



Public Works and  
Government Services Canada

## Appendix A - Information (Photos) and Reports

## **Hazardous Building Materials Assessments**

Palace Grand Theatre  
Dawson City, YT



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### Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Public Works and Government Services Canada (PWGSC) to conduct a hazardous building materials assessments within the Palace Grand Theatre located in Dawson City, YT (subject building).

The purpose of the assessment was to check for potential hazardous building materials that may require special attention for ongoing operations and/or during renovations in accordance with the requirements of the Canada Labour Code, Part II (Canada Labour Code), the Yukon Workers' Compensation Health and Safety Board (WCB) and the current version of the Yukon Territory *Occupational Health and Safety Act and Regulations* (YT OHS Reg.).

The hazardous building materials considered included asbestos-containing materials (ACMs), lead, including lead-containing paints (LCPs), polychlorinated biphenyls (PCBs), mercury-containing items, ozone-depleting substances (ODSs), mould-impacted building materials and silica.

Based on Stantec's review of previous documentation regarding hazardous building materials as well as our current visual assessment and the laboratory analyses performed on samples collected, hazardous building materials were identified within the subject building.

A summary of our findings and recommendations is presented below. Recommendations pertaining to the handling, removal, transportation and disposal of identified hazardous materials are provided in Section 6 of this report.

It should be noted that this summary is subject to the same restrictions and limitations as presented in Section 4.0 (Assessment Limitations) and Section 7.0 (Closure). The information provided is to be read in conjunction with the remainder of this report.

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

<b>Summary of Identified Hazardous Building Materials</b>
<p><b>Identified ACMs</b></p> <ul style="list-style-type: none"> <li>• Vermiculite insulation present between the floor joists throughout the ground floor (analytical results for samples collected by others were reviewed on-site).               <ul style="list-style-type: none"> <li>– Vermiculite debris observed in joist spaces of perimeter walls in the crawlspace (joist spaces themselves are insulated with fiberglass batt) – expected to be releasing from the floor joist spaces.</li> </ul> </li> <li>• Exterior cement panels present on the walls of the Mechanical Room and the emergency stairwells (east and west, and building paper materials directly behind those cement wall panels).</li> <li>• White woven flex duct connectors found in the Mechanical Room, between the main furnace units and primary furnace ducting (one on each of the four furnaces).</li> <li>• White fibrous liner/gasket found in mechanical room on circular furnace hatches (one on each of the four furnaces).</li> <li>• White furnace gasket found in Mechanical Room between furnace and red burner box.</li> <li>• White pipe wrap found in the southwest corner of the Mechanical Room and on two domestic water lines running through rooms 116 (women’s washroom), 117 (janitor’s room) and 118 (men’s washroom).               <ul style="list-style-type: none"> <li>– This material may be present in concealed spaces in locations throughout the building. However, limited domestic piping was observed</li> </ul> </li> <li>• Joint compound on gypsum walls and ceilings (where present) throughout.</li> <li>• Fibrous (paper like) mechanical insulation debris found in the crawl space               <ul style="list-style-type: none"> <li>– One piece of debris was found directly beneath the hatch under the stage. The entire piece of debris was collected as our sample</li> <li>– Similar debris was not observed elsewhere, but not all areas of crawlspace were accessible.</li> </ul> </li> </ul> <p>Unless otherwise noted, the materials listed above were observed to be in good condition. The following building materials were observed to be present but not sampled to preserve their integrity, and are listed as presumed asbestos-containing materials (PACMs):</p> <ul style="list-style-type: none"> <li>• Roofing materials</li> <li>• Insulation inside fire rated doors</li> <li>• Fire curtain (indicated on drawings reviewed)</li> </ul>
<p><b>Lead</b></p> <ul style="list-style-type: none"> <li>• Grey paint on furnace ducts in the mechanical room is lead-containing.</li> <li>• Grey paint on mechanical room walls and ceiling (gypsum board and/or plywood) is lead-containing.</li> </ul> <p>In addition to paint, lead is present/may be present in the following materials throughout the subject building:</p> <ul style="list-style-type: none"> <li>• Lead-acid batteries used in emergency lighting</li> <li>• Older electrical wiring materials and sheathing</li> <li>• Solder used on domestic water lines, in bell fittings for cast iron pipes and in electrical equipment</li> <li>• Vent and pipe flashings</li> </ul>
<p><b>PCBs</b></p> <ul style="list-style-type: none"> <li>• One fluorescent light fixture was observed in the mechanical room. Based on the construction date of the subject building and the apparent vintage of the fixture, the ballast within this fixture may contain PCBs.</li> </ul>
<p><b>Mercury</b></p> <ul style="list-style-type: none"> <li>• One (1) mercury-containing thermostat was observed in the mechanical room.</li> <li>• Mercury vapour is expected to be present in the fluorescent light tubes in one fixture observed in the mechanical room.</li> </ul>
<p><b>Mould</b></p> <ul style="list-style-type: none"> <li>• Frost and ice was observed on drywall walls and around window frames in various locations throughout the building. When this melts, the resulting moisture that will impact porous materials in the areas (e.g. paper facings of drywall) can create conditions conducive to mould growth.</li> </ul>

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Summary of Identified Hazardous Building Materials
<p><b>Ozone-Depleting Substances</b></p> <ul style="list-style-type: none"><li>• The roof was not accessed as part of this assessment due to snow cover and lack of safe access. It was reported by site personnel that there is one HVAC unit located on the roof of the mechanical room that contains the ODS refrigerant R-22.</li></ul>
<p><b>Silica</b></p> <ul style="list-style-type: none"><li>• Silica is expected to be present in ceramic tiles, concrete, cement and masonry block and interior wall finishes observed in various locations.</li></ul>

## Abbreviations

AAS	Atomic Absorption Spectrometry
ACGIH	American Conference of Governmental Industrial Hygienists
ACM	asbestos-containing material
AIHA	American Industrial Hygiene Association
AMP	Asbestos Management Plan
CFC	chlorofluorocarbon
EMSL	EMSL Canada Inc.
EPA	Environmental Protection Agency
FHR	<i>Federal Halocarbon Regulations</i>
HVAC	heating, ventilation and air conditioning
kg	kilogram
LCP	lead-containing paint
m <sup>3</sup>	cubic metre
mg	milligram
NVLAP	National Voluntary Laboratory Accreditation Program
ODS	ozone-depleting substance
OEL	occupational exposure limit
PACM	presumed asbestos-containing material
PCB	polychlorinated biphenyl
PLM	polarized light microscopy
ppm	parts per million

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

PWGSC	Public Works and Government Services Canada
Stantec	Stantec Consulting Ltd.
SWP	Safe Work Practice
WCB	Yukon Workers' Compensation Health and Safety Board
YT OHS Reg.	Yukon Territory <i>Occupational Health and Safety Act and Regulations</i>

# HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Introduction  
March 18, 2015

## 1.0 INTRODUCTION

Stantec Consulting Ltd. (Stantec) was retained by Public Works and Government Services Canada (PWGSC) to conduct a hazardous building materials assessments within the Palace Grand Theatre, Dawson City, YT (subject building).

The purpose of the assessment was to check for potential hazardous building materials that may require special attention for ongoing operations and/or during renovations in accordance with the requirements of the Canada Labour Code, Part II (Canada Labour Code), the Yukon Workers' Compensation Health and Safety Board (WCB) and the current version of the Yukon Territory *Occupational Health and Safety Act and Regulations* (YT OHS Reg.).

The hazardous building materials considered included asbestos-containing materials (ACMs), lead, including lead-containing paints (LCPs), polychlorinated biphenyls (PCBs), mercury-containing items, ozone-depleting substances (ODSs), mould-impacted building materials and silica.

The site work was conducted by Keith Irwin of Stantec on January 21 and 22, 2015.

## 2.0 BACKGROUND

The subject building was reportedly constructed in 1962 as a replica of an original building that was constructed in 1899. This time period (1962) is consistent with those dates when hazardous building materials were commonly used in construction and/or may be present including, but not limited to ACMs, LCPs, PCBs, mould, mercury, ODSs, and silica.

In addition, Stantec understands that although various sampling records were on-file that indicated the presence of asbestos-containing cement products and asbestos-containing vermiculite within the building, comprehensive documentation and/or reports regarding hazardous building materials were not on file.

Stantec further understands that PWGSC is planning renovations within the subject building. As a measure of diligence in updating records while maintaining compliance with the requirements of the Canada Labour Code, the WCB and the current version of the YT OHS Reg. pertaining to the identification of hazardous materials for ongoing operations and management as well as prior to planned renovation activities, PWGSC retained Stantec to conduct this assessment.

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Scope and Methodology

March 18, 2015

### 3.0 SCOPE AND METHODOLOGY

Keith Irwin of Stantec conducted a visual assessment within the subject building on January 21 and 22, 2015. Site work was conducted in general compliance with the requirements of the Canada Labour Code, the WCB, the current version of the YT OHS Reg. and Stantec's safe work practices (SWPs).

Mechanical systems, structures and finishes of the subject building were visually examined to determine the suspected presence of ACMs, lead including LCPs, PCBs, mercury, ODSs, mould, and silica. Where building materials were suspected but not confirmed to contain asbestos, lead (in paint), or mould samples were collected for analysis to confirm or deny the presence of these hazardous materials. Based on analytical results, visually similar materials were referenced to specific analyzed samples to reduce the number of samples collected.

Additional background information and the methodology used for the determination of presence or absence of each specific hazardous material considered in this assessment are outlined in the following sections.

#### 3.1 ASBESTOS

The common use of friable (materials which, when dry, can be easily crumbled or powdered by hand pressure) ACMs in construction generally ceased voluntarily in the mid-1970s but was only banned through legislation by the late 1980s. Friable asbestos was used in many building products, primarily high temperature insulations, spray-applied structural fireproofing, and a material known as vermiculite that was commonly used as block wall insulation and may be contaminated with asbestos fibres. Asbestos was also used in many non-friable manufactured products such as floor tiles, ceiling tiles, Transite cement products, and various other construction materials. Some cement products currently used in the construction of buildings may still contain asbestos.

The presence of asbestos in federal workplaces, and pertaining to federally regulated workers is governed by the Canada Labour Code. The presence of asbestos in the workplace in the Yukon pertaining to territorially regulated workers is governed by the WCB, with provisions published in the current version of the YT OHS Reg. As both federally regulated workers and territorially regulated workers (e.g., contractors) are expected to carry out work activities within the subject building, and as the territorial regulations are generally more prescriptive pertaining to asbestos (and generally include the requirements noted in the Canada Labour Code), this assessment was conducted to meet the requirements of the current version of the YT OHS Reg.

According to current version of the YT OHS Reg., ACM means any material which is found to contain any asbestos.

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Scope and Methodology  
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Based on this criterion, a visual assessment of accessible areas was undertaken in order to check for the presence of materials suspected of containing asbestos. Locations to collect discrete bulk asbestos samples of suspect building materials were identified. Samples of representative materials were then collected at these locations.

Multiple samples were collected from each "homogenous application" of observed suspected ACMs (materials suspected to contain asbestos that are uniform in material type, colour, texture application and estimated installation date) and submitted to EMSL Canada Inc. (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 (EPA) 600/R-93/116 method.

The number of samples to be collected for each homogenous application of a suspected ACM was based on accepted occupational hygiene standards and protocols, along with the assessor's experience and understanding of the consistency of that building material's application.

EMSL's analytical laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

### 3.1.1 Sample Results Interpretation

When asbestos is detected in any concentration in one of the samples within a set that was collected to represent a "homogenous application" of a particular material, the entire sample set and the entire application of that material is then considered to be an ACM.

In addition to the above, a "positive stop" option was used during the laboratory analysis of the building material samples submitted for asbestos analysis. The "positive stop" option is utilized by the laboratory when asbestos is detected in any concentration in one of the samples within a set that was collected to represent a "homogenous application" of that material. At this point, further analysis of subsequent samples within the set is deemed to be unnecessary (as the entire set will be considered an ACM, per above), and the remainder of the samples within the set are not analyzed.

### 3.1.2 Potential Asbestos-Containing Vermiculite Insulation

As part of the assessment, Stantec assessed the subject building for areas where vermiculite insulation, a potential ACM, would likely be present. This included making note of and assessing attic spaces, floor cavities and masonry or brick walls, which are typical areas where vermiculite is found.

