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**XCG File No. 5-336-200-01**  
**COLE File No. 2018-0565**  
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**DESIGNATED SUBSTANCES AND  
HAZARDOUS MATERIALS SURVEY  
PIN 614124  
10725 REESOR ROAD  
MARKHAM, ONTARIO**

Prepared for:

**PUBLIC SERVICES AND PROCUREMENT CANADA**  
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On Behalf of

**PARKS CANADA AGENCY  
ROUGE NATIONAL URBAN PARK**

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**ES 1. EXECUTIVE SUMMARY**

COLE Engineering Group Ltd. and XCG Consulting Limited, hereafter referred to as the COLE Engineering & XCG Consulting Joint Venture, were retained by Public Services and Procurement Canada (PSPC) on behalf of Parks Canada Agency (PCA) to complete a Designated Substances and Hazardous Material Survey (DSHMS) to update the asbestos inventory and to serve as a resource for PCA in the management of their buildings within the Rouge National Urban Park (RNUP). Properties at the RNUP are represented with a numerical Property Identification Number (PIN).

This DSHMS was conducted at PIN 614124 located at 10725 Reesor Road near Markham, Ontario (subject building). The investigation was completed to determine if designated substances and hazardous materials are present in the residential building, and what measures, if any, are required to mitigate potential exposure by persons entering the residential building and/or conducting any future demolition or renovations. It is understood that the barn and sheds located north and east of the subject building are not included in this DSHMS and were therefore not inspected.

The DSHMS involved a review of background information pertaining to the design and use of the residential building, site visit, and collection and testing of building materials suspected of being asbestos-containing materials (ACMs) and potential lead-based paints (LBP). All of the designated substances defined by the Ontario Ministry of Labour (MOL) under Ontario Regulation 490/09 (O. Reg. 490/09), O. Reg. 278/05 for asbestos, polychlorinated biphenyls (PCBs), and other potentially hazardous materials listed in the table below were evaluated, as well as other materials identified by PSPC. The results of the investigation to determine the potential presence or absence of designated substances are summarized in the following table.

Substance	Not Identified	Potentially Present	Determined Present
Acrylonitrile	X		
Arsenic	X		
Asbestos		X	X
Benzene			X
Halocarbons		X	
Coke Oven Emissions	X		
Ethylene Oxides	X		
Isocyanates	X		
Lead		X	X
Mercury			X
Mould	X		
Polychlorinated Biphenyls (PCBs)	X		
Silica		X	X
Urea Formaldehyde Foam Insulation (UFFI)	X		
Vinyl Chloride	X		
Chemical Storage			X
Fuel Oil			X
Waste Oil	X		

The substances that were not identified on-site are not likely to be a concern and require no further evaluation or management. A further discussion of the substances that are present or potentially present is provided below.

#### ***Asbestos-Containing Materials***

At the time of the Designated Substances Survey conducted in 2009, eight types of materials were submitted for laboratory analysis. The plaster and cement parging (composite) was confirmed to be ACM. During this survey (2019), six types of materials were submitted for laboratory analysis of asbestos, none of the samples analyzed were ACM. It should be noted that roofing materials were not collected due to the height and safety precautions, however some roofing materials are known to have been manufactured with asbestos and therefore these materials are presumed to be ACM. Prior to disturbance, it is recommended to sample all and roofing material layers to confirm ACM or undertake Type 1 abatement if required.

#### ***Lead-Based Paints***

In 2015, twenty paint samples were collected and submitted for lead analysis. Thirteen of the samples were more than 90 ppm therefore the paints are considered lead-based. The paints were generally observed to be in good to fair conditions with the exception of the beige paint and brown paint in the bedroom SW (office SW) which was observed to be in poor condition. During this survey (2019), one white paint sample was collected and submitted for lead analysis and was found to have a lead concentration of 720 parts per million (ppm). At the time of the survey, most of the lead-based paints identified in 2015 with the exception of green paint from the kitchen door, turquoise paint from the basement stairwell walls were observed to be repainted. The kitchen cabinets had been replaced. Therefore, all the lead-based paints were observed to be in good condition with an exception of the green paint (historical sample) on the door frame in the kitchen and west entrance door and frame, and white lead-based paint on the west porch which were observed to be in poor condition and had locations of flaking or peeling paint. Based on the location of the exterior porch paint and the small quantity on the interior door frame, the urgency level for repair is considered moderate. If lead-based paints are not flaking, they may be painted over to reduce further deterioration. Flaking paints should be cleaned up or removed using power tools with a high-efficiency particulate air (HEPA) filter-equipped vacuum to limit the potential for the spread of lead dust.

