

September 29, 2016

Ms. Melissa O'Reilly-Nash
Public Works and Government Services
Environmental Services
10 Barter's Hill
St. John's, NL A1C 6M1

(Sent Via Email *Melissa.OReilly-Nash@pwgsc-tpsgc.gc.ca*)

Subject: Bulk Asbestos Sampling Program - FINAL
Northwest Atlantic Fisheries Centre, Pods H7, H17, O17, and All Penthouses
E. White Hills Road, St. John's, NL
Our ref.: P-0010737-0-02-202

Dear Ms. O'Reilly-Nash:

At your request, Englobe Corp. (Englobe) has conducted an asbestos sampling program at the above-noted site to support major electrical upgrades in Pods H7, H17, O17 and all Penthouses. The work includes replacement of the electrical systems, specifically the major components, such as the high voltage switchyard, high voltage transformers, high voltage primary switchgear and secondary switchgear. Equipment will be fastened to drywall walls and floor and wall will be penetrated to run conduit.

1 SCOPE OF WORK

The scope of work included a review past asbestos sampling programs, a site inspection to assess current conditions and collect samples of potential asbestos-containing materials (ACMs), and a summary of the findings of all assessments.

Previous asbestos assessment reports reviewed by Englobe included:

- ▶ *Asbestos Assessment, Northwest Atlantic Fisheries Complex, St. John's, NF.* Prepared by All-Tech Environmental Services Limited and dated March 31, 2002.
- ▶ *Asbestos Inventory Update, Northwest Atlantic Fisheries Centre – St John's, NL.* Prepared by LVM-Maritime Testing, dated April 16, 2012.
- ▶ *Bulk Asbestos Sampling - Various Washrooms, NAFC, St. John's, NL.* Prepared by Englobe, dated March 17, 2016.

2 SITE DESCRIPTION

2.1 Pod H7

Pod H7 is a single-storey, electrical substation building. The walls, ceiling and floors consist of concrete. Potential ACMs observed and assessed in Pod H7 included mechanical insulations on ductwork.

2.2 Pods H17 & O17

Pods H17 and O17 are two-storey + basement structures. The basements consist primarily of utility rooms (an electrical room and elevator machine room in H17 and an electrical room in Pod O17). The first and second floors are primarily occupied by office spaces.

The basement finishes consist primarily of concrete, however some drywall is present on walls and ceiling. The first and second floors are finished with drywall walls, suspended tile ceilings and a combination of carpet, vinyl tile, vinyl sheet and ceramic tile flooring. Potential ACMs observed and assessed in Pod H17 and O17 included wall, ceiling and flooring materials, adhesives and mechanical insulations.

2.3 Penthouses

Mechanical penthouses are present as the top floor in Pods E18, G10, G18, J12, J16, J18, L14, L16, N18, N20, P16, P18 and R16. The penthouses are primarily concrete structures; however some walls are finished with drywall. Potential ACMs observed and assessed in the penthouses included drywall joint compound, adhesives and mechanical insulations.

3 METHODOLOGY

The current asbestos sampling program consisted of a walkthrough of the Pods H7, H17, and O17 on August 15, 2016 with a return visit to inspect the Penthouses on August 26, 2016. During the survey, samples of potential ACMs were collected for laboratory analyses. Areas and materials that were assessed during previous investigations were not re-sampled (unless clarification was required) but the results were simply carried forward.

This report outlines the results of the current assessment and summarizes the results of the previous investigations. **This report should be used in conjunction with the three previous assessment reports listed in Section 1.**

4 REGULATORY CRITERIA

4.1 Asbestos

Asbestos materials are defined in *Newfoundland and Labrador Asbestos Abatement Regulation 111/98*, under the *Occupational Health and Safety Act* (o.c. 98-730) as material containing greater than 1% asbestos by dry weight.

All ACMs must be handled in accordance with *NL Regulation 111/98* and asbestos waste must be disposed of at an approved municipal landfill disposal site.

Asbestos is classified as a hazardous material under the *Transportation of Dangerous Goods Act* (TDGA), Transport Canada, and has specific requirements for transfer (i.e. manifests, placards, etc.). ACMs must be transported by an operator holding a valid Certificate of Approval under the *Newfoundland and Labrador Waste Material Disposal Act*.

5 CURRENT ASSESSMENT

The purpose of the current assessment was to determine the presence and extent of ACMs by visual inspection and sampling, and confirm presence of asbestos identified in previous reports. During the survey, samples were collected of all materials that could have been reasonably expected to contain asbestos. These included thermal insulations, drywall joint compound, acoustic ceiling tiles, flooring materials and adhesives.

In total, three (3) samples were collected from Pod H7, thirty-one (31) samples (including two blind field duplicates) were collected from Pod H17, eleven (11) samples (including one blind field duplicate) were collected from Pod O17 and nine (9) samples were collected from the Penthouses for asbestos analysis. The samples were collected to either confirm previous results or to assess previously unassessed materials. Samples of suspected ACMs were collected in accordance with PWGSC *Deputy Minister Directive 057 - Asbestos Management*.

The assessment included the sampling of both friable and non-friable material suspected of containing asbestos. The term friable refers to a building material that can be reduced to dust by hand or moderate pressure, or any material that is already dust. Friable ACMs pose a greater risk to workers and building users due to the higher likelihood of releasing airborne asbestos fibres when disturbed.

When collecting samples for asbestos analysis, care was taken to avoid disturbing the materials more than necessary to prevent fibre release during sampling and to prevent unnecessary damage to the structures. Samples were collected by penetrating the material in question through the entire thickness with either a clean knife or a clean hammer and chisel. Samples were placed in individual sample bags with zip-locks and labelled with the sample ID. Photographs were taken of each sample location.

All asbestos samples were submitted to EMSL Canada Inc. in Mississauga, ON for analysis by the EPA 600/R-93/116 method using polarized light microscopy (PLM). EMSL is a National Voluntary Laboratory Accreditation Program (NVALP) certified laboratory, for the required analyses.

The results of the current asbestos assessment are provided below in Section 4.1 and are included in the summary of ACMs in Section 5 of this report.

5.1 Asbestos Sample Locations

Tabulated analytical results from the current survey are presented in Table 1. Sample locations are provided on Figures in Appendix 1. Laboratory certificates are provided in Appendix 3.

It should be noted that the table is meant to be a list of samples with corresponding sample locations and results, to provide clarity on the materials sampled during the current survey. Please consult the 2002, 2012 and March 2016 reports for a tabulated list of all materials sampled in during those assessments.

Table 1: Bulk Asbestos Results. Samples collected August 15 and 26, 2016.

SAMPLE ID	SAMPLE DESCRIPTION	SAMPLE LOCATION	ASBESTOS PRESENT	PHOTO REFERENCE
H7				
2016-H7-A1	Ductwork wrap	H7 Mechanical Room, Ductwork	None Detected	1
2016-H7-A2	Ductwork fibreglass insulation	H7 Mechanical Room, Ductwork	None Detected	2
2016-H7-A3	Ductwork expansion fabric	H7 Transformer Vault, Ductwork	None Detected	3
H17				
2016-H17-104-A4	Drywall joint compound	H17-104, Office Wall	None Detected	4
2016-H17-104-A5	24"x24" ceiling tile, big and small dots	H17-104, Office Ceiling	None Detected	5
2016-H17-104-A6	Drywall joint compound	H17-104, Office Wall	None Detected	6
2016-H17-104-A7 Baseboard	Dark brown vinyl baseboard	H17-104, Office Wall	None Detected	7
2016-H17-104-A7 Adhesive	Vinyl baseboard adhesive	H17-104, Office Wall	None Detected	7
2016-H17-104-A8 Floor Tile	12"x12" blue vinyl floor tile	H17-104, Office Floor	None Detected	8
2016-H17-104-A8 Adhesive	Adhesive beneath 12" blue vinyl floor tile	H17-104, Office Floor	None Detected	8
2016-H17-101-A9 Floor Tile	12"x12" white vinyl floor tile with grey specks	H17-101, Hallway Floor	None Detected	9
2016-H17-101-A9 Adhesive	Adhesive beneath 12"x12" white vinyl floor tile with grey specks	H17-101, Hallway Floor	None Detected	9
2016-H17-103-A10 Carpet	Red carpet	H17-103, Office Floor	None Detected	10
2016-H17-103-A10 Adhesive	Adhesive beneath red carpet	H17-103, Office Floor	None Detected	10
2016-H17-103-A11	24"x24" ceiling tile with small dots	H17-103, Office Ceiling	None Detected	11
2016-A31	Blind Field Duplicate of 2016-H17-103-A11		None Detected	-

SAMPLE ID	SAMPLE DESCRIPTION	SAMPLE LOCATION	ASBESTOS PRESENT	PHOTO REFERENCE
2016-H17-102-A12 Vinyl Flooring	White seamless vinyl floor with brown specks	H17-102, Office Floor	None Detected	12
2016-H17-102-A12 Adhesive	Adhesive beneath white seamless vinyl floor with brown specks	H17-102, Office Floor	None Detected	12
2016-H17-102-A13 Baseboard	Light brown vinyl baseboard	H17-102, Office	None Detected	13
2016-H17-102-A13 Adhesive	Vinyl baseboard adhesive	H17-102, Office	None Detected	13
2016-H17-101-A14	Drywall joint compound	H17-101, Hallway Wall	None Detected	14
2016-H17-101-A15	24"x48" ceiling tile with small dots and small gouges	H17-101, Hallway Ceiling	None Detected	15
2016-H17-B3-A16	Ductwork wrap	H17-B3, Ductwork	None Detected	16
2016-H17-B3-A17	Ductwork fibreglass insulation	H17-B3, Ductwork	None Detected	17
2016-A32	Duplicate of 2016-H17-B3-A17		None Detected	-
2016-H17-B3-A18	Drywall joint compound	H17-B3, Wall	None Detected	18
2016-H17-B1-A19 Ceramic Tile	Dark grey ceramic tile	H17-B1, Floor	None Detected	19
2016-H17-B1-A19 Grout	Grout beneath dark grey ceramic tile	H17-B1, Floor	None Detected	19
2016-H17-B1-A19 Adhesive	Adhesive on dark grey ceramic tile	H17-B1, Floor	None Detected	19
2016-H17-201-A20 Flooring	White seamless vinyl floor with grey specks	H17-201, Hallway floor	None Detected	20
2016-H17-201-A20 Adhesive	Adhesive beneath white seamless vinyl floor with grey specks	H17-201, Hallway floor	None Detected	20
2016-H17-203-A21	Drywall joint compound	H17-203, Washroom Wall	None Detected	21
2016-H17-201-A22	Mixed speckled carpet	H17-201, Stairwell and Offices	None Detected	22
2016-H17-201-A22	Adhesive beneath mixed speckled carpet	H17-201, Stairwell and Offices	None Detected	22

SAMPLE ID	SAMPLE DESCRIPTION	SAMPLE LOCATION	ASBESTOS PRESENT	PHOTO REFERENCE
O17				
2016-O17-B1-A23	Drywall joint compound	O17-B1, Wall	None Detected	23
2016-O17-B1-A24	Concrete slab	O17-B1, Floor	None Detected	24
2016-O17-S1-A25	Drywall joint compound	O17-S1, Stairwell	None Detected	25
2016-A33	Duplicate of 2016-O17-S1-A25		None Detected	--
2016-O17-S1-A26 Floor Tile	12"x12" pink vinyl floor tile	O17-S1, Stairwell	None Detected	26
2016-O17-S1-A26 Adhesive	Adhesive from vinyl floor tile	O17-S1, Stairwell	None Detected	26
2016-O17-201-A27	Drywall joint compound	O17-201, Hallway Wall	None Detected	27
2016-O17-201-A28	Drywall joint compound	O17-201, Hallway Wall	None Detected	28
2016-O17-201-A29 Vinyl Flooring	Light grey seamless vinyl flooring with dark specks	O17-201, Hallway Floor	None Detected	29
2016-O17-201-A29	Adhesive beneath light grey seamless vinyl flooring with dark specks	O17-201, Hallway Floor	None Detected	29
2016-O17-201-A30	24"x24" ceiling tile with small dots and large gouges	O17-201, Hallway Ceiling	None Detected	30
Penthouses				
G10-Pent-A34	Drywall joint compound	G10 Penthouse, Wall	None Detected	31
G10-Pent-A35	Ductwork sealant (caulking)	G10 Penthouse, where ductwork passes through wall	2% Chrysotile	32
J12-Pent-A36	Drywall joint compound	J12 Penthouse, Wall	None Detected	33
J16-Pent-A37	Drywall joint compound	J16 Penthouse, Wall	None Detected	34
J16-Pent-A38	Ductwork wrap	J16 Penthouse ductwork	None Detected	35
J16-Pent-A39	Ductwork fiberglass insulation	J16 Penthouse ductwork	None Detected	35
L14-Pent-A40	Drywall joint compound	L14 Penthouse, Wall	None Detected	36
L16-Pent-A41	Drywall joint compound	L16 Penthouse, Wall	None Detected	37
P16-Pent-A42	Drywall joint compound	P16 Penthouse, Wall	3% Chrysotile	38

6 SUMMARY OF ASBESTOS-CONTAINING MATERIALS

During the surveys, Englobe staff had access to all areas of Pods H7, H17, O17 and all Penthouses. ACMs identified during the current survey as well as the three previous assessments (All-Tech 2002, LVM 2012, and Englobe March 2016) are summarized below.

6.1 Pod H7

- A white, powdery parging cement and weaved-fabric wrap were identified on a large diameter duct in Substation 1 in Building H7 in 2012 (see Photo 39 in Appendix 2). The parging cement was found to contain 3% chrysotile asbestos and is considered highly friable. The weaved-fabric wrap was found to contain 90% chrysotile asbestos and is considered friable.
- No other ACMs were identified in Pod H7.

6.2 Pod H17

- No ACMs were identified in Pod H17.
 - During the 2002 asbestos assessment, samples of drywall joint compound were collected sparingly throughout the facility. The results of those samples were then conservatively applied to all areas of the building. As a result, drywall joint compound throughout the NAFC has been identified as asbestos-containing. However, several samples of drywall joint compound have been collected from Pod H17 during the current and past assessments. One sample of joint compound was collected in 2002, three samples of joint compound were collected in March 2016 and five samples of joint compound were collected during the current assessment. All nine samples were found to not contain asbestos. Therefore, it is our opinion that the drywall joint compound in Pod H17 is non-asbestos containing.

6.3 Pod O17

- No ACMs were identified in Pod O17.
 - During the 2002 asbestos assessment, samples of drywall joint compound were collected sparingly throughout the facility. The results of those samples were then conservatively applied to all areas of the building. As a result, drywall joint compound throughout the NAFC has been identified as asbestos-containing. However, several samples of drywall joint compound have been collected from Pod O17 during current and past assessments. Two samples of joint compound were collected in March 2016 and five samples of joint compound were collected during

the current assessment. All seven samples were found to not contain asbestos. Therefore, it is our opinion that the drywall joint compound in Pod O17 is non-asbestos containing.

6.4 Penthouses

- Ductwork sealant (caulking), where the ductwork passes through wall, in the penthouse of Pod G10 contains 2% chrysotile asbestos. The sealant is considered non-friable. The sealant was not observed in other penthouses.
- Parging cement insulation on pipe elbows and fittings in the penthouse (and the penthouse access room) of Pod N20 was sampled in 2002 and found to contain 45% chrysotile asbestos. Approximately 15 elbows/fittings were identified. The parging cement is considered friable.
 - Samples of parging cement were collected from the penthouses in Pods E18, G10, G18, J12, J16, J18, L14, L16, N18, P18, P20 and R16 and found to not contain asbestos. Therefore, it is our opinion that the parging cement present in all penthouses, other than Pod N20, is non-asbestos-containing.
- Drywall joint compound in the penthouse of Pod P16 contains 3% chrysotile asbestos. The drywall joint compound should be considered friable.
 - During the 2002 asbestos assessment, samples of drywall joint compound were collected sparingly throughout the facility. The results of those samples were then conservatively applied to all areas of the building. As a result, drywall joint compound throughout the NAFC has been identified as asbestos-containing. However, no drywall joint compound samples were previously collected directly from the penthouses. During the current assessment, samples of drywall joint compound were collected from each penthouse where drywall was observed (Pods G10, G18, J12, J16, L14, L16 and P16). Joint compound in Pod P16 was found to contain asbestos, while all other samples were found to not contain asbestos. Therefore, it is our opinion that the drywall joint compound in all penthouses, other than Pod P16, is non-asbestos containing.
- No other ACMs were identified in the penthouses.

