



Stantec

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**FINAL REPORT: INTRUSIVE
MOULD ASSESSMENT**

Highland Consolidated Middle School
Westville, Nova Scotia

Prepared for:
**Chignecto-Central Regional School
Board**

60 Lorne Street
Truro, NS B2N 3K3

Attention: Ms. Jackie Fahey, Coordinator,
Health & Safety

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1 INTRODUCTION

Stantec Consulting Ltd. (Stantec) was commissioned by the Chignecto-Central Regional School Board (CCRSB) to conduct an intrusive mould assessment in sections of the Highland Consolidated Middle School (HCMS) located in Westville, Nova Scotia.

The mould assessment was requested in response to the water intrusion issues and active mould growth found in two (2) classrooms during the recent Building Pathway Investigation performed by Stantec on May 24, 2012.

The primary purpose of this assessment was to determine if indicators of mould growth were present on building materials as well as to provide the approximate extent of mould impacted building materials and associated recommendations for mould remediation.

Don Hartt and David Ayres of Stantec conducted the intrusive mould assessment on June 12-13, 2012. The exterior cladding intrusive assessment was performed by Don Hartt on July 17 and August 24, 2012.

This report outlines the potential sources of mould growth and moisture, an estimate of the extent of mould growth, a suggested a course of action to remediate mould growth found to be present and measures to help mitigate moisture issues likely causing the observed mould growth. This assessment is part of the ongoing odour investigation at the HCMS.

2 SCOPE OF WORK

The scope of work for the intrusive assessment consisted of the following:

- A visual assessment of readily-accessible surfaces in the interior of the subject area was completed to identify areas where apparent mould is most likely to proliferate (i.e. areas where water damage/staining was visible on building material surfaces);
- A visual assessment of the exterior portion of the wall assembly by removal of exterior cladding;
- Intrusive assessments in areas where apparent mould and/or moisture is observed or expected, to permit visual observation inside wall cavities;
- Using a boroscope, penetrate deep into cavities to identify mould/moisture-impacted building materials;
- Documentation of existing conditions within and outside the subject areas, including site photographs; and
- Provision of a report outlining the findings of the above assessment, including recommendations pertaining to the remediation of identified mould/moisture-impacted

(and/or asbestos-containing) building materials and/or strategies to address particulate concentrations.

2.1 Limitations of Survey

The investigation included an assessment of classrooms on the front-side (northwest facing) at the HCMS only. A limited mould assessment was done on March 13, 2012 that identified active mould growth and moisture impacted building materials in other sections of the HCMS.

The information and observations contained within this report are based on visual assessments of the interior surfaces of the subject area (i.e., walls, ceilings and floors) and in wall cavities where intrusive inspections were conducted. The visual inspection of the wall cavities was limited to the area made accessible by removing drywall with a 15.24 cm borehole saw (182.41 cm²). Information obtained during the intrusive inspection may not be extrapolated to other areas of the wall and ceiling cavities not assessed through intrusive inspection.

3 INDUSTRY STANDARDS AND GUIDELINES

The scope of work and assessment is based on the recommendations provided in the following documents:

- Mould Guidelines for The Canadian Construction Industry, Canadian Construction Association – 82, 2004
- Guidelines on Assessment and Remediation of Fungi in Indoor Environment, New York City Department of Health and Mental Hygiene, November 2008;
- Bioaerosols: Assessment and Control, American Conference of Governmental Industrial Hygienists (ACGIH), 1999
- Fungal Contamination in Public Buildings: Health Effects and Investigation Methods, Federal-Provincial Committee on Environmental and Occupational Health, 2004
- Field Guide for the Determination of Biological Contaminants in Environmental Samples, American Industrial Hygiene Association (AIHA), 1996
- “Assessment, Remediation, and Post-Remediation Verification of Mold in Buildings”. AIHA’s Law, Biosafety and Environmental Microbiology and, Indoor Environmental Quality Committees, 2004
- “Recognition, Evaluation and Control of Indoor Mold”. AIHA, 2008
- “Facts About Mold”. AIHA, 2011
- Clean-Up Procedures for Mould in Houses, Canada Mortgage and Housing Corporation (CMHC), 2004
- “Mold Remediation in Schools and Commercial Buildings”. United States Environmental Protection Agency (EPA), 2008