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Scope and Methodology

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### 3.1.3 Asbestos Sampling Quality Assurance/Quality Control

Sampling activities pertaining to asbestos were conducted in accordance with Stantec's SWPs, which take into account current territorial regulations pertaining to such work (i.e., sampling procedures, required number of samples, and laboratory analytical procedures).

Representative bulk samples were collected of accessible suspect ACMs in sufficient quantities for laboratory analyses. Suspect ACM samples were sealed in polyethylene zip-lock bags labeled with the sample number, suspect material description, and sample location. As part of sampling procedures, sampling tools were cleaned between sample collection events to avoid the potential for cross-contamination of samples.

Sample bags were compiled in order and placed into a single container accompanied with a Chain of Custody form outlining the project information, date, building location, number of samples, and sample description. Samples were submitted to the analytical laboratory in a sealed container via courier.

## 3.2 LEAD

Lead may be used in its pure metallic form or combined chemically with other elements to form lead compounds. Metallic lead is used to make products such as electric storage batteries, ammunition, lead solder, radiation shields, pipes, and sheaths for electric cables. Metallic lead is sometimes combined with other metals such as copper, tin, and antimony as lead alloys for use in the manufacture of a variety of metal products. Lead is commonly found in buildings in the solder used on copper domestic pipes, in the caulking on bell fittings of cast iron drainage pipes and in electrical equipment.

The presence of lead-containing materials (other than paint) was assessed through visual means.

With respect to paint, the lead content of interior paint was limited to 0.5% by weight (equivalent to 5,000 mg/kg or ppm) in 1976 under the Federal *Hazardous Products Act*, which governs the import, export and distribution of hazardous products in Canada. In 2005, the *Hazardous Products Act* had reduced the criteria for surface coatings (including paint) to 600 mg/kg (600 ppm) to define them as "lead-containing". This criterion has since (2010) been reduced to 90 ppm.

However, with respect to potential lead exposures associated with disturbance to surfaces coated with lead-containing products, various occupational health and safety administrations have indicated that working with materials coated with paint that has a lead content that exceeds 600 ppm can lead to exposures in excess of 50% of the occupational exposure limit (OEL) for lead, when the OEL is 0.05 mg/m<sup>3</sup> (the OEL for lead in the Yukon, according to the current version of the YT OHS Reg., is 0.15 mg/m<sup>3</sup>).

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

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Prior to disposal, Yukon Environment recommends that analytical results for building materials should be compared to the territorial soil guideline value of 1,000 ppm as found in the *Contaminated Sites Regulations*. As such, and given that the OEL for lead in the Yukon is three times that of jurisdictions that reference 600 ppm as lead-containing, Stantec will reference the 1,000 ppm value in defining paints as "lead-containing" as the most applicable criteria.

Based on this criterion, samples of suspected LCPs were collected from major paint applications, and were collected to substrate, where possible, in sufficient quantity to conduct analyses for total lead content. Samples collected were placed into separate, sealed, and labeled polyethylene bags, and submitted to EMSL for analyses of total lead content using Flame Atomic Absorption Spectrometry (AAS) (SW 846 3050B\*/7000B).

EMSL's analytical laboratory is also accredited by the American Industrial Hygiene Association (AIHA) Environmental Lead Laboratory Approval Program.

### 3.3 POLYCHLORINATED BIPHENYLS

PCBs were used widely as coolants and lubricants in transformers, capacitors, and other electrical equipment. In fluorescent fixtures, PCBs were usually found within the small capacitors inside the ballast that controls the lamp. The *Federal Chlorobiphenyls Regulation SOR/91-152*, prohibited the use of PCBs in electrical equipment manufactured after July 1, 1980.

The presence of PCB-containing equipment was assessed through visual means. With respect to fluorescent lamp ballasts, due to the risk of electrical shock associated with dismantling operating fixtures, fluorescent lamp ballasts were not removed to view identification numbers/information.

The total number of fluorescent lamp ballasts that may contain PCBs within the subject building was approximated.

Suspected PCB-containing electrical equipment can be visually inspected and compared to the Environment Canada reference guide entitled "*Identification of Lamp Ballasts Containing PCBs, Report EPS 2/CC/2*", dated August 1991 (PCB Guide).

### 3.4 MERCURY

Mercury is commonly found in buildings as mercury vapour lighting, thermostats/thermometers with mercury-containing glass ampoules, electrical switches and can also be found in minor amounts in fluorescent lamp tubes and vapour bulbs and may be present in stable forms in adhesives. Exposure to mercury in workplaces is governed by the WCB.

The presence of mercury and mercury-containing equipment was assessed through visual means.

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Scope and Methodology

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### 3.5 MOULD

Moist building materials may provide suitable conditions for mould growth, and the removal of building materials impacted by mould growth may require workers with specific training and experience using work procedures that have been developed to protect workers and work areas from exposure to elevated concentrations of airborne mould.

The presence of suspect visible mould was assessed through visual means. Material observed with dark-colored staining and/or a textured and discolored appearance is described as “suspect mould”. Mould identified visually is defined as “suspect mould” unless it is confirmed as mould by laboratory analysis.

#### 3.5.1 Mould Reference Guidelines

With respect to mould and/or moisture, the visual assessment procedures utilized during this project were based on the recommendations 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).
- *Guidelines on Assessment and Remediation of Fungi in Indoor Environment*, New York City Department of Health, Bureau of Environmental and Occupational Disease Epidemiology, April 2000 (referred to as the NYC Guidelines).
- *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).

### 3.6 OZONE-DEPLETING SUBSTANCES

Chlorofluorocarbons (CFCs) and other ODSs are often found in refrigeration units associated with air-conditioning or other refrigeration equipment. In September 1987, 47 countries agreed to the Montreal Protocol on Substances that Deplete the Ozone Layer. Disposal of ODSs are regulated in the Yukon by the Yukon Government’s *Special Waste Regulations* (2010) and the *Federal Halocarbon Regulations*, 2003 (FHR 2003).

The presence of ODSs and equipment containing these materials was assessed through visual means.

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Assessment Limitations  
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### 3.7 SILICA

Silica, also referred to as free crystalline silica, is found in concrete, cement, mortar, ceramic wall and floor tiles, stucco finishes and acoustic ceiling tiles. Prolonged exposure to, and inhalation of free crystalline silica, may result in respiratory disease known as silicosis, which is characterized by progressive fibrosis of the inner lung tissue and marked shortness of breath or impaired lung function.

Exposure to silica dust is governed by the WCB, with applicable exposure limits indicated in the current version of the YT OHS Reg., depending on the type of silica to be considered (quartz, cristobalite or tridymite).

The presence of silica was assessed through visual means.

## 4.0 ASSESSMENT LIMITATIONS

This report has been prepared for the exclusive use of the PWGSC for the purpose of assessing general conditions in the subject building. Any use that a third party makes 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.

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 investigation and laboratory analytical reports.

This report reflects the observations made within accessed areas of the subject building and the results of analyses performed on specific materials sampled during the assessment. Analytical results reflect the sampled materials at the specific sample locations.

Sampling was conducted pertaining to suspected ACMs and suspected LCPs only. The assessment for the presence of other hazardous building materials was visual in nature, and was conducted pertaining to readily visible surfaces within accessible spaces only. Concealed spaces were inspected via existing access panels, where present.

As safe access was not possible due to snow cover, the roof of the subject building was not included in this assessment. Limited comments will be made regarding materials present on the roof and any comments made will be based on information reported to Stantec by site personnel.

Due to limitations on the agreed to scope of work for this project as well as physical limitations in accessing concealed areas and limitations associated with working in occupied/operational spaces, there are specific limitations to the information that can be provided to each hazardous building material considered in this assessment, as outlined below.



## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Assessment Limitations  
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### 4.1 ASBESTOS

Suspected ACMs that were not sampled include, but are not limited to, the following (where present, based on building construction or as otherwise noted):

- Roofing materials and materials/equipment present on the roof
- Sub-grade materials
- Interior components of mechanical equipment (e.g., inner linings or gaskets in boilers)
- Interior components of heating, ventilation and air conditioning (HVAC) units
- Heat protection materials inside mechanical installations (e.g., gaskets) and light fixtures (e.g., paper backing in sealed incandescent fixtures)
- Flooring material concealed beneath ceramic tile, brickwork, hardwood flooring, and/or concealed beneath existing sub-floors
- Drywall and/or wall plaster and associated finish materials concealed behind new and/or additional walls or ceilings
- Woven tape inside duct connection joints or inner ducting insulation
- Materials within wall cavities, hard ceiling cavities or crawlspaces
- Insulation materials inside fire doors

If encountered during demolition or other activities, any suspected ACMs not identified within this report should be presumed to contain asbestos and handled as such until otherwise proven, through analytical testing.

### 4.2 LEAD

Assessment for the presence of lead or lead-containing materials was visual in nature, and was conducted pertaining to readily visible surfaces within accessible spaces of the subject building only. The presence of lead or lead-containing materials in inaccessible areas not assessed included, but was not limited to: ceiling spaces, wall cavities, crawlspaces, and buried materials.

With respect to paint, samples of suspected LCPs were collected within the subject building only from surfaces of major paint applications where visually different paint colours and/or types were identified. Although the surfaces where samples were collected may be covered with more than one coat of paint, the paint samples are described by the surface (visible) colour only.

Attempts were made to represent all layers of paint in the samples collected. As analytical results are referenced to the surface paint colour only, the lead content of all painted surfaces similar to that represented by the surface paint colour will be presumed to be the same, regardless of differing sub surface paints, if any.

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Assessment Limitations  
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### 4.3 POLYCHLORINATED BIPHENYLS

Due to height restrictions and the risk of electrical shock in handling operational light fixtures, the ballasts present in the fixtures observed within the subject building were not removed for comparison to the PCB Guide.

Conclusions and recommendations regarding the presence of PCBs within the subject building are based on Stantec's limited observations in combination with information provided by staff regarding lighting renovations (where requested by Stantec based on observations) and is presented to provide guidance regarding the likelihood that PCB-containing equipment is or is not present within the subject building. The exact extent and/or number of fluorescent lamp ballasts containing PCBs, if any, within the subject building will not be commented on.

### 4.4 MERCURY

Visual assessment for the presence of mercury-containing equipment within the subject building was conducted in accessible areas only. The presence of mercury or mercury-containing equipment in inaccessible areas includes, but is not limited to: ceiling spaces, wall cavities, and crawlspaces, or as internal parts of HVAC mechanisms.

### 4.5 MOULD

Visual assessment for the presence of suspected visible mould and/or suitable conditions for mould growth (e.g., moist and/or water-stained building materials) were conducted in accessed portions of the subject building only. The assessment was not intrusive in nature and included visual assessment of exposed surfaces and closer inspection of known problem areas.

The conclusions made in this report provide description(s) of the potential source(s) of moisture within the subject building that may have led to suitable conditions for mould growth, only in those cases where potential source(s) of moisture were identified. These conclusions will not necessarily identify all sources of moisture leading to suitable conditions for mould growth within the subject building or within the impacted area(s).

This assessment does not constitute a building envelope/building systems assessment for any of the subject building, 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.

### 4.6 OZONE DEPLETING SUBSTANCES

Visual assessment for the presence of ODSs within the subject building was conducted in accessible areas only. The presence of ODS-containing equipment in inaccessible areas including, but not limited to, ceiling spaces, wall cavities and crawlspaces, was not assessed. In addition, portable equipment that may contain ODSs (refrigerators, drink coolers, etc.) was not considered as part of this assessment.

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Findings  
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### 4.7 SILICA

Visual assessment for the presence of silica-containing materials within the subject building was conducted in accessible areas only. The presence of potential silica-containing materials in inaccessible areas including, but not limited to, ceiling spaces, wall cavities and crawlspaces was not assessed.

## 5.0 FINDINGS

Floor plans showing bulk sample locations and locations of identified hazardous materials (where practical) are provided in Appendix A.

The results of the assessment for each of the considered hazardous materials are provided in the following sub-sections.

### 5.1 ASBESTOS

Visual observations and/or records provided to Stantec on-site indicated that the following materials were previously identified as asbestos-containing:

- Vermiculite insulation present between the floor joists throughout the ground floor
  - Analytical results from Maxxam Analytics for samples collected by others were reviewed on-site, and indicated this material to be asbestos-containing (see sample PG1 in the photo below).

