



Mould Assessment and Remediation Plan

CFIA Sidney Building 12 – 8801 East
Saanich Road, North Saanich, BC

December 20, 2021

Prepared for:

Public Services and Procurement
Canada, Pacific Region
1230 Government Street
Victoria, BC V8W 3X4

Prepared by:

Stantec Consulting Ltd.
500 – 4515 Central Blvd.
Burnaby, BC V5H 0C6

Project Number: 123222004

MOULD ASSESSMENT AND REMEDIATION PLAN

Limitations and Sign-off

This document entitled Mould Assessment and Remediation Plan was prepared by Stantec Consulting Ltd. ("Stantec") for the account of Public Services and Procurement Canada (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Personnel conducting site work and documentation reviews for this project, as indicated below, have appropriate knowledge and experience in the management and control of asbestos hazards to be considered "qualified persons" by WorkSafeBC as it pertains to the provision of consultation in relation to asbestos in buildings.

Prepared by _____
(signature)

Sean Brigden, B.Sc., P.B.Dipl., CRSP

Reviewed by _____
(signature)

Lovy Mangat, B.Sc.

Approved by _____
(signature)

Rob Robinson, P.Eng.



Table of Contents

1.0 INTRODUCTION..... 1

1.1 BACKGROUND 1

 1.1.1 Previous Reports 2

2.0 SCOPE..... 3

2.1 LIMITATIONS..... 3

 2.1.1 Information from Previous Reports 4

3.0 ASSESSMENT FINDINGS 5

3.1 MOULD 5

 3.1.1 Methodology 5

 3.1.2 Findings 6

3.2 ASBESTOS 12

 3.2.1 Methodology 12

 3.2.2 Findings 13

3.3 LEAD IN PAINT 13

 3.3.1 Methodology 13

 3.3.2 Findings 14

4.0 RECOMMENDATIONS..... 15

5.0 CLOSURE..... 18

LIST OF TABLES

Table 1 Mould/Moisture Observations Summary CFIA Sidney Building 12 7

Table 2 Surface Sample Collection and Analysis Summary CFIA Sidney Building 12 12

LIST OF APPENDICES

APPENDIX A FLOOR PLANS A.1

APPENDIX B LABORATORY ANALYTICAL CERTIFICATES B.1



MOULD ASSESSMENT AND REMEDIATION PLAN

Introduction
December 20, 2021

1.0 INTRODUCTION

Stantec Consulting Ltd. (Stantec) was retained by Public Services and Procurement Canada (PSPC) on behalf of the Canadian Food Inspection Agency (CFIA) to provide a mould assessment and remediation recommendations for CFIA Sidney Building 12, located at 8801 East Saanich Road, North Saanich, British Columbia (subject building).

The consulting services were requested in response to a flooding event that impacted various building materials within the subject building, including those that are known to support mould growth. The overall intention of the project is to identify and remove mould from the workplace in accordance with the requirements of the Canada Labour Code, Part II Canada Occupational Health and Safety Regulations (COHSR).

The objectives of this phase of the project were as follows:

- To document existing conditions with respect to the extent of building materials impacted by mould and/or moisture that are presumed to have resulted from the recent flooding event.
- To prepare a remediation plan for removal, cleaning and/or drying of those building materials that are providing conditions conducive to mould growth, as well as those with existing mould growth, that resulted from the recent flooding event.

Site work associated with the initial assessment was conducted by Mr. Sean Brigden of Stantec on December 9, 2021.

1.1 BACKGROUND

Stantec understands that areas of Building 12 were impacted by water during a flooding event that was a result of unprecedented rainfall in southern BC that occurred from November 13-15, 2021. An indication of the impacted areas within the subject building is provided in Drawing 1 in Appendix A.

Water from the flooding event was reportedly discovered on the morning of Monday, November 15 and had been removed from the impacted areas by approximately 4:00 pm that day. Subsequent to the removal of water from the building, areas that were impacted by the flooding event, as well as rooms/spaces adjacent to the impacted areas (throughout the main floor) were vacated by CFIA personnel, due to concerns that mould, if present, would have negative impacts on air quality.



MOULD ASSESSMENT AND REMEDIATION PLAN

Introduction
December 20, 2021

1.1.1 Previous Reports

The following documentation related to hazardous building materials was reviewed prior to undertaking the assessment (Previous Reports):

- Stantec report on Project No. 115615283 *Hazardous Building Materials Assessment for HVAC Upgrade; CFIA Buildings 12 and 46 Centre for Plant Health 8801 East Saanich Road, North Saanich, BC*, dated October 20, 2015, prepared for CFIA/PWGSC (Stantec 2015 Report)
- Arcadis report no. 702860-000 *Pre-Demolition Hazardous Materials Survey for CFIA Centre for Plant Health*, dated August 10, 2018 (Arcadis 2018 Report)

Stantec reviewed the above-noted reports to obtain information regarding the presence of hazardous materials in the subject building – specifically in relation to those building materials impacted by the flooding event (interior flooring materials and wall materials) and that would be expected to require impacts (removal, alteration, etc.) during mould remediation activities. Based on the information provided in the above-noted reports, the following was understood prior to our assessment:

- Asbestos-containing materials (ACMs):
 - 9"x9" vinyl floor tiles in the sprinkler room are ACM
 - Mastic on the underside of one sink in the impacted area is ACM
 - No asbestos was detected in various samples of sheet flooring materials present in other locations impacted by the flood
 - No asbestos was detected in samples of joint compound collected from drywall walls in various locations impacted by the flood
- Lead-containing paints (LCPs):
 - Lead was identified in concentrations less than detection limits in paint samples collected from wall materials in areas impacted by the flood



MOULD ASSESSMENT AND REMEDIATION PLAN

Scope
December 20, 2021

2.0 SCOPE

The planned scope of work for this assessment included the following:

- Review of existing information, including site drawings, previous assessment and/or abatement documentation and discussions with site personnel, where available.
- Visual assessment of readily accessible areas for the presence of suspect mould and/or conditions conducive to mould growth (e.g., wet building materials).
- Collection of surface samples from building materials exhibiting suspect mould growth.
- Submission of samples collected for laboratory analysis.
- Evaluation and interpretation of field findings and sample analytical results to develop conclusions and a mould remediation plan.

2.1 LIMITATIONS

In preparation of this report, Stantec used professional judgment based on experience. The work was conducted in accordance with generally accepted professional standards. Stantec relied on information gathered during the site review and laboratory analytical reports.

This report reflects the observations made within accessible and accessed portions of the subject building and the analytical results of the samples collected at specific times/locations during the assessment.