- Standard and Reference Guide for Professional Water Damage Restoration – IICRC S500, Institute of Inspection, Cleaning and Restoration Certification, 2006
- Standard and Reference Guide for Professional Mold Remediation – IICRC S520, Institute of Inspection, Cleaning and Restoration Certification, 2008
- “A Brief Guide to Mold in the Workplace”. United States Department of Labor, Occupational Safety and Health Administration (OSHA). SHIB 03-10-10

4 INVESTIGATIVE METHODOLOGY

4.1 Walkthrough Assessment

An inspection of readily accessible surfaces of the interior of the subject area was completed by Stantec to identify areas where apparent mould was most likely to proliferate (i.e., areas where water damage/staining was visible on building material surfaces). Intrusive assessments were undertaken in selected areas of all rooms on the front-side of the HCMS (northwest facing) to assess the presence and extent of mould growth and apparent mould growth in these areas (refer to **Table 1** for interior findings).

Material observed with black staining and/or a textured and discoloured appearance is described as apparent mould. Mould identified visually is defined as “apparent mould” unless it is confirmed as mould by laboratory analysis.

4.2 Intrusive Assessment

Intrusive holes were selected along the exterior walls in the classrooms following the walkthrough assessment. Holes were cut in the wall using a drill and a 15.24 cm hole saw (182.41 cm²). The visual inspection of the wall cavities was limited to the area made accessible by removing drywall exposing the exterior wall cavity (refer to **Table 1** for intrusive assessment findings).

Air sampling was conducted in a previous site visit on April 26, 2012 to establish baseline values for mould prior to the upcoming abatement phase. The laboratory results from air sampling are provided in **Appendix C**.

The exterior cladding was removed outside rooms 218 and 120 as part of the ongoing building investigation to expose the exterior water barrier and sheathing. Visual observation of the sheathing in this area was limited to the area made accessible by removing the cladding. A moisture meter was used as a tool to aid in identifying moist/wet areas of sheathing.

The exterior cladding was removed outside rooms 215, 119, and 101 as part of the ongoing building investigation to expose the exterior water barrier and sheathing. Visual observation of

the sheathing in this area was limited to the area made accessible by removing the cladding. A moisture meter was used as a tool to aid in identifying moist/wet areas of sheathing.

Some overlap exists with regard to the various investigations conducted by Stantec at the HCMS. This report should be read in conjunction with Stantec's *Final Report 2: Building Investigation – Highland Consolidated Middle School*, dated November 2, 2012. This report arises from the recommendations made in the building investigation report.

5 SUMMARY OF ASSESSMENT FINDINGS

5.1 General Conditions

The HCMS was constructed in 1965 and is a two-storey rectangular building with flat roof and brick siding. Reported renovations to the building envelope occurred in 1995-1996 where windows were replaced and portions of the exterior brick curtain wall were converted to a wood-frame with corrugated metal cladding.

CCRSB has undertaken an extensive investigation to address the odour concerns at the HCMS since they were first reported in March 2011 following a partial roof replacement. Stantec has completed several assessments in previous site visits, which include (but are not limited to) air quality testing, air/vapour and moisture pathway investigation. Findings from these assessments suggested that past roof issues and building envelope deficiencies from the 1995-1996 renovations were allowing moisture to impact building materials on a medium-scale where wall cavities were visually observed. These findings led the investigators to perform a more intrusive assessment to delineate the impacts of mould on the areas where the deficiencies were observed.

The interior of the subject area appear to consist of drywall over stud frame with fiberglass. Some areas of wall are drywall over concrete block with brick façade on the exterior.

5.2 Interior Assessment

A summary of observations made during the assessment of the subject areas are presented in **Table 1** below. The findings include a description of mould and apparent mould growth and/or moisture damage by visual assessing the wall cavity through a 15.24 cm hole (182.41 cm²) cut in wall.

Floor plans identifying areas with apparent mould and moisture damage are provided in **Appendix A**. Site photographs of apparent mould and moisture damage have been included in the report and are presented in **Appendix B**.