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Maxxam  
Success Through Science®

Maxxam Job #: BOE7981  
Report Date: 2010/12/16

Parks Canada  
Client Project #: DAWSON CITY NATIONAL HISTORIC

ASBESTOS IDENTIFICATION (BULK)

Maxxam ID		Y83210	Y83211		
Sampling Date		2010/11/10	2010/11/10		
	Units	PG1	PG2	RDL	QC Batch
Asbestos Type					
Actinolite	% vol/vol	1-10	<1	1	4512468
Amosite	% vol/vol	<1	<1	1	4512468
Anthophyllite	% vol/vol	<1	<1	1	4512468
Chrysotile	% vol/vol	<1	10-30	1	4512468
Crocidolite	% vol/vol	<1	<1	1	4512468
Tremolite	% vol/vol	<1	<1	1	4512468
Others					
Cellulose	% vol/vol	<1	<1	1	4512468
Filler	% vol/vol	90-99	70-90	1	4512468
Glass Fibres	% vol/vol	<1	<1	1	4512468
Hair	% vol/vol	<1	<1	1	4512468
Other Fibers	% vol/vol	<1	<1	1	4512468

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Findings  
March 18, 2015

As part of the current assessment, Stantec collected representative samples of various suspected ACMs. The materials sampled by Stantec included the following:

- Exterior cement panel
- Woven flex duct connector
- Fibrous liner
- Head shield
- Furnace gasket
- Pipe wrap
- Duct wrap
- Duct mastic
- Building paper
- Mechanical gasket
- Ceramic tile grout
- Sheet flooring
- Dry wall joint compound
- Fibrous debris

Sixty-seven samples of the above-noted suspected ACMs were collected within the subject building and submitted to EMSL for analysis of asbestos content and nature. A summary of the sample types, locations and analytical results is presented in Appendix B. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are included in Appendix C.

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of the results of suspected ACM samples collected during this assessment, the materials presented in Table 1, below were identified as ACMs within the subject building.

**Table 1 Summary of Identified ACMs, Palace Grand Theatre, Dawson City, YT**

Identified ACM Description		Photo
Vermiculite insulation present between the floor joists throughout the ground floor.		
Condition	Good where concealed within floor space. Vermiculite debris (poor condition) observed in joist spaces of perimeter walls in the crawlspace (joist spaces themselves are insulated with fiberglass batt) – expected to be releasing from the floor joist spaces.	
% Type	1-10% Actinolite (according to Maxxam Analytics record reviewed on-site)	
Friability	Friable	

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Findings  
March 18, 2015

Identified ACM Description		Photo
Exterior cement panels present on the walls of the Mechanical Room and the emergency stairwells (east and west), and building paper behind those cement wall panels		
Condition	Good	
% Type	15% Chrysotile in cement board; Trace (<0.25% Chrysotile) in building paper	
Friability	Non-friable	
White woven flex duct connectors found in the Mechanical Room between the main furnace units and primary furnace ducting (one on each of the four furnaces)		
Condition	Good	
% Type	60% Chrysotile	
Friability	Non-friable	
White fibrous liner/gasket found in mechanical room on circular furnace hatches (one on each of the four furnaces)		
Condition	Good	
% Type	50% Chrysotile	
Friability	Friable	
White furnace gasket found in Mechanical Room between furnace and red burner box		
Condition	Good	
% Type	1.3% Chrysotile	
Friability	Non-Friable	

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Findings  
March 18, 2015

Identified ACM Description		Photo
<p>White pipe wrap found in the southwest corner of the Mechanical Room and on two domestic water lines running through rooms 116 (women's washroom), 117 (janitor's room), 118 (men's washroom). May be present in concealed spaces in locations throughout the building. However, limited domestic piping was observed.</p>		
Condition	Good	
% Type	20% Chrysotile	
Friability	Non-Friable	
<p>Joint compound on gypsum walls and ceilings (where present) throughout</p>		
Condition	Good	
% Type	2% Chrysotile	
Friability	Friable	

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Findings  
March 18, 2015

Identified ACM Description		Photo
Fibrous (paper like) mechanical insulation debris found in the crawl space. NOTE: One piece of debris was found directly beneath the hatch under the stage. The entire piece of debris was collected as our sample		No Photo.
Condition	Debris	
% Type	50% Chrysotile	
Friability	Friable	

### 5.1.1 Assessment for Vermiculite Insulation

As part of the assessment, Stantec assessed the subject building for additional areas where vermiculite insulation, a potential ACM, would likely be present outside of the areas mentioned above (joist spaces of the ground floor and in the crawlspace as debris). This included making note of and assessing accessible attic spaces and floor cavities which are typical areas where vermiculite is found. No evidence of vermiculite was observed in the attic, and the other floors were constructed such that they did not appear to have a space where vermiculite would be present. However, floorboards were not destructively assessed on other floors to confirm.

### 5.1.2 Presumed Asbestos-Containing Materials

The following building materials were observed to be present but not sampled to maintain their integrity and/or due to lack of safe access, and are listed as presumed asbestos-containing materials (PACMs):

- Roofing materials
- Insulation materials in fire rated doors
- Fire curtain (indicated to be present in reports reviewed on-site)

These materials were observed to be in good condition. Sampling of these materials was not part of the scope of work as determined by Stantec's understanding of the Project. As these materials are known to have been manufactured with asbestos, they should be presumed to be asbestos-containing unless proven otherwise by laboratory analysis.

### 5.1.3 Materials with less than 0.25% Asbestos Detected

According to current version of the YT OHS Reg., ACM means any material which is found to contain any asbestos.

Less than 0.25% asbestos was detected in three samples of building paper collected from the exterior of the subject building. It should be noted that this material is present directly behind and in contact with identified asbestos-containing cement panels. The trace amounts of asbestos detected in the samples of the building paper are not likely indicative of the material itself containing asbestos, but are likely the result of contamination/transfer from the overlying

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Findings  
March 18, 2015

asbestos-containing cement panels. However, due to the presence of detectable concentrations of asbestos in the building paper samples collected, this material (building paper) should be considered as an ACM. However, this should only be the case in those locations where building paper is present directly behind asbestos-containing cement panels.

### 5.2 LEAD

Stantec collected five paint chip samples of suspected LCPs within the subject building and submitted the samples to EMSL for analysis of lead content. A summary of the sample types, locations and analytical results is presented in Table 2, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is included in Appendix D.

**Table 2 Suspected LCP Sample Collection and Analysis Summary, Palace Grand Theatre, Dawson City, YT**

Sample Number	Paint Description	Location	Result (ppm Lead)	Lead Containing (Yes/No)
P-01	Grey	Furnace duct	3,600	Yes
P-02	Black	Stage walls	<90	No
P-03	White	Emergency stairwell	240	No
P-04	Grey	Mechanical room walls and ceiling	1,700	Yes
P-05	Grey	Exterior trim	90	No

Based on our observations and interpretations of previous reports as well as the results of suspected LCP samples collected as part of this assessment, the paint type presented in Table 3, below was identified as an LCP.

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Findings  
March 18, 2015

**Table 3** Summary of Identified LCPs, Palace Grand Theatre, Dawson City, YT

Lead-Containing Material Description	Photo
Grey paint on furnace ducts in the mechanical room This paint was observed to be in poor condition (flaking and peeling) in various locations.	
Grey paint on mechanical room walls and ceiling This paint was observed to be in good condition (minimal flaking, bubbling, and peeling)	

In addition to paint, lead is present/may be present in the following materials throughout the subject building:

- Lead-acid batteries used in emergency lighting
- Older electrical wiring materials and sheathing
- Solder used on domestic water lines, in bell fittings for cast iron pipes and in electrical equipment
- Vent and pipe flashings

### 5.3 POLYCHLORINATED BIPHENYLS

One fluorescent light fixture was observed in the mechanical room. Based on the construction date of the subject building and the apparent vintage of the fixture, the ballast within this fixture may contain PCBs.

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Findings  
March 18, 2015

### 5.4 MERCURY

Mercury vapour is likely to be present in the fluorescent light tubes in the one fluorescent light fixture observed in the mechanical room. In addition, one mercury containing thermostat was also observed in the mechanical room as indicated on the floor plan drawings in Appendix A.

### 5.5 MOULD

Observations made by Stantec associated with mould and moisture impacted building materials are presented below in Table 4.

**Table 4 Summary of Microbial Contamination Observations, Palace Grand Theatre, Dawson City, YT**

Suspect Mould and/or Moisture Impacted Building Material Observed	Photo
Frost and ice was observed on drywall walls and around window frames in various locations throughout the building. When this melts, the resulting moisture that will impact porous materials in the areas (e.g. paper facings of drywall) can create conditions conducive to mould growth.	

### 5.6 OZONE DEPLETING SUBSTANCES

The roof was not accessed as part of this assessment.

It was reported by site personnel that there is one HVAC unit located on the roof of the mechanical room that contains the ODS refrigerant R-22.

### 5.7 SILICA

Silica is expected to be present in ceramic tiles, concrete, cement and masonry block and interior wall finishes observed in various locations.

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Recommendations  
March 18, 2015

### 6.0 RECOMMENDATIONS

The recommendations pertaining to the requirements for each of the hazardous materials included in this assessment are presented in the sub-sections below.

#### 6.1 ASBESTOS

Based on the visual assessment and results of laboratory analyses and review of previous documentation, Stantec recommends the following with regards to ACMs in the subject building

- Identified ACMs in good condition can be managed in place. When they are to be impacted by planned renovation/demolition activities they should be removed prior to the onset of these activities, in accordance with the requirements of the Canada Labour Code, the WCB and the current version of the YT OHS Reg. It is expected that this will require the involvement of an experienced asbestos abatement contractor.
- Prior to renovation and/or demolition activities that would disturb them, undertake testing of PACMs that may be impacted to determine their asbestos content. Confirmed asbestos materials should be handled accordingly.
- Should a material suspected to contain asbestos fibres become uncovered during renovation/demolition activities, all work in the areas that may disturb the material should be stopped. Samples of the suspect material should be submitted for laboratory analysis to determine if asbestos fibres are present. Confirmed asbestos materials should be handled in accordance with applicable guidelines and regulations.
- Due to the confirmed presence of asbestos within the subject building, and in accordance with PWGSC requirements, an asbestos exposure control plan (also known as an Asbestos Management Plan [AMP] or asbestos operations and management plan) should be developed and implemented for the subject building. The AMP would serve to compile the available data, results and reports regarding the presence, extent, handling, removal, and disposal of ACMs within the subject building. The AMP would also provide sections for information regarding future sampling and analysis of suspected ACMs, if required, asbestos-abatement projects, if undertaken, and other information regarding the management of asbestos within the subject building.
- Suspected ACMs deemed visually similar to the ACMs identified in this report should be considered asbestos-containing and handled as such, unless proven otherwise, through analytical testing.
- Ensure asbestos containing waste is handled, stored, and disposed of in accordance with the requirements of the *Federal Transportation of Dangerous Goods Regulation* and Yukon *Environment Special Waste and Solid Waste Regulations* document entitled *Asbestos Disposal* (2010).

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Recommendations

March 18, 2015

### 6.1.1 Vermiculite Debris

Asbestos-containing vermiculite debris is present within the crawlspace. Options to address this include the following:

- Sealing any air pathways between the main floor and the crawlspace (or operating the crawlspace under negative pressure with respect to the main floor area) and restricting access to the crawlspace area through locking the access hatchways and posting appropriate signage warning of the presence (and hazards) of asbestos and indicating that only authorized personnel (appropriately trained/qualified) with appropriate personal protective equipment may enter.
- Conducting an abatement project to remove debris within the crawlspace and to seal openings and/or pathways from which this material is being released. It is expected that this will require the involvement of an experienced asbestos abatement contractor.

## 6.2 LEAD

Lead-containing paint in poor condition should be cleaned-up and/or addressed to mitigate potential for loose paint chips to be released.

For LCPs and lead-containing materials that are to be disturbed and/or removed during renovation/demolition activities (or the above-noted clean-up) ensure compliance with the following:

- Occupational exposure control requirements of the Canada Labour Code and the WCB
- Disposal requirements of Yukon Environment – *Contaminated Sites Regulations* and the Yukon Government *Special Waste Regulations*
- Transportation requirements of the *Federal Transportation of Dangerous Goods Regulation*

Corrective action or remedial work on paint applications containing any concentration of lead should be undertaken in a manner so as to avoid generating fine particulate matter or dust (i.e., avoid sanding). Airborne lead dust or fumes should not exceed the WCB 8-hour OEL of 0.15 mg/m<sup>3</sup> during the removal of paints and products containing any concentration of lead. The use of personal protective equipment is recommended to reduce the potential for over-exposure to lead dust.