7 QUALITY ASSURANCE (QA) / QUALITY CONTROL (QC)

Englobe conducted the sampling following standard operating procedures, including job procedures and safe work practices, for the collection and handling of hazardous materials. The sampling was conducted in accordance with all pertinent acts, regulations, codes, guidelines and standard practices.

All bulk asbestos samples were submitted under chain of custody to EMSL Canada Inc. laboratory in Mississauga, ON, Canada.

EMSL conducts analysis on asbestos bulk samples following the EPA 600/R-93/116 method for PLM analysis. PLM alignment, including proper illumination, objective centering, polarizer, analyzer and ocular alignment, refractive index liquid calibration and analyst calibration using known reference standards are all a part of EMSL’s calibration and standardization program for PLM analysis. In addition, EMSL has QA/QC procedures described in their Quality Assurance Manual. Sample analysis is subjected to 10% reanalysis for quality control. Re-preparation and re-analysis of samples is conducted by the same analyst and different analysts. Analysts are required to analyze samples of known standards.

Englobe also reviewed the results of the QA/QC blind duplicate samples to verify that results were within the acceptable relative percent difference (RPD) ranges. RPD is defined as:

$$RPD = \frac{(\text{sample result} - \text{duplicate result})}{\frac{(\text{sampleresult} + \text{duplicateresult})}{2}} \times 100$$

EMSL’s internal acceptable RPD range for duplicate samples submitted for PLM analysis by the EPA 600/R-93/116 method is 0 – 100%.

Table 2 provides a summary of the RPD results for the three blind duplicate asbestos samples a collected for analysis; it should be noted that RPDs cannot be calculated in instances where the original sample, the blind duplicate sample, or both were found to contain no detectable asbestos, or if results are within 5x the detection limits.

Table 2: Relative Percent Difference (RPD) Results for Blind Duplicate Samples

ORIGINAL SAMPLE ID	ORIGINAL RESULT	DUPLICATE ID	DUPLICATE RESULT	RPD	ACCEPTABLE RPD RANGE
Asbestos					
2016-H17-103-A11	None detected	2016-A31	None detected	-	100%
2016-H17-B3-A17	None detected	2016-A32	None detected	-	100%
2016-O17-S1-A25	None detected	2016-A33	None detected	-	100%

8 REPORT USE AND CONDITIONS

This report was prepared for the exclusive use of Public Works and Government Services Canada and is based on data and information obtained during a site visit by Englobe at the subject site and the condition of the site on the date of such inspection, supplemented by information obtained and described herein. In compiling hazardous material summaries Englobe has relied on the results of several previous investigations. This report should be used in conjunction with the original reports and is subject to any limitations stated within those reports.

The asbestos sampling program addresses the only the specified asbestos-containing materials. An attempt was made to identify all materials in the site structures with potential to contain asbestos. However, it is possible that materials other than those mentioned in this report may be present.

Investigation that could have compromised the integrity of the building envelopes (i.e., destructive sampling of roofing and exterior building materials) was kept to a minimum.

The scope of the assessment encompassed only the Pods H7, H17, O17 and all Penthouses at the NAFC noted herein. Additional asbestos-containing materials may be present on-site in areas not included in the scope of the current assessment.

The statements and conclusions presented in this report are professional opinions based upon data and information obtained during a site survey by Englobe, visual observations made during the site survey, information provided to us by PWGSC, and on interpretation of asbestos and paint laboratory analyses.

The opinions in this report are given using generally accepted scientific judgement, principles, and practices; however, because of the inherent uncertainty in this process no guarantee of conclusion is intended or can be given.

9 CLOSING

We trust this is to your satisfaction. If, however, additional information should be required, please communicate with the undersigned.

Regards,
Englobe Corp.



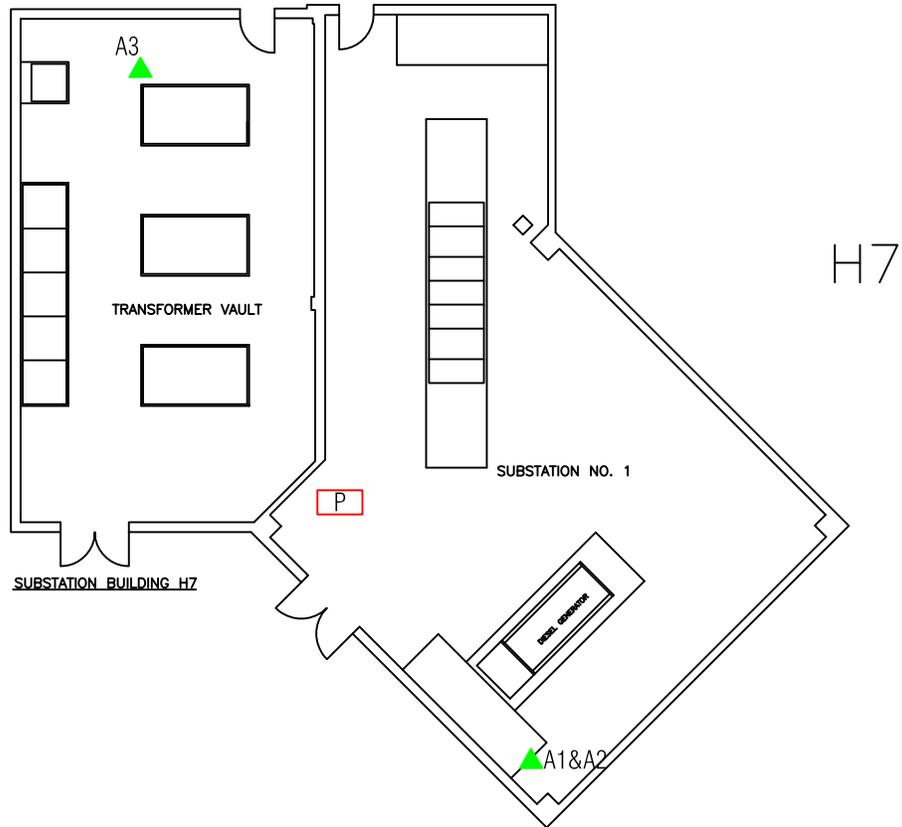
Andrew Thorne, B. Tech.
Environmental Technologist
Geotechnical, Materials and Environmental Engineering



Scott Fisher, P.Eng
Project Manager
Environmental Engineering



Appendix 1 Figures



LEGEND:

-  - Asbestos Sample Location(2016). No Asbestos Detected.
-  - Pipe Materials Contains Asbestos.

Ref: First Floor Plan, NWAFC, St. John's, NL, DWG # 106537 Version 2, Dated 2005/09/19, Provided by PWGSC.

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1	1	2016/09/07	JJ	AH	SF
No.	Version	Date	By	Verif	Appr.

Public Works and Government Services Canada

Asbestos Sampling

H7 - First Floor North West Atlantic Fisheries Centre
St. John's, NL

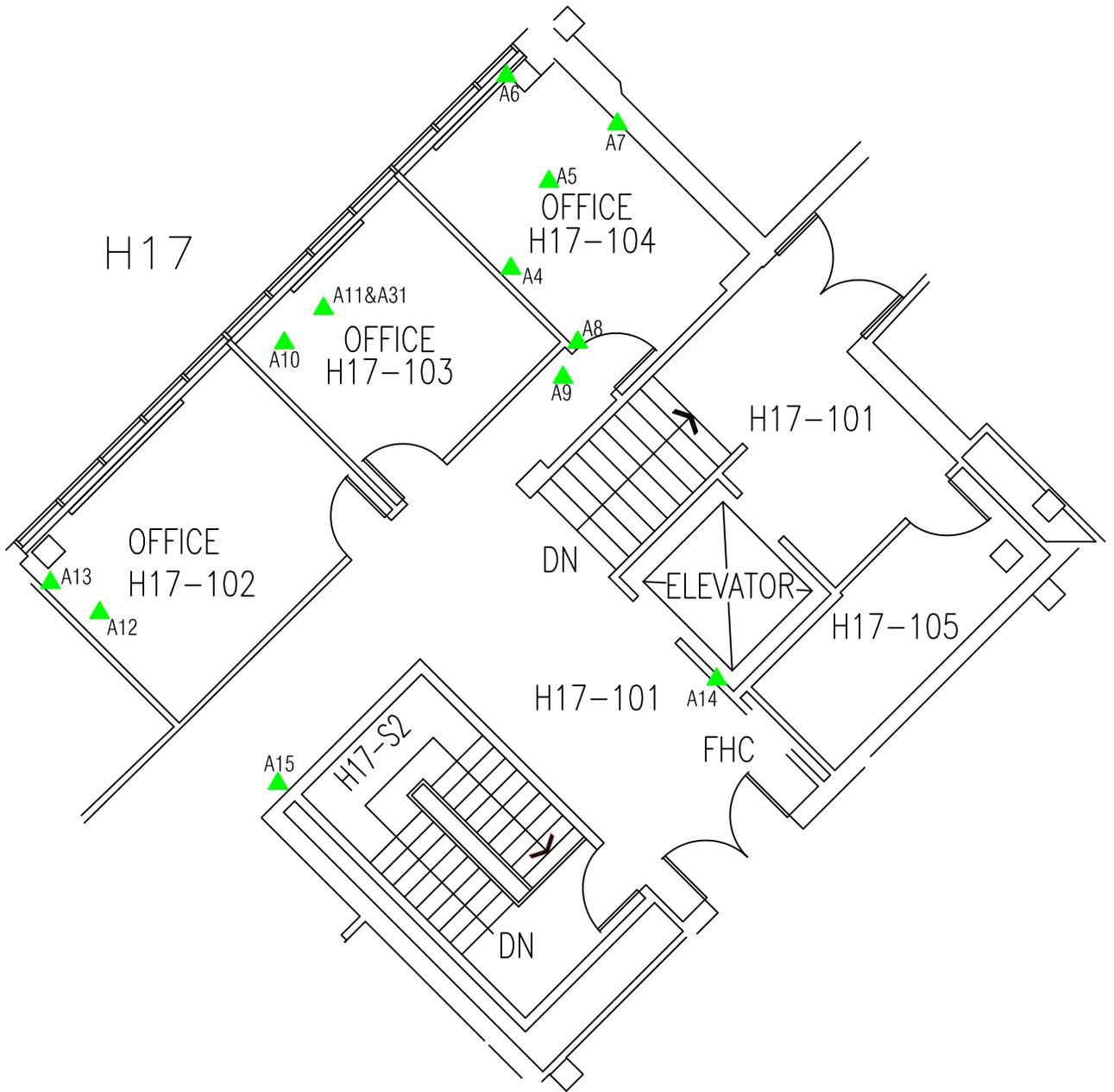
Floor Plan



39 Sagona Avenue
Mount Pearl, NL A1N 4P9
709 - 576 - 8148

Discipline:	Environment	Prepare by:	AH	Verify by:	AH
Scale:	1:200	Draw by:	JJ	Approval by:	SF
Date:	2016/09/07	Figure no.:	1		
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Figure 1	Letter				

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LEGEND:

▲ - Asbestos Sample Location(2016). No Asbestos Detected.

Ref: First Floor Plan, NWAFC, St. John's, NL, DWG # 106537 Version 2, Dated 2005/09/19, Provided by PWGSC.

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Public Works and Government Services Canada

Asbestos Sampling

H17 - First Floor North West Atlantic Fisheries Centre
St. John's, NL

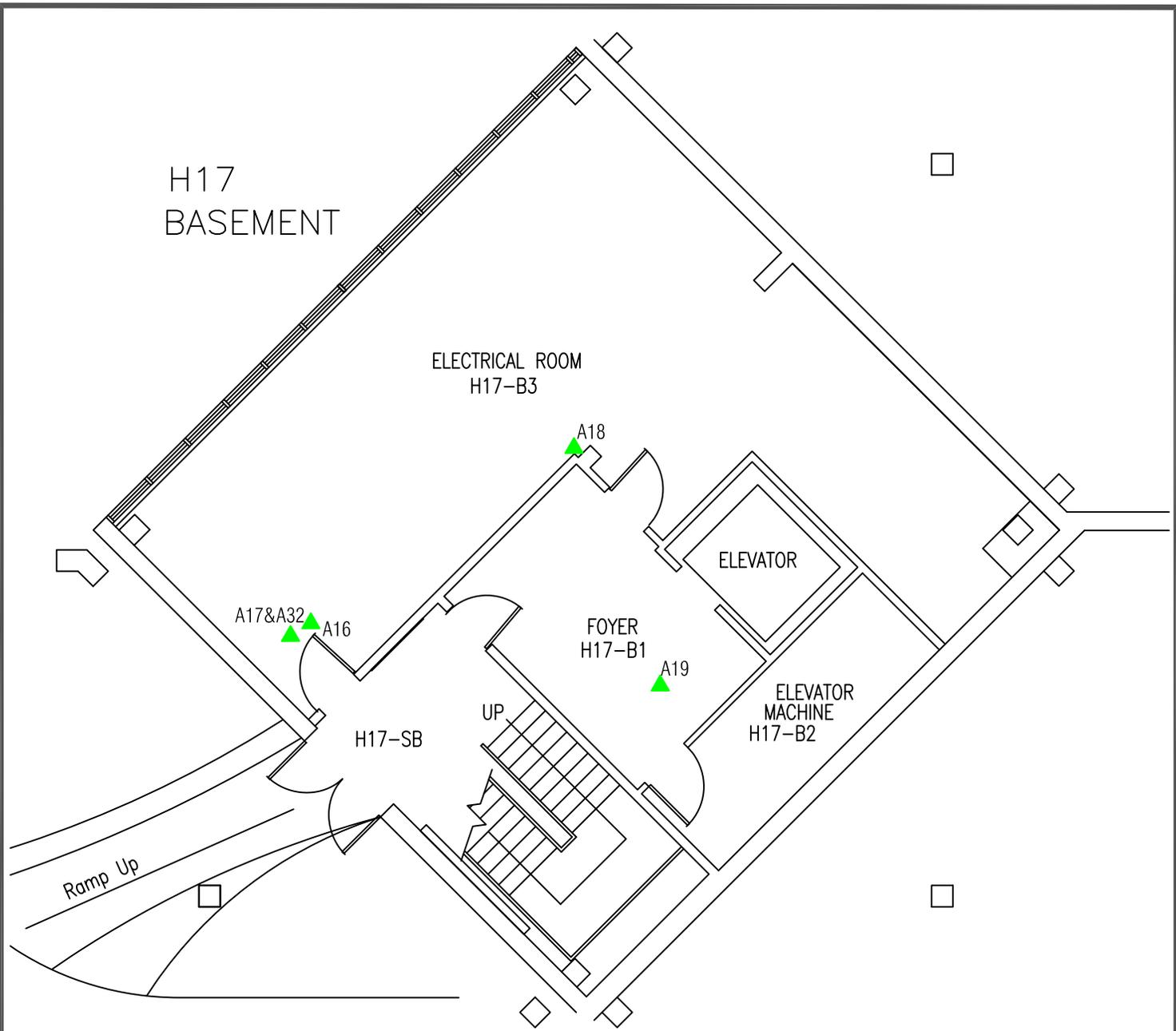
Floor Plan



39 Sagona Avenue
Mount Pearl, NL A1N 4P9
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LEGEND:

 - Asbestos Sample Location(2016). No Asbestos Detected.