Table 1 Summary of Interior Assessment – HCMS, June 12-13, 2012

Location	Observations
Main Floor – Room 122	<ul style="list-style-type: none"> ● 2 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH122-1: Nothing noted ○ IH122-2: Nothing noted ● Area of drywall previously removed by the CCRSB <ul style="list-style-type: none"> ○ Rusting on drywall screws around window ○ Water staining on window frame studs
Main Floor – Room 120	<ul style="list-style-type: none"> ● 5 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH122-1: Apparent mould on drywall (~30% of 0.2m² observed) and rusted drywall screws ○ IH122-2: Water staining on exterior sheathing and wall studs (~0.2m² impacted) ○ IH122-3: Water staining on window stud (~0.1m² impacted) ○ IH122-4: Nothing noted ○ IH122-5: Nothing noted
Main Floor – Room 118	<ul style="list-style-type: none"> ● 6 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH118-1: Nothing noted ○ IH118-2: Nothing noted ○ IH118-3: Nothing noted ○ IH118-4: Nothing noted ○ IH118-5: Nothing noted ○ IH118-6: Nothing noted
Main Floor – Room 116	<ul style="list-style-type: none"> ● 6 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH116-1: Water staining on drywall (~<0.1m² impacted) ○ IH116-2: Nothing noted ○ IH116-3: Apparent mould on window stud (~0.076m² observed) ○ IH116-4: Apparent mould on window stud (~0.023m² observed) ○ IH116-5: Nothing noted ○ IH116-6: Apparent mould on window stud (~0.15m² observed)
Main Floor – Room 114	<ul style="list-style-type: none"> ● 2 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH114-1: Nothing noted ○ IH114-2: Nothing noted
Main Floor – Room 110	<ul style="list-style-type: none"> ● 3 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH110-1: Nothing noted ○ IH110-2: Nothing noted ○ IH110-3: Nothing noted ● Above suspended T-bar ceiling along perimeter wall on structural I-beam: <ul style="list-style-type: none"> ○ Water staining on studs (~2m² impacted)
Main Floor – Room 108	<ul style="list-style-type: none"> ● 4 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH108-1: Water staining on studs and exterior sheathing (~0.3m² impacted) ○ IH108-2: Water staining on studs and exterior sheathing (~0.1m² impacted) ○ IH108-3: Water staining on exterior sheathing and sill plate (~0.1m² impacted) ○ IH108-4: Nothing noted ● Above suspended T-bar ceiling on along perimeter wall on structural I-beam: <ul style="list-style-type: none"> ○ Water staining and apparent mould on studs (~2m² observed)

Location	Observations
Main Floor – Room 106	<ul style="list-style-type: none"> • 3 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH106-1: Water staining on still plate (~0.1m² impacted) ○ IH106-2: Water staining on studs, window base and sill plate (~0.9m² impacted) ○ IH106-3: Water staining on stud (~0.2m² impacted) • Above suspended T-bar ceiling on along perimeter wall on structural I-beam: <ul style="list-style-type: none"> ○ Water staining and apparent mould on studs (~1.5m² observed)
Main Floor – Room 104	<ul style="list-style-type: none"> • 4 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH104-1: Water staining on exterior sheathing and sill plate (~0.2m² impacted) ○ IH104-2: Water staining on exterior sheathing and sill plate (~0.2m² impacted) ○ IH104-3: Water staining on exterior sheathing (~0.14m² impacted) ○ IH104-4: Water staining on sill plate (~0.1m² impacted)
Main Floor – Room 102	<ul style="list-style-type: none"> • 8 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH102-1: Apparent mould on stud (~<0.1m² observed) ○ IH102-2: Water staining on studs (~<0.1m² impacted) ○ IH102-3: Nothing noted ○ IH102-4: Apparent mould on exterior sheathing (~10% of 0.4m² area observed) ○ IH102-5: Water staining on exterior sheathing and studs (~0.2m² impacted) ○ IH102-6: Apparent mould on exterior sheathing and sill plate (~20% of 0.3m² area observed) and water staining on studs and window base (~0.3m² impacted) ○ IH102-7: Water staining on exterior sheathing and studs (~0.2m² impacted) ○ IH102-8: Water staining on exterior sheathing (~0.1m² impacted)
Main Floor – Room 100	<ul style="list-style-type: none"> • 5 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH100-1: Apparent mould on exterior sheathing (~80% of 0.4m² area observed) and water staining on studs (~0.1m² impacted) ○ IH100-2: Apparent mould on studs adjacent to concrete block wall (~50% of 0.4m² area observed) and water staining on exterior sheathing (~0.1m² impacted) ○ IH100-3: Apparent mould on exterior sheathing (~40% of 0.55m² area observed) and water staining on studs (~0.1m² impacted) ○ IH100-4: Apparent mould on exterior sheathing (~50% of 0.4m² area observed) and water staining on studs (~0.1m² impacted) ○ IH100-5: Apparent mould on exterior sheathing (~70% of 0.4m² area observed) and water staining on sill plate (~0.2m² impacted)
Upper Floor – Room 220	<ul style="list-style-type: none"> • 5 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH220-1: Apparent mould on exterior sheathing and studs (~50% of 0.4m² area observed) ○ IH220-2: Apparent mould on exterior sheathing and studs (~50% of 0.4m² area observed) ○ IH220-3: Water staining observed on exterior sheathing and studs (~0.04m² impacted) ○ IH220-4: Apparent mould on exterior sheathing (~75% of 0.4m² area observed) ○ IH220-5: Apparent mould on exterior sheathing (~30% of 0.4m² area observed) and water staining on building materials