## 6.3 POLYCHLORINATED BIPHENYLS

For continued operations and maintenance, fluorescent lamp ballasts that may contain PCBs can be managed in place, where these items are operating and in good condition. No further action is currently required until 2025, when PCB-containing items will require removal and disposal.

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Recommendations

March 18, 2015

The provisions for PCBs that are indicated below would apply for either renovation or demolition:

- As fluorescent lamp ballasts may contain PCBs, if these items are removed from service, they should be assessed in reference to the PCB Guide.
- If PCB-containing items are identified and require removal, they should be handled, transported, stored and disposed of according to the *Federal Transportation of Dangerous Goods Regulation* and the PCB Regulations (SOR/2008-273).

### 6.4 MERCURY

For continued operations and maintenance, identified mercury-containing materials can be managed in place. Mercury vapour within light fixtures and/or liquid mercury in thermostat switches or thermometers pose no risk to workers or occupants provided the mercury containers remain intact and undisturbed. No further action is currently required.

For either renovation or demolition, if mercury-containing materials (e.g., thermostats, fluorescent light bulbs) are to be removed from service, ensure all mercury waste is handled, stored and disposed of in accordance with the requirements of the requirements of the Yukon Government *Special Waste Regulations* and the *Transportation of Dangerous Goods Regulation*.

### 6.5 MOULD

When renovation/demolition work proceeds mould and/or moisture-impacted building materials may be encountered during that process. If those impacted materials are to be removed by hand, demolition workers should be notified of the potential presence of mould and be provided with respiratory protection and/or other personal protective equipment as deemed necessary for the work that they will be conducting.

If significant mould contamination is identified in concealed locations, an experienced mould abatement contractor may be required to assist with removal in accordance with applicable guidelines and standards for such work.

When temperatures within the subject building rise to above freezing, care should be taken to remove any excess moisture or standing water and to avoid wetting of porous materials, which may lead to mould growth on those materials.

### 6.6 OZONE DEPLETING SUBSTANCES

Reported ODS-containing equipment within the building that is to remain operational (one HVAC unit located on the roof of the mechanical room that reportedly contains the ODS refrigerant R-22) can be managed in place and must be serviced by licensed refrigeration technicians (as defined in the FHR).

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Closure  
March 18, 2015

If ODS-containing equipment in the building is to be decommissioned, ODSs must be handled, recycled, stored, and/or disposed of in accordance with the requirements of with the requirements of the *Yukon's Ozone Depleting Substances Regulations* and the FHR 2003.

### 6.7 SILICA

For continued operations and maintenance, identified silica-containing materials can be managed in place.

For renovation or demolition activities, if silica-containing materials are to be disturbed, ensure dust control measures are employed such that airborne silica dust concentrations do not exceed the applicable exposure limits indicated in the current version of the YT OHS Reg. This would include, but not be limited to, the following:

- Providing workers with respiratory protection
- Wetting the surface of the materials to prevent dust emissions
- Providing workers with facilities to properly wash prior to exiting the work area
- Providing dust control to mitigate the potential for demolition dust to escape from the work area into public and/or adjacent areas

### 7.0 CLOSURE

This report has been prepared by Stantec Consulting Ltd. for the sole benefit of Public Works and Government Services Canada. Any use that a third party makes of this report, or any reliance on decisions to be 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.

The conclusions presented represent the best judgment of the assessor based on current environmental standards and the site conditions observed on the dates cited within this report. This report is based on, and limited by, circumstances and conditions stated herein, and on information available at the time of preparation of the report. Due to the limited nature of the investigation and the limited data available, Stantec Consulting Ltd. cannot warrant against undiscovered environmental liabilities. It is possible that additional, concealed hazardous materials may become evident during renovation and/or demolition activities within the subject building.

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.

## HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Closure  
March 18, 2015

We trust that the report meets your current requirements. Should you have any questions or concerns regarding the above, please do not hesitate to contact the undersigned.

Respectfully submitted,

**STANTEC CONSULTING LTD.**

Reviewed by:

**Original Signed By**

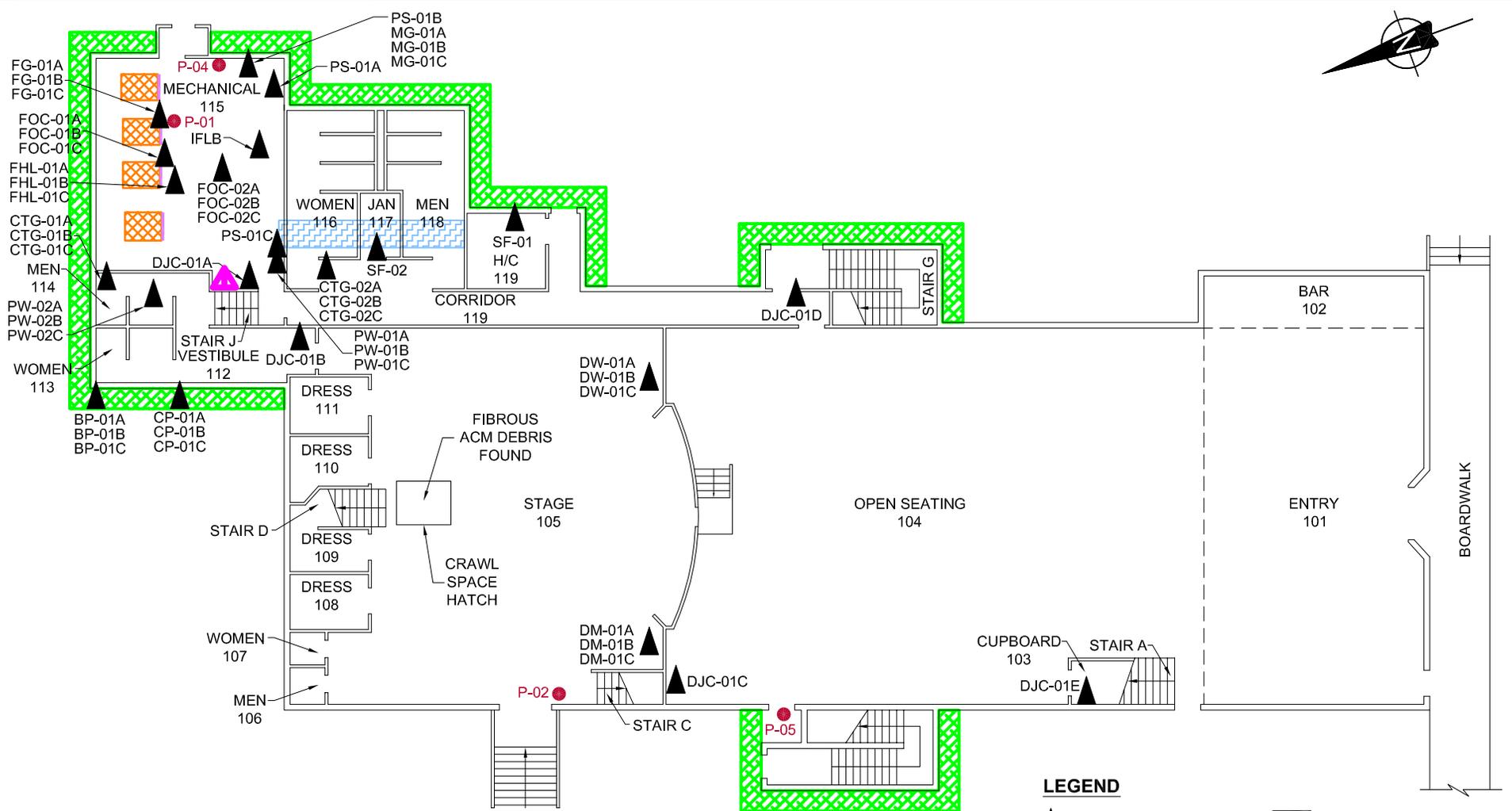
Keith Irwin Dipl. Tech.  
Environmental Technologist

KI/SB/tt

**Original Signed By**

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

# **APPENDIX A FLOOR PLANS**



## PALACE GRAND THEATRE GROUND FLOOR

- NOTES:**
1. ASBESTOS-CONTAINING VERMICULITE INSULATION IS PRESENT BETWEEN THE FLOOR JOISTS THROUGHOUT THE GROUND FLOOR.
  2. ASBESTOS-CONTAINING DRYWALL JOINT COMPOUND IS PRESENT THROUGHOUT.
  3. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

**LEGEND**

- BULK SAMPLE
- PAINT CHIP SAMPLE
- ACM CEMENT PANEL AND BUILDING PAPER MATERIALS DIRECTLY BEHIND THOSE PANELS
- ACM FLEX DUCT CONNECTOR
- ACM FIBROUS LINER AND FURNACE GASKET
- ACM PIPE WRAP
- MERCURY-CONTAINING THERMOSTAT

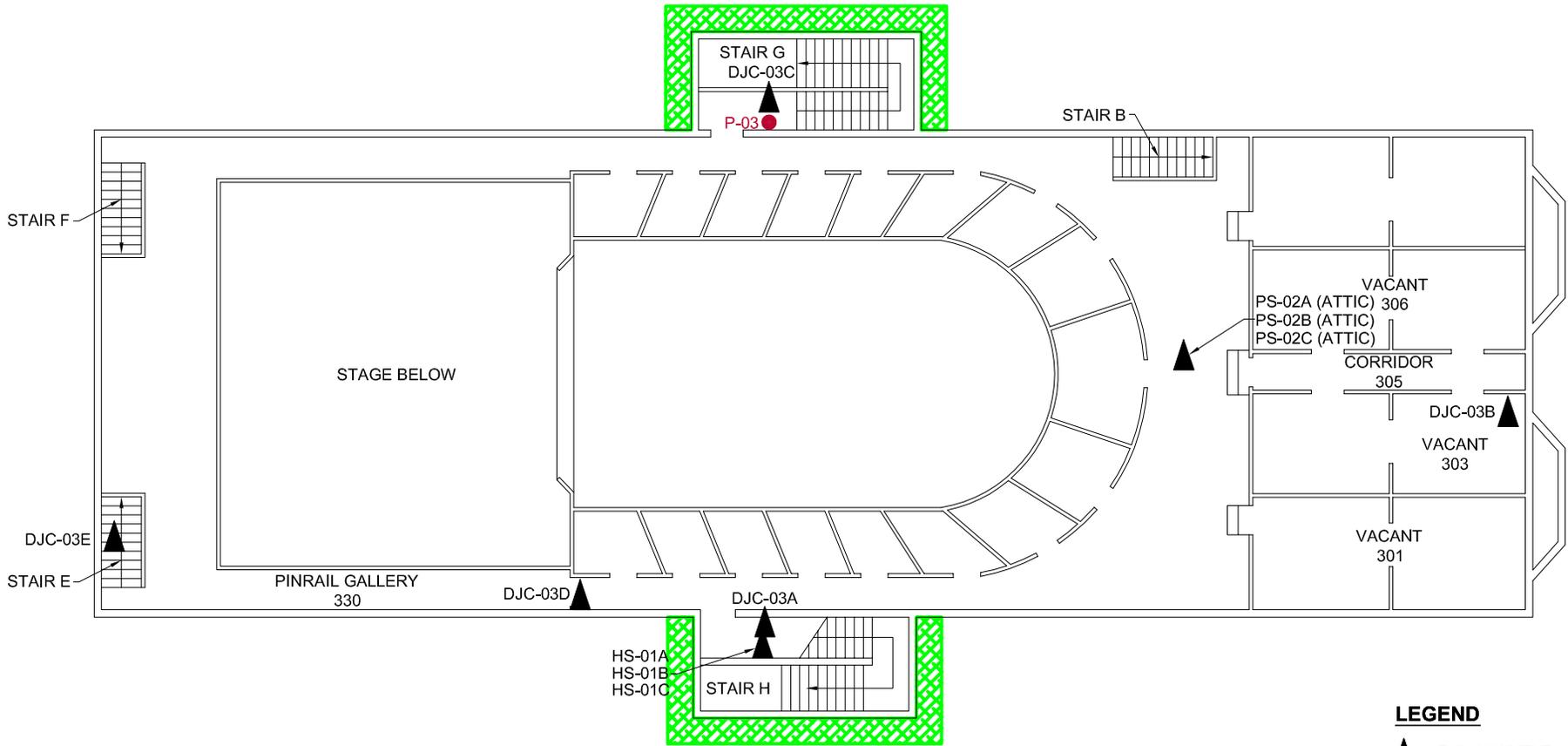
# FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