Visual assessment for the presence of suspected visible mould and/or suitable conditions for mould growth (e.g., moist and/or moisture-stained building materials) was conducted pertaining to interior building materials in accessed portions of the subject building only, and only in relation to those materials in areas that were reportedly impacted by the flooding events as described herein.

The conclusions provided herein will not necessarily identify all sources of moisture leading to suitable conditions for mould growth within the subject building. This assessment does not constitute a building envelope/building systems assessment, which would include an intrusive investigation to assess the internal condition, potential moisture sources, and expected remaining service life of the various components and systems comprising the envelope of a building (or area).

Regarding asbestos and lead, this assessment does not constitute a comprehensive hazardous building materials assessment for the subject building. Assessment and sampling was limited to only those suspect materials that are expected to be impacted during the mould abatement work described herein.

This report has been prepared for the exclusive use of the Client for the purpose of assessing general conditions pertaining to mould in the subject building as outlined herein. Any use that a third party makes of this report, or reliance on, or decisions to be made on it, are the responsibility of such third parties. Stantec accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.



MOULD ASSESSMENT AND REMEDIATION PLAN

Scope

December 20, 2021

2.1.1 Information from Previous Reports

Stantec reviewed the previous report(s) outlined herein for information purposes only. Although the information provided in the documentation outlined in Section 1.1.1 was reviewed and considered in developing our sampling plan, Stantec did not rely entirely on the documentation or all of the sample analytical results within. However, for the purposes of this report, where previous sampling and analytical data indicated the presence of a hazardous building material (e.g., asbestos, lead), additional sampling was not conducted, and the material was considered to be hazardous.



MOULD ASSESSMENT AND REMEDIATION PLAN

Assessment Findings
December 20, 2021

3.0 ASSESSMENT FINDINGS

Methodology and findings are presented in the following sub-sections for mould, asbestos and lead separately.

3.1 MOULD

3.1.1 Methodology

The presence of suspect visible mould was assessed through visual observations and sampling. Material observed with dark or discoloured marks with a textured appearance and/or clustered distribution is described as “suspected mould”, unless it is confirmed as mould by laboratory analysis.

The visual assessment was supplemented through the use of a surface moisture meter. The instrument was used in a non-quantitative manner, comparing moisture readings from areas where impacts were visible and/or presumed to those of similar materials that were known to be dry.

To determine whether selected surfaces within the building were growth sites for fungi, samples were collected from surfaces that were visibly or potentially impacted, using tape-lift sampling/bulk sampling techniques. Samples were submitted to EMSL Canada Inc. (EMSL) in Mississauga, Ontario for laboratory examination (direct microscopic analysis) of the mould forms present. EMSL’s Mississauga, Ontario laboratory has fulfilled the requirements of the American Industrial Hygiene Association (AIHA) Laboratory Accreditation Program (LAP) for Environmental Microbiology.

The scope of work and procedures utilized for the visual assessment and sampling were based on the recommendations for such provided in the documents listed below:

- Standard Construction Document CCA 82 *Mould Guidelines for the Canadian Construction Industry*, Canadian Construction Association, 2004 (referred to as CCA 82)
- *Fungal Contamination in Public Buildings: Health Effects and Investigation Methods*, Federal-Provincial Committee on Environmental and Occupational Health, 2004 (referred to as the Health Canada Guide)
- *Indoor Air Quality in Office Buildings: A Technical Guide*, Report of the Federal-Provincial Advisory Committee on Environmental and Occupational Health, 1995 (referred to as the IAQ Guide)
- *Bioaerosols: Assessment and Control*, American Conference of Governmental Industrial Hygienists (ACGIH), 1999 (referred to as the ACGIH Report)
- *Field Guide for the Determination of Biological Contaminants in Environmental Samples*, AIHA, Second Edition 2005.



MOULD ASSESSMENT AND REMEDIATION PLAN

Assessment Findings

December 20, 2021

3.1.2 Findings

General observations made within the areas impacted by the flood (refer to Drawing 1 in Appendix A for areas impacted) include the following:

- Significant odours typically associated with mould or moist building materials (e.g., musty odours) were not noted within the areas affected by the recent flooding event, or within adjacent areas entered by Stantec.
- Building materials with elevated moisture content were typically limited to:
 - Cabinetry toe-kicks composed of wood
 - Gypsum wall materials behind rubber cove base in various locations throughout the areas assessed. In limited instances, elevated moisture was detected above the cove base materials, generally no higher than 0.3 m from the floor.
 - Flooring materials (typically indicative of moisture in underlying concrete)
- No visible suspect mould was observed on exposed materials
- Limited instances of suspect mould were observed on gypsum wall materials behind rubber cove base.
- Exposed concrete curbs are present at perimeter walls in various locations throughout. Although concrete curbs may have been impacted by water and may still hold some moisture subsequent to the flooding event, conditions of moist concrete do not typically provide suitable conditions for significant mould growth. Exposed concrete curbs are expected to dry slowly as moisture evaporates.
- Cabinetry and toe kicks associated with lab benches and counters in the North Lab are comprised of metal. Metal does not retain moisture and is not a substrate that provides suitable conditions for mould growth even when wet. Although action may be required to investigate materials beneath and/or behind metal components of lab benches and counters, those metal components are not anticipated to require specific action as part of a mould remediation plan.




More detailed observations pertaining to mould and/or moisture that were made during this assessment are summarized in Table 1, below. Rooms referenced below are indicated on Drawing 2 in Appendix A, which also includes visual representations of observations (where possible) and locations of samples collected during this assessment.



MOULD ASSESSMENT AND REMEDIATION PLAN

Assessment Findings
December 20, 2021

**Table 1 Mould/Moisture Observations Summary
CFIA Sidney Building 12**




Building Area	Observation	Photo(s)
<p>Southwest entrance foyer</p>	<p>No visible suspect mould observed on exposed gypsum wall materials or gypsum materials concealed behind rubber cove base.</p> <p>No elevated moisture detected in gypsum wall materials tested.</p> <p>Wall configuration behind rubber cove base appears to include a gap, filled with expanding foam, between the bottom of the gypsum wall and the floor. This may have kept gypsum wall materials from becoming wet during the flooding event, in many instances/areas.</p>	
<p>Washroom</p>	<p>No visible suspect mould observed on exposed gypsum wall materials or gypsum materials concealed behind rubber cove base.</p> <p>Elevated moisture detected on lower portion of the north gypsum wall (east of the door, beneath the waste bin) – primarily behind the rubber cove base.</p> <p>No elevated moisture detected on other gypsum wall materials.</p>	
<p>Stairwell Entrance Foyer</p>	<p>No visible suspect mould observed on exposed gypsum wall materials or gypsum materials concealed behind rubber cove base.</p> <p>Elevated moisture detected on lower portion of the north gypsum wall.</p> <p>No elevated moisture detected on other gypsum wall materials.</p>	