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Public Works and Government Services Canada

Asbestos Sampling

H17 - Basement North West Atlantic Fisheries Centre
St. John's, NL

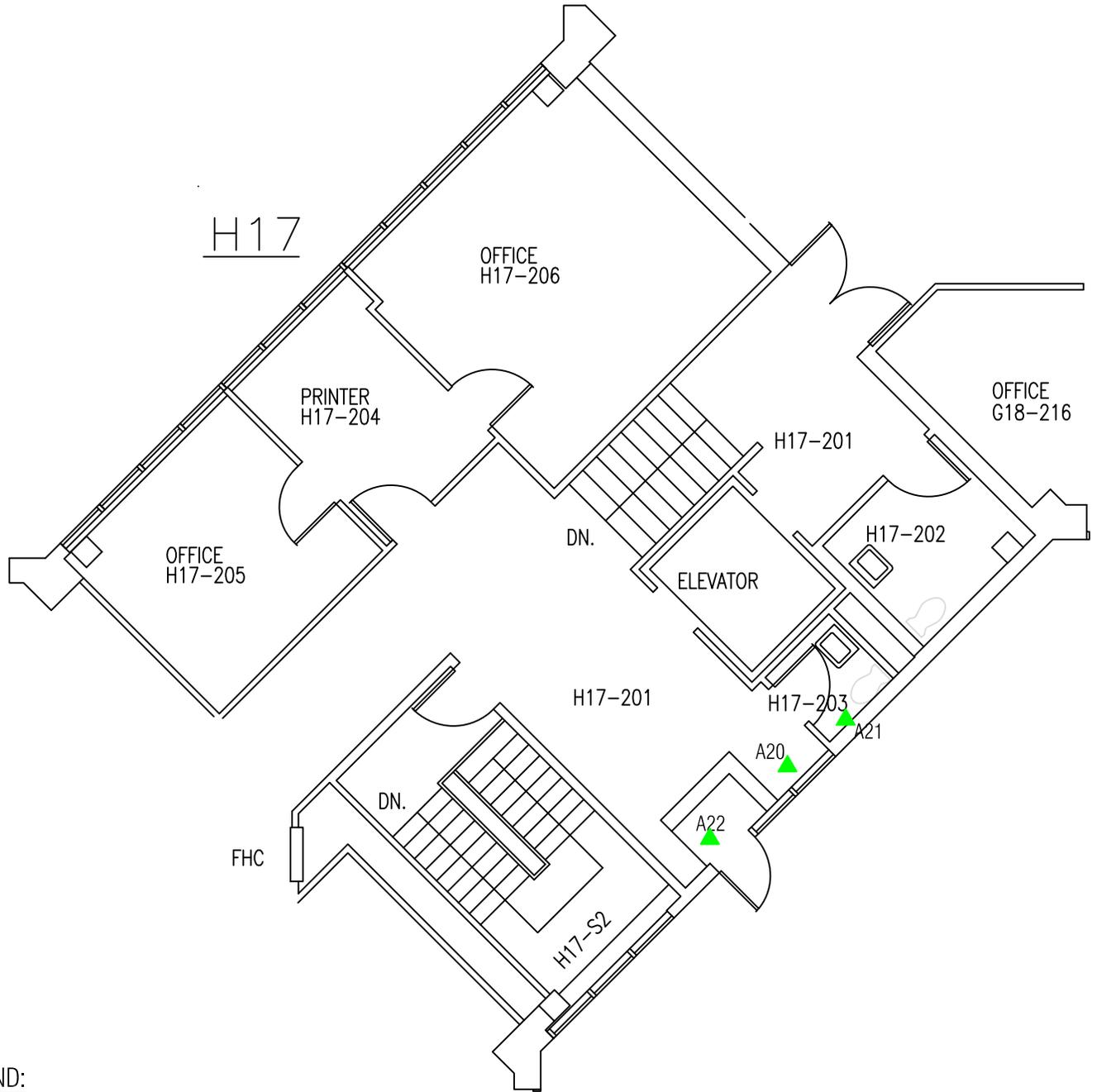
Floor Plan



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LEGEND:

▲ - Asbestos Sample Location(2016). No Asbestos Detected.

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Asbestos Sampling

H17 - Second Floor North West Atlantic Fisheries Centre
St. John's, NL

Floor Plan



39 Sagona Avenue
Mount Pearl, NL A1N 4P9
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SF	P-0010737	0	02	202	-	-

N18

FHC

M17

SLAB ON GRADE

O17
BASEMENT

EAST BLOCK

P16

ELECT. RM
017-B1

A23

017-SB

UP

A24

LEGEND:

 - Asbestos Sample Location(2016). No Asbestos Detected.

 - Area Not Surveyed (Exterior Between O17 and M17)

Ref: Basement Floor Plan, NWAFC, St. John's, NL, DWG # 106537
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Public Works and Government Services Canada

Asbestos Sampling

O17 - Basement North West Atlantic Fisheries Centre
St. John's, NL

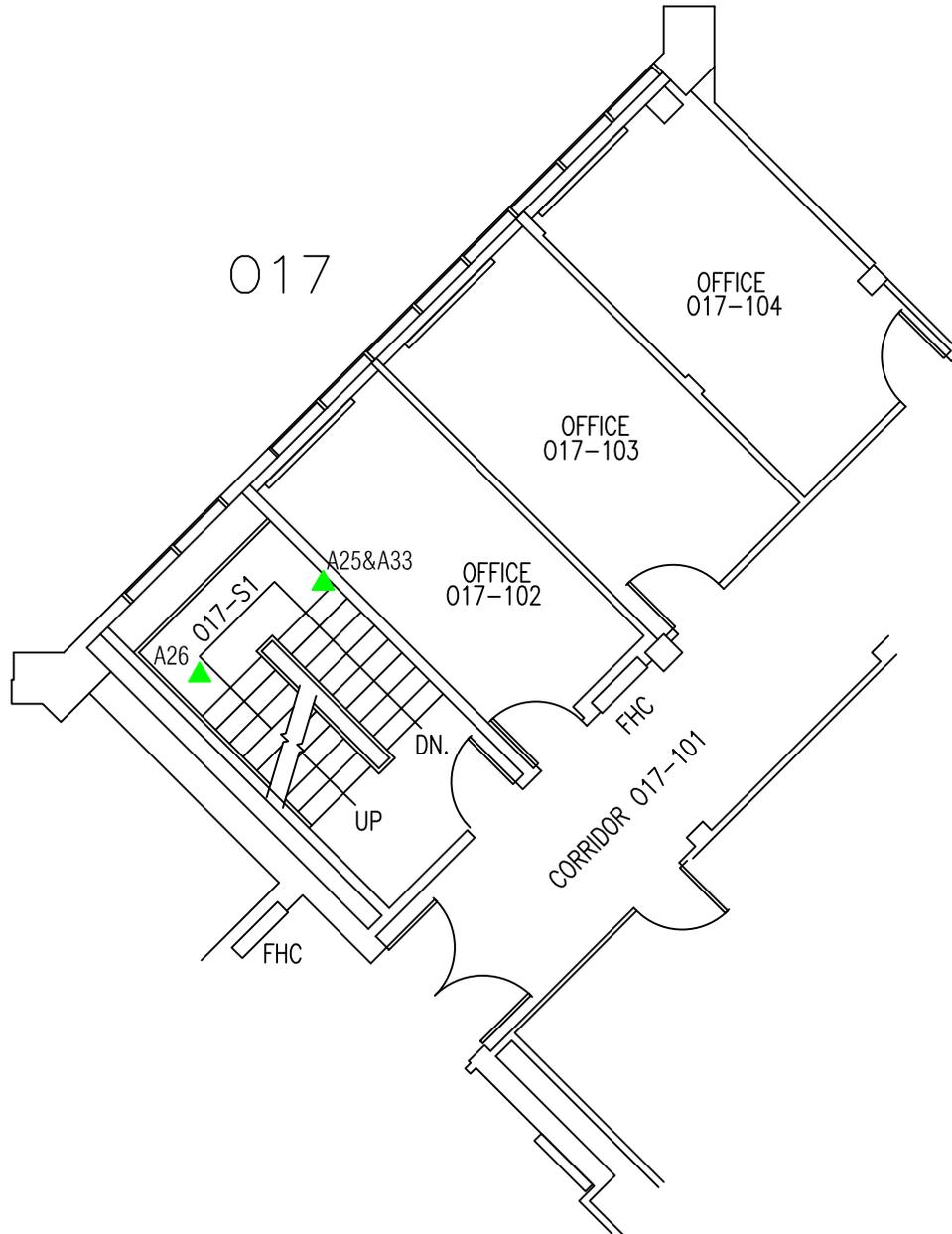


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Asbestos Sampling

O17 - First Floor North West Atlantic Fisheries Centre
St. John's, NL

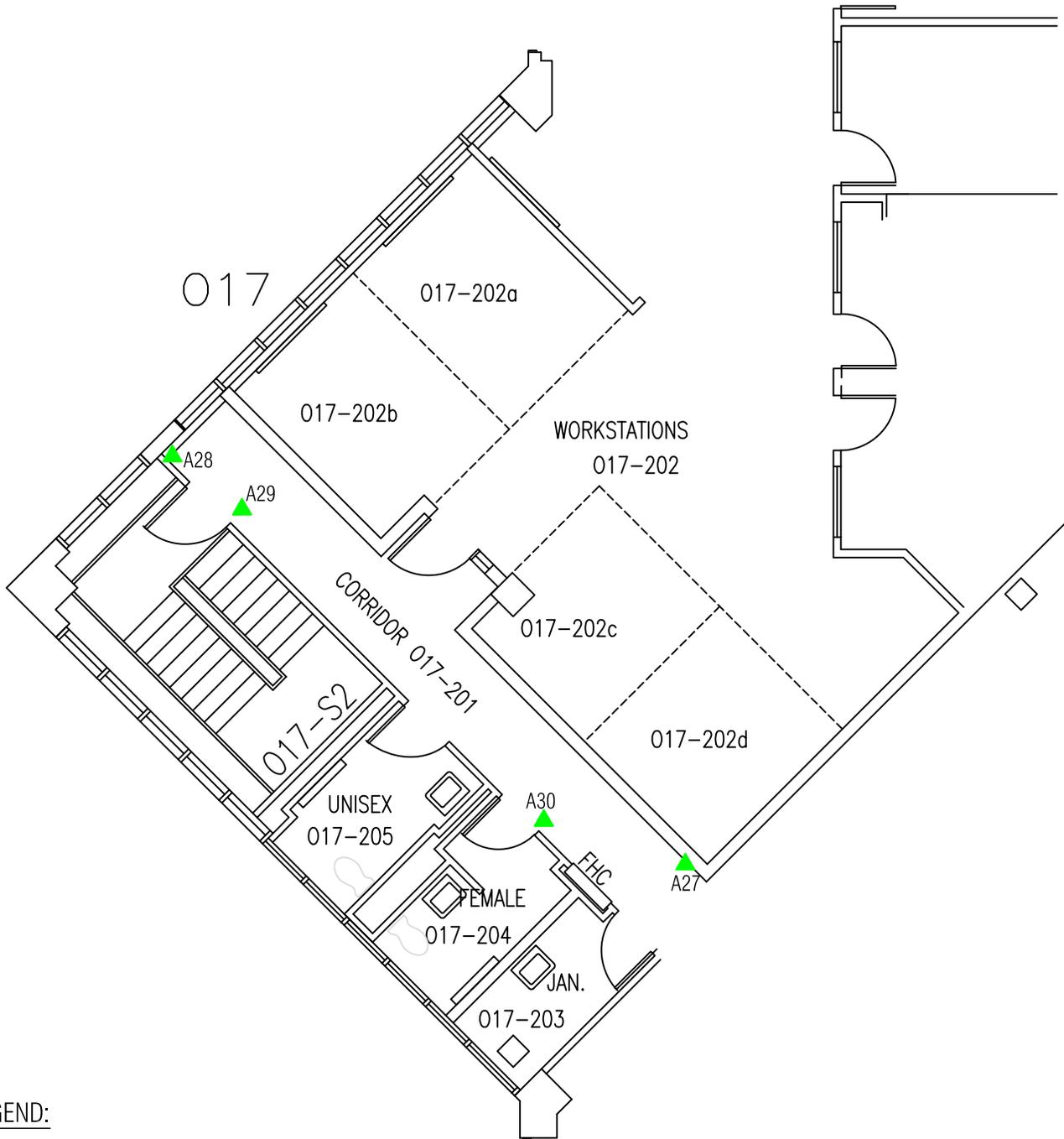
Floor Plan



39 Sagona Avenue
Mount Pearl, NL A1N 4P9
709 - 576 - 8148

Discipline:	Environment	Prepare by:	AH	Verify by:	AH
Scale:	1:100	Draw by:	JJ	Approval by:	SF
Date:	2016/09/07	Figure no.:	6		
Page setup: Figure 6	Paper size: Letter	Register no.:	P-0010737(former 16279)		

Man.	Project	Otp	Project	Phase	Electronic ref.	Rev.
SF	P-0010737	0	02	202	-	-



LEGEND:

▲ - Asbestos Sample Location(2016). No Asbestos Detected.

Ref: Second Floor Plan, NWAFC, St. John's, NL, DWG # 106537 Version 2, Dated 2005/09/19, Provided by PWGSC.

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1	1	2016/09/07	JJ	AH	SF
No.	Version	Date	By	Verif	Appr.

Public Works and Government Services Canada

Asbestos Sampling

O17 - Second Floor North West Atlantic Fisheries Centre
St. John's, NL

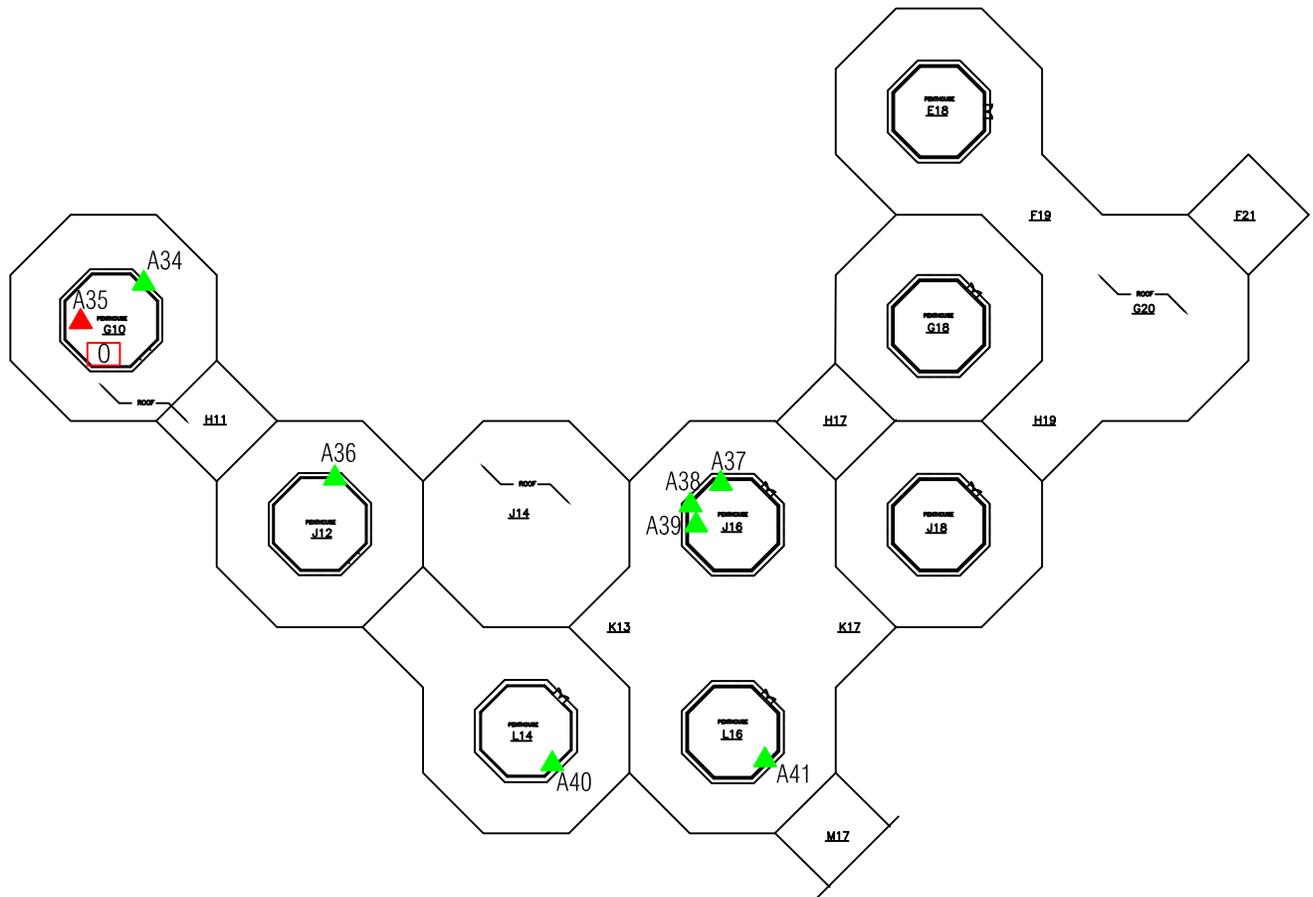
Floor Plan



39 Sagona Avenue
Mount Pearl, NL A1N 4P9
709 - 576 - 8148

Discipline:	Environment	Prepare by:	AH	Verify by:	AH
Scale:	1:100	Draw by:	JJ	Approval by:	SF
Date:	2016/09/07	Figure no.:	7		
Page setup:	Paper size:	Register no.:	P-0010737(former 16279)		
Figure 7	Letter				

Man.	Project	Otp	Project	Phase	Electronic ref.	Rev.
SF	P-0010737	0	02	202	-	-



LEGEND:

-  - Asbestos Sample Location(2016). No Asbestos Detected.
-  - Asbestos Sample Location(2016). Asbestos Detected.
-  - Other Asbestos Containing Materials (Caulking)

Ref: Penthouse Plan, NWAFC, St. John's, NL, DWG # 106537 Version 2, Dated 2005/09/19, Provided by PWGSC.