PALACE GRAND THEATRE - DAWSON CITY, YT

**Client:** PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

<b>Project No.:</b> 123220212
<b>Scale:</b> N.T.S.
<b>Date:</b> 15/02/27
<b>Dwn. By:</b> CD <sup>DM/MM</sup> SL2015020108
<b>App'd By:</b> SB

<b>Dwg. No.:</b>  <b>1</b>	
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### PALACE GRAND THEATRE SECOND FLOOR

**LEGEND**

- BULK SAMPLE
- PAINT CHIP SAMPLE
- ACM CEMENT PANEL AND BUILDING PAPER MATERIALS DIRECTLY BEHIND THOSE PANELS

**NOTE: 1. ASBESTOS-CONTAINING DRYWALL JOINT COMPOUND IS PRESENT THROUGHOUT.**

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

## FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

PALACE GRAND THEATRE - DAWSON CITY, YT

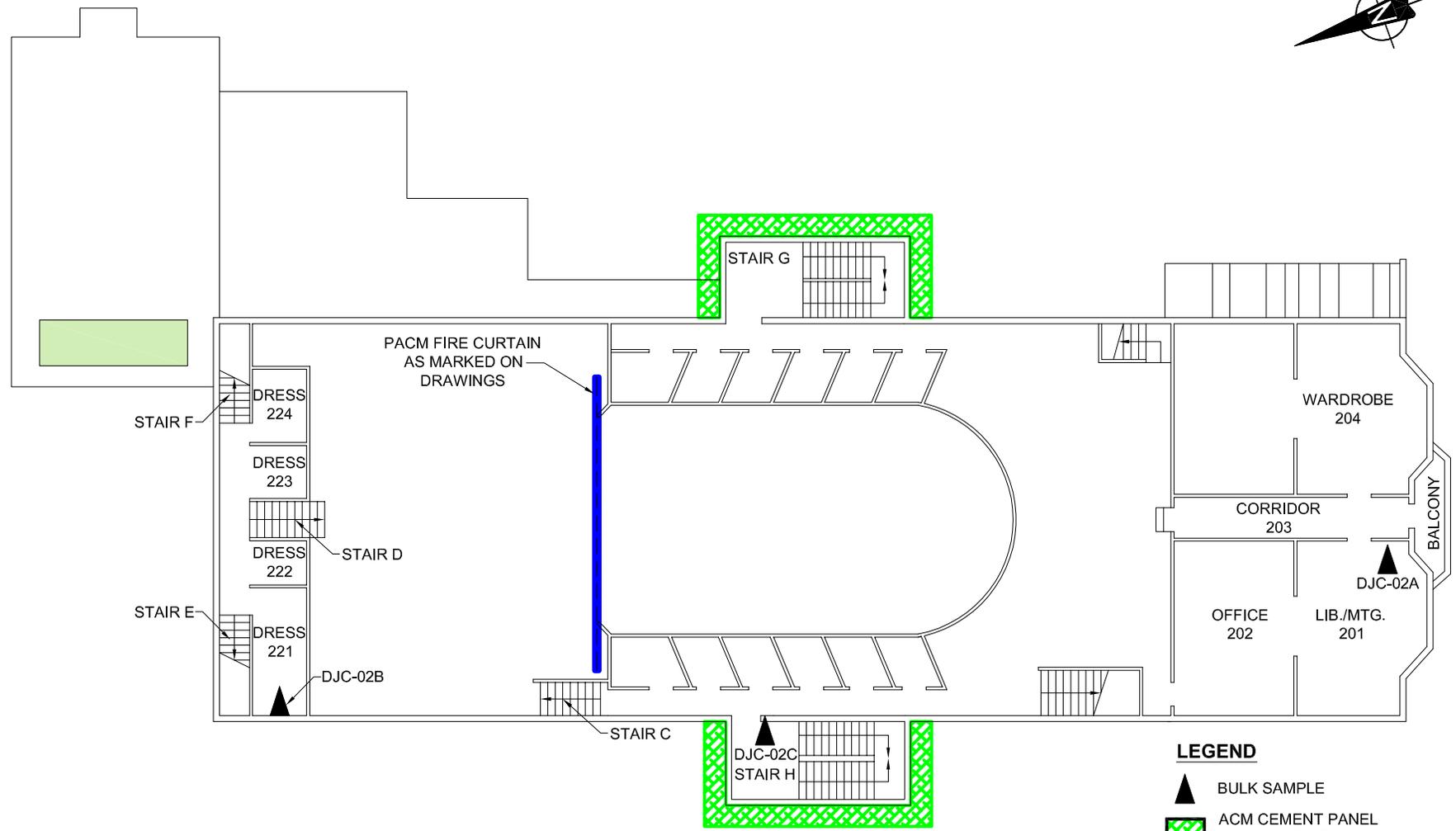
**Client:** PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

<b>Project No.:</b> 123220212
<b>Scale:</b> N.T.S.
<b>Date:</b> 15/02/26
<b>Dwn. By:</b> CD <sup>PK/DM</sup> SL2015020104
<b>App'd By:</b> SB

**Dwg. No.:**

2





### PALACE GRAND THEATRE MEZZANINE FLOOR

**LEGEND**

- BULK SAMPLE
- ACM CEMENT PANEL AND BUILDING PAPER MATERIALS DIRECTLY BEHIND THOSE PANELS
- REPORTED ODS-CONTAINING HVAC UNIT (R-22)
- PRESUMED ASBESTOS-CONTAINING FIRE CURTAIN

**NOTE: 1. ASBESTOS-CONTAINING DRYWALL JOINT COMPOUND IS PRESENT THROUGHOUT.**  
 2. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

<p><b>FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS</b></p> <p>PALACE GRAND THEATRE - DAWSON CITY, YT</p>		<p>Project No.: 123220212</p> <p>Scale: N.T.S.</p> <p>Date: 15/02/26</p> <p>Dwn. By: CD <sup>PK/DM</sup> SL2015010105</p> <p>App'd By: SB</p>	<p>Dwg. No.:</p> <p style="font-size: 2em; font-weight: bold;">3</p>	
<p><b>Client:</b> PUBLIC WORKS AND GOVERNMENT SERVICES CANADA</p>				

**APPENDIX B**  
**SUMMARY OF SUSPECTED ACM BULK**  
**SAMPLES**

Sample Number	Material Description	Sample Location	Results (%/Type Asbestos)
CP-01A	Exterior Cement Panel	West Wall of Mechanical Room	15% Chrysotile
CP-01B	Exterior Cement Panel	West Wall of Mechanical Room	Stop Positive (Not Analyzed)
CP-01C	Exterior Cement Panel	West Wall of Mechanical Room	Stop Positive (Not Analyzed)
FDC-01A	White Woven Flex Duct Connector	Mechanical Room Between Furnaces and Furnace Ducting	60% Chrysotile
FDC-01B	White Woven Flex Duct Connector	Mechanical Room Between Furnaces and Furnace Ducting	Stop Positive (Not Analyzed)
FDC-01C	White Woven Flex Duct Connector	Mechanical Room Between Furnaces and Furnace Ducting	Stop Positive (Not Analyzed)
FDC-02A	Black Rubbery Flex Duct Connector	Mechanical Room on Emergency Generator Exhaust Duct	None Detected
FDC-02B	Black Rubbery Flex Duct Connector	Mechanical Room on Emergency Generator Exhaust Duct	None Detected
FDC-02C	Black Rubbery Flex Duct Connector	Mechanical Room on Emergency Generator Exhaust Duct	None Detected
FHL-01A	White Fibrous Liner	Mechanical Room on Back of Circular Furnace Hatches	50% Chrysotile
FHL-01B	White Fibrous Liner	Mechanical Room on Back of Circular Furnace Hatches	Stop Positive (Not Analyzed)
FHL-01C	White Fibrous Liner	Mechanical Room on Back of Circular Furnace Hatches	Stop Positive (Not Analyzed)
HS-01A	Heat Shield Inside Round Incandescent Light Fixtures	West Second Floor Emergency Stairwell Landing	None Detected
HS-01B	Heat Shield Inside Round Incandescent Light Fixtures	West Second Floor Emergency Stairwell Landing	None Detected
HS-01C	Heat Shield Inside Round Incandescent Light Fixtures	West Second Floor Emergency Stairwell Landing	None Detected
FG-01A	White Furnace Gasket	Mechanical Room on Between Furnace and Red Burner Box	1.3% chrysotile
FG-01B	White Furnace Gasket	Mechanical Room on Between Furnace and Red Burner Box	Stop Positive (Not Analyzed)
FG-01C	White Furnace Gasket	Mechanical Room on Between Furnace and Red Burner Box	Stop Positive (Not Analyzed)
PS-01A	Brown Pipe Sealant	East Corner of Mechanical Room on Piping	None Detected
PS-01B	Brown Pipe Sealant	East Corner of Mechanical Room on Piping	None Detected
PS-01C	Brown Pipe Sealant	East Corner of Mechanical Room on Piping	None Detected

Sample Number	Material Description	Sample Location	Results (%/Type Asbestos)
PS-02A	Light Blue Pipe Sealant	On 2" Sprinkler System in Attic Space	None Detected
PS-02B	Light Blue Pipe Sealant	On 2" Sprinkler System in Attic Space	None Detected
PS-02C	Light Blue Pipe Sealant	On 2" Sprinkler System in Attic Space	None Detected
PW-01A	White Pipe Wrap	South West Corner of Mechanical Room	20% Chrysotile
PW-01B	White Pipe Wrap	South West Corner of Mechanical Room	Stop Positive (Not Analyzed)
PW-01C	White Pipe wrap	South West Corner of Mechanical Room	Stop Positive (Not Analyzed)
PW-02A	Grey Painted Pipe Wrap	Outside of North end men's Washroom	None Detected
PW-02B	Grey Painted Pipe Wrap	Outside of North end men's Washroom	None Detected
PW-02C	Grey Painted Pipe Wrap	Outside of North end men's Washroom	None Detected
DW-01A	Black Duct Wrap	South East Corner of Stage	None Detected
DW-01B	Black Duct Wrap	South East Corner of Stage	None Detected
DW-01C	Black Duct Wrap	South East Corner of Stage	None Detected
DM-01A	Brown Duct Mastic	South East Corner of Stage	None Detected
DM-01B	Brown Duct Mastic	South East Corner of Stage	None Detected
DM-01C	Brown Duct Mastic	South East Corner of Stage	None Detected
BP-01A	Black Building Paper Under Cement Panel on Exterior	West Wall of Mechanical Room	<0.25% Chrysotile
BP-01B	Black Building Paper Under Cement Panel on Exterior	West Wall of Mechanical Room	<0.25% Chrysotile
BP-01C	Black Building Paper Under Cement Panel on Exterior	West Wall of Mechanical Room	<0.25% Chrysotile
MG-01A	Black Mechanical Gasket	Mechanical Room on Red Viking Fitting	None Detected
MG-01B	Black Mechanical Gasket	Mechanical Room on Red Viking Fitting	None Detected
MG-01C	Black Mechanical Gasket	Mechanical Room on Red Viking Fitting	None Detected
CTG-01A	White Ceramic Tile Grout	North End Men's Washroom	None Detected
CTG-01B	White Ceramic Tile Grout	North End Men's Washroom	None Detected
CTG-01C	White Ceramic Tile Grout	North End Men's Washroom	None Detected