MOULD ASSESSMENT AND REMEDIATION PLAN

Assessment Findings
December 20, 2021

**Table 1 Mould/Moisture Observations Summary
CFIA Sidney Building 12**




Building Area	Observation	Photo(s)
Stairwell	<p>No visible suspect mould observed on exposed gypsum wall materials or gypsum materials concealed behind rubber cove base.</p> <p>Elevated moisture detected on lower portion of the east gypsum wall.</p> <p>No elevated moisture detected on other gypsum wall materials or stair treads.</p>	
Central Foyer/Freezer Area	<p>No visible suspect mould observed on exposed gypsum wall materials or gypsum materials concealed behind rubber cove base.</p> <p>Elevated moisture detected on lower portion of the south gypsum wall (opposite the north wall of the stairwell foyer), on the lower portion of the west gypsum wall (north half) and on the lower portion of the wall leading to the electrical room.</p> <p>No elevated moisture detected on other gypsum wall materials.</p>	
Electrical Room	<p>No visible suspect mould observed on exposed gypsum wall materials or gypsum materials concealed behind rubber cove base.</p> <p>Elevated moisture detected on lower portion of various gypsum wall sections.</p> <p>South wall includes a concrete curb (not conducive to supporting mould growth).</p>	



MOULD ASSESSMENT AND REMEDIATION PLAN

Assessment Findings
December 20, 2021

**Table 1 Mould/Moisture Observations Summary
CFIA Sidney Building 12**




Building Area	Observation	Photo(s)
South Lab	<p>No visible suspect mould observed on exposed gypsum wall materials or gypsum materials concealed behind rubber cove base.</p> <p>Elevated moisture detected on lower portion of most exposed gypsum wall sections and on wooden toe kicks beneath cabinets/lab benches throughout.</p> <p>South wall includes a concrete curb (not conducive to supporting mould growth). Sink with ACM undercoating (shown at arrow) not anticipated to require action.</p>	
West Corridor and Sprinkler Room Foyer	<p>No visible suspect mould observed on exposed gypsum wall materials.</p> <p>Suspect visible mould on gypsum wall materials concealed behind rubber cove base along east wall (surface samples M-01 and M-02 collected).</p> <p>Elevated moisture detected on lower portion of exposed gypsum wall sections.</p> <p>South wall includes a concrete curb (not conducive to supporting mould growth).</p>	
Sprinkler Room	<p>No visible suspect mould observed on exposed gypsum wall materials.</p> <p>Elevated moisture detected on lower portion of most exposed wall sections, including gypsum walls around shower.</p> <p>ACM floor tiles lifting in some instances.</p> <p>South and west walls include concrete curbs (not conducive to supporting mould growth).</p>	



MOULD ASSESSMENT AND REMEDIATION PLAN

Assessment Findings
December 20, 2021

**Table 1 Mould/Moisture Observations Summary
CFIA Sidney Building 12**



Building Area	Observation	Photo(s)
Tissue Culture Transfer Room	<p>No visible suspect mould observed on exposed gypsum wall materials or gypsum materials concealed behind rubber cove base.</p> <p>Elevated moisture detected sporadically on lower portion of various gypsum wall sections.</p>	
Tissue Culture Area	<p>No visible suspect mould observed on exposed gypsum wall materials or gypsum materials concealed behind rubber cove base.</p> <p>Elevated moisture detected on lower portion of most exposed gypsum wall sections and on wooden toe kicks beneath cabinets/lab benches throughout.</p>	
North Lab	<p>No visible suspect mould observed on exposed gypsum wall materials or gypsum materials concealed behind rubber cove base.</p> <p>Elevated moisture detected on lower portion of most exposed gypsum wall sections.</p> <p>Metal toe kicks on lab benches, and north wall appears to include a concrete curb (not conducive to supporting mould growth).</p>	



MOULD ASSESSMENT AND REMEDIATION PLAN

Assessment Findings
December 20, 2021

**Table 1 Mould/Moisture Observations Summary
CFIA Sidney Building 12**

Building Area	Observation	Photo(s)
Centrifuge Room	<p>No visible suspect mould observed on exposed gypsum wall materials or gypsum materials concealed behind rubber cove base.</p> <p>No elevated moisture detected on exposed gypsum wall sections.</p> <p>North wall appears to include a concrete curb (not conducive to supporting mould growth).</p>	
Floors (general, throughout)	<p>Elevated moisture detected in sheet flooring materials (sheet flooring) and exposed concrete throughout. Expected condition as sheet flooring is present on concrete, and the underlying concrete will have absorbed moisture during the flood event.</p> <p>Sheet flooring appears well adhered to concrete (no lifting, bubbling or excess moisture observed) and moisture conditions on the sheet flooring and underlying concrete materials are unlikely to lead to mould growth.</p>	



MOULD ASSESSMENT AND REMEDIATION PLAN

Assessment Findings
December 20, 2021

3.1.2.1 Surface Sampling

Table 2, below, summarizes the locations and analytical results of the bulk surface samples collected during this assessment. A copy of the sample analytical report provided by EMSL is attached in Appendix B.

**Table 2 Surface Sample Collection and Analysis Summary
CFIA Sidney Building 12**

Sample No.	Sample Location	Microscopic Observation	Mould Growth Indicated?
M-01	East wall of west corridor – north of door to South Lab	Aspergillus/Penicillium spores detected in concentrations indicative of dispersion directly or indirectly from an active growth area, and may be indicative of actual growth.	Potentially
M-02	East wall of west corridor – south of door to South Lab	Alternaria (Ulocladium), Aspergillus/Penicillium and Acremonium spores detected in concentrations indicative of actual mould growth.	Yes

As indicated above, mould growth was confirmed on gypsum materials behind rubber cove base materials on the east wall of the west corridor. Although this was the only location that visible mould growth was observed during Stantec's assessment, conditions conducive to similar growth exist throughout the areas assessed (moist gypsum materials behind rubber cove base).

3.2 ASBESTOS

3.2.1 Methodology

The presence of asbestos in federal workplaces and pertaining to federally regulated workers is governed by the COHSR. According to the COHSR, ACM means:

- Any article that is manufactured and contains 1% or more asbestos (by weight) at the time of manufacture, or any material that contains 1% or more asbestos when tested in accordance with accepted methods.