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1	1	2016/09/07	JJ	AH	SF
No.	Version	Date	By	Verif	Appr.

Public Works and Government Services Canada

Asbestos Sampling

Centre Block Section - Penthouse North West Atlantic Fisheries Centre
St. John's, NL

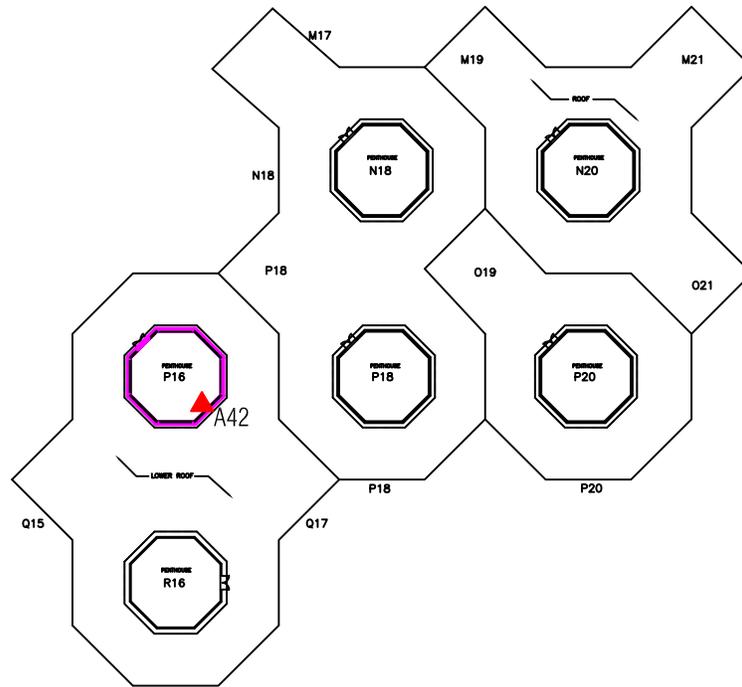
Floor Plan



39 Sagona Avenue
Mount Pearl, NL A1N 4P9
709 - 576 - 8148

Discipline:	Environment	Prepare by:	AH	Verify by:	AH
Scale:	1:1000	Draw by:	JJ	Approval by:	SF
Date:	2016/09/07	Figure no.:	8		
Page setup: Figure 8	Paper size: Letter	Register no.:	P-0010737(former 16279)		

Man.	Project	Otp	Project	Phase	Electronic ref.	Rev.
SF	P-0010737	0	02	202	- -	-



LEGEND:

- ▲ - Asbestos Sample Location(2016). Asbestos Detected.
- Wall Contains Asbestos

Ref: Penthouse Plan, NWAFC, St. John's, NL, DWG # 106537 Version 2, Dated 2005/09/19, Provided by PWGSC.

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1	1	2016/09/07	JJ	AH	SF
No.	Version	Date	By	Verif	Appr.

Public Works and Government Services Canada

Asbestos Sampling

East Block Section - Penthouse North West Atlantic Fisheries Centre
St. John's, NL



39 Sagona Avenue
Mount Pearl, NL A1N 4P9
709 - 576 - 8148

Discipline:	Environment	Prepare by:	AH	Verify by:	AH
Scale:	1:1000	Draw by:	JJ	Approval by:	SF
Date:	2016/09/07	Figure no.:	9		
Page setup: Figure 9	Paper size: Letter	Register no.:	P-0010737(former 16279)		

Floor Plan

Man.	Project	Otp	Project	Phase	Electronic ref.	Rev.
SF	P-0010737	0	02	202	- -	-



Appendix 2 Site Photographs

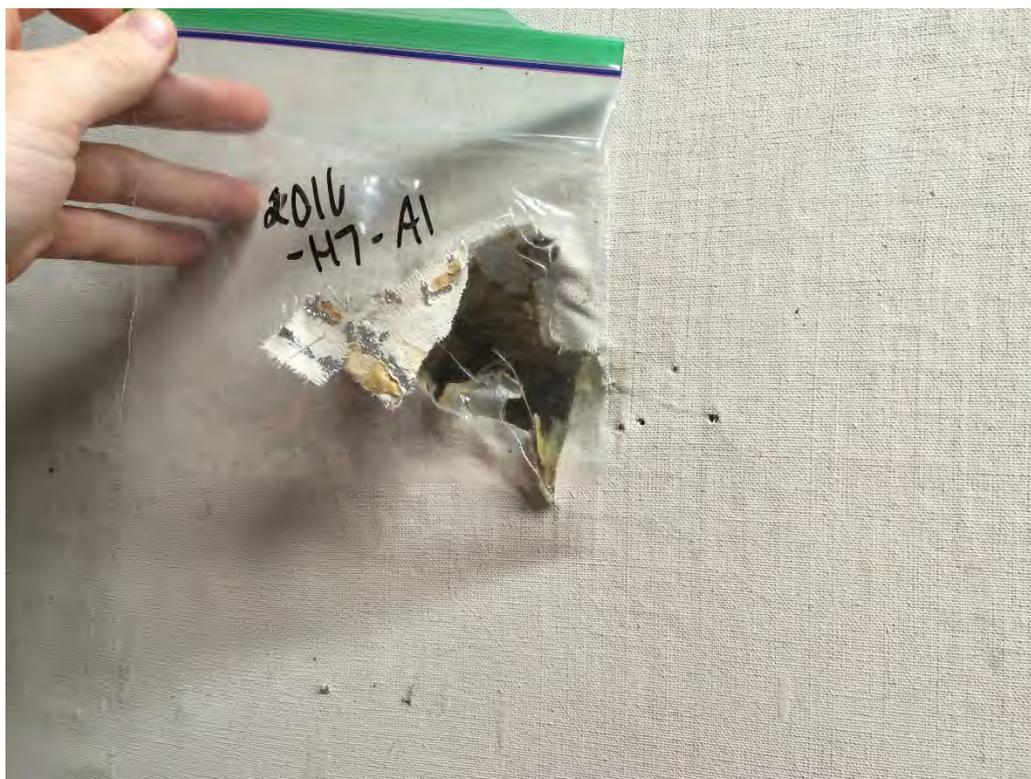


Photo 1: Asbestos sample A1, ductwork wrap in Pod H7. No asbestos detected.

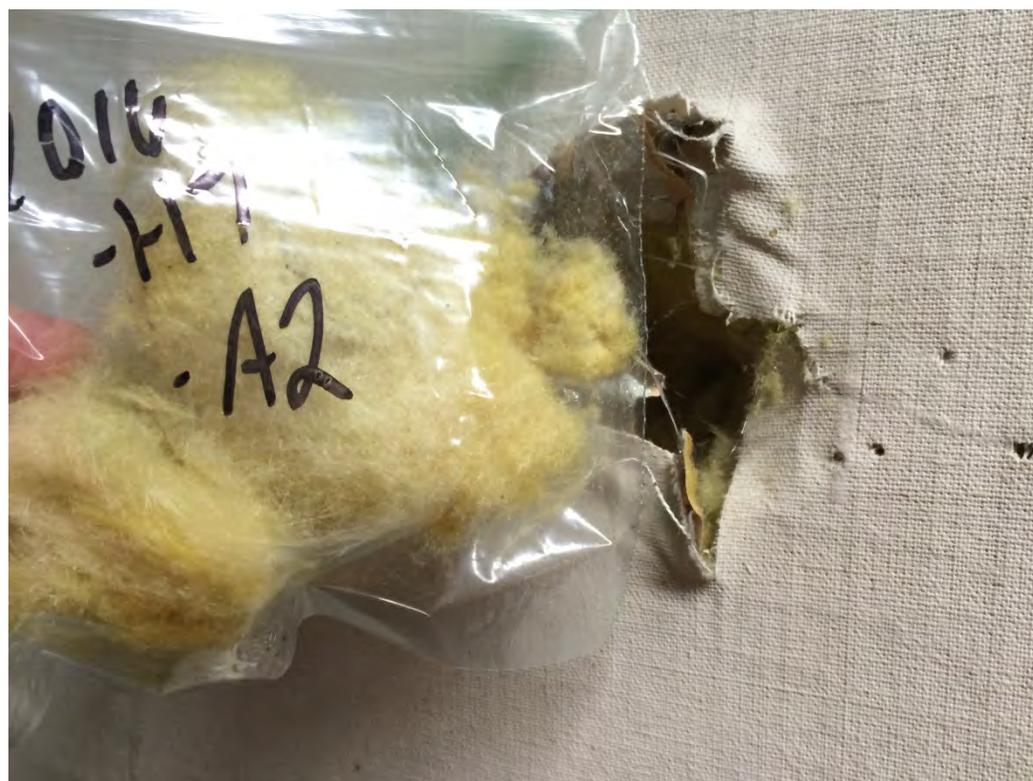


Photo 2: Asbestos sample A2, fibreglass insulation on ductwork in Pod H7. No asbestos detected.



Photo 3: Asbestos sample A3, ductwork expansion fabric in Pod H7, Transformer Vault. No asbestos detected.



Photo 4: Asbestos sample A4, drywall joint compound collected wall of H17-104. No asbestos detected.



Photo 5: Asbestos sample A5, 24" x 24" ceiling tile with big and small dots patten, collected from H17-104. No asbestos detected.

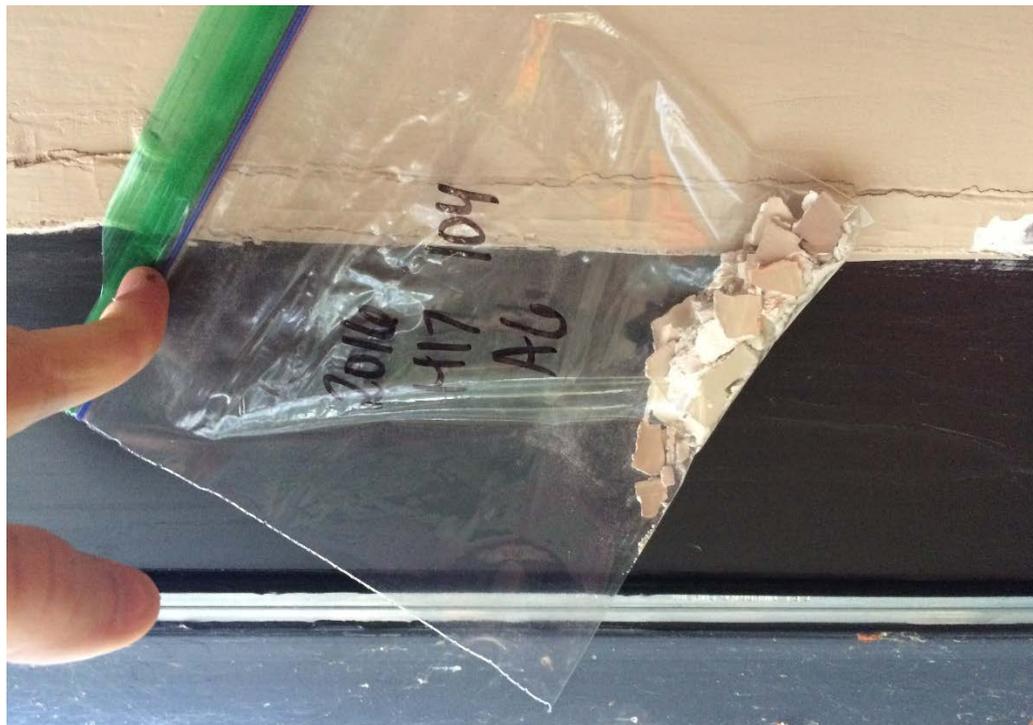


Photo 6: Asbestos sample A6, drywall joint compound collected from wall of H17-104. No asbestos detected.

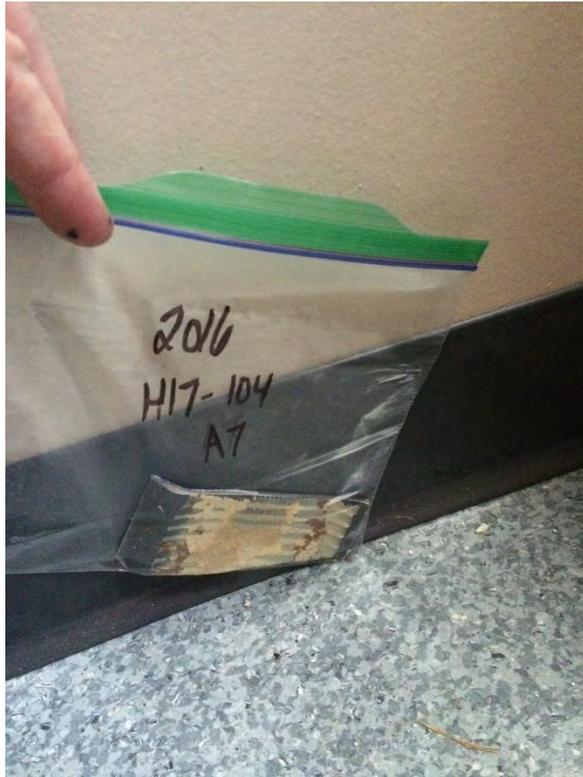


Photo 7: Asbestos sample A7, dark brown vinyl baseboard and adhesive collected from H17-104. No asbestos detected in floorboard or adhesive.