Sample Number	Material Description	Sample Location	Results (%/Type Asbestos)
CTG-02A	White Ceramic Tile Grout	North East Outside Women's Washroom	None Detected
CTG-02B	White Ceramic Tile Grout	North East Outside Women's Washroom	None Detected
CTG-02C	White Ceramic Tile Grout	North East Janitor Room	None Detected
SF-01	Tanned Sheet Flooring	North East Handicap Washroom	None Detected
SF-02	Tanned Sheet Flooring	North East Janitor Room	None Detected
DJC-01A	Dry Wall Joint Compound	Mechanical Room at North East Door	2% Chrysotile
DJC-01B	Dry Wall Joint Compound	Hallways Behind Stage at South West Door	Stop Positive (Not Analyzed)
DJC-01C	Dry Wall Joint Compound	Landing in Stairwell C on Main Floor	Stop Positive (Not Analyzed)
DJC-01D	Dry Wall Joint Compound	Corridor Outside Stairwell G on Main Floor	Stop Positive (Not Analyzed)
DJC-01E	Dry Wall Joint Compound	Interior Wall in Stairwell A on Main Floor	Stop Positive (Not Analyzed)
DJC-02A	Dry Wall Joint Compound	East Wall in Library/Meeting Room on Third Floor	2% Chrysotile
DJC-02B	Dry Wall Joint Compound	Landing in Stairwell E on Third Floor	Stop Positive (Not Analyzed)
DJC-02C	Dry Wall Joint Compound	Landing in Stairwell H on Third Floor	Stop Positive (Not Analyzed)
DJC-03A	Dry Wall Joint Compound	Landing in Stairwell H on Second Floor	2% Chrysotile
DJC-03B	Dry Wall Joint Compound	North West Room From Corridor on Second Floor	Stop Positive (Not Analyzed)
DJC-03C	Dry Wall Joint Compound	Landing in Stairwell G on Second Floor	Stop Positive (Not Analyzed)
DJC-03D	Dry Wall Joint Compound	North East Wall in Pin Rail Gallery	Stop Positive (Not Analyzed)
DJC-03E	Dry Wall Joint Compound	Landing in Stairwell E on Second Floor	Stop Positive (Not Analyzed)
CDP-0A	Fibrous Debris	Crawl Space Hatch	50% Chrysotile
CDP-0B	Fibrous Debris	Crawl Space Hatch	Stop Positive (Not Analyzed)
CDP-0C	Fibrous Debris	Crawl Space Hatch	Stop Positive (Not Analyzed)

**APPENDIX C  
CERTIFICATE OF ANALYSIS –  
SUSPECTED ACM SAMPLES**



# EMSL Canada Inc.

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EMSL Canada Order 551500844  
Customer ID: 55JACQ30N  
Customer PO: 123220212.200  
Project ID:

**Attn:** Keith Irwin  
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**Phone:** (604) 436-3014  
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**Collected:**  
**Received:** 1/26/2015  
**Analyzed:** 2/02/2015  
**Proj:** 123220212.200

## 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:** CP-01A **Lab Sample ID:** 551500844-0001

**Sample Description:** WEST WALL OF MECHANICAL ROOM/EXTERIOR CEMENT PANEL

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015	Gray	0%	85%	15% Chrysotile	

**Client Sample ID:** CP-01B **Lab Sample ID:** 551500844-0002

**Sample Description:** WEST WALL OF MECHANICAL ROOM/EXTERIOR CEMENT PANEL

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015					Stop Positive (Not Analyzed)

**Client Sample ID:** CP-01C **Lab Sample ID:** 551500844-0003

**Sample Description:** WEST WALL OF MECHANICAL ROOM/EXTERIOR CEMENT PANEL

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015					Stop Positive (Not Analyzed)

**Client Sample ID:** FDC-01A **Lab Sample ID:** 551500844-0004

**Sample Description:** MECHANICAL ROOM BETWEEN FURNACES AND FURNACE/DUCTING/WHITE WOVEN FLEX DUCT CONNECTOR

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015	White	5%	35%	60% Chrysotile	

**Client Sample ID:** FDC-01B **Lab Sample ID:** 551500844-0005

**Sample Description:** MECHANICAL ROOM BETWEEN FURNACES AND FURNACE/DUCTING/WHITE WOVEN FLEX DUCT CONNECTOR

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015					Stop Positive (Not Analyzed)

**Client Sample ID:** FDC-01C **Lab Sample ID:** 551500844-0006

**Sample Description:** MECHANICAL ROOM BETWEEN FURNACES AND FURNACE/DUCTING/WHITE WOVEN FLEX DUCT CONNECTOR

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015					Stop Positive (Not Analyzed)

**Client Sample ID:** FDC-02A **Lab Sample ID:** 551500844-0007

**Sample Description:** MECHANICAL ROOM ON EMERGENCY GENERATOR EXHAUST/DUCT/BLACK RUBBERY FLEX DUCT CONNECTOR

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Gray	0.0%	100%	None Detected	



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EMSL Canada Order 551500844  
Customer ID: 55JACQ30N  
Customer PO: 123220212.200  
Project ID:

## 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:** FDC-02B **Lab Sample ID:** 551500844-0008

**Sample Description:** MECHANICAL ROOM ON EMERGENCY GENERATOR EXHAUST/DUCT/BLACK RUBBERY FLEX DUCT CONNECTOR

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Gray	0.0%	100%	None Detected	

**Client Sample ID:** FDC-02C **Lab Sample ID:** 551500844-0009

**Sample Description:** MECHANICAL ROOM ON EMERGENCY GENERATOR EXHAUST/DUCT/BLACK RUBBERY FLEX DUCT CONNECTOR

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Gray	0.0%	100%	None Detected	

**Client Sample ID:** FHL-01A **Lab Sample ID:** 551500844-0010

**Sample Description:** MECHANICAL ROOM ON BACK OF CIRCULAR FURNACE/HATCHES/WHITE FIBROUS LINER

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015	Beige	2%	48%	50% Chrysotile	

**Client Sample ID:** FHL-01B **Lab Sample ID:** 551500844-0011

**Sample Description:** MECHANICAL ROOM ON BACK OF CIRCULAR FURNACE/HATCHES/WHITE FIBROUS LINER

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015				Stop Positive (Not Analyzed)	

**Client Sample ID:** FHL-01C **Lab Sample ID:** 551500844-0012

**Sample Description:** MECHANICAL ROOM ON BACK OF CIRCULAR FURNACE/HATCHES/WHITE FIBROUS LINER

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015				Stop Positive (Not Analyzed)	

**Client Sample ID:** HS-01A **Lab Sample ID:** 551500844-0013

**Sample Description:** WEST SECOND FLOOR EMERGENCY STAIRWELL LANDING/HEAT SHIELD INSIDE ROUND INCANDESCENT LIGHT FIXTURES

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Yellow	0.0%	100%	None Detected	

**Client Sample ID:** HS-01B **Lab Sample ID:** 551500844-0014

**Sample Description:** WEST SECOND FLOOR EMERGENCY STAIRWELL LANDING/HEAT SHIELD INSIDE ROUND INCANDESCENT LIGHT FIXTURES

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Yellow	0.0%	100%	None Detected	

**Client Sample ID:** HS-01C **Lab Sample ID:** 551500844-0015

**Sample Description:** WEST SECOND FLOOR EMERGENCY STAIRWELL LANDING/HEAT SHIELD INSIDE ROUND INCANDESCENT LIGHT FIXTURES

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Yellow	0.0%	100%	None Detected	



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## 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:** FG-01A **Lab Sample ID:** 551500844-0016

**Sample Description:** MECHANICAL ROOM ON BETWEEN FURNACE AND RED BURNER/BOX/WHITE FURNACE GASKET

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Gray	0.0%	98.7%	1.3% Chrysotile	

**Client Sample ID:** FG-01B **Lab Sample ID:** 551500844-0017

**Sample Description:** MECHANICAL ROOM ON BETWEEN FURNACE AND RED BURNER/BOX/WHITE FURNACE GASKET

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015		Positive Stop (Not Analyzed)			

**Client Sample ID:** FG-01C **Lab Sample ID:** 551500844-0018

**Sample Description:** MECHANICAL ROOM ON BETWEEN FURNACE AND RED BURNER/BOX/WHITE FURNACE GASKET

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015		Positive Stop (Not Analyzed)			

**Client Sample ID:** PS-01A **Lab Sample ID:** 551500844-0019

**Sample Description:** EAST CORNER OF MECHANICAL ROOM ON PIPING/BROWN PIPE SEALANT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Brown	0.0%	100%	None Detected	

**Client Sample ID:** PS-01B **Lab Sample ID:** 551500844-0020

**Sample Description:** EAST CORNER OF MECHANICAL ROOM ON PIPING/BROWN PIPE SEALANT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Brown	0.0%	100%	None Detected	

**Client Sample ID:** PS-01C **Lab Sample ID:** 551500844-0021

**Sample Description:** EAST CORNER OF MECHANICAL ROOM ON PIPING/BROWN PIPE SEALANT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Brown	0.0%	100%	None Detected	

**Client Sample ID:** PS-02A **Lab Sample ID:** 551500844-0022

**Sample Description:** ON 2" SPRINKLER SYSTEM IN ATTIC SPACE/LIGHT BLUE PIPE SEALANT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Blue	0.0%	100%	None Detected	

**Client Sample ID:** PS-02B **Lab Sample ID:** 551500844-0023

**Sample Description:** ON 2" SPRINKLER SYSTEM IN ATTIC SPACE/LIGHT BLUE PIPE SEALANT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Blue	0.0%	100%	None Detected	



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Customer ID: 55JACQ30N  
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Project ID:

## 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:** PS-02C **Lab Sample ID:** 551500844-0024

**Sample Description:** ON 2" SPRINKLER SYSTEM IN ATTIC SPACE/LIGHT BLUE PIPE SEALANT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Blue	0.0%	100%	None Detected	

**Client Sample ID:** PW-01A **Lab Sample ID:** 551500844-0025

**Sample Description:** SOUTH WEST CORNER OF MECHANICAL ROOM/WHITE PIPE WRAP

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015	White/Beige	50%	30%	20% Chrysotile	

**Client Sample ID:** PW-01B **Lab Sample ID:** 551500844-0026

**Sample Description:** SOUTH WEST CORNER OF MECHANICAL ROOM/WHITE PIPE WRAP

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015				Stop Positive (Not Analyzed)	

**Client Sample ID:** PW-01C **Lab Sample ID:** 551500844-0027

**Sample Description:** SOUTH WEST CORNER OF MECHANICAL ROOM/WHITE PIPE WRAP

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015				Stop Positive (Not Analyzed)	

**Client Sample ID:** PW-02A **Lab Sample ID:** 551500844-0028

**Sample Description:** OUTSIDE OF NORTH END MEN'S WASHROOM/GREY PAINTED PIPE WRAP

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015	Gray/Black/Beige	55%	45%	None Detected	

**Client Sample ID:** PW-02B **Lab Sample ID:** 551500844-0029

**Sample Description:** OUTSIDE OF NORTH END MEN'S WASHROOM/GREY PAINTED PIPE WRAP

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015	Gray/Black/Beige	55%	45%	None Detected	

**Client Sample ID:** PW-02C **Lab Sample ID:** 551500844-0030

**Sample Description:** OUTSIDE OF NORTH END MEN'S WASHROOM/GREY PAINTED PIPE WRAP

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	2/02/2015	Black/Beige	60%	40%	None Detected	

**Client Sample ID:** DW-01A **Lab Sample ID:** 551500844-0031

**Sample Description:** SOUTH EAST CORNER OF STAGE/BLACK DUCT WRAP

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015	Brown/Black/Beige	60%	40%	None Detected	



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Customer ID: 55JACQ30N  
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Project ID:

## 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:** DW-01B **Lab Sample ID:** 551500844-0032  
**Sample Description:** SOUTH EAST CORNER OF STAGE/BLACK DUCT WRAP

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015	Brown/Black/Beige	60%	40%	None Detected	

**Client Sample ID:** DW-01C **Lab Sample ID:** 551500844-0033  
**Sample Description:** SOUTH EAST CORNER OF STAGE/BLACK DUCT WRAP

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	2/02/2015	Black/Beige	60%	40%	None Detected	

**Client Sample ID:** DM-01A **Lab Sample ID:** 551500844-0034  
**Sample Description:** SOUTH WEST CORNER OF STAGE/BROWN DUCT MASTIC

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Brown	0.0%	100%	None Detected	

**Client Sample ID:** DM-01B **Lab Sample ID:** 551500844-0035  
**Sample Description:** SOUTH WEST CORNER OF STAGE/BROWN DUCT MASTIC

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Brown	0.0%	100%	None Detected	

**Client Sample ID:** DM-01C **Lab Sample ID:** 551500844-0036  
**Sample Description:** SOUTH WEST CORNER OF STAGE/BROWN DUCT MASTIC

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Brown	0.0%	100%	None Detected	