The presence of asbestos in the workplace in British Columbia pertaining to provincially regulated workers is governed by British Columbia's Occupational Health and Safety Regulation (BC Reg. 296/97). According to the current version of BC Reg. 296/97, ACM means:

- Any material containing at least 0.5% asbestos, or vermiculite insulation with any asbestos.

As both federally regulated workers and provincially regulated workers (e.g., contractors) are expected to carry out work activities within the subject building, and as the provincial regulations have a more stringent definition of ACM, and generally include the requirements noted in the COHSR, this assessment was conducted to meet the requirements of BC Reg. 296/97.



MOULD ASSESSMENT AND REMEDIATION PLAN

Assessment Findings
December 20, 2021

Although information provided in the Previous Reports indicated that the building materials impacted by the flooding event did not contain asbestos, additional samples were collected during this assessment from drywall joint compound materials specifically in areas impacted by the flooding event. This was completed as a measure of diligence to verify previous (negative) results, due to the knowledge that the asbestos content of drywall joint compound materials can be inconsistent.

Three samples were collected from joint compound on drywall materials impacted by the flood. Samples were submitted to EMSL in Mississauga, Ontario for analysis of asbestos content using polarized light microscopy (PLM) with dispersion staining, in accordance with the United States Environmental Protection Agency (USEPA) 600/R-93/116 method. EMSL's analytical laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

3.2.2 Findings

No asbestos was detected in the three samples of joint compound collected as part of this assessment. This is consistent with the information in the Previous Reports with respect to drywall joint compound, which can be considered non-ACM for mould remediation activities.

3.3 LEAD IN PAINT

3.3.1 Methodology

A visual assessment of accessible areas was undertaken in order to check for the presence of materials that may contain lead. These materials included paint applications, wiring and plumbing, batteries, etc.

3.3.1.1 Lead in Paint

When considering the risks of potential lead exposures associated with disturbance to surfaces coated with lead-containing products, the 2011 WorkSafeBC manual titled *Lead-Containing Paint and Coatings: Preventing Exposure in the Construction Industry*, provides some context in relation to concentrations of lead in paint, indicating the following:

- Improper removal of lead paint containing 600 mg/kg (equivalent to 600 parts per million, or “ppm”) lead can result in airborne lead concentrations that exceed half of the exposure limit.
 - In accordance with the provisions of BC Reg. 296/97, the potential for exposure exceeding half of the occupational exposure limit would trigger the requirement for implementation of an exposure control plan.
- Lead concentrations as low as 90 mg/kg may present a risk to pregnant women and children.
 - Any risk assessment should include for the presence of high risk individuals within the workplace.



MOULD ASSESSMENT AND REMEDIATION PLAN

Assessment Findings

December 20, 2021

In addition to the above, the 2017 WorkSafeBC publication *Safe Work Practices for Handling Lead* (BC Lead Guide) indicates the following:

- Unlike for asbestos-containing material, WorkSafeBC does not numerically define what would be considered a lead-containing paint or coating. All suspected paints or coatings should be tested for lead because, depending on the nature of the work, even a small amount could pose a risk to workers. In order to determine which controls and personal protective equipment would be required for a particular job, a qualified person must consider this information as part of the risk assessment.

When reviewing the above, “high risk” individuals are not expected to be present in the mould remediation work area when significant disturbance to painted surfaces is conducted. As such, paints containing 600 ppm lead or more will be considered “lead-containing” for the purpose of this report, such that appropriate risk assessments can be completed for mould remediation. However, information regarding the lead content of all paints tested is provided herein, for reference and risk assessment should the consideration of high risk individuals be necessary, based on the requirements of a particular situation.

Although information provided in the Previous Reports indicated that the paint on building materials impacted by the flooding event did not contain lead in concentrations greater than analytical method detection limits, additional samples were collected during this assessment from materials in areas specifically impacted by the flooding event. This was completed as a measure of diligence to verify previous results, due to the knowledge that the lead content of paints can be inconsistent, and areas could have been re-painted since previous sampling occurred.

Samples of potential LCPs were collected and submitted to EMSL for analysis of total lead content using EPA Method SW 846 3050B*/7000B. EMSL’s analytical laboratory is also accredited by the AIHA Environmental Lead Laboratory Approval Program (ELLAP).

3.3.2 Findings

Lead was not detected in concentrations that exceeded the method detection limit in the two additional samples of typical off-white paint on drywall that were collected as part of this assessment (<81 ppm lead detected in both samples). This is consistent with the information in the Previous Reports with respect to the lead content of paint, which can be considered non-LCP for mould remediation activities.



MOULD ASSESSMENT AND REMEDIATION PLAN

Recommendations
December 20, 2021

4.0 RECOMMENDATIONS

Documents published by Health Canada, Ontario Ministry of Health, AIHA, ACGIH and others, provide guidance for interpreting the results of mould investigations. The Health Canada Guide states that:

“current knowledge supports the need to prevent damp conditions and mold growth and to remediate any fungal contamination in buildings.”

To this end, Stantec recommends the scope of work outlined below be completed to remove mould growth and conditions conducive to mould growth. The statements made below are general in nature, and are represented visually on Drawing 3 in Appendix A.

- Remove and dispose of the lower 60 cm (two feet) of wallboard materials (and underlying vapour barrier and insulation, if present) in areas where elevated moisture content was detected.
 - Within the Sprinkler Room, this will require removal of the manufactured shower stall, to access wall materials behind it. The shower stall can likely be re-installed once remediation is complete.
 - In the following instances, this will require removal of cabinetry, shelving or lab bench cupboards from the wall, to access wallboard materials behind them:
 - o South Lab
 - Two shelving units on the north wall and one shelving unit on the south wall
 - o Tissue Culture Transfer Room
 - Two lab bench cupboards under the countertop on the north wall
 - o North Lab
 - Lab bench cupboard under the countertop along the northwest wall, and shelving unit on the southeast wall
 - Where wall materials remain on the opposite side of the exposed wall cavity, assess for evidence of moisture or mould contamination on the back side of those wall materials, when viewed in the wall cavity. If mould and/or moisture are present, this may require expansion to the remediation scope. Areas where this will be of particular importance include the following wall sections that could not be viewed during this assessment (covered by items such as built-in cabinets under lab benches, etc.):
 - o South Lab
 - North wall (will be visible in wall cavity once materials are removed from the south wall of the North Lab)
 - East wall (will be visible in wall cavity once materials are removed from the west wall of the Central Foyer/Freezer Area)
 - o Tissue Culture Area
 - South wall (will be visible in wall cavity once materials are removed from the north wall of the Tissue Culture Transfer Room)