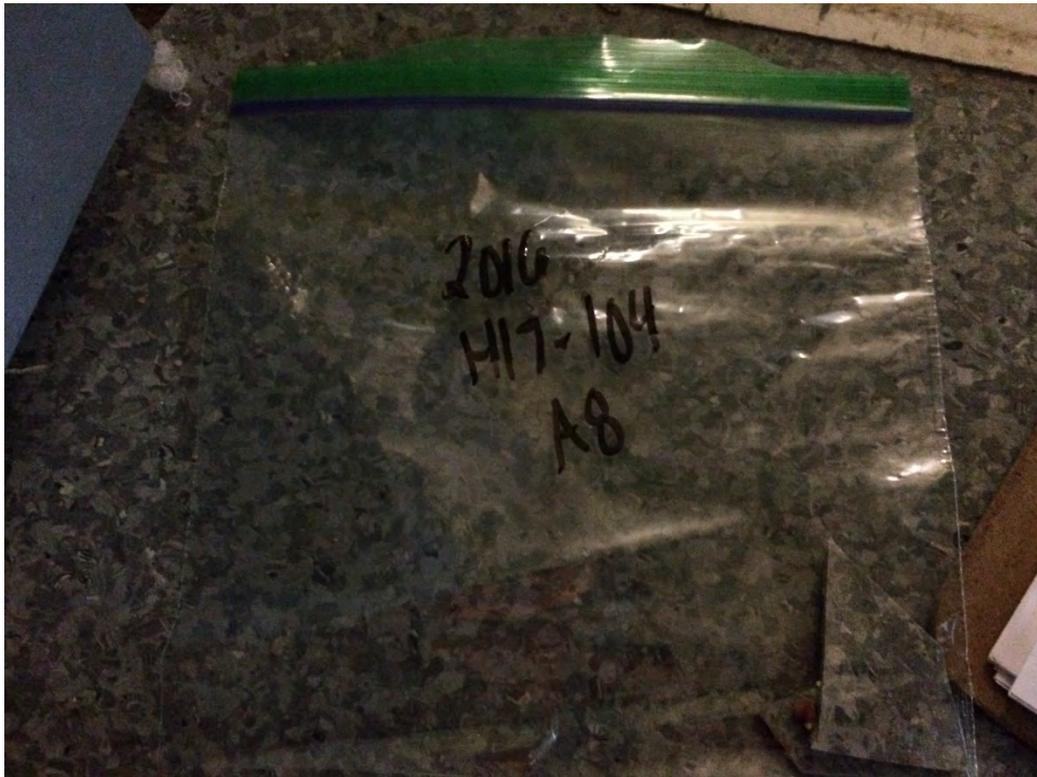


Photo 8: Asbestos sample A8, 12" blue vinyl floor tile and adhesive collected from H17-104. No asbestos detected in tile or adhesive.

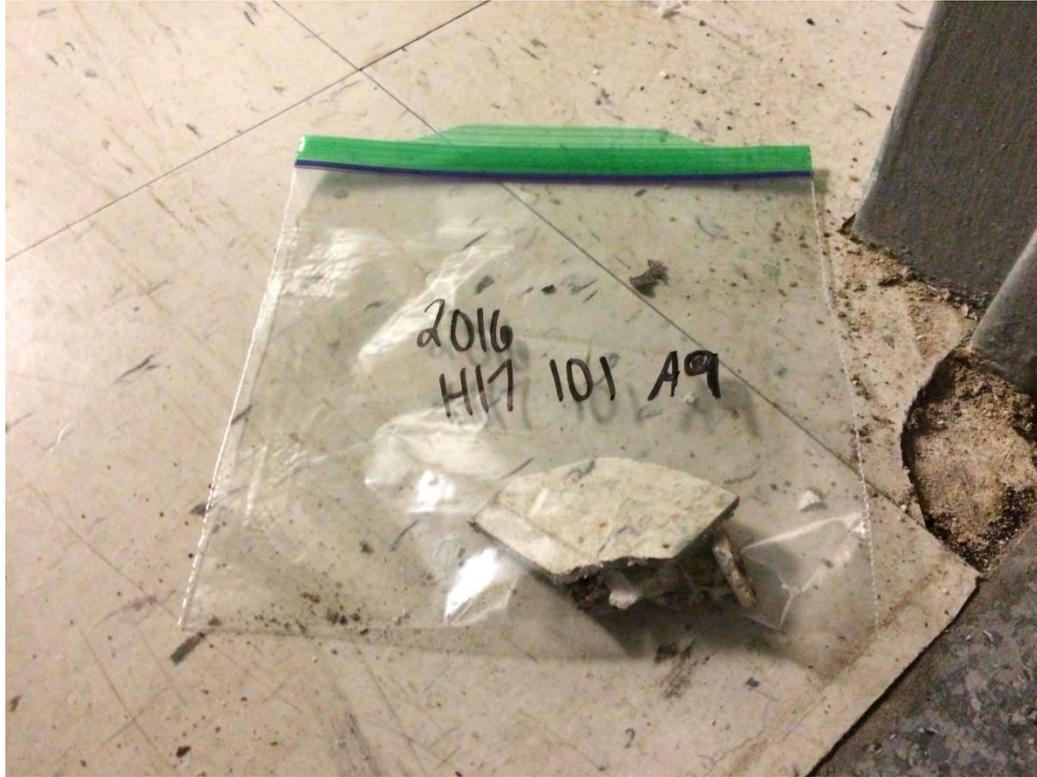


Photo 9: Asbestos sample A9, 12" white vinyl floor tile with grey specks and adhesive collected from H17-101. No asbestos detected in tile or adhesive.



Photo 10: Asbestos sample A10, red carpet and adhesive collected from H17-103. No asbestos detected in carpet or adhesive.

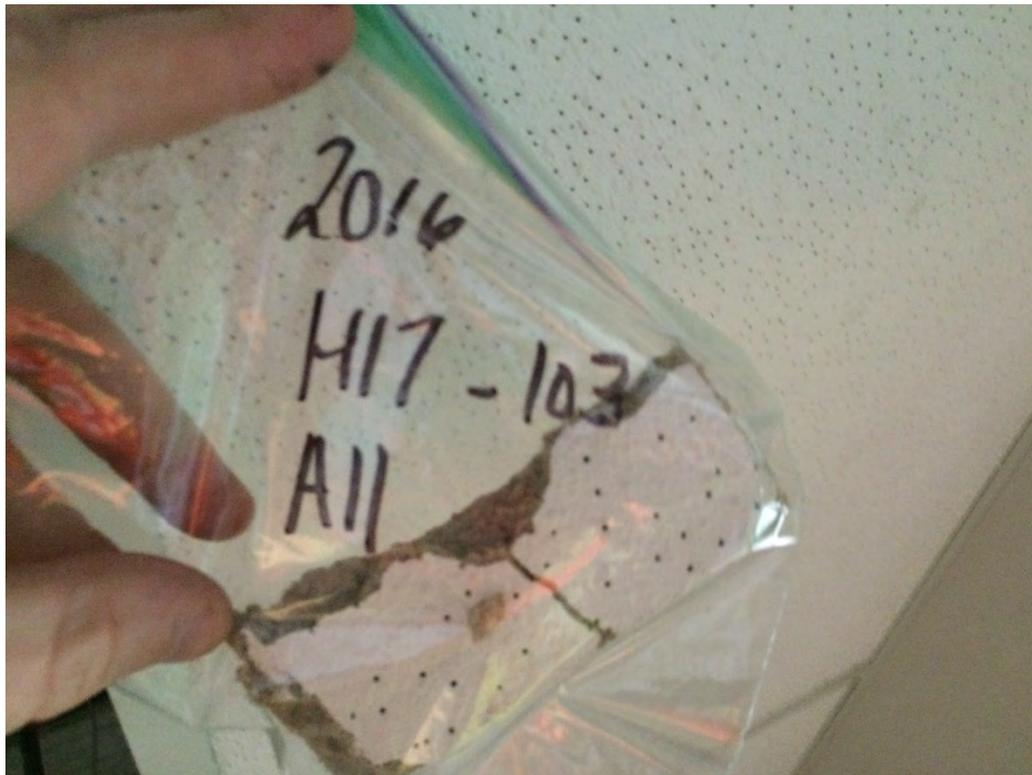


Photo 11: Asbestos sample A11 (and duplicate A31), ceiling tile with small dots pattern collected from H17-103. No asbestos detected.

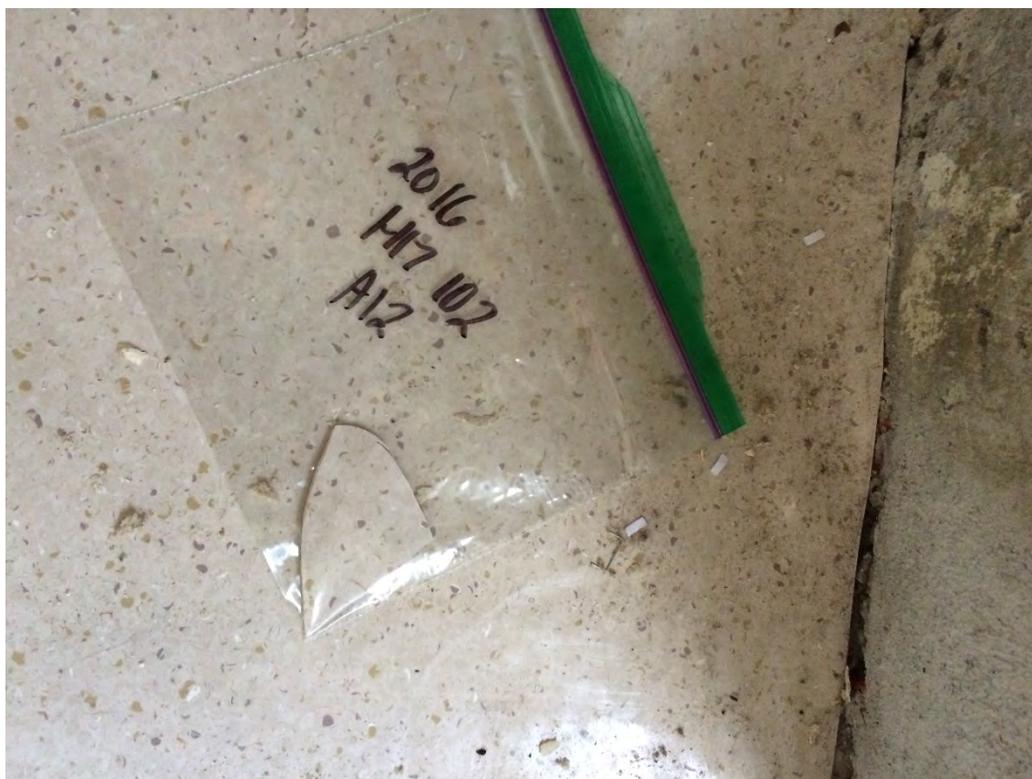


Photo 12: Asbestos sample A12, white seamless vinyl floor with brown specks and adhesive collected from H17-102. No asbestos detected in flooring or adhesive.



Photo 13: Asbestos sample A13, light brown vinyl baseboard and adhesive from collected from H17-102. No asbestos detected in floorboard or adhesive.



Photo 14: Asbestos sample A14, drywall joint compound collected from wall in H17-101. No asbestos detected.

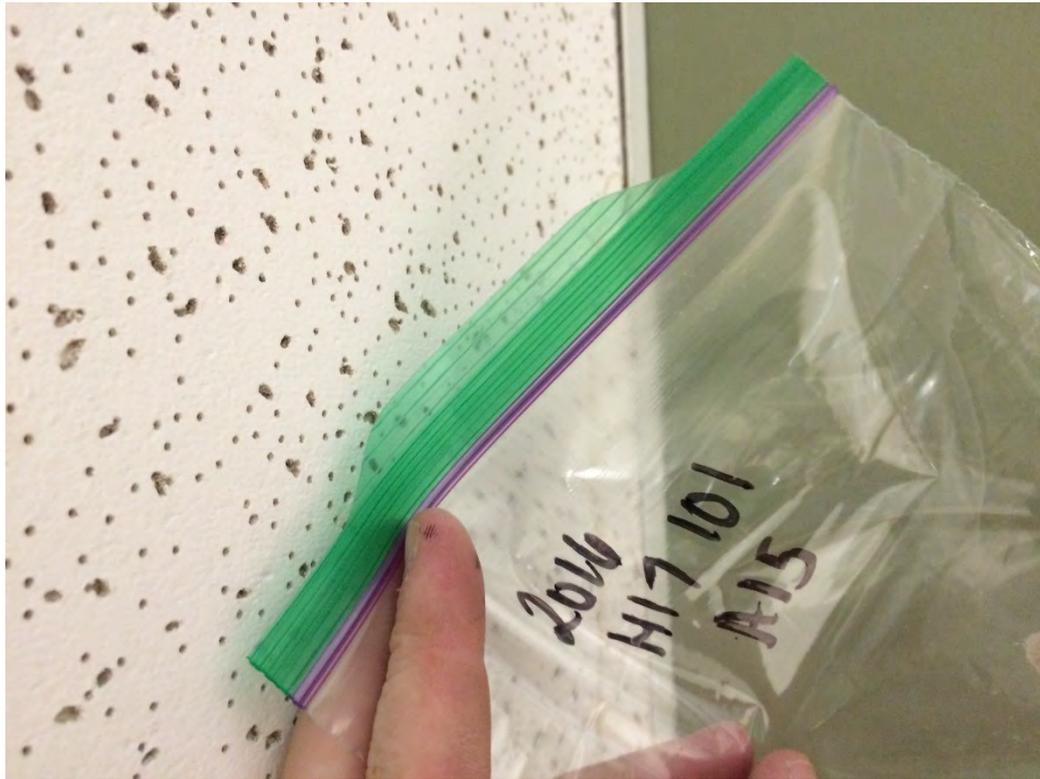


Photo 15: Asbestos sample A15, 24" x 48" ceiling tile with small dots and small gouges pattern collected from H17-101. No asbestos detected.

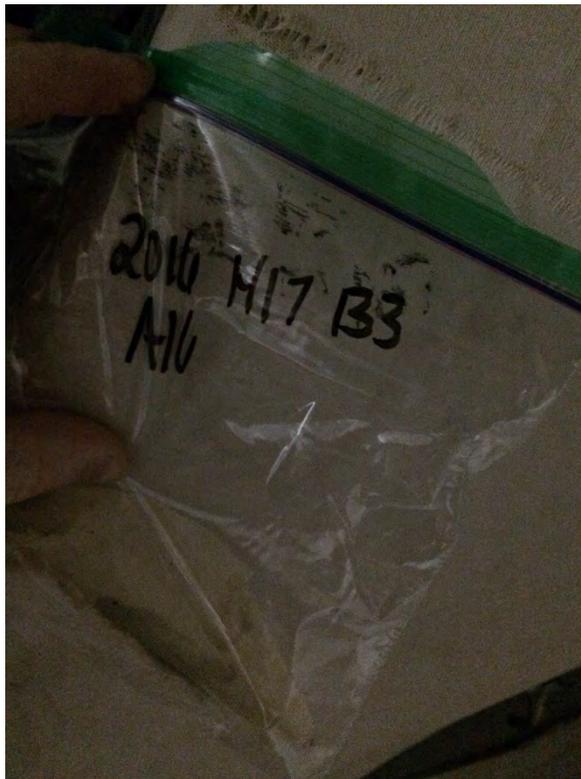


Photo 16: Asbestos sample A16, ductwork wrap collected from H17-B3. No asbestos detected.

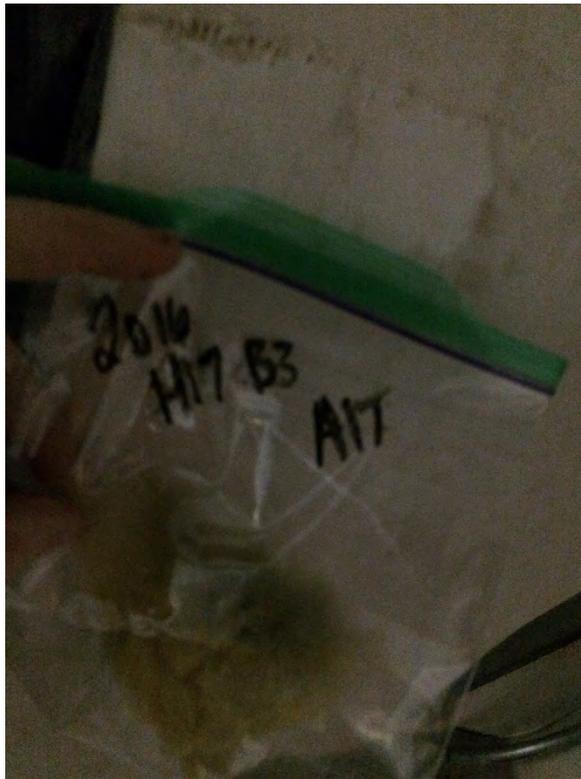


Photo 17: Asbestos sample A17 (and duplicate A32), fibreglass insulation collected from ductwork in H17-B3. No asbestos detected.