**Client Sample ID:** BP-01A **Lab Sample ID:** 551500844-0037  
**Sample Description:** WEST WALL OF MECHANICAL ROOM/BLACK BUILDING PAPER UNDER CEMENT PANEL ON EXTERIOR

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Black	0.0%	100%	<0.25% Chrysotile	

**Client Sample ID:** BP-01B **Lab Sample ID:** 551500844-0038  
**Sample Description:** WEST WALL OF MECHANICAL ROOM/BLACK BUILDING PAPER UNDER CEMENT PANEL ON EXTERIOR

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Black	0.0%	100%	<0.25% Chrysotile	

**Client Sample ID:** BP-01C **Lab Sample ID:** 551500844-0039  
**Sample Description:** WEST WALL OF MECHANICAL ROOM/BLACK BUILDING PAPER UNDER CEMENT PANEL ON EXTERIOR

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Black	0.0%	100%	<0.25% Chrysotile	



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## 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:** MG-01A **Lab Sample ID:** 551500844-0040

**Sample Description:** MECHANICAL ROOM ON RED VIKING FITTING/BLACK MECHANICAL GASKET

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Black	0.0%	100%	None Detected	

**Client Sample ID:** MG-01B **Lab Sample ID:** 551500844-0041

**Sample Description:** MECHANICAL ROOM ON RED VIKING FITTING/BLACK MECHANICAL GASKET

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Black	0.0%	100%	None Detected	

**Client Sample ID:** MG-01C **Lab Sample ID:** 551500844-0042

**Sample Description:** MECHANICAL ROOM ON RED VIKING FITTING/BLACK MECHANICAL GASKET

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Black	0.0%	100%	None Detected	

**Client Sample ID:** CTG-01A **Lab Sample ID:** 551500844-0043

**Sample Description:** NORTH END MEN'S WASHROOM/WHITE CERAMIC TILE GROUT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/30/2015	White	0%	100%	None Detected	

**Client Sample ID:** CTG-01B **Lab Sample ID:** 551500844-0044

**Sample Description:** NORTH END MEN'S WASHROOM/WHITE CERAMIC TILE GROUT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/30/2015	White	0%	100%	None Detected	

**Client Sample ID:** CTG-01C **Lab Sample ID:** 551500844-0045

**Sample Description:** NORTH END MEN'S WASHROOM/WHITE CERAMIC TILE GROUT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/30/2015	White	0%	100%	None Detected	

**Client Sample ID:** CTG-02A **Lab Sample ID:** 551500844-0046

**Sample Description:** NORTH EAST OUTSIDE WOMEN'S WASHROOM/WHITE CERAMIC TILE GROUT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/30/2015	White	0%	100%	None Detected	

**Client Sample ID:** CTG-02B **Lab Sample ID:** 551500844-0047

**Sample Description:** NORTH EAST OUTSIDE WOMEN'S WASHROOM/WHITE CERAMIC TILE GROUT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/30/2015	White	0%	100%	None Detected	



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Customer ID: 55JACQ30N  
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Project ID:

## 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:** CTG-02C **Lab Sample ID:** 551500844-0048  
**Sample Description:** NORTH EAST JANITOR ROOM/WHITE CERAMIC TILE GROUT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/30/2015	White	0%	100%	None Detected	

**Client Sample ID:** SF-01 **Lab Sample ID:** 551500844-0049  
**Sample Description:** NORTH EAST HANDICAP WASHROOM/TANNED SHEET FLOORING

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Beige	0.0%	100%	None Detected	

**Client Sample ID:** SF-02 **Lab Sample ID:** 551500844-0050  
**Sample Description:** NORTH EAST JANITOR ROOM/TANNED SHEET FLOORING

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	1/30/2015	Gray	0.0%	100%	None Detected	

**Client Sample ID:** DJC-01A **Lab Sample ID:** 551500844-0051  
**Sample Description:** MECHANICAL ROOM AT NORTH EAST DOOR/DRY WALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015	Beige	0%	98%	2% Chrysotile	

**Client Sample ID:** DJC-01B **Lab Sample ID:** 551500844-0052  
**Sample Description:** HALLWAYS BEHIND STAGE AT SOUTH WEST DOOR/DRY WALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015				Stop Positive (Not Analyzed)	

**Client Sample ID:** DJC-01C **Lab Sample ID:** 551500844-0053  
**Sample Description:** LANDING IN STAIRWELL C ON MAIN FLOOR/DRY WALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015				Stop Positive (Not Analyzed)	

**Client Sample ID:** DJC-01D **Lab Sample ID:** 551500844-0054  
**Sample Description:** CORRIDOR OUTSIDE STAIRWELL G ON MAIN FLOOR/DRY WALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015				Stop Positive (Not Analyzed)	

**Client Sample ID:** DJC-01E **Lab Sample ID:** 551500844-0055  
**Sample Description:** INTERIOR WALL IN STAIRWELL A ON MAIN FLOOR/DRY WALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015				Stop Positive (Not Analyzed)	



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Project ID:

## 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:** DJC-02A **Lab Sample ID:** 551500844-0056

**Sample Description:** EAST WALL IN LIBRARY/MEETING ROOM ON THIRD FLOOR/DRY WALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015	Beige	0%	98%	2% Chrysotile	

**Client Sample ID:** DJC-02B **Lab Sample ID:** 551500844-0057

**Sample Description:** LANDING IN STAIRWELL E ON THIRD FLOOR/DRY WALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015		Stop Positive (Not Analyzed)			

**Client Sample ID:** DJC-02C **Lab Sample ID:** 551500844-0058

**Sample Description:** LANDING IN STAIRWELL H ON THIRD FLOOR/DRY WALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015		Stop Positive (Not Analyzed)			

**Client Sample ID:** DJC-03A **Lab Sample ID:** 551500844-0059

**Sample Description:** LANDING IN STAIRWELL H ON SECOND FLOOR/DRY WALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015	Beige	0%	98%	2% Chrysotile	

**Client Sample ID:** DJC-03B **Lab Sample ID:** 551500844-0060

**Sample Description:** NORTH WEST ROOM FROM CORRIDOR ON SECOND FLOOR/DRY WALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015		Stop Positive (Not Analyzed)			

**Client Sample ID:** DJC-03C **Lab Sample ID:** 551500844-0061

**Sample Description:** LANDING IN STAIRWELL G ON SECOND FLOOR/DRY WALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015		Stop Positive (Not Analyzed)			

**Client Sample ID:** DJC-03D **Lab Sample ID:** 551500844-0062

**Sample Description:** NORTH EAST WALL IN PINRAIL GALLERY/DRY WALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015		Stop Positive (Not Analyzed)			

**Client Sample ID:** DJC-03E **Lab Sample ID:** 551500844-0063

**Sample Description:** LANDING IN STAIRWELL E ON SECOND FLOOR/DRY WALL JOINT COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/29/2015		Stop Positive (Not Analyzed)			



**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](mailto:torontolab@emsl.com)

EMSL Canada Order 551500844  
Customer ID: 55JACQ30N  
Customer PO: 123220212.200  
Project ID:

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

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**Analyst(s):**

---

Jefferson Salvador PLM (11)  
John Biesiadecki PLM (4)  
PLM Grav. Reduction (16)  
Kate Fee PLM (2)  
Nicole Yeo PLM (2)  
PLM Grav. Reduction (8)

**Reviewed and approved by:**

Matthew Davis  
or Other Approved Signatory

None Detected = <0.5%. EMSL maintains liability limited to cost of analysis. 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. 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 of any agency of the U.S. Government.

Samples analyzed by EMSL Canada Inc. Calgary, AB

Initial report from: 02/02/2015 13:16:55



# 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](mailto:torontolab@emsl.com)

EMSL Canada Order 551500974  
Customer ID: 55JACQ30L  
Customer PO: 123220212  
Project ID:

**Attn:** Keith Irwin  
Stantec Consulting, Ltd.  
500 - 4730 Kingsway  
Burnaby, BC V5H 0C6  
**Phone:** (604) 412-3004  
**Fax:**  
**Collected:**  
**Received:** 1/29/2015  
**Analyzed:** 1/30/2015  
**Proj:** 123220212

## 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:** CDP-0A **Lab Sample ID:** 551500974-0001

**Sample Description:** CRAWL SPACE HATCH/FIBROUS DEBRIS

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/30/2015	Gray	0%	50%	50% Chrysotile	

**Client Sample ID:** CDP-0B **Lab Sample ID:** 551500974-0002

**Sample Description:** CRAWL SPACE HATCH/FIBROUS DEBRIS

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/30/2015				Stop Positive (Not Analyzed)	

**Client Sample ID:** CDP-0C **Lab Sample ID:** 551500974-0003

**Sample Description:** CRAWL SPACE HATCH/FIBROUS DEBRIS

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	1/30/2015				Stop Positive (Not Analyzed)	

**Analyst(s):** \_\_\_\_\_

John Biesiadecki PLM (1)

**Reviewed and approved by:**

Matthew Davis  
or Other Approved Signatory

None Detected = <0.5%. EMSL maintains liability limited to cost of analysis. 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. 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 of any agency of the U.S. Government.

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

Initial report from: 02/05/2015 13:58:28

**APPENDIX D  
CERTIFICATE OF ANALYSIS –  
SUSPECTED LCP SAMPLES**

**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](mailto:torontolab@emsl.com)

EMSL Canada Or	551500839
CustomerID:	55JACQ30L
CustomerPO:	123220212.200
ProjectID:	

Attn: **Keith Irwin**  
**Stantec Consulting, Ltd.**  
**500 - 4730 Kingsway**  
**Burnaby, BC V5H 0C6**

Phone: (604) 412-3004  
 Fax:  
 Received: 01/26/15 11:23 AM  
 Collected:

Project: 123220212.200

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

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
P-01 Site: FURNACE DUCT Desc: GREY	551500839-0001	1/28/2015		3600 ppm
P-02 Site: STAGE WALLS Desc: BLACK	551500839-0002	1/28/2015		<90 ppm
P-03 Site: EMERGENCY STAIRWELL Desc: WHITE	551500839-0003	1/28/2015		240 ppm
P-04 Site: MECHANICAL ROOM Desc: GREY	551500839-0004	1/28/2015		1700 ppm
P-05 Site: EXTERIOR TRIM Desc: GREY	551500839-0005	1/28/2015		<90 ppm

\_\_\_\_\_  
 Lisa Podzyhun  
 or other approved signatory

\*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. 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. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 01/30/2015 14:42:05



**Photo 1:** Front exterior of the Palace Grand Theatre.



**Photo 2:** Palace Grand Theater - View of exterior skirting that can be removed to create an exterior access point to the crawlspace.



**Photo 3** Palace Grand Theater Crawlspace - Non-asbestos foil-wrapped fiberglass insulation to be removed from HVAC ducting in the crawlspace.



**Photo 4:** Palace Grand Theater Crawlspace - Asbestos-contaminated fiberglass insulation in the crawlspace at perimeter walls.



**Photo 5:** Palace Grand Theater Crawlspace - Asbestos-containing vermiculite insulation to be removed from the “ceiling” space of the crawlspace as seen from the exterior when skirting was removed.



**Photo 6:** Palace Grand Theater - View of crawlspace floor hatch located beneath the stage that can be used for emergency entry/egress only.



**Photo 7:** Palace Grand Theater Crawlspace - Plywood attached to underside of main floor joists and HVAC ducts hung from the plywood/joists.



**Photo 8:** Palace Grand Theater Crawlspace – Typical hanger attachment for HVAC ducting to underside of plywood in the crawlspace.



**Photo 9:** Palace Grand Theater Crawlspace - Fire suppression/sprinkler lines hung from the plywood/joists.



**Photo 10:** Palace Grand Theater Crawlspace - Electrical wires/conduit and HVAC ducts hung from the plywood/joists.



**Photo 11:** Palace Grand Theater Crawlspace – Typical HVAC ducting locations, insulation and installation.



**Photo 12:** Palace Grand Theater Crawlspace – Typical conditions.



**Photo 13:** Palace Grand Theater Crawlspace – Typical HVAC, sprinkler and electrical conduit attached to underside of plywood.



**Photo 14:** Palace Grand Theater Crawlspace – Typical HVAC, sprinkler and electrical conduit attached to underside of plywood.