MOULD ASSESSMENT AND REMEDIATION PLAN

Recommendations

December 20, 2021

- o Centrifuge Room
 - West wall – south section (will be visible in wall cavity once materials are removed from the east wall of the North Lab.
- Remove and dispose of wood toe kicks from cabinets associated with laboratory benches and counters throughout.
 - This will involve removal of toe kicks from such items throughout the South Lab and the Tissue Culture area
 - Assess areas beneath cabinets for remaining water and/or concealed wall materials that may be mould and/or moisture impacted.
- Remove metal toe kicks from cabinets associated with laboratory benches and counters throughout the North Lab.
 - Assess areas beneath cabinets for remaining water and/or concealed wall materials that may be mould and/or moisture impacted. Impacts are unlikely along the north wall, as it is presumed to have a concrete curb behind the cabinets.
- Remove and dispose of ACM floor tile throughout the sprinkler room (approximately 4.6 square metres or 50 square feet)

The above-noted work associated with removal of non-ACM materials must be conducted by competent personnel, who are knowledgeable of potential hazards of mould exposure, using personal protective equipment and procedures in accordance with industry accepted practices for mould abatement. A specialized mould abatement contractor is recommended.

With respect to the removal of ACM floor tile from the sprinkler room, removal must be completed by appropriately trained personnel (e.g., asbestos abatement contractor personnel), in accordance with the requirements of the COHSR, BC Reg. 296/97 and the BC Asbestos Guide

The following additional recommendations/considerations are provided:

- At a minimum, mould abatement work should be completed following the procedures for “Remediation of Medium-Scale Mould Growth” as outlined in CCA 82, which include provisions for enclosure of the work area, and operation of the work area under negative pressure.
 - Stantec recommends the use of HEPA air filtration devices (negative air machines) vented directly to the outdoors to maintain negative pressure. Depending on the size of each work area (areas may be enclosed separately, depending on contractor protocols), more than one negative air machine may be necessary to maintain adequate negative pressure within a particular enclosure.
- Mould abatement protocols call for removal of visibly impacted materials plus 30 cm (1 foot) of clean materials in all directions. Depending on the conditions within wall cavities as materials are removed, it may be necessary to remove wall materials to heights greater than 60 cm, or small sections of adjacent walls, if they are not already planned for removal.
- Cabinetry, shelving or lab bench cupboards are present in various locations that restrict access to concealed wallboard materials. As such, the condition of those concealed materials is currently



MOULD ASSESSMENT AND REMEDIATION PLAN

Recommendations

December 20, 2021

unknown. As opposed to removing all such items from walls to investigate conditions, Stantec recommends proceeding with removal of items/materials as outlined herein as a first step. Upon completion in each area, there will be more opportunity to view the condition of concealed materials. If concealed materials do not show evidence of mould growth or conditions conducive to mould growth, removal of additional cabinetry, shelving or lab bench cupboards may not be necessary.

- Given the requirement for additional assessment at various stages of removal, there should be regular involvement and/or oversight by a health and safety professional experienced in performing microbial investigations, who is independent of the remediation contractor. The health and safety professional can provide guidance on additional removal scope, if necessary.
- Although moisture appears to be present beneath sheet flooring materials, action is not currently required as the flooring remains well adhered to the concrete, and the condition is unlikely to support mould growth. Although unlikely to result from the recent flooding event, given that they were impacted during the flood and there is evidence that some moisture remains (likely in the underlying concrete), flooring materials should be routinely monitored for lifting or other damage that may occur, and repaired as necessary.



MOULD ASSESSMENT AND REMEDIATION PLAN

Closure
December 20, 2021

5.0 CLOSURE

This report has been prepared for the sole benefit of PSPC and CFIA. Any use which any additional party makes of this report, or any reliance on decisions based on it, is the responsibility of such additional parties. Stantec Consulting Ltd. accepts no responsibility for damages, if any, suffered by any additional party as a result of decisions made or actions based on this report.

The information and conclusions contained in this report are based upon work undertaken by trained professionals and technical staff in accordance with generally accepted engineering, scientific and occupational health and safety 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 assessment 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. Due to the nature of the investigation and the limited data available, Stantec Consulting Ltd. cannot warrant against undiscovered environmental or health and safety 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 Stantec Project Manager at your convenience.



