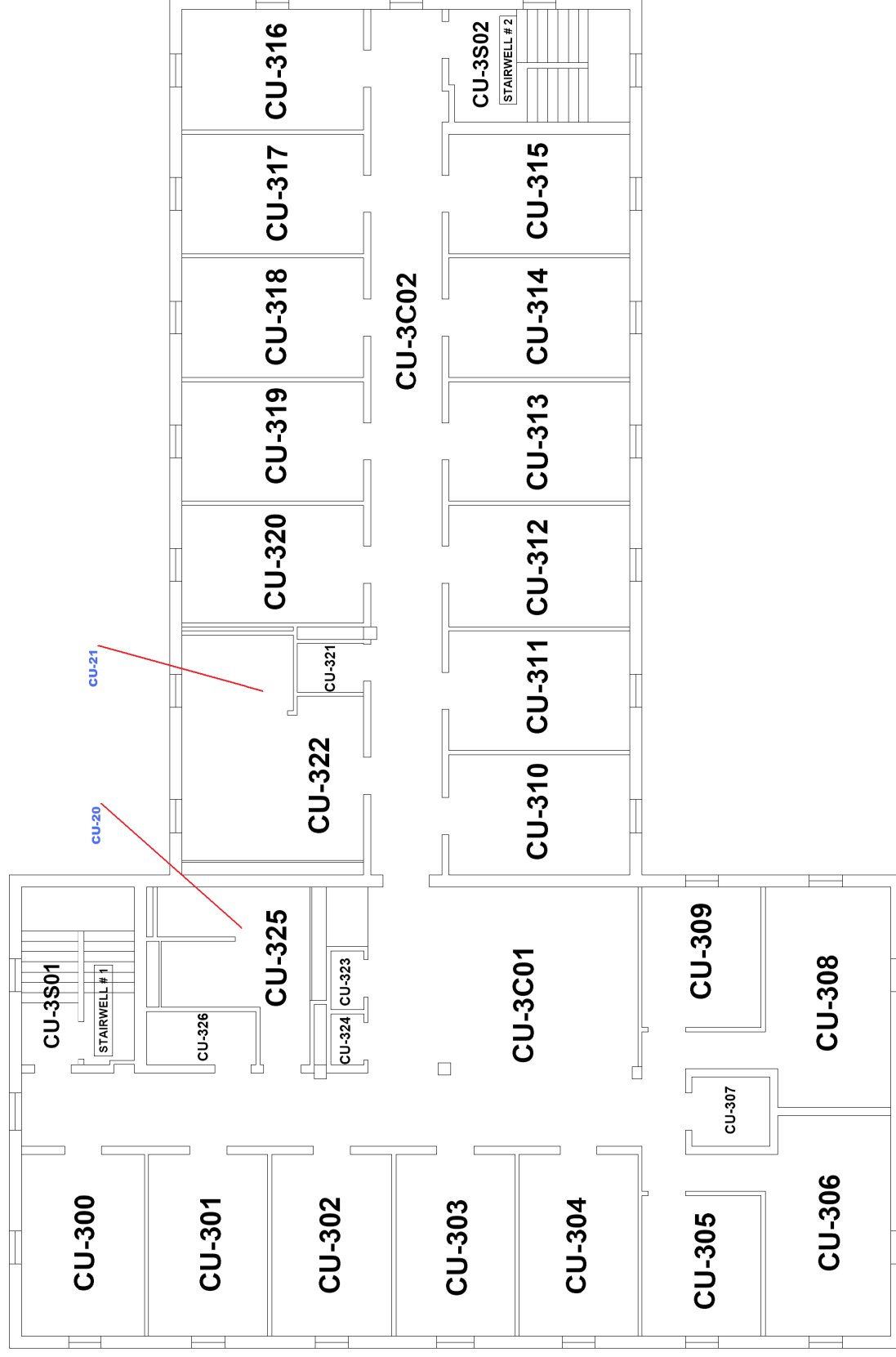
CURTIS HOUSE - LEVEL - 1



CURTIS HOUSE - LEVEL - 2



CURTIS HOUSE - LEVEL - 3



CURTIS HOUSE - LEVEL - 4