**Photo 15:** Palace Grand Theater - Asbestos-containing pipe wrap in Room 116 Women's Washroom.



**Photo 16:** Palace Grand Theater - Asbestos-containing pipe wrap in Room 117 Janitor's Washroom.



**Photo 17: Commanding Officer's Quarters - Front exterior.**



**Photo 18: Commanding Officer's Quarters - Attic hatch in the second floor hallway (only access).**



**Photo 19:** Commanding Officer's Quarters - Fibreglass batt insulation laid on top of asbestos-containing vermiculite insulation in the attic space.



**Photo 20:** Madame Tremblay's Store - Front exterior.



**Photo 21: Madame Tremblay's Store - Exterior attic access hatch.**



**Photo 22: McCauley House - Front exterior.**



**Photo 23:** McCauley House – Typical attic/insulation conditions.



**Photo 24:** McCauley House – Typical attic/insulation conditions.



Public Works and  
Government Services Canada

## Appendix B - Issued for Tender Drawings

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N

1st FLOOR

TRUCK DRIVE  
CUB. INLET

EXHIBIT ROOM

OFFICE

EXISTING WORK

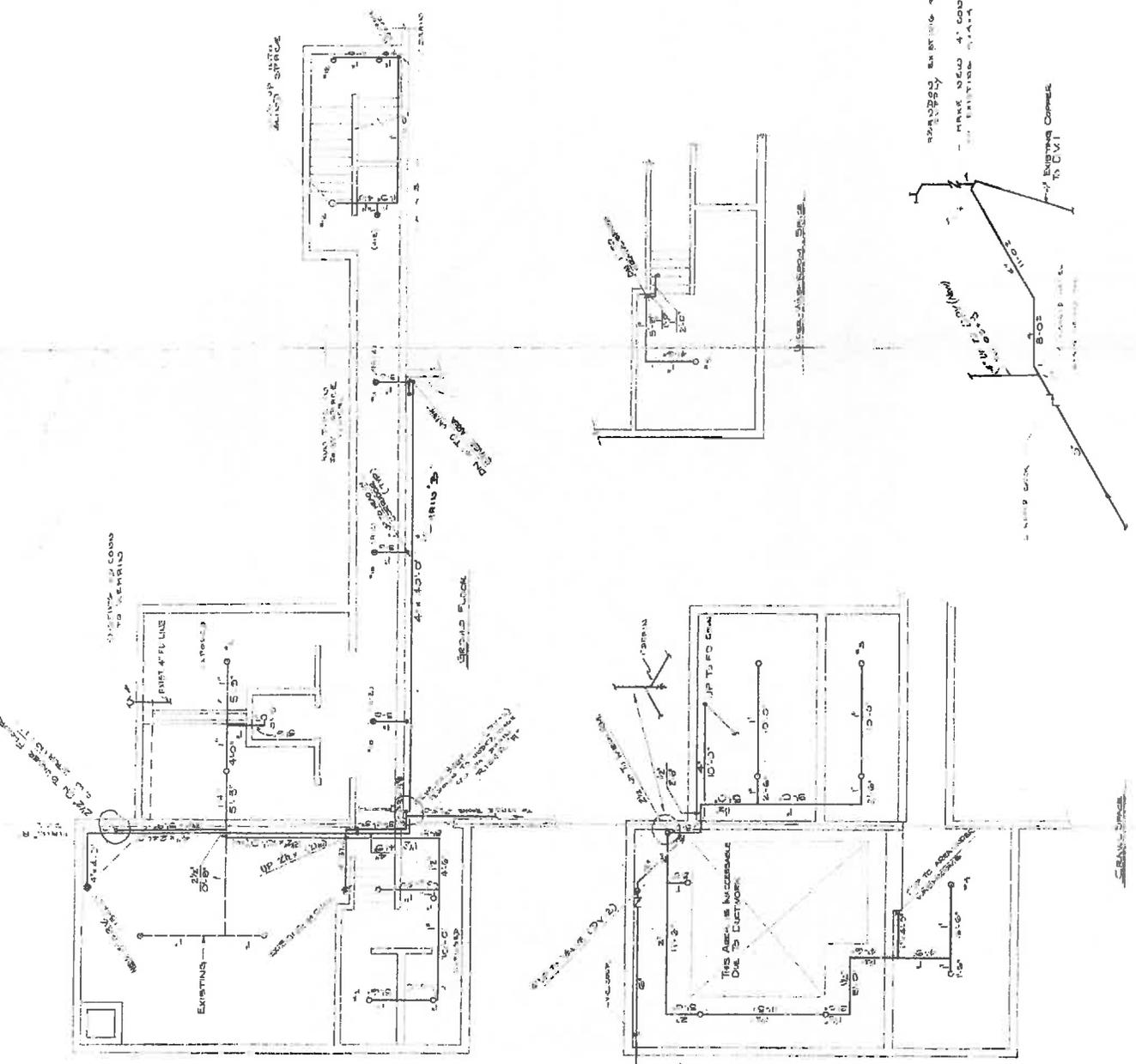
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DETAIL

APPROVED:  
[Signature]

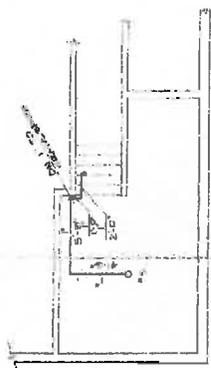
VIKING SPRINKLER CO. LTD.  
[Signature]

VIKING SPRINKLER CO. LTD.  
[Signature]

25 B. 3
VIKING SPRINKLER CO. LTD.
BRANCH: [Blank]
ADDRESS: [Blank]
PHONE: [Blank]
DATE: [Blank]
BY: [Blank]
FOR: [Blank]
PROJECT: [Blank]
NO. OF SHEETS: [Blank]
SHEET NO.: [Blank]



250 NEW SPRINKLES  
 SYSTEM #1 21 RIS. EXISTING  
 15 RIS. NEW  
 SYSTEM #2 14R. A.S. NEW  
 200F HEADS 10 RTIC  
 100F HEADS 1000 RTIC



SEALING OFF

THIS AREA IS SURVEILLANCE  
DUE TO DUCTWORK

THIS SWITCH  
SHOULD BE  
REMOVED  
AND  
REPLACED  
WITH  
A  
CIRCUIT  
BREAKER

EXISTING COORD  
TO MEMPHIS

FIRST FLOOR

APPELL

5'0\"/>

TRUCK DRIVE

4'0\"/>

18'0\"/>

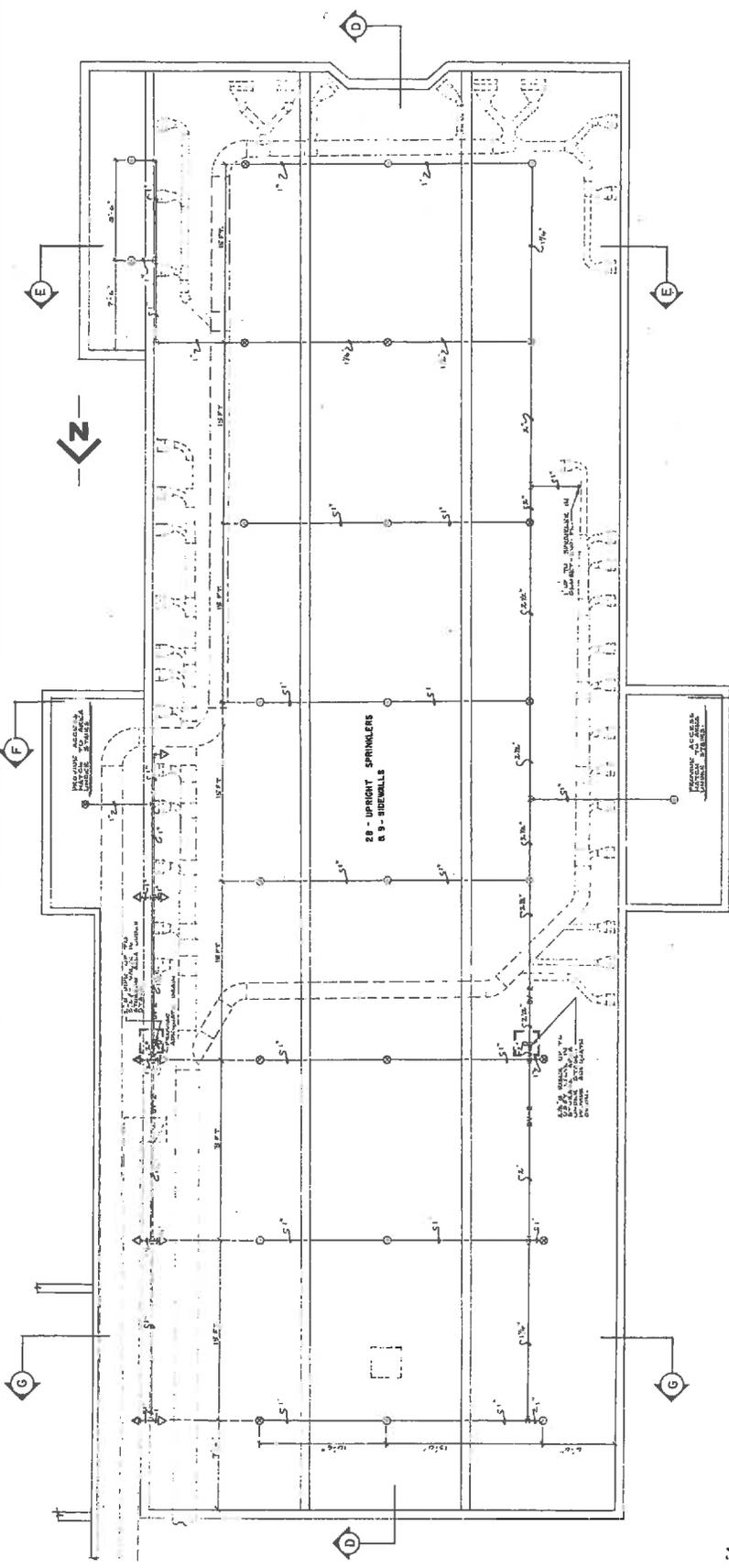
SECOND FLOOR

TRUCK DRIVE

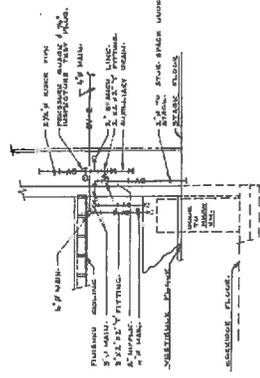


Institute of Architects  
 ARCHITECTS  
 ENGINEERING AND ARCHITECTURE  
 BRANCH

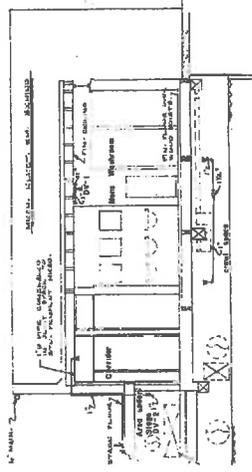
A. Client No.	117
B. Building Name	SPRINKLER SYSTEM
C. Drawing No.	PLAN - B
Drawn by / scale	AS SHOWN
Checked by / scale	AS SHOWN
Approved by / date	
Project Name	PALACE GRAND THEATRE
Client Name	DAWSON Y.T.
Drawing Title	SPRINKLER SYSTEM CRAWL SPACE PLAN - B
Scale	1/4" = 1'-0"
Sheet No.	HWDC 76/H7
Total Sheets	M2 of 6



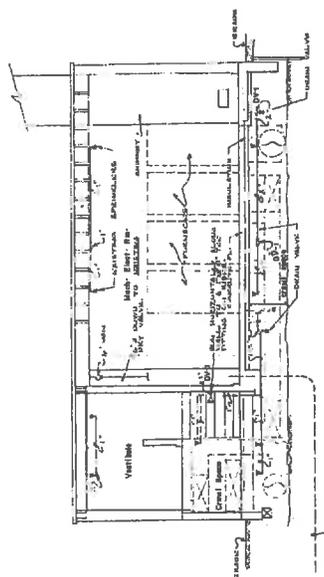
THEATRE CRAWL SPACE PLAN  
 SCALE: 1/4" = 1'-0"



ELEVATION: B-B  
 SCALE: 1/4" = 1'-0"



CROSS SECTION B-B  
 SCALE: 1/4" = 1'-0"



CROSS SECTION A-A  
 SCALE: 1/4" = 1'-0"