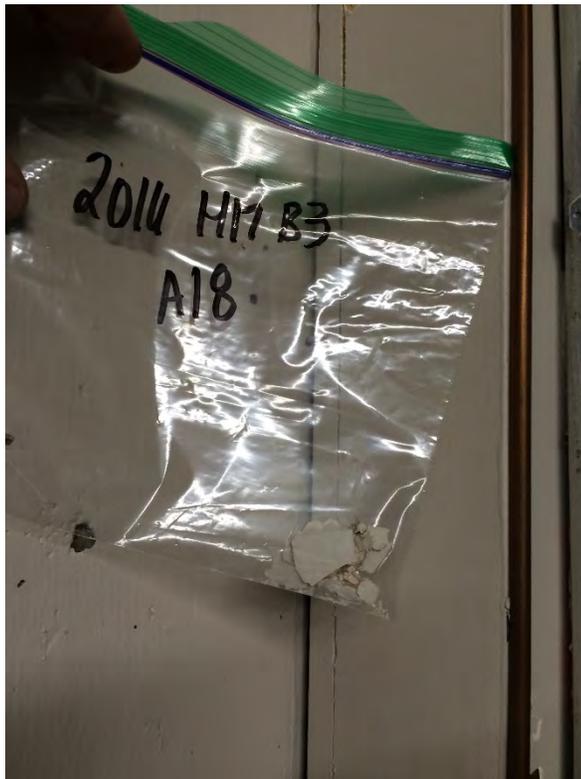


Photo 18: Asbestos sample A18, drywall joint compound collected from wall in H17-B3. No asbestos detected.

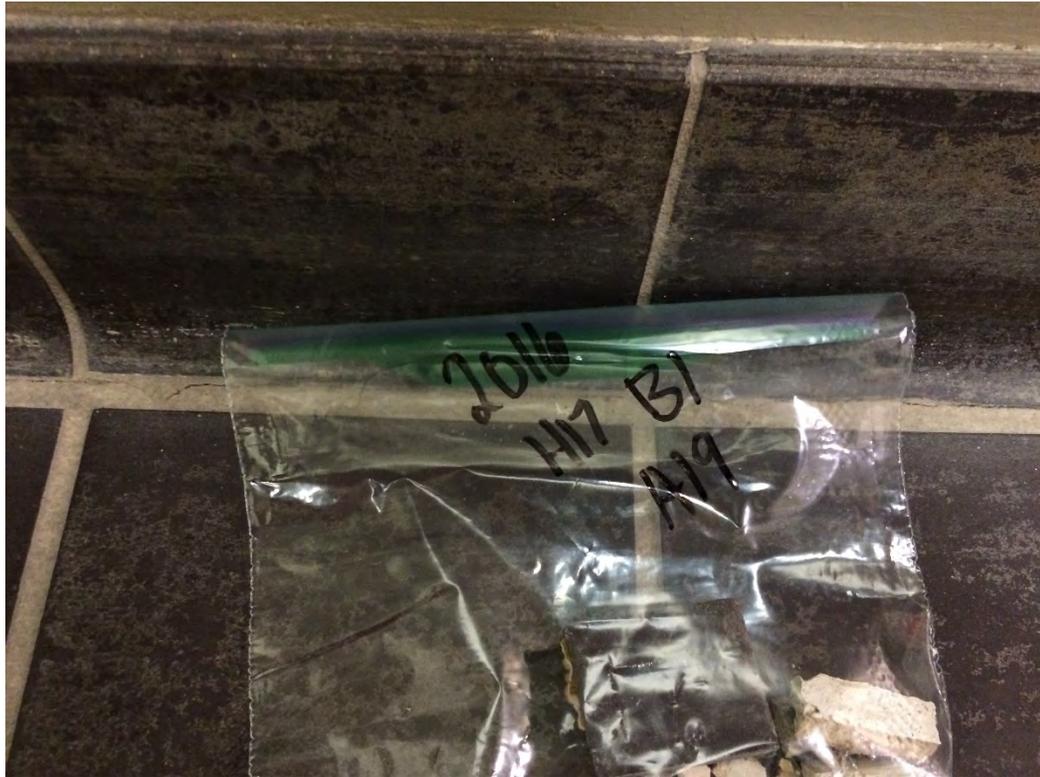


Photo 19: Asbestos sample A19, dark grey ceramic floor tile, grout and adhesive collected from H17-B1. No asbestos detected in the tile, grout or adhesive.

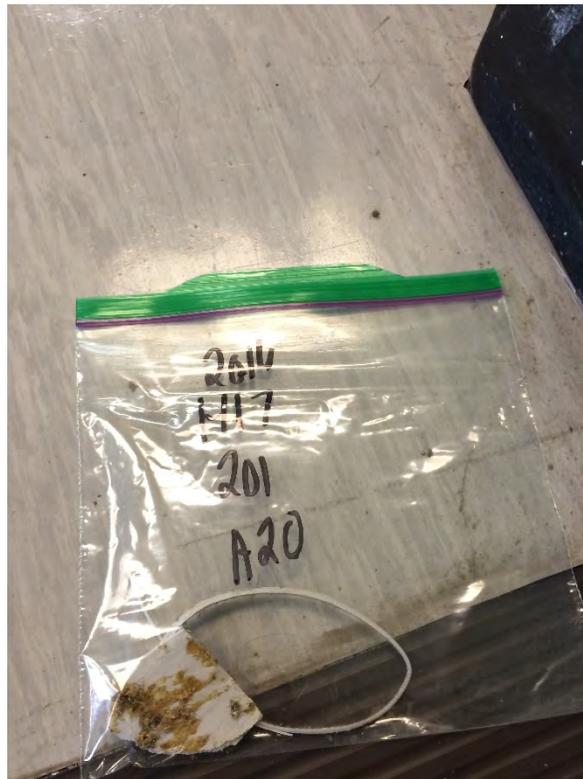


Photo 20: Asbestos sample A20, white seamless vinyl floor with grey specks and adhesive collected from H17-201. No asbestos detected in flooring or adhesive.

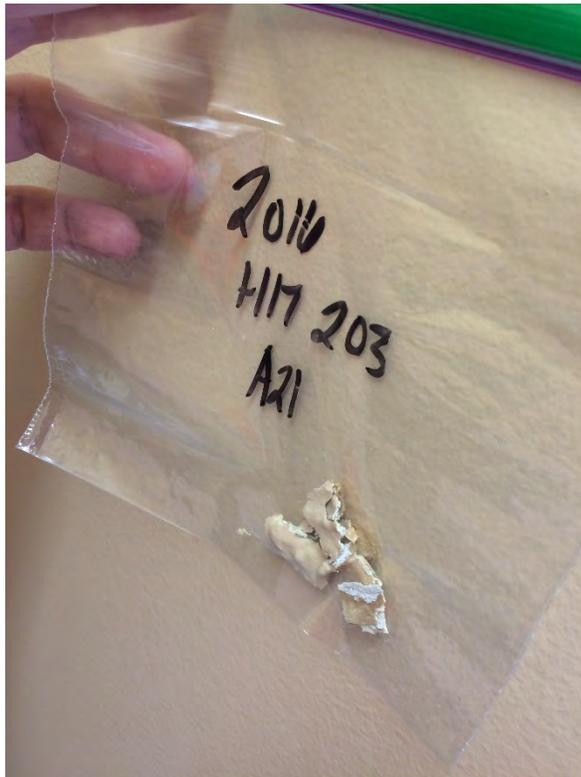


Photo 21: Asbestos sample A21, drywall joint compound collected from wall in H17-203. No asbestos detected.



Photo 22: Asbestos sample A22, mixed speckled carpet and adhesive collected from H17-201. No asbestos detected in carpet or adhesive.

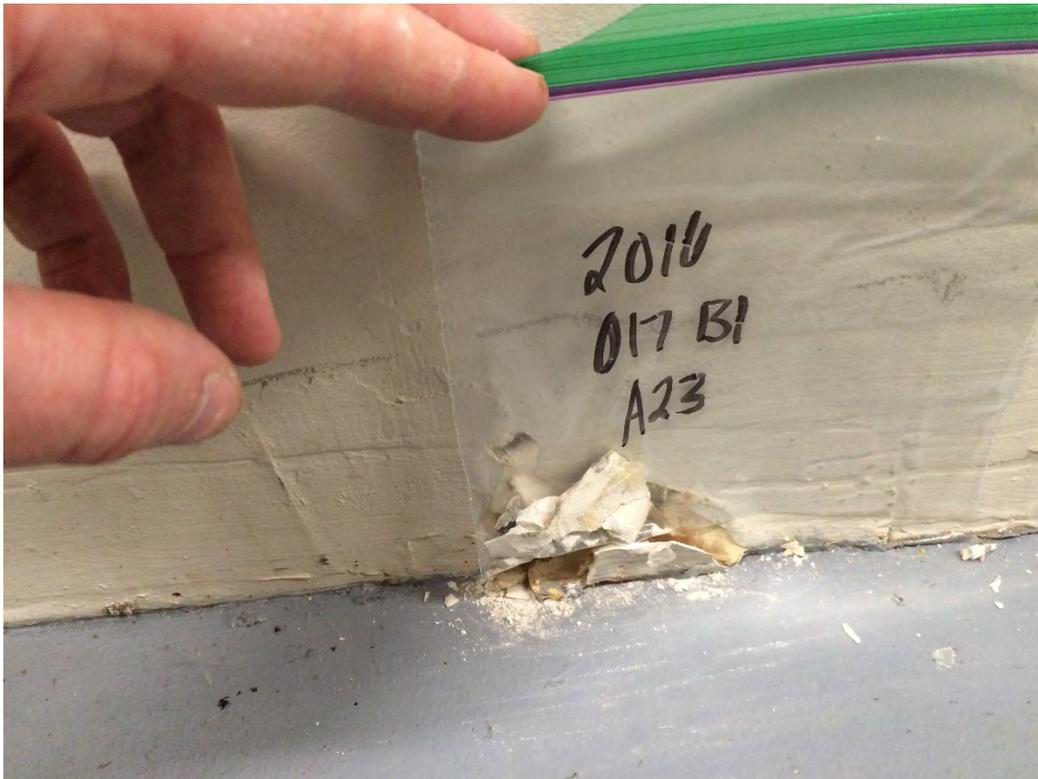


Photo 23: Asbestos sample A23, drywall joint compound collected from wall of O17-B1. No asbestos detected.

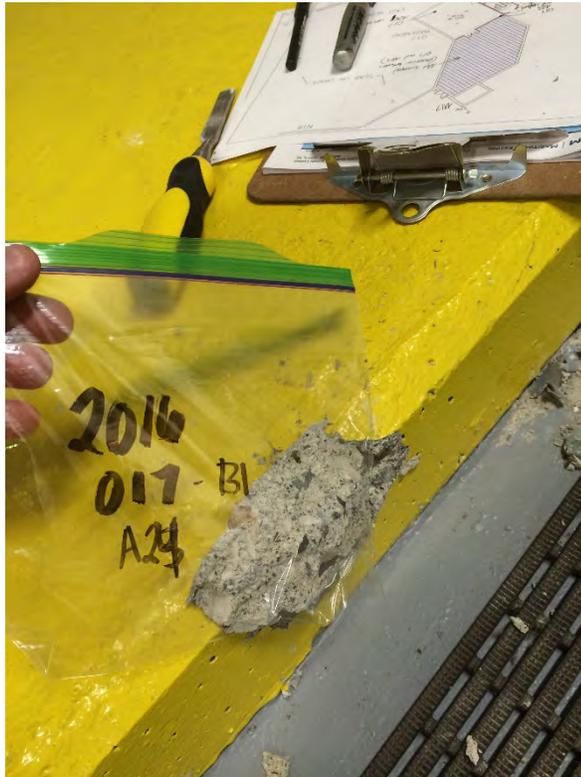


Photo 24: Asbestos sample A24, concrete slab O17-B1. No asbestos detected.

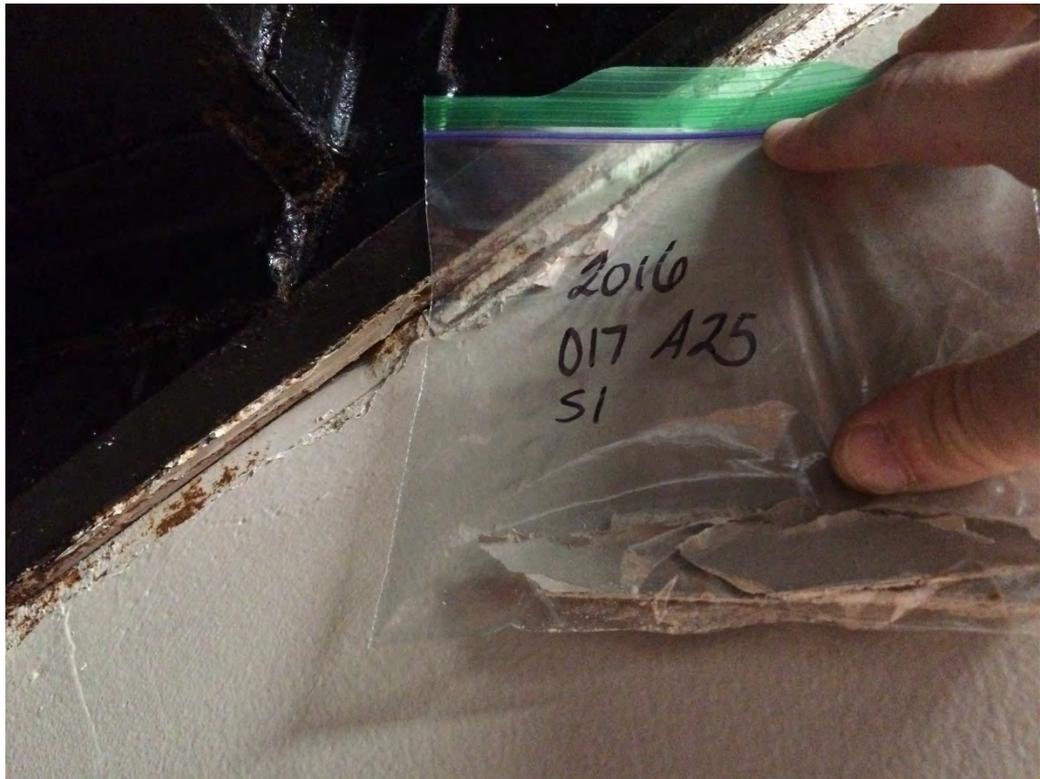


Photo 25: Asbestos sample A25, drywall joint compound collected from wall in O17-S1. No asbestos detected.

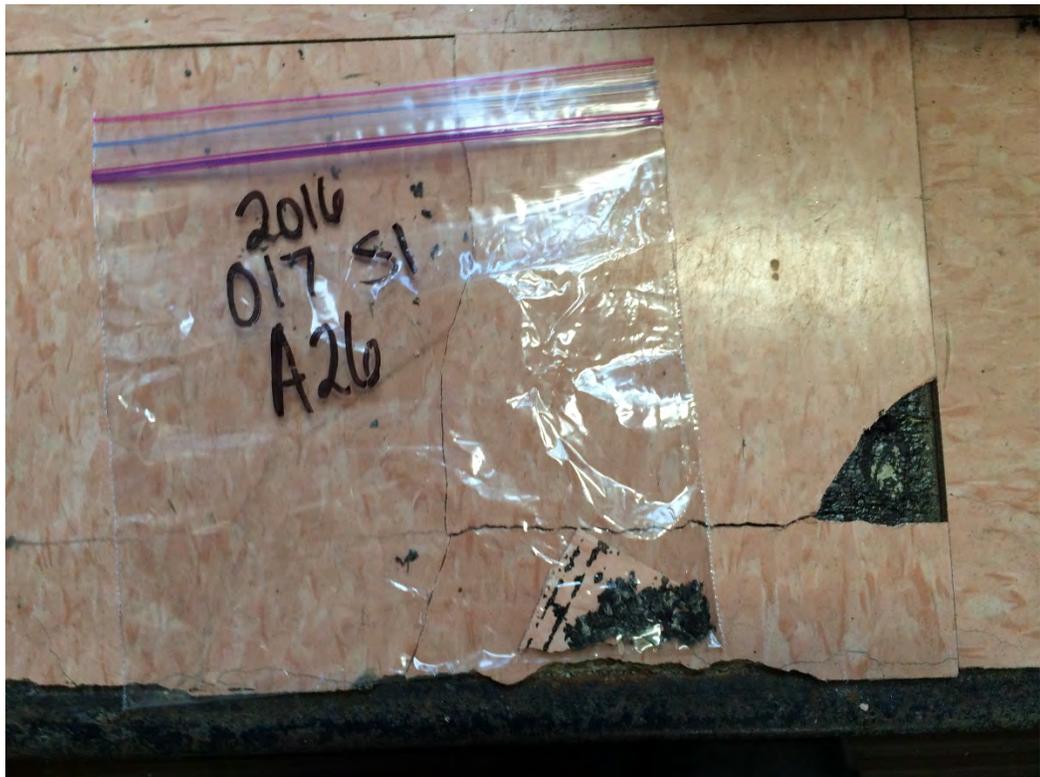


Photo 26: Asbestos sample A26, 12" x 12" pink vinyl floor tile and adhesive collected from O17-S1. No asbestos detected in tile or adhesive.