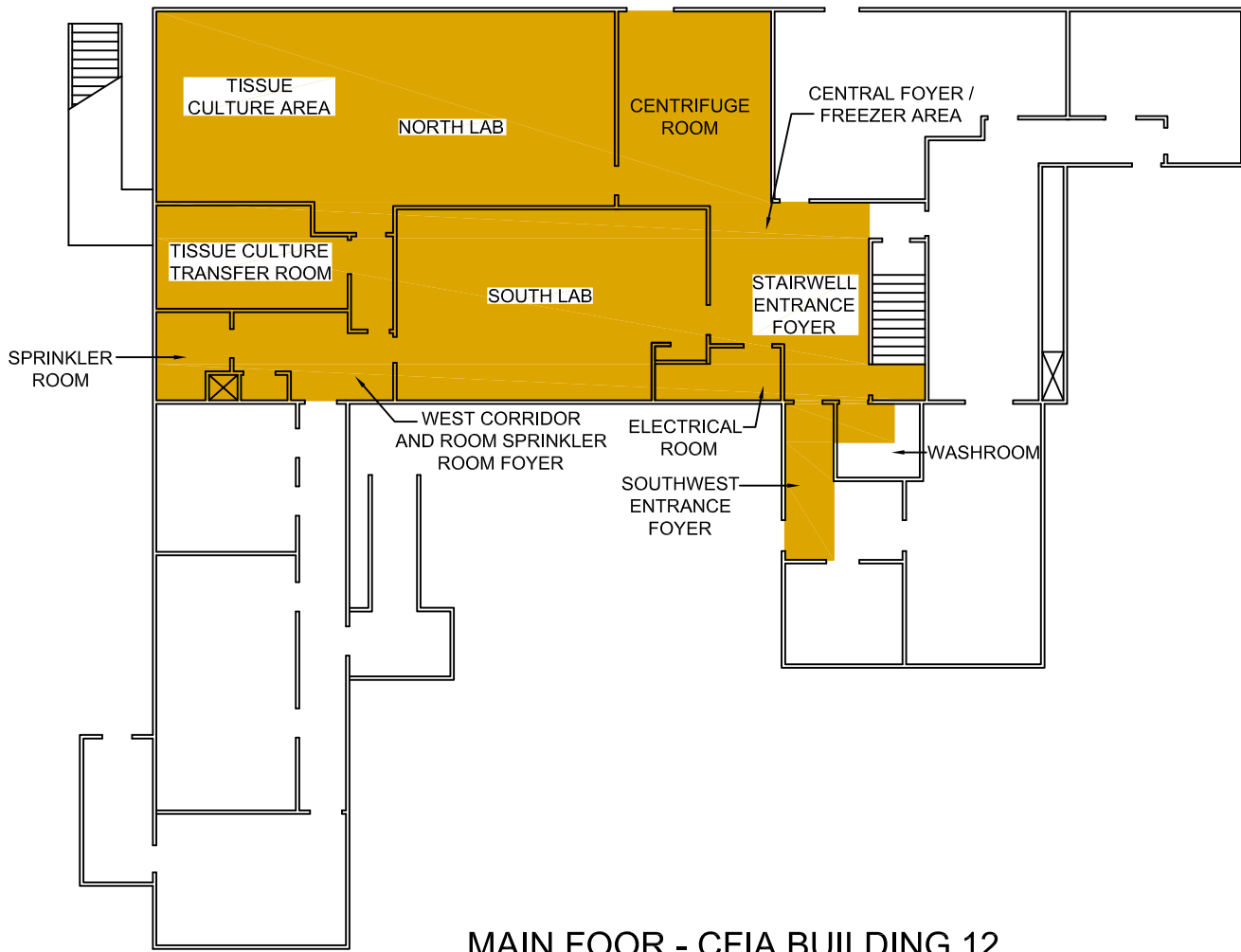
APPENDIX A
Floor Plans

MOULD ASSESSMENT AND REMEDIATION PLAN

Appendix A Floor Plans
December 20, 2021

Appendix A FLOOR PLANS





MAIN FOOR - CFIA BUILDING 12

LEGEND
 FLOOD IMPACTED AREA

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

AREA IMPACTED BY FLOOD

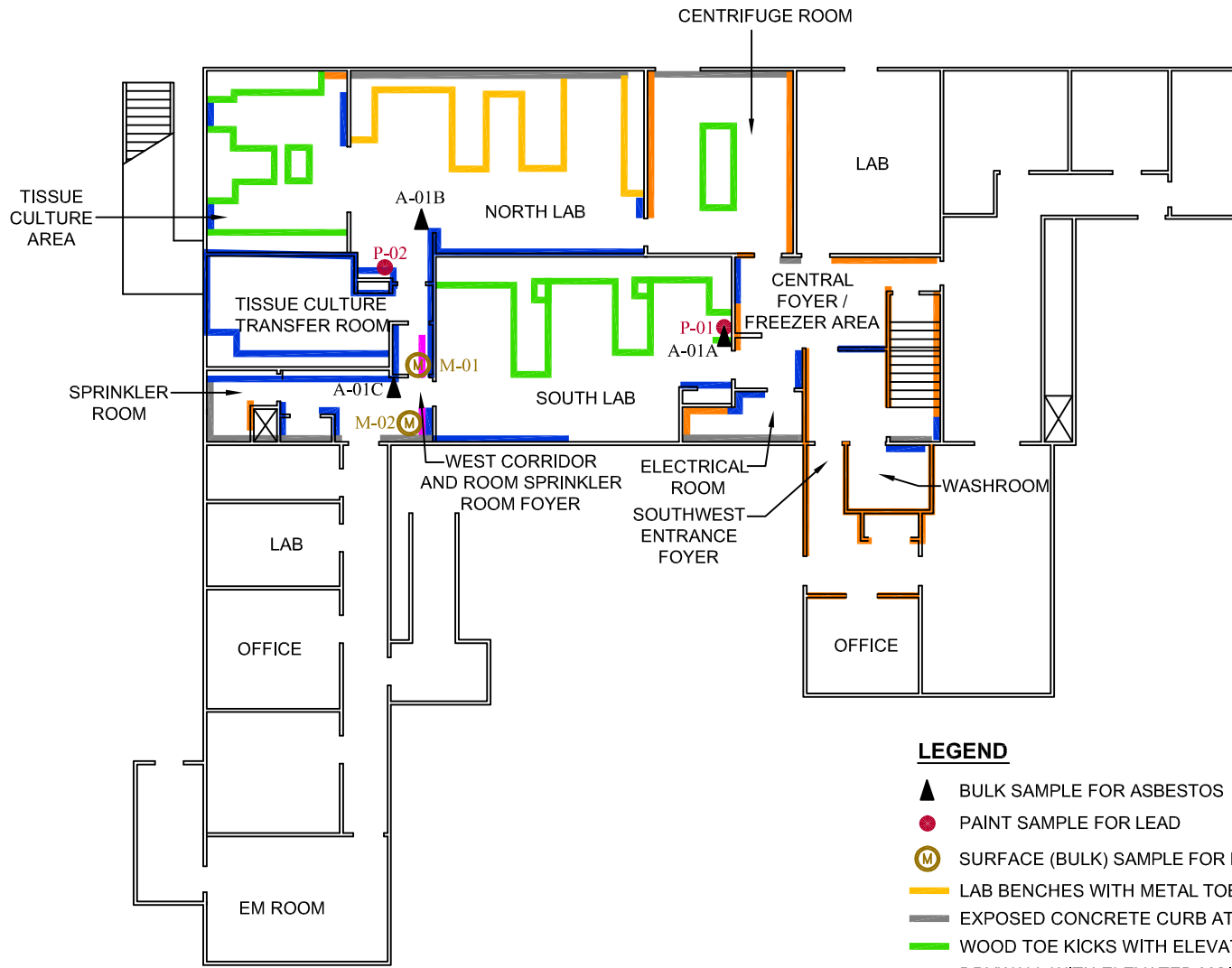
8801 EAST SAANICH ROAD, NORTH SAANICH, BC

Client: PUBLIC SERVICES AND PROCUREMENT CANADA

Project No.:	123222004
Scale:	N.T.S.
Date:	21/12/18
Dwn. By:	CD _{PT/CS} SL2021120117
App'd By:	SB

Dwg. No.:	1
-----------	---





MAIN FLOOR - CFIA BUILDING 12

LEGEND

- ▲ BULK SAMPLE FOR ASBESTOS
- PAINT SAMPLE FOR LEAD
- Ⓜ SURFACE (BULK) SAMPLE FOR MOULD
- LAB BENCHES WITH METAL TOE KICKS
- EXPOSED CONCRETE CURB AT BASE OF WALL
- WOOD TOE KICKS WITH ELEVATED MOISTURE DETECTED
- DRYWALL WITH ELEVATED MOISTURE AT BASE OF WALL
- DRYWALL WITH NO ELEVATED MOISTURE OR SUSPECT MOULD
- DRYWALL WITH VISIBLE MOULD BEHIND RUBBER COVE MOULDING