Location	Observations
Upper Floor – Room 218	<ul style="list-style-type: none"> ● 4 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH201-1: Apparent mould on exterior sheathing (~20% of 0.4m² area observed) and water staining on studs ○ IH201-2: Water staining observed on studs ○ IH201-3: Water staining observed on studs ○ IH201-4: Apparent mould on exterior sheathing and studs (~90% of 0.4m² area observed) and water staining on building materials ● Area of drywall previously removed by the CCRSB: <ul style="list-style-type: none"> ○ Apparent mould on exterior sheathing, window header and base, and studs
Upper Floor – Room 216	<ul style="list-style-type: none"> ● 4 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH216-1: Apparent mould on exterior sheathing and studs (~90% of 0.4m² area observed) and water staining on building materials ○ IH216-2: Apparent mould on exterior sheathing and studs (~30% of 0.4m² area observed) and water staining on sill plate ○ IH216-3: Water staining on exterior sheathing and studs ○ IH216-4: Apparent mould on exterior sheathing (~40% of 0.4m² area observed) and water staining on building materials ● Area of drywall previously removed by the CCRSB: <ul style="list-style-type: none"> ○ Apparent mould on exterior sheathing, window header and base, and studs
Upper Floor – Room 214	<ul style="list-style-type: none"> ● 6 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH214-1: Apparent mould on exterior sheathing (~10% of 0.4m² area observed) and water staining on window base ○ IH214-2: Apparent mould on exterior sheathing (~10% of 0.4m² area observed) and water staining on window base and sill plate ○ IH214-3: Apparent mould on exterior sheathing (~10% of 0.4m² area observed) and water staining on studs ○ IH214-4: Apparent mould on exterior sheathing (~10% of 0.4m² area observed) and water staining on studs ○ IH214-5: Apparent mould on exterior sheathing (~90% of 0.4m² area observed), water staining on studs, and black staining on fiberglass insulation ○ IH214-6: Apparent mould on exterior sheathing (~90% of 0.4m² area observed), water staining on studs, and black staining on fiberglass insulation
Upper Floor – Room 208	<ul style="list-style-type: none"> ● 3 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH208-1: Water staining on studs ○ IH208-2: Apparent mould on exterior sheathing (~20% of 0.4m² area observed) and water staining on studs ○ IH208-3: Apparent mould on exterior sheathing (~15% of 0.4m² area observed) and water staining studs
Upper Floor – Room 206	<ul style="list-style-type: none"> ● 3 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH206-1: Water staining on studs (~0.1m² impacted) ○ IH206-2: Water staining on building materials (<0.1m² impacted) ○ IH206-3: Apparent mould on exterior sheathing (~100% of 0.4m² area observed) and water staining on studs ● Area of drywall previously removed by the CCRSB: <ul style="list-style-type: none"> ○ Apparent mould on exterior sheathing (~20% of 2m² area observed)

Location	Observations
Upper Floor – Room 204	<ul style="list-style-type: none"> • 6 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH204-1: Apparent mould on exterior sheathing (~20% of 0.4m² area observed) and water staining on studs ○ IH204-2: Apparent mould on exterior sheathing (~90% of 0.4m² area observed) and water staining on studs and exterior sheathing ○ IH204-3: Apparent mould on exterior sheathing and fiberglass insulation (~30% of 0.4m² area observed) and water staining on studs ○ IH204-4: Apparent mould on exterior sheathing (~10% of 0.4m² area observed) and water staining on studs and exterior sheathing ○ IH204-5: Water staining on exterior sheathing (<0.1m² impacted) ○ IH204-6: Water staining on exterior sheathing (~0.2m² impacted) • Area of drywall previously removed by the CCRSB: <ul style="list-style-type: none"> ○ Apparent mould on exterior sheathing (~40% of 3m² area observed) and water staining observed on building materials
Upper Floor – Room 200	<ul style="list-style-type: none"> • 5 intrusive hole cuts: <ul style="list-style-type: none"> ○ IH200-1: Apparent mould on exterior sheathing (~10% of 0.4m² area observed) ○ IH200-2: Apparent mould on exterior sheathing (~100% of 0.4m² area observed) and water staining on studs ○ IH200-3: Apparent mould on exterior sheathing (~60% of 0.4m² area observed) and water staining on studs ○ IH200-4: Apparent mould on exterior sheathing (~50% of 0.4m² area observed) and water staining on studs ○ IH200-5: Nothing noted (drywall over concrete block wall)

5.2.1 Discussion – Interior Assessment

The assessment of the condition of the drywall and wall cavity was limited to areas viewed through a 15.24 cm borehole (182.41 cm²) cut in drywall.

Apparent mould was observed on the drywall exposed on the south wall at the west end of the corridor.

While there are few definitive guidelines on the interpretation of laboratory results for mould analysis, documents published by Health Canada, Ontario Ministry of Health, American Industrial Hygiene Association (AIHA), American Conference of Governmental Industrial Hygienists (ACGIH) and others, provide guidance for interpreting the results of mould assessments. The Health Canada Guide entitled *Fungal Contamination in Public Buildings: A Guide to Recognition and Management*¹ states that:

“identifiable promoters of fungal growth require correction, and any visible fungi require removal”

Several factors noted during a general review of the construction of the building may be contributing to the ingress of water/moisture that is impacting building materials:

¹ *Fungal Contamination in Public Buildings: A Guide to Recognition and Management*. Federal-Provincial Committee of Environmental and Occupational Health. 2004.

- Reported roof leaks associated with the previous roof system;
- Unsealed gaps between the exterior brick façade and corrugated metal siding;
- Caulking in fair to poor condition around windows; and,
- Breaks in window head flashing.

Drywall and wood are made of porous, hydrophilic material that can wick up and retain a considerable amount of water. The lack of air movement in the wall cavity may have prevented areas from drying.

Based on the areas observed to be impacted by mould, it is likely that issues with one or all of the deficiencies noted above have been ongoing since the reported construction of the metal siding in 1995-1996 and are not a result of a one-time water/moisture intrusion event.

In accordance with the Standard and Reference Guide for Professional Water Damage Restoration – IICRC S500, Institute of Inspection, Cleaning and Restoration Certification, 2006 (IICRC S500), materials that have remained wet for longer than 48 hours need to be removed. This includes materials that have been wet for more than 48 hours, and do not have visible mould growth.

5.3 Exterior Assessment

Following the interior intrusive investigation, an assessment was performed on the exterior northwest facing (front) section of the HCMS. Based on the mould/water damaged building materials observed throughout the 2nd floor, it was determined that a section of exterior corrugated sheet metal cladding be removed to expose the water barrier and sheathing outside rooms 218 and 120.

The following observations were made regarding the condition of the exterior wall:

- Apparent mould (black staining) observed above window header outside room 218 (approximate 2 sq. m area impacted).
- Apparent mould (black staining) observed around windows in rooms 218 and 120 mostly around base and corners (approximate 2 sq. m area impacted).
- Water damage observed on areas of sheathing where obvious wall assembly deficiencies were noted, which included:

- Tears in Tyvek water barrier.
- Wall transition from brick façade where mortar is in poor condition.
- Improper overlapping of Tyvek water barrier in certain areas (less than 6 inches overlap between sheets).

Site photographs of apparent mould, moisture damage and exterior wall deficiencies have been included in the report and are presented in **Appendix B**.

Following the interior intrusive investigation an assessment was done on the exterior southeast facing (rear) section of the HCMS outside of rooms 215, 119 and 101. The building construction was different than the front facing section of the HCMS and was not observed to have any water damage in the locations where the cladding was removed.

6 CONCLUSIONS

Based on our findings and observations noted above, Stantec makes the following conclusions:

- Apparent mould growth and water/moisture damage was observed on building materials in the exterior wall cavity throughout each one of the classrooms located on the upper floor on the front side (northwest facing) of the HCMS.
- Apparent mould growth and water/moisture damage was observed on building materials in the exterior wall cavity and above the suspended ceiling in six (6) of the 11 rooms located on the main floor on the front side (northwest facing) of the HCMS.
- Water/moisture damage only was observed above the suspended ceiling along the exterior wall in one (1) room of the 11 rooms located on the main floor on the front side (northwest facing) of the HCMS.
- Apparent mould growth and water/moisture damage was observed on the exterior sheathing following the removal of the exterior cladding in several areas below the roof line, around windows and around other areas where wall assembly deficiencies were allowing water/moisture to impact building materials.
- Based on the observations from both the interior and exterior assessment, it is reasonable to believe that the likely cause of the mould growth and water damage impacting building materials is related predominantly to previous roof leaks and leaks around windows. Deficiencies were also noted in the wall assembly that was observed to be causing relatively minor impacts to building materials resulting in mould growth and water damage.

7 RECOMMENDATIONS

Based on the conclusions and observations noted above, and the intrusive mould assessment conducted, Stantec makes the following recommendations:

- Apparent mould found indoors should be remediated in accordance with the *Mould Guidelines for the Canadian Construction Industry*, Canadian Construction Association – 82, 2004.
- Apparent mould in the exterior wall assembly (exterior cavity) on the northwest facing (front) of the HCMS should be remediated from outside using modified methods outlined in the *Mould Guidelines for the Canadian Construction Industry*, Canadian Construction Association – 82, 2004. The modified methods would include measures outlined in the guidelines for worker protection. The remediation would involve removing the exterior cladding to access mould-impacted materials without damaging the interior drywall and vapour barrier, which were observed to be in good condition in most areas.
- Reinstatement of hydrophobic, mould resistant material should be considered.

8 CLOSURE

This report has been prepared for the sole benefit of Chignecto-Central Regional School Board. The report may not be used by any other person or entity without the express written consent of Stantec Consulting Ltd and Chignecto-Central Regional School Board.

Any use which a third party makes of this report, or any reliance on decisions made based on it, is the responsibility of such third parties. Stantec Consulting Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Some of the information presented in this report was provided through existing documents and through interviews. Although attempts were made, whenever possible, to obtain confirmatory sources of information, Stantec Consulting Ltd. in certain instances has been required to assume the information provided is accurate.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted engineering and scientific practices current at the time the work was performed. Conclusions presented in this report should not be construed as legal advice.

The conclusions presented in this report represent the best technical judgment of Stantec Consulting Ltd. based on the data obtained from the work. The conclusions are based on the site conditions encountered by Stantec Consulting Ltd. at the time the work was performed at the specific inspection and/or sampling locations, and can only be extrapolated to an undefined limited area around these locations. The extent of the limited area depends on building construction and conditions, weather, building usage and other factors. In addition, analysis has been carried out for mould on a limited number of samples, and it should not be inferred that

other mould species are not present. Due to the nature of the assessment and the limited data available, Stantec Consulting Ltd. cannot warrant against undiscovered environmental liabilities.

If any conditions become apparent that differ significantly from our understanding of conditions as presented in this report, we request that we be notified immediately to reassess the conclusions provided herein.

We trust that the above is satisfactory for your purposes at this time. Should you have any questions or concerns, or require additional information, please do not hesitate to contact the undersigned at your convenience.

This report was prepared by Don Hartt and reviewed by Pamela Sears.

Respectfully Submitted,

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FINAL REPORT: INTRUSIVE MOULD ASSESSMENT

APPENDIX A

Floor plans

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FINAL REPORT: INTRUSIVE MOULD ASSESSMENT

APPENDIX B

Photographs

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FINAL REPORT: INTRUSIVE MOULD ASSESSMENT

APPENDIX C

Previous Baseline Mould Air Testing Results