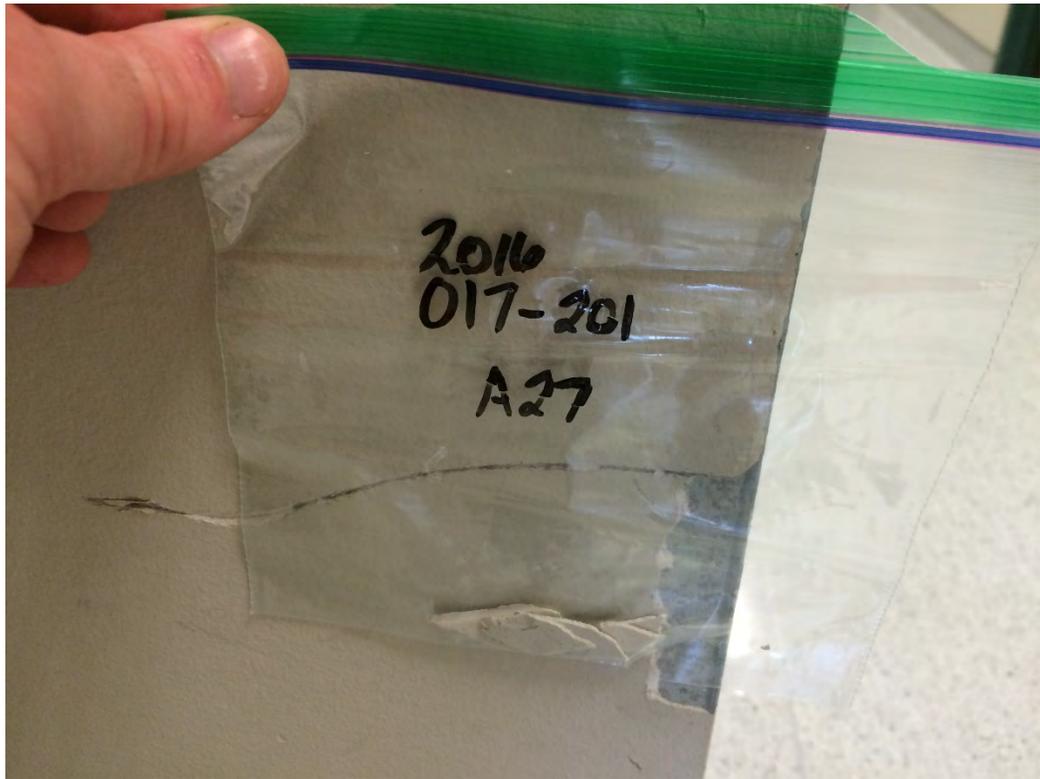


Photo 27: Asbestos sample A27, drywall joint compound collected from wall in O17-201. No asbestos detected.

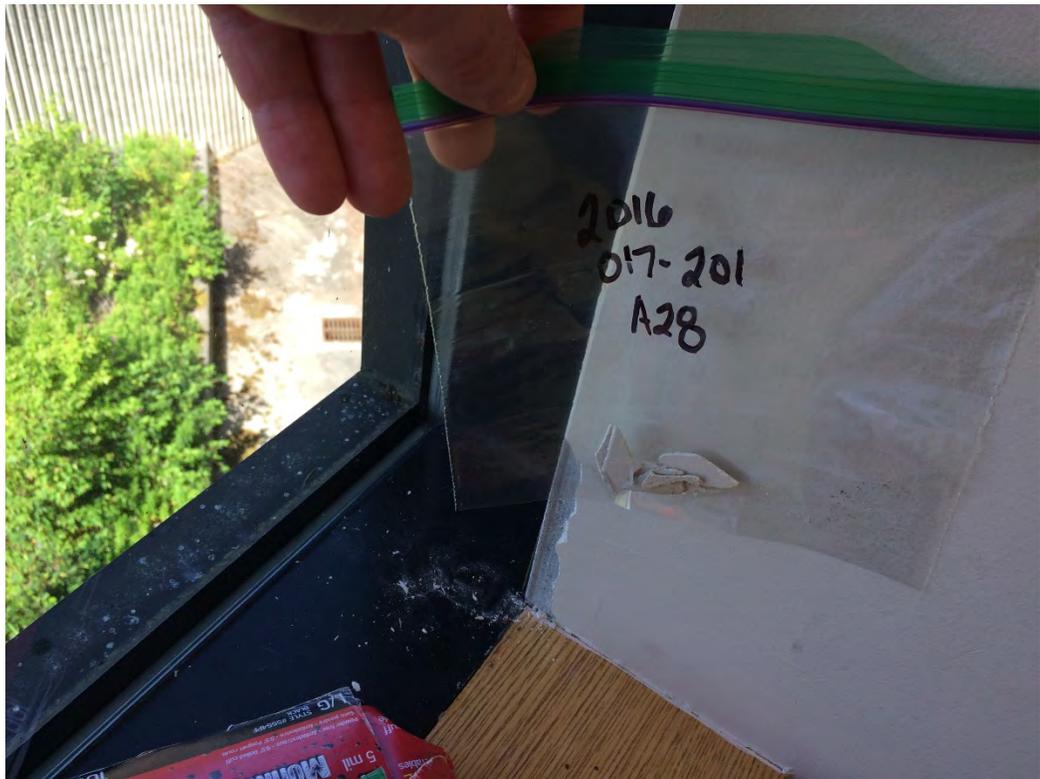


Photo 28: Asbestos sample A28, drywall joint compound collected from wall in O17-201. No asbestos detected.

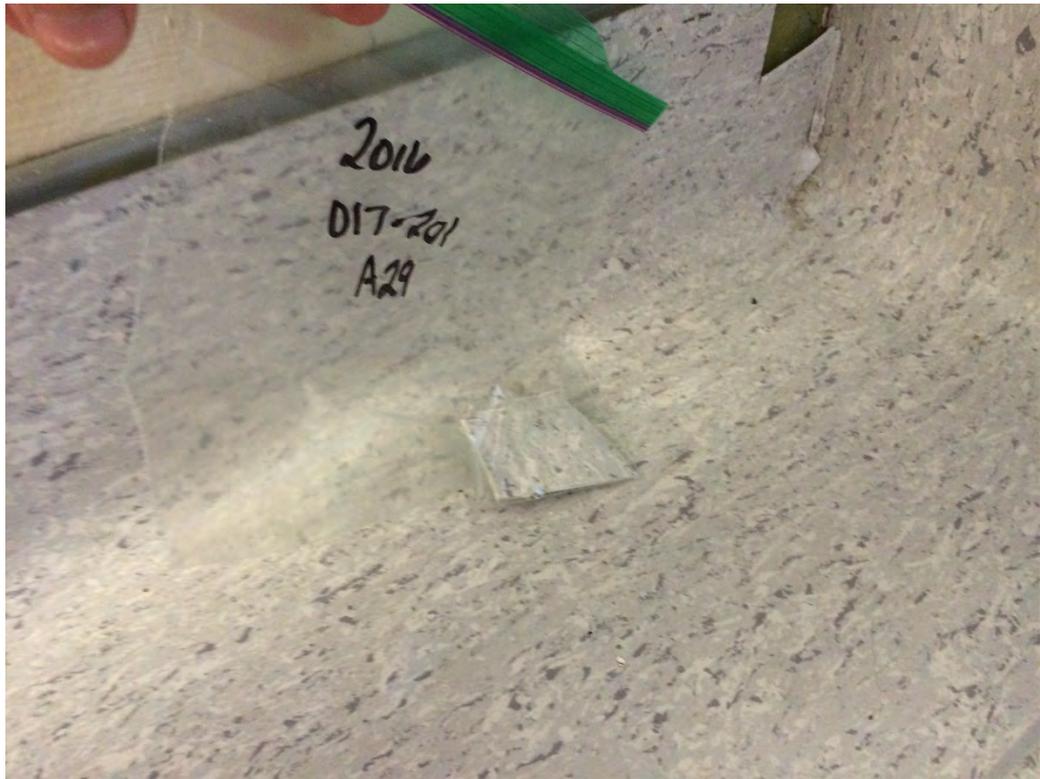


Photo 29: Asbestos sample A29, light grey seamless vinyl flooring with dark specks and adhesive collected from O17-201. No asbestos detected in flooring or adhesive.



Photo 30: Asbestos sample A30, 24" x 24" ceiling tile with small dots and large gouges pattern collected from O17-201. No asbestos detected.

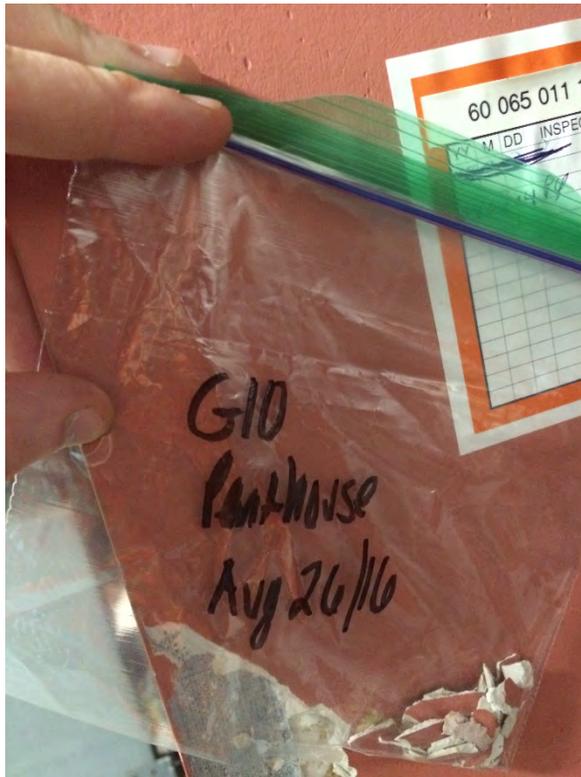


Photo 31: Asbestos sample A34, drywall joint compound collected from wall in penthouse of Pod G10. No asbestos detected.

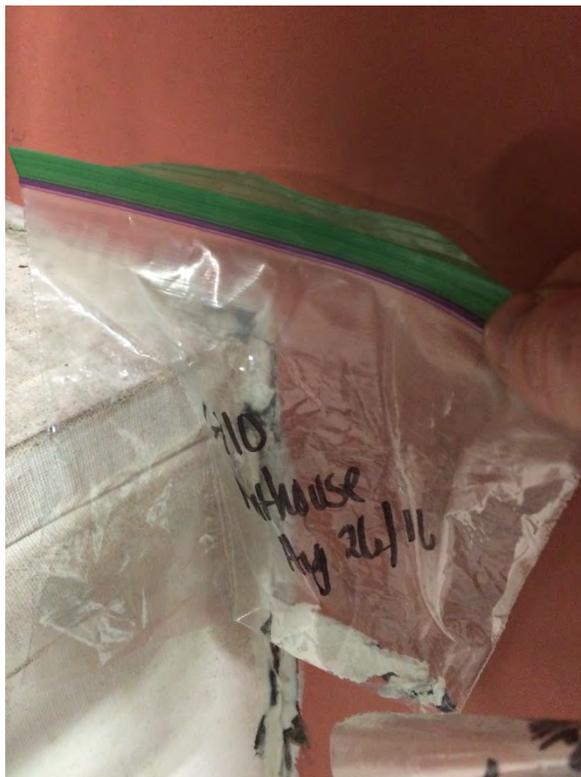


Photo 32: Asbestos sample A35, ductwork sealant (caulking), collected where ductwork passes through wall in penthouse of Pod G10. The material contains **2% chrysotile asbestos**.

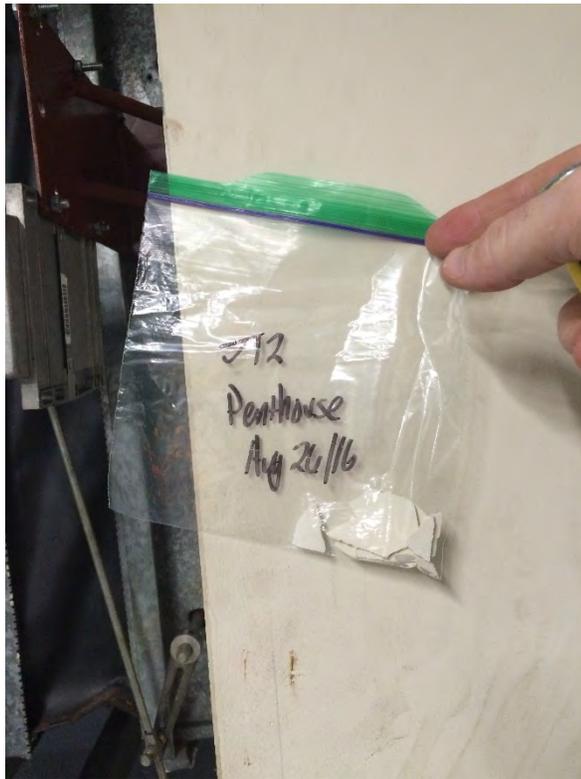


Photo 33: Asbestos sample A36, drywall joint compound collected from wall of penthouse in Pod J12. No asbestos detected.

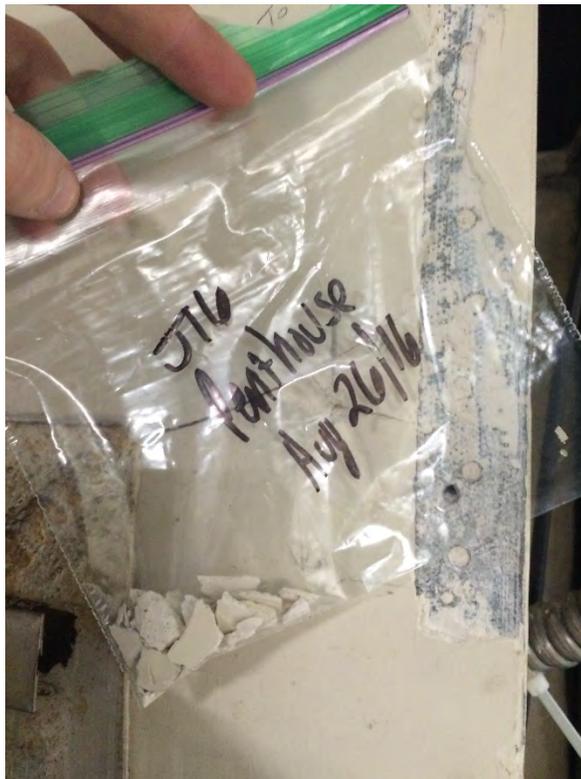


Photo 34: Asbestos sample A37, drywall joint compound collected from wall of penthouse in Pod J16. No asbestos detected.