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

MOULD/MOISTURE ASSESSMENT FINDINGS

8801 EAST SAANICH ROAD, NORTH SAANICH, BC

Client:

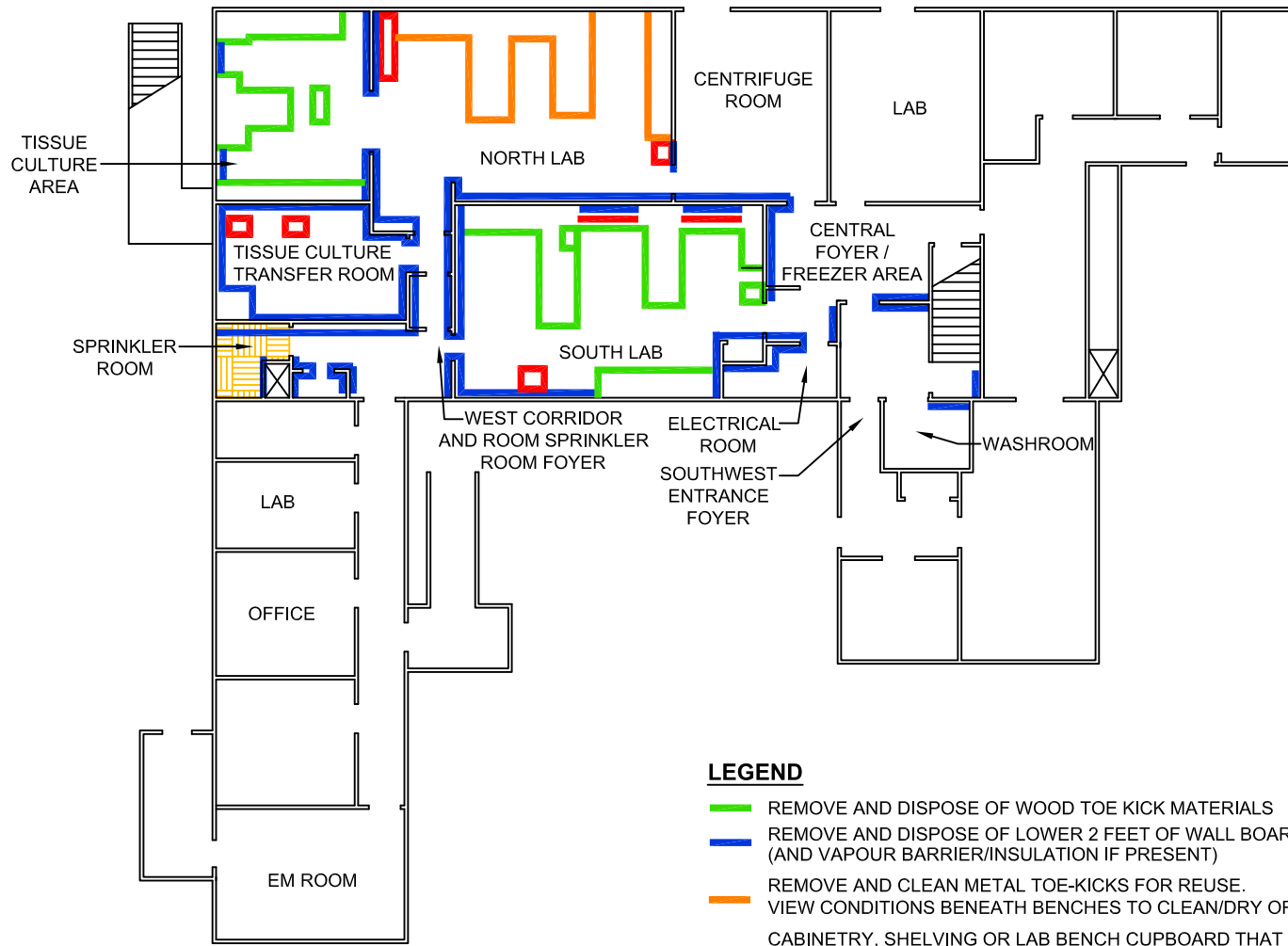
PUBLIC SERVICES AND PROCUREMENT CANADA

Project No.:	123222004
Scale:	N.T.S.
Date:	21/12/18
Dwn. By:	CD _{PT/CS} SL2021120118
App'd By:	SB

Dwg. No.:

2





LEGEND

- REMOVE AND DISPOSE OF WOOD TOE KICK MATERIALS
- REMOVE AND DISPOSE OF LOWER 2 FEET OF WALL BOARD (AND VAPOUR BARRIER/INSULATION IF PRESENT)
- REMOVE AND CLEAN METAL TOE-KICKS FOR REUSE.
VIEW CONDITIONS BENEATH BENCHES TO CLEAN/DRY OR ADJUST SCOPE IF NECESSARY
- CABINETY, SHELVING OR LAB BENCH CUPBOARD THAT WILL REQUIRE RELOCATION (OR DISMANTLING TO ACCESS WALL MATERIAL THAT REQUIRES REMOVAL)
- REMOVE AND DISPOSE OF ACM FLOOR TILE

MAIN FOOR - CFIA BUILDING 12

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

MOULD REMEDIATION PLAN

8801 EAST SAANICH ROAD, NORTH SAANICH, BC

Client:

PUBLIC SERVICES AND PROCUREMENT CANADA

Project No.:	123222004
Scale:	N.T.S.
Date:	21/12/19
Dwn. By:	CD <small>SL2021120119</small> PT/CS
App'd By:	SB

Dwg. No.:	3
------------------	----------



APPENDIX B
Laboratory Analytical Certificates

MOULD ASSESSMENT AND REMEDIATION PLAN

Appendix B Laboratory Analytical Certificates
December 20, 2021

Appendix B LABORATORY ANALYTICAL CERTIFICATES





EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3



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




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

EMSL Order: 552120284 Customer ID: 55STBC42 Customer PO: 123222004 Project ID:

Attention: Sean Brigden Stantec Consulting Ltd. 11-2042 Mills Road Sidney, BC V8L 5X4 Project: 123222004	Phone: (250) 655-6062 Fax: Collected Date: 12/09/2021 Received Date: 12/13/2021 Analyzed Date: 12/13/2021
--	--

Surface Contamination ASSESSMENT Report™ Samples Based on Direct Microscopic Analysis MICRO-SOP-200

Sample Information	Sample Location	Surface Contamination Rating (Referenced in IICRC S520)	Recommended Remedial Action (Referenced in IICRC S520)
Lab Sample #: 552120284-0001 Client Sample ID: M-01	W Hallway, N of door to lab	Condition 2: Contaminated with settled spores	 Remediate to a Condition 1 status
Lab Sample #: 552120284-0002 Client Sample ID: M-02	W Hallway, S of door to lab	Condition 3: Actual fungal growth	 Remediate to a Condition 1 status

Definitions (from IICRC S520 Standard)	
	Condition 1 (normal fungal ecology): an indoor environment that may have settled spores, fragments, or traces of actual growth.
	Condition 2 (settled spores): an indoor environment which is primarily contaminated with settled spores that were dispersed directly or indirectly from a Condition 3 area, and which may have traces of actual growth.
	Condition 3 (actual growth): an indoor environment contaminated with the presence of actual mold growth and associated spores. Actual growth includes growth that is active or dormant, visible or hidden.