#### ***Halocarbons***

Based on observations made during the site visit, equipment potentially containing halocarbons identified at the subject building was limited to a refrigerator in the kitchen. If present, removal or disposal of any refrigeration equipment and/or refrigerant containers is regulated under Federal Halocarbon Regulations, 2003, and should only be undertaken by qualified licensed individuals.

#### ***Mercury***

Small quantities of mercury are likely present in the fluorescent light tubes throughout the building. No samples were collected or submitted for laboratory analysis. Prior to any demolition or renovations to the building, the fluorescent lights that may be

disturbed must be handled and if necessary, disposed of in accordance with O. Reg. 490/09 (as amended).

**Silica**

Concrete and mortar-based building materials were observed, but do not represent a concern in their present state and condition.

**Fuel, Oil, and Waste Oil Storage (Containing Benzene)**

A 900-L furnace oil above ground storage tank (AST) was located in the basement. Furnace oil is benzene-containing. All fuels and oils should be stored in accordance with the Storage Tank Systems for Petroleum Products and Allied Petroleum Products (SOR/2008-197) requirements.

**Summary**

In summary, designated substances, as indicated in the table below are present or likely to be present. During any renovations or demolition, PSPC and PCA representatives and project contractors should ensure that the materials are properly handled and disposed of in accordance with Federal and Provincial regulations.

**EXECUTIVE SUMMARY**

Material	Sample ID	Description	Location	Quantity (square metres)	Condition	Action (Urgency Level)	Photo
Asbestos (Friable)	12287-061-5-A,B,C (Historic Sample)	Plaster and cement parging (composite)	Stairwell to basement. Similar material on walls and ceilings throughout the building.	195	Good	Action 4 or 6 – routine surveillance. Type 3 abatement if required.	Photo 2
Asbestos (Non-Friable)	Presumed	Roofing Material	Residence Roof	100	Good (Note: condition observed from ground level only)	Action 6 – Surveillance. Sample prior to any disturbance to confirm ACM, or undertake Type 1 abatement.	Photo 1
Lead Paint	614124-P-01	White paint	Porch rails	10	Poor	Remove chipped or flaking paint and paint over damaged areas. (Moderate)	Photo 5
Lead Paint	P-1 (Historic Sample)	Orange/beige paint	Kitchen	-	Unknown (walls and trim repainted, cabinets replaced)	None	-
Lead Paint	P-3 (Historic Sample)	Cream paint	Kitchen	-	Unknown (replaced)	None	-
Lead Paint	P-4 (Historic Sample)	Green paint	Kitchen door. Visually similar paint on west door and exterior window frames.	12	Poor at kitchen and west doors.	Remove chipped or flaking paint and paint over damaged areas. (Moderate)	Photo 3
Lead Paint	P-6 (Historic Sample)	Brown and beige paint (two layers)	Basement	-	Good (repainted)	None	-
Lead Paint	P-7 (Historic Sample)	Turquoise/blue paint	Basement	4	Good (repainted)	None	-
Lead Paint	P-8 (Historic Sample)	White paint	Basement	-	Good	None	Photo 4
Lead Paint	P-10 (Historic Sample)	Sky blue paint	Bedroom N (Office N)	-	Good (repainted)	None	-
Lead Paint	P-12 (Historic Sample)	Beige/pink paint	Bedroom N (Office N)	-	Good (repainted)	None	-
Lead Paint	P-13 (Historic Sample)	Beige paint	Bedroom SW (Office SW)	-	Good (repainted)	None	-
Lead Paint	P-14 (Historic Sample)	Brown/dark beige paint	Bedroom SW (Office SW)	-	Good (repainted)	None	-

**EXECUTIVE SUMMARY**

Material	Sample ID	Description	Location	Quantity (square metres)	Condition	Action (Urgency Level)	Photo
Lead Paint	P-15 (Historic Sample)	Cream paint	Bedroom SW (Office SW)	-	Good (repainted)	None	-
Lead Paint	P-16 (Historic Sample)	Light green/grey paint	Bedroom SW (Office SW)	-	Good (repainted)	None	-
Lead Paint	P-18 (Historic Sample)	Brown/green paint	Bedroom SW (Office SW)	-	Good (repainted)	None	-
Halocarbons	-	Refrigerator	Kitchen	-	Good	Manage in accordance with Federal Halocarbon regulation. Dispose of appropriately.	-
Mercury	-	Fluorescent light tubes	Throughout	37 bulbs	Good	Handle and if necessary, dispose of in accordance with O. Reg. 490/09 (as amended).	Photo 6
Silica	-	Brick and mortar / concrete block / cement floor / drywall and plaster walls and ceiling / ceramic tiles	Exterior / basement foundation / basement floor / throughout / bathroom	-	Good	Prohibit drilling, grinding, cutting, and abrading silica-containing material unless safety precautions taken (wetting and HEPA filter)	-
Fuel oil	-	Furnace oil	Steel AST in basement	900 litres	Good	Manage any fuel oil tank and its contents in accordance with the Storage Tank Systems for Petroleum Products and Allied Petroleum Products (SOR/2008-197) requirements.	Photo 7
<p>Notes:            Urgency Level: Identified for ACMs or lead-containing paint in poor condition only. Additional information provided in Section 6.0 for each material.            (High): Immediate repairs required.            (Moderate): Repairs required.            -: Not applicable.</p>							

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## **1. INTRODUCTION**

COLE Engineering Group Ltd. and XCG Consulting Limited, hereafter referred to as the COLE Engineering & XCG Consulting Joint Venture, were retained by Public Services and Procurement Canada (PSPC) on behalf of Parks Canada Agency (PCA) to complete a Designated Substances and Hazardous Material Survey (DSHMS) to update the asbestos inventory and to serve as a resource for PCA in the management of their buildings within the Rouge National Urban Park (RNUP). Properties at the RNUP are represented with a numerical Property Identification Number (PIN). The subject site is shown on Figures 1 through 6.

PCA as a federal department has asbestos management policy and guidance documents titled “Parks Canada Asbestos Management Standard” and “Parks Canada Asbestos Management Guide,” both dated January 2014. The policy and guideline documents describe PCA’s requirements for asbestos management on PCA properties.

The purpose of the DSHMS was to determine if any designated substances and other potentially hazardous materials are present at the subject building and provide references for the management as required to mitigate potential exposure by persons entering the building and/or conducting any demolition or renovation activities. The survey included all designated substances defined by the Ontario Ministry of Labour (MOL) and PCA, as well as other potentially hazardous materials, and included testing of potential asbestos-containing materials (ACMs) and lead-based paints (LBP). An inventory of designated substances and other potentially hazardous materials present or potentially present was developed.

### **1.1 Building Description**

The subject building, PIN 614124 is located at 10725 Reesor Road, near Markham, Ontario. Currently the building is occupied as Parks Canada Office. A photograph of the exterior of the residential dwelling is included as Photo 1 in Appendix C.

The subject building consists of one two storey building with a basement. The original construction date of the building is unknown. The exterior walls are brick. The interior construction of the building is comprised of stucco, drywall, lath and plaster walls, wood panel walls, texture coat (stucco), drywall, lath and plaster ceilings, hardwood, laminate, vinyl floor tiles and vinyl sheet flooring. The attic access is located in the second-floor office SW. Insulation in the attic consisted of pink fiberglass insulation. A mud room has been added on the southeast end of the subject building since the 2015 survey.

### **1.2 Historic Reports**

As part of this DSHMS, previous reports were reviewed prior to the 2019 DSHMS site visit, and summarized below:

- ***Terrapex Environmental Ltd., “Designated Substances and Hazardous Material Survey, 10725 Reesor Road, Markham, Ontario, SNC-Lavalin ProFac Property Identification No. 614124,” October 8, 2015.***

A Designated Substances and Hazardous Material Survey (2015 DSHMS) was conducted at the subject building on August 26, 2015. The DSS included an inspection of all accessible interior and exterior areas of the building and additional sheds.

Twenty paint samples were collected and submitted for lead analysis by Flame AAS. Thirteen of the samples were more than 90 ppm therefore the paints are considered lead-based. The paints were generally observed to be in good to fair conditions with the exception of the beige paint and brown paint in the bedroom SW.

Mercury was identified in one thermostat within the building. Silica was present in concrete, and mortar construction materials.

No equipment potentially containing PCBs was observed on the property.

No materials containing acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, or vinyl chloride were observed at the subject building.

- ***Occupational Hygiene & Environment (OHE), “Pre-Renovation Survey for Designated Substances and PCBs, 10725 Reesor Road, Markham, Ontario, SNC-Lavalin ProFac Property Identification No. 614124,” March 2009.***

Samples of texture coat, vinyl floor tiles, vinyl sheet flooring, plaster and cement parging (composite) from the building were collected and submitted for asbestos analysis. The laboratory analysis indicated that plaster and cement parging (composite) throughout the building were confirmed to be asbestos-containing materials.

Details are discussed in Section 5.

## 2. SCOPE OF WORK

The scope of work for the DSHMS included the following activities:

- Review of drawings and related information pertaining to the design and condition of the building;
- Inspection and sampling of potential hazardous materials within the subject building that could be reasonably accessed by occupants, workers and the general public;
- Documentation of the locations of potential hazardous materials and estimation of quantities;
- Submission of representative samples of potential hazardous materials for laboratory analysis; and
- Preparation of a report summarizing the results of the DSHMS for the building.

The field survey included an inspection of accessible areas of the subject building, and the visual identification of potential designated substances. Where confirmation was required to verify the presence or absence of certain designated substances (specifically lead and asbestos) within a building material, representative samples were collected and submitted for analysis to EMSL Analytical Inc. (EMSL), a National Voluntary Laboratory Accreditation Program (NVLAP) and American Industrial Hygiene Association (AIHA) accredited laboratory.

### 2.1 Designated Substances

Table 1 lists the designated substances and other potentially hazardous materials that were evaluated and included in the survey.

**Table 1 List of Designated Substances and Hazardous Materials Evaluated at the Subject Site**

Designated Substances	Other Potentially Hazardous Materials
Acrylonitrile	Polychlorinated biphenyls (PCBs)
Arsenic	Halocarbons
Asbestos	Urea formaldehyde foam insulation (UFFI)
Benzene	Mould (limited)
Coke oven emissions	Chemical Storage
Ethylene oxide	Fuel Oil
Isocyanates	Waste Oil
Lead	
Mercury	
Silica	
Vinyl chloride	

### **3. REGULATIONS AND GUIDELINES**

The site is considered a federal site and is governed by the *Canada Labour Code (Part II)*, and associated regulations, specifically the *Canada Occupational Health and Safety Regulations (SOR/86-304)*. This code establishes responsibilities and requirements of employers, managers and supervisors who act on behalf of the employer and employees.

Since the standards and qualifications of working with ACMs and lead varies between each provincial and territorial region in Canada, PCA requires that the applicable regional requirements are met for any contracted work (including surveys, testing, removal, etc.). Therefore, the Ontario provincial regulations and guidelines, specifically, Ontario Regulation (O. Reg.) 278/05 *Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations* (as amended), and the MOL guideline “*Lead on Construction Projects*”, dated April 2011, documents have been consulted and referenced for this project.

#### **3.1.1 Asbestos Containing Material (ACM)**

Asbestos was used in building materials such as mechanical pipe insulation, fireproofing, and interior finishes, such as plaster and drywall joint compound until approximately the mid-1980s. Asbestos was also commonly used in vinyl and linoleum flooring products, acoustic ceiling tiles, adhesives, and caulking, among other materials.

PCA as a federal department has an asbestos management policy and guidance documents titled “Parks Canada Asbestos Management Standard” and “Parks Canada Asbestos Management Guide,” both dated January 2014. The policy and guideline documents describe PCA’s requirements for asbestos management on PCA properties.

Although, the RNUP is considered federal property and federal regulation apply, PCA uses the more stringent of the federal and provincial regulations. For projects in Ontario, O. Reg. 278/05 requirements are considered as a best practice. The management of ACMs is governed under Ontario Regulation (O. Reg.) 278/05 *Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations* (as amended). Building materials found to have 0.5 percent or greater asbestos by dry weight are considered to be ACMs. This regulation describes the procedures and protocols for the identification and removal of ACM from buildings. If ACM is known or suspected to be present, then the locations of the material must be documented, and the material managed and removed in accordance with O. Reg. 278/05.

Disposal of ACM is governed under O. Reg. 347 General Waste Management (as amended) and requires that all ACM waste must be placed in a double sealed labelled container that is free of cuts, tears, or punctures and disposed of in a licensed waste facility that has been properly notified.

#### **3.1.2 Lead-Based Paint**

Lead is a heavy metal and is typically found in inorganic compounds often occurring as components of products such as pigments, varnishes, and paints. Lead exposure is

a particular concern from lead based dust during renovation, demolition, or construction activities, or from deterioration of wall coverings.

The Surface Coating Materials Regulations under the Hazardous Products Act (HPA) states that paints having a lead content greater than 90 parts per million (ppm) (90 mg/kg) are considered lead-based. Although not a workplace, O. Reg. 490/09 (as amended) may be used as a best practice guide when renovations or demolition is being undertaken. O. Reg. 490/09 (as amended) stipulates that workers shall be protected from exposure to airborne lead if they are undertaking an activity that disturbs surfaces covered with lead-based paint. The MOL guideline “*Lead on Construction Projects*” dated April 2011, outlines procedures that should be used during renovation or demolition activities to ensure that worker exposure to lead does not exceed regulated limits specified in the Ontario Health and Safety Act (OHSA).

### **3.1.3 Halocarbons**

Halocarbons are chemical compounds that include most ozone depleting substances, chlorofluorocarbons and their halogenated replacements, many of which are greenhouse gases. The use and handling of halocarbons in refrigeration and air conditioning, fire-extinguishing, and solvent systems on federal lands are controlled by the Federal Halocarbon Regulations, 2003. “Small” systems, such as household appliances, are exempt from the annual leak test requirement.

### **3.1.4 Mercury**

Mercury is contained within some thermostats and fluorescent light bulbs. Mercury exposure may occur from airborne vapours or through skin absorption. There is no personal, occupational or environmental concern associated with mercury in its current state and condition. Normal use of a thermostats and fluorescent light bulbs would not cause exposure to vapours. Therefore, residents in a home are unlikely to be exposed. However, if damage occurs to these materials, mercury could be released. Those at highest risk of exposure are construction workers during renovation, demolition, or construction activities. Manage mercury containing equipment in accordance with applicable legislative requirements.

### **3.1.5 Mould**

The presence of mould was not included in the scope of work for this project. As such XCG and COLE did not conduct any inspections specific to mould growth. If significant mould growth was observed, a note was made, however sampling of moulds was not conducted.

Mould spores are present in all indoor and outdoor environments and cannot be completely eliminated. Cellulose-based building materials provide a nutrient base for many mould species; however, moulds generally do not grow unless an adequate amount of moisture is present.

There are no clear regulatory standards for determining acceptable concentrations of mould in indoor air. Listed below are commonly used industry references used to help identify and evaluate mould contamination in buildings:

- “*Guidelines for the Investigation, Assessment, & Remediation of Mould in Workplaces*,” Manitoba Department of Labour and Immigration, Workplace Safety and Health Division, March 2001;
- “*Mold Remediation in Schools and Commercial Buildings*,” U.S. E.P.A. Office of Air and Radiation, Indoor Environments Division, September 2008;
- “*Guidelines on Assessment and Remediation of Fungi in Indoor Environments*,” New York City Department of Health, November 2008;
- “*Mould Guidelines for the Canadian Construction Industry*,” Standard Construction Document CCA 82, 2004; and
- “*Mould Abatement Guidelines*,” Environmental Abatement Council of Ontario (EACO), Edition (3) 2015.

### **3.1.6 PCBs**

PCBs were historically used as dielectric and coolant fluids in electrical equipment such as capacitors, transformers, heat exchangers, electric motors, and fluorescent light ballasts. PCBs are known carcinogens to mammals and humans; therefore, PCB sales were banned in Canada in 1977 and releasing the chemical into the environment was banned in 1985; however, owners of PCB-containing equipment are allowed to continue to use the equipment until the end of its service life, with the storage, handling, transport, and destruction of the PCBs regulated by Environment Canada, SOR 2008-273.

### **3.1.7 Silica**

Silica occurs naturally as crystalline or amorphous material. It is normally found in concrete, mortar, acoustic ceiling tiles, and stucco finishes. Silica exposure is a particular concern from airborne silica dust during renovation, demolition, or construction activities. There is no personal, occupational or environmental concern associated with silica in its current state and condition. Therefore, residents in a home are unlikely to be exposed. However, if dust creating disturbance occurs to these materials, silica could be released. Those at highest risk of exposure are construction workers during renovation, demolition, or construction activities.

Manage silica containing dust during renovations in accordance with applicable legislative requirements.

### **3.1.8 UFFI**

UFFI is a type of insulation made from a foaming agent and compressed air used to insulate hard to reach areas, such as within pre-existing hollow walls. In Canada, UFFI was approved for use in 1977 and was banned in 1980; however, approximately 100,000 homes in Canada contain UFFI. During the curing process of the insulation, formaldehyde gas is emitted, which can cause eye irritation, respiratory problems, nausea, and headaches; however, many other household materials create formaldehyde gas, and humidity, mould, other airborne chemicals and a tightly sealed house can also cause the same symptoms as UFFI.

**3.1.9 Other Designated Substances and Hazardous Materials**

The other designated substances and hazardous materials that were part of the survey are regulated by the following Ontario or Canadian regulations include acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

These designated substances are typically found in industrial settings and are unlikely to be located within the residential dwelling, with the exception of benzene, which is present within the furnace oil in the AST in the basement.

## **4. SURVEY METHODOLOGY**

Ms. Jerralyn Cole of COLE conducted the DSHMS on February 7, 2019. Ms. Cole was accompanied during the initial site tour by John Kemp, Technician at BGIS at the subject site.

The fieldwork was conducted in accordance with XCG and COLE's standard field procedures and health and safety measures. Details regarding the approach used in conducting the field investigations including sampling procedures and analytical methodologies are outlined in this section.

Where it was considered possible that designated substances or hazardous materials existed in areas that could not be accessed without employing destructive methods, such methods to access the area were not used, as the building was occupied, and occupancy was to be on-going.

### **4.1 Site Observations**

The survey included room by room visual observations of reasonably accessible areas to identify the presence of designated or hazardous materials in the project area. The survey was undertaken in a manner to minimize repetition of observations and sampling of like areas (e.g., painted surfaces).

The following building components were assessed individually during the survey as part of routine field procedures:

- Walls;
- Ceiling;
- Floors;
- Mechanical Systems (i.e. pipe wrap);
- Chemical Storage Areas; and
- Fuel, Oil, and Fuel Oil Storage Areas.

During the site survey, bulk samples for asbestos content analysis and paint chip samples for lead in paint analysis were collected and submitted under chain-of-custody to EMSL.

Observations were made of possible visible mould; however, no samples were submitted for laboratory analysis, as this was outside the scope of work for this project.

If fluorescent light ballasts were observed, a minimum of 10% of the light ballasts were visually inspected to identify whether or not PCBs were present within the ballast.

### **4.2 Confirmatory Sampling**

A sufficient number of samples were collected to conclusively identify suspect materials. Duplicate sampling is included as part of the multiple asbestos samples collected (minimum of three) following O. Reg. 278/05. One sample of each paint colour was submitted for laboratory analysis; however, laboratory duplicates are



analyzed on one of every 20 samples. Discretion was used to avoid testing duplicate materials. The samples were collected and handled according to applicable occupational health and safety regulations.

### **4.3 Record Keeping**

Prior to the on-site survey and sampling, a unique and logical sample identification system was developed. This sample identification consisted of the following:

- Property PIN identifier;
- Sample identification; and
- Sequential sample number.

The information on the sample identification, location collected, physical description, condition of material sampled, and quantity of material was collected during the survey.

#### **4.3.1 Asbestos-Containing Material**

Visual observations of accessible areas in the building were made in order to identify the presence of materials suspected of containing asbestos. The visual surveys were primarily limited to a survey of structures in areas with reasonable accessibility.

The following suspected ACMs were sampled: vinyl tiles, parging cement and caulking. Bulk samples of materials suspected of containing asbestos were collected and were later submitted to EMSL for analysis by polarized light microscopy (PLM) with dispersion staining, following USEPA Method 600/R-93/116 under chain-of-custody protocol or by the qualitative transmission electron microscopy (TEM) and gravimetric reduction method.

#### **4.3.2 Sampling of Suspected Asbestos-Containing Materials**

During the survey of the building, a sufficient number of bulk samples were collected to meet the requirements of O. Reg. 278/05 and the “Parks Canada Asbestos Management Standard” and “Parks Canada Asbestos Management Guide,” both dated January 2014, and submitted for laboratory analysis in order to determine the existence and quantities of friable and non-friable asbestos containing materials present in the project area. Each of the layers of a material suspected of containing asbestos were sampled.

##### **4.3.2.1 Sampling of Friable Materials**

During the sampling of any friable materials suspected of containing asbestos, a respirator was worn, and the following sampling procedure was followed:

1. The surface of the material to be sampled was first wetted using a spray bottle to apply the water.
2. A sample was obtained by slowly pushing the sampler (i.e. knife blade) into the material with a twisting motion, until the entire thickness was penetrated. Wetting was continued through the entire process. The sampler was then extracted.

3. The sample was then ejected into a sealable plastic sample bag and labelled as described in Section 4.3.
4. The sampler was thoroughly cleaned after the collection of each sample to avoid potential cross contamination of samples. This cleaning was done by wiping down the blade with water.

**4.3.2.2 Sampling of Non-Friable Materials**

The following sampling procedure was used during the sampling of any non-friable materials suspected of containing asbestos.

1. A sample was obtained by slowly pushing the sampler (i.e. knife blade) into the material with a twisting motion. The sampler was then extracted.
2. The sample was then ejected into a sealable plastic sample bag and labelled. In the case of vinyl tiles, a small portion of broken tile was collected, or a hammer and chisel were used to score the tile and then break a piece off.
3. The sampler was thoroughly cleaned after the collection of each sample to avoid potential cross contamination of samples by wiping down the sampler with water.

**4.3.3 Accessibility and Action Matrix**

The location, approximate volume/area, condition and accessibility of all potential ACMs was recorded in accordance with guidance provided in the Parks Canada Asbestos Management Guide (January 2014). Recommended asbestos control actions were identified based on the condition and accessibility of each confirmed/assumed ACM in accordance with the Action Matrix as defined in Table 6.1 of the Parks Canada Asbestos Management Guide, reproduced in Table 3 below.

The accessibility of building materials suspected of containing asbestos was rated in the field according to the criteria listed in Table 2.

**Table 2 Accessibility of Building ACMs**

<b>Access Category</b>	<b>Definition</b>
Access A	Areas of the building within reach (from floor level) of all building users.
Access B	Frequently entered maintenance areas within reach of maintenance staff, without the need of a ladder.
Access C (Exposed)	Areas of the building above 2.4 m where use of a ladder is required to reach the ACM.
Access C (Concealed)	Areas of the building that require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
Access D	Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment etc. where demolition of the ceiling, wall or equipment etc. is required to reach the ACM.

The PCA Action Matrix below establishes the recommended asbestos control action depending on two variables: 1) the condition of the ACM; and 2) the access level. The actions that correspond to this table are described below in Table 3.

**Table 3 PCA Action Matrix**

Access	ACM Condition			Debris
	Good	Fair	Poor	
(A)	ACTION 4 or 6 <sup>1</sup>	ACTION 4 or 5 <sup>2</sup>	ACTION 3	ACTION 1
(B)	ACTION 4 or 6	ACTION 5 or 4 <sup>3</sup>	ACTION 3	ACTION 1
(C) exposed	ACTION 4 or 6	ACTION 4 or 5	ACTION 2	ACTION 2
(C) concealed	ACTION 4 or 6	ACTION 4 or 6	ACTION 2	ACTION 2
(D)	ACTION 4 or 6	ACTION 6	ACTION 6	ACTION 6

**NOTES:**

<sup>1</sup> If material in ACCESS (A)/GOOD condition is not removed, ACTION 6 is required.  
<sup>2</sup> If material in ACCESS (A)/FAIR condition is not removed, ACTION 5 is required.  
<sup>3</sup> Remove ACM in ACCESS (B)/FAIR condition if ACM is likely to be disturbed.

**ACTION DESCRIPTIONS**

**ACTION 1 Immediate clean-up of debris that is likely to be disturbed**  
 Restrict access that is likely to cause a disturbance of the ACM debris and arrange for immediate clean up of ACM debris in accordance with appropriate Work Type procedures.

**ACTION 2 Limit/Restrict entry into areas where ACM is present and likely to be disturbed by access, or where ACM debris is present, until ACM or ACM debris is removed.**  
 Restrict access to the area to authorized staff or asbestos contractor personnel. At locations where ACM debris can be temporarily isolated, use appropriate means to limit entry to the area until the ACM debris has been removed, and the source of the debris has been stabilized or removed.

**ACTION 3 ACM removal**  
 Arrange for removal of ACM in accordance with appropriate Work Type procedures.

**ACTION 4 Optional ACM removal**  
 If merited by a cost/benefit analysis, arrange for removal of ACM in lieu of repair, or at locations where the presence of asbestos in GOOD condition is not desirable.

**ACTION 5 ACM repair**  
 Arrange for repair ACM found in FAIR condition, and not likely to be damaged again or disturbed by normal use of the area or room. Upon completion of the repair work, treat ACM as material in GOOD condition and implement ACTION 6. If ACM is likely to be damaged or disturbed, during normal use of the area or room, implement ACTION 4.

**ACTION 6 Routine surveillance**  
 Institute routine surveillance of the ACM, in accordance with appropriate Work Type procedures.

#### 4.3.4 Sampling of Suspected Lead-Based Paint

Samples from the subject building of visibly different paints were collected through small scrapings of the paint from the substrate and/or where paint was observed to be peeling or flaking. The location, approximate volume/area, and condition of each different paint was recorded based on visual observation. All paint samples were submitted to EMSL and analyzed by USEPA Method SW-846 Flame Atomic Absorption Spectrophotometry.

#### 4.4 Quality Assurance and Quality Control

Each sample was collected in a clean single use sample bag suitable for lead and asbestos sample collection. All sample bags were labelled with the appropriate sample ID at the time of sample collection. Additional quality assurance and control procedures included: dedicated one-use sealable sample bags, the use of disposable nitrile gloves for all sample collection activities; and cleaning tools between samples by damp wiping with a single use moist towelette, or a single use wet paper towel.

Asbestos sampling requires a minimum of three samples for each suspect sample material collected to determine of the asbestos fibre concentration. Duplicate samples are built into the required number of samples as per the regulation.

Lead in paint samples are collected as a single sample for each of the suspected lead containing surface coatings. Samples collected were representative of the colour of the top layer of paint, however, multiple layers of paint down to the base layer were collected if possible. Laboratory duplicates were relied upon, which for this project is one laboratory duplicate per 20 samples.

All requested sample analysis was filled into a laboratory chain-of-custody prior to shipment. All samples were shipped or dropped off at the laboratory with the corresponding chain-of-custody for confirmation of receipt at the laboratory. The laboratory's quality assurance program follows guidelines as documented in *General requirements for the competence of testing and calibration laboratories* (ISO/IEC 17025:2017). In addition, the program requirements of the AIHA and the NVLAP, the American Association for Laboratory Accreditation, the NELAC Institute, as well as other applicable regulatory requirements associated with laboratory accreditations/certifications are followed. Quality control is performed according to the scope of the laboratories accreditation status and quality control requirement for each type of analysis. Asbestos analysis was completed following *Method For The Determination Of Asbestos In Bulk Building Materials* (EPA 600/R-93/116). Analysis of lead in paint chips was completed following Flame Atomic Absorption Spectrophotometry (EPA SW-846 Test Method 7000B).

## 5. SURVEY FINDINGS

### 5.1 Substance Identification

The likely presence or absence of designated substances and other potentially hazardous materials within the subject building was initially assessed through background research, visual observation and inspection, and discussions with personnel knowledgeable about the building.

Table 4 summarizes the potential presence or absence of each designated substance at the subject site, based on on-site observations and the results of sampling of potential asbestos containing and lead-based materials.

**Table 4 Suspected Designated Substances and Potentially Hazardous Materials**

Substance	Not Identified	Potentially Present	Determined Present
Acrylonitrile	X		
Arsenic	X		
Asbestos		X	X
Benzene			X
Halocarbons		X	
Coke Oven Emissions	X		
Ethylene Oxides	X		
Isocyanates	X		
Lead		X	X
Mercury			X
Mould	X		
Polychlorinated Biphenyls (PCBs)	X		
Silica		X	X
Urea Formaldehyde Foam Insulation (UFFI)	X		
Vinyl Chloride	X		
Chemical Storage			X
Fuel Oil			X
Waste Oil	X		

The substances that were not identified on-site are not likely to be a concern and require no further evaluation or management. A further discussion of the substances that are present or potentially present is provided below.

#### 5.1.1 Asbestos

Potential ACMs visually identified in the building included vinyl tiles, parging cement and caulking. One type of vinyl tile from the first floor, one type of vinyl tile from the second floor, one type of parging cement from