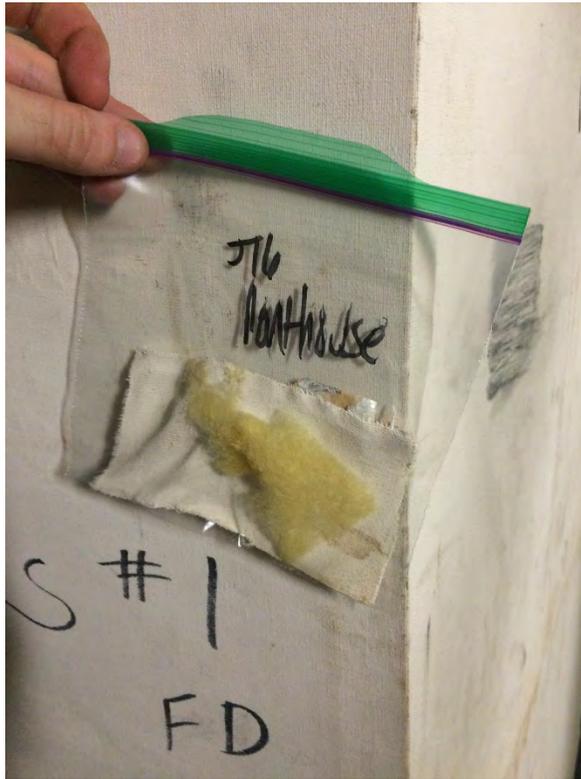


Photo 35: Asbestos sample A38 and A39, ductwork wrap and fibreglass insulation collected from penthouse in Pod J16. No asbestos detected.

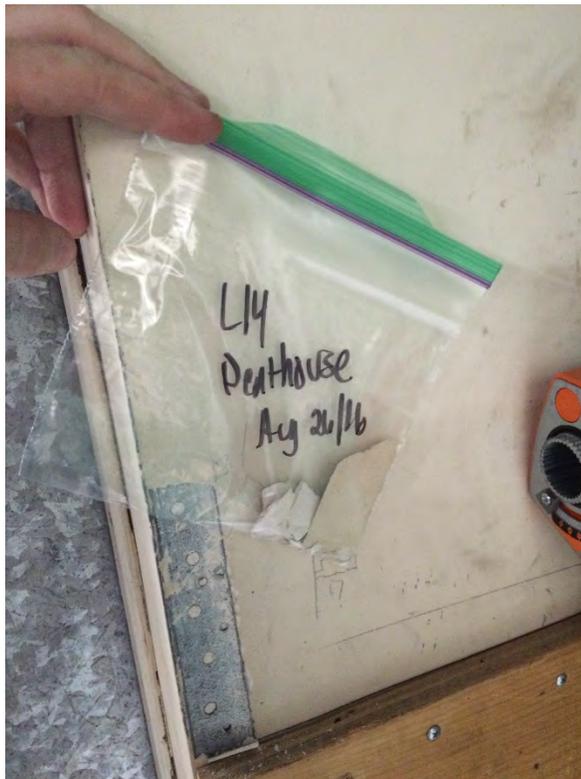


Photo 36: Asbestos sample A40, drywall joint compound collected from wall of penthouse in Pod L14. No asbestos detected.



Photo 37: Asbestos sample A41, drywall joint compound collected from wall of penthouse in Pod L16. No asbestos detected.

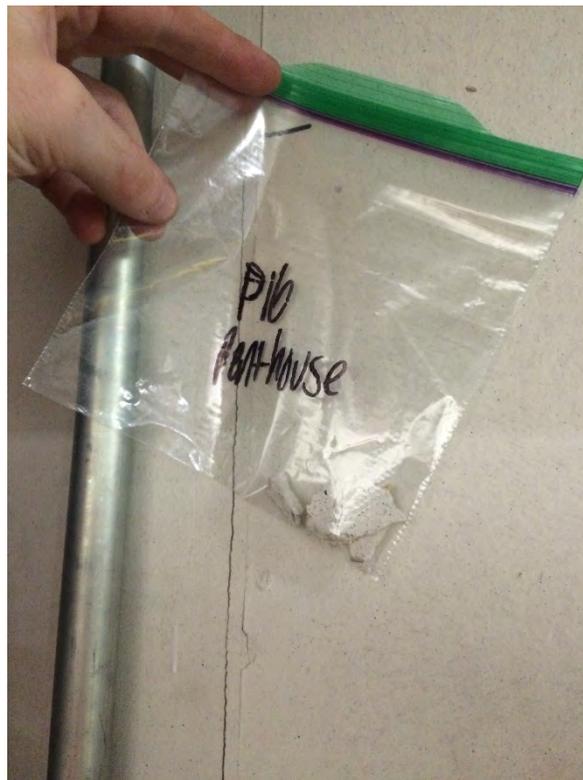


Photo 38: Asbestos sample A42, drywall joint compound collected from wall of penthouse in Pod P16. Joint compound contains 3% chrysotile asbestos.



Photo 39: Hot air duct in Building H7 (Substation). Both the weaved, fabric wrap and the underlying parging insulation were sampled in 2012 and found to be asbestos containing. The wrap contains **90% chrysotile asbestos** and the insulation contains **3% chrysotile asbestos.** (Photo taken during 2012 assessment)



Appendix 3 Laboratory Certificates of Analysis



EMSL Canada Inc.

2756 Slough Street Mississauga, ON L9T 5N4

Tel/Fax: (289) 997-4602 / (289) 997-4607

<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order: 551608814

Customer ID: 55LVMM42

Customer PO: A05901

Project ID:

Attention: Andrew Thorne
Englobe Corp.
39 Sagona Avenue
Mount Pearl, NL A1N 4P9

Phone: (709) 576-8148

Fax:

Received Date: 08/17/2016 9:52 AM

Analysis Date: 08/19/2016

Collected Date:

Project: P-0010737-0-02-202

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
2016-H7-A1 <small>551608814-0001</small>	DUCTWORK WRAP WEAVE	White Non-Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
2016-H7-A2 <small>551608814-0002</small>	DUCTWORK FIBRE INSULATION	Yellow Fibrous Homogeneous	90% Min. Wool	10% Non-fibrous (Other)	None Detected
2016-H7-A3 <small>551608814-0003</small>	DUCTWORK JOINT SEAM	White/Black Fibrous Homogeneous	65% Glass	35% Non-fibrous (Other)	None Detected
2016-H17-104-A4 <small>551608814-0004</small>	DRYWALL JOINT COMPOUND INTERIOR WALL	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-104-A5 <small>551608814-0005</small>	24X24 CEILING TILE BIG AND SMALL DOTS	Gray Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
2016-H17-104-A6 <small>551608814-0006</small>	DRYWALL JOINT COMPOUND EXTERIOR WALL	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-104-A7-Base board <small>551608814-0007</small>	DARK BROWN VINYL BASEBOARD AND ADHESIVE	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-104-A7-Adhesive <small>551608814-0007A</small>	DARK BROWN VINYL BASEBOARD AND ADHESIVE	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-104-A8-Floor Tile <small>551608814-0008</small>	12X12 BLUE VINYL FLOOR TILE AND ADHESIVE	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-104-A8-Adhesive <small>551608814-0008A</small>	12X12 BLUE VINYL FLOOR TILE AND ADHESIVE	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-101-A9-Floor Tile <small>551608814-0009</small>	12X12 WHITE WITH GREY SPECKS VINYL FLOOR TILE ADHESIVE	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-101-A9-Adhesive <small>551608814-0009A</small>	12X12 WHITE WITH GREY SPECKS VINYL FLOOR TILE ADHESIVE	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-103-A10-Carpet <small>551608814-0010</small>	RED CARPET AND ADHESIVE	Red Fibrous Homogeneous	90% Synthetic	10% Non-fibrous (Other)	None Detected
2016-H17-103-A10-Adhesive <small>551608814-0010A</small>	RED CARPET AND ADHESIVE	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Report amended: 08/29/2016 13:48:29 Replaces initial report from: 08/19/2016 21:04:22 Reason Code: Client-Change to Location



EMSL Canada Inc.

2756 Slough Street Mississauga, ON L9T 5N4

Tel/Fax: (289) 997-4602 / (289) 997-4607

<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order: 551608814

Customer ID: 55LVMM42

Customer PO: A05901

Project ID:

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
2016-H17-103-A11 <small>551608814-0011</small>	24X24 CEILING TILE SMALL DOTS	Gray Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
2016-H17-102-A12-Viny l Flooring <small>551608814-0012</small>	SEAMLESS WHITE VINYL FLOOR WITH BROWN SPECKS AND ADHESIVE	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-102-A12-Adh esive <small>551608814-0012A</small>	SEAMLESS WHITE VINYL FLOOR WITH BROWN SPECKS AND ADHESIVE	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-102-A13-Bas eboard <small>551608814-0013</small>	LIGHT BROWN VINYL BASEBOARD WITH ADHESIVE	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-102-A13-Adh esive <small>551608814-0013A</small>	LIGHT BROWN VINYL BASEBOARD WITH ADHESIVE	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-101-A14 <small>551608814-0014</small>	DRYWALL JOINT COMPOUND HALLWAY INTERIOR WALL	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-101-A15 <small>551608814-0015</small>	24X48 CEILING TILE SMALL DOTS AND SMALL GOUGES	Gray Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
2016-H17-B3-A16 <small>551608814-0016</small>	DUCTWORK WRAP WEAVE	White Non-Fibrous Homogeneous	85% Cellulose	15% Non-fibrous (Other)	None Detected
2016-H17-B3-A17 <small>551608814-0017</small>	DUCTWORK FIBRE INSULATION	Yellow Non-Fibrous Homogeneous	85% Min. Wool	15% Non-fibrous (Other)	None Detected
2016-H17-B3-A18 <small>551608814-0018</small>	DRYWALL JOINT COMPOUND BASEMENT INTERIOR WALL	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-B1-A19-Cera mic Tile <small>551608814-0019</small>	DARK GREY CERAMIC TILE WITH GROUT AND ADHESIVE	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-B1-A19-Grout <small>551608814-0019A</small>	DARK GREY CERAMIC TILE WITH GROUT AND ADHESIVE	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-B1-A19-Adhe sive <small>551608814-0019B</small>	DARK GREY CERAMIC TILE WITH GROUT AND ADHESIVE	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-201-A20-Floo r Tile <small>551608814-0020</small>	WHITE VINYL FLOOR, GREY SPECKS AND ADHESIVE	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-201-A20-Adh esive <small>551608814-0020A</small>	WHITE VINYL FLOOR, GREY SPECKS AND ADHESIVE	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Report amended: 08/29/2016 13:48:29 Replaces initial report from: 08/19/2016 21:04:22 Reason Code: Client-Change to Location



EMSL Canada Inc.

2756 Slough Street Mississauga, ON L9T 5N4

Tel/Fax: (289) 997-4602 / (289) 997-4607

<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order: 551608814

Customer ID: 55LVMM42

Customer PO: A05901

Project ID:

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
2016-H17-203-A21 <small>551608814-0021</small>	DRYWALL JOINT COMPOUND, WASHROOM INTERIOR WALL	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-H17-201-A22-Carpet <small>551608814-0022</small>	MIXED SPECKLED CARPET AND ADHESIVE	Various Fibrous Homogeneous	90% Synthetic	10% Non-fibrous (Other)	None Detected
2016-H17-201-A22-Adhesive <small>551608814-0022A</small>	MIXED SPECKLED CARPET AND ADHESIVE	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-O17-B1-A23 <small>551608814-0023</small>	DRYWALL JOINT COMPOUND ELECTRICAL ROOM INTERIOR WALL	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-O17-B1-A24 <small>551608814-0024</small>	ELECTRICAL ROOM CONCRETE FLOOR	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-O17-S1-A25 <small>551608814-0025</small>	DRYWALL JOINT COMPOUND STAIRWELL INTERIOR WALL	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-O17-S1-A26-Floor Tile <small>551608814-0026</small>	12X12 PINK VINYL TILE AND ADHESIVE	Pink Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-O17-S1-A26-Adhesive <small>551608814-0026A</small>	12X12 PINK VINYL TILE AND ADHESIVE	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-O17-201-A27 <small>551608814-0027</small>	DRYWALL JOINT COMPOUND INTERIOR WALL	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-O17-201-A28 <small>551608814-0028</small>	DRYWALL JOINT COMPOUND EXTERIOR WALL	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-O17-201-A29-Vinyl Flooring <small>551608814-0029</small>	LIGHT GREY WITH DARK SPECKS VINYL FLOOR WITH ADHESIVE	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-O17-201-A29-Adhesive <small>551608814-0029A</small>	LIGHT GREY WITH DARK SPECKS VINYL FLOOR WITH ADHESIVE	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2016-O17-201-A30 <small>551608814-0030</small>	24X24 CEILING TILE WITH SMALL DOTS AND LARGE GOUGES	Gray Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
2016-A31 <small>551608814-0031</small>	24X24 CEILING TILE SMALL DOTS	Gray Fibrous Homogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (Other)	None Detected
2016-A32 <small>551608814-0032</small>	DUCTWORK FIBRE INSULATION	Yellow Fibrous Homogeneous	95% Min. Wool	5% Non-fibrous (Other)	None Detected
2016-A33 <small>551608814-0033</small>	DRYWALL JOINT COMPOUND STAIRWELL INTERIOR WALL	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Report amended: 08/29/2016 13:48:29 Replaces initial report from: 08/19/2016 21:04:22 Reason Code: Client-Change to Location



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<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order: 551608814

Customer ID: 55LVMM42

Customer PO: A05901

Project ID:

Analyst(s)

Romeo Samson (45)

Matthew Davis
or Other Approved Signatory

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Samples analyzed by EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0

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EMSL Canada Order 551609350
Customer ID: 55LVMM42
Customer PO: P-0010737
Project ID:

Attn: Andrew Thorne
Englobe Corp.
39 Sagona Avenue
Mount Pearl, NL A1N 4P9
Phone: (709) 576-8148
Fax:
Collected:
Received: 8/30/2016
Analyzed: 8/30/2016
Proj: P-0010737-0-02-202

Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: G10-PENT-A34 **Lab Sample ID:** 551609350-0001
Sample Description: PENTHOUSE DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/30/2016	White	0%	100%	None Detected	

Client Sample ID: G10-PENT-A35 **Lab Sample ID:** 551609350-0002
Sample Description: DUCTWORK SEALANT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/30/2016	Various	0%	98%	2% Chrysotile	

Client Sample ID: J12-PENT-A36 **Lab Sample ID:** 551609350-0003
Sample Description: PENTHOUSE DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/30/2016	White	0%	100%	None Detected	

Client Sample ID: J16-PENT-A37 **Lab Sample ID:** 551609350-0004
Sample Description: PENTHOUSE DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/30/2016	White	0%	100%	None Detected	

Client Sample ID: J16-PENT-A38 **Lab Sample ID:** 551609350-0005
Sample Description: PENTHOUSE DUCTWORK WRAP WEAVE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/30/2016	White	0%	100%	None Detected	

Client Sample ID: J16-PENT-A39 **Lab Sample ID:** 551609350-0006
Sample Description: PENTHOUSE DUCTWORK FIBRE INSULATION

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/30/2016	Yellow	70%	30%	None Detected	

Client Sample ID: L14-PENT-A40 **Lab Sample ID:** 551609350-0007
Sample Description: PENTHOUSE DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/30/2016	White	0%	100%	None Detected	



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EMSL Canada Order 551609350
Customer ID: 55LVMM42
Customer PO: P-0010737
Project ID:

Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: L16-PENT-A41 **Lab Sample ID:** 551609350-0008

Sample Description: PENTHOUSE DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/30/2016	White	0%	100%	None Detected	

Client Sample ID: P16-PENT-A42 **Lab Sample ID:** 551609350-0009

Sample Description: PENTHOUSE DRYWALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/30/2016	White	0%	97%	3% Chrysotile	

Analyst(s):
John Biesiadecki PLM (9)

Reviewed and approved by:

Matthew Davis
or Other Approved Signatory

Samples analyzed by EPA 600/R-93/116 consistent with NLR 111/98. The estimated limit of detection for non-detect samples is <0.1%. Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP or any agency of the US Government.

Samples analyzed by EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0
Report amended: 08/31/2016 12:33:55 Replaces initial report from: 08/30/2016 17:34:27 Reason Code: Client-Change to Sample ID