Data provided in this report are intended to facilitate the assessment process performed by an Indoor Environmental Professional (IEP). The IEP is responsible for final data interpretation and remediation conclusions based on their assessment which may include information on the building history, an inspection, sampling, and laboratory data. Post-remediation verification testing recommended after any remediation.



Sneha Panchal, M.Sc., RMCCM Laboratory Manager
or other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted.

Samples analyzed by EMSL Canada Inc. Mississauga, ON AIHA-LAP, LLC-EMLAP Accredited #196142

Report Amended: 12/13/2021 05:00 PM Replaces initial report from: 12/13/2021 04:37 PM Reason Code Client-Change to Project

All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.



EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3

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

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

EMSL Order: 552120284
Customer ID: 55STBC42
Customer PO: 123222004
Project ID:

Attention: Sean Brigden Stantec Consulting Ltd. 11-2042 Mills Road Sidney, BC V8L 5X4	Phone: (250) 655-6062 Fax: Collected Date: 12/09/2021 Received Date: 12/13/2021 Analyzed Date: 12/13/2021
Project: 123222004	

Test Report: Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, and Other Particulates from Bulk Samples (EMSL Method MICRO-SOP-200)

Lab Sample Number: Client Sample ID: Sample Location:	552120284-0001 M-01 W Hallway, N of door to lab	552120284-0002 M-02 W Hallway, S of door to lab			
Spore Types	Category	Category			
Alternaria (Ulocladium)	-	*High*			
Ascospores	-	-			
Aspergillus/Penicillium	Medium	Low			
Basidiospores	-	-			
Bipolaris++	-	-			
Chaetomium	-	-			
Cladosporium	-	-			
Curvularia	-	-			
Epicoccum	-	-			
Fusarium	-	-			
Ganoderma	-	-			
Myxomycetes++	-	-			
Pithomyces++	-	-			
Rust	-	-			
Scopulariopsis/Microascus	-	-			
Stachybotrys/Memnoniella	-	-			
Unidentifiable Spores	-	-			
Zygomycetes	-	-			
Acremonium++	-	*Low*			
Hyphal Fragment	-	-			
Fibrous Particulate	-	-			
Insect Fragment	-	-			
Pollen	-	-			

Report Comment: 552120284-0001 Penicillium/Talaromyces conidiophores present in sample.

Category: Count/per area analyzed Rare: 1 to 10 Low: 11 to 100 Medium: 101 to 1000 High: >1000 ++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category. * = Sample contains fruiting structures and/or hyphae associated with the spores. "-" Denotes Not Detected.

No discernable field blank was submitted with this group of samples.

Sneha Panchal, M.Sc., RMCCM Laboratory Manager
or other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted.

Samples analyzed by EMSL Canada Inc. Mississauga, ON AIHA-LAP, LLC-EMLAP Accredited #196142

Report Amended: 12/13/2021 05:00 PM Replaces initial report from: 12/13/2021 04:37 PM Reason Code Client-Change to Project

All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.



EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order 552120286
Customer ID: 55STBC42
Customer PO: 123222004
Project ID:

Attn: Sean Brigden
Stantec Consulting Ltd.
11-2042 Mills Road
Sidney, BC V8L 5X4

Phone: (902) 565-0662
Fax:
Collected:
Received: 12/11/2021
Analyzed: 12/13/2021

Proj: 123222004

Test Report: Asbestos Analysis in Bulk Material for Occupational Health and Safety British Columbia Regulation 188/2011 via EPA 600/R-93/116 Method

Client Sample ID: A-01A

Lab Sample ID: 552120286-0001

Sample Description: East wall of south lab, north of door (under desk)/Joint compound - gypsum wall

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/13/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: A-01B

Lab Sample ID: 552120286-0002

Sample Description: South wall of northwest lab, at entrance/Joint compound - gypsum wall

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/13/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: A-01C

Lab Sample ID: 552120286-0003

Sample Description: North wall of hallway to mechanical room/Joint compound - gypsum wall

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/13/2021	White	0.0%	100.0%	None Detected	

Analyst(s):

Delaney Breen PLM (1)
Natalie D'Amico PLM (2)

Reviewed and approved by:

Matthew Davis or other approved signatory
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty available upon request. This report is a summary of multiple methods of analysis, fully compliant reports are available upon request. A combination of PLM and TEM analysis may be necessary to ensure consistently reliable detection of asbestos. This report must not be used to claim product endorsement by NVLAP of any agency or the U.S. Government.

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

Report amended: 12/13/2021 17:33:28 Replaces initial report from: 12/13/2021 12:11:38 Reason Code: Client-Change to Project



EMSL Canada Inc.

2756 Slough Street, Mississauga, ON L4T 1G3

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

<http://www.EMSL.com>

torontolab@emsl.com

EMSL Canada Or 552120291
CustomerID: 55STBC42
CustomerPO: 123222004
ProjectID:

Attn: **Sean Brigden**
Stantec Consulting Ltd.
11-2042 Mills Road
Sidney, BC V8L 5X4

Phone: (902) 565-0662
Fax:
Received: 12/13/2021 09:00 AM
Collected: 12/9/2021

Project: 123222004

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

<i>Client SampleDescription</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>RDL</i>	<i>Lead Concentration</i>
P-01 552120291-0001	12/9/2021	12/13/2021	0.2468 g	81 ppm	<81 ppm
	Site: East wall of south lab, north of door Desc: Typical off-white paint on DW				
P-02 552120291-0002	12/9/2021	12/13/2021	0.2471 g	81 ppm	<81 ppm
	Site: S wall of NW lab, at entrance Desc: Typical off-white paint on DW				

Rowena Fanto, Lead Supervisor
or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted.
Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008% wt based on the minimum sample weight per our SOP. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.
Samples analyzed by EMSL Canada Inc. Mississauga, ON AIHA-LAP, LLC - ELLAP #196142

Initial report from 12/14/2021 08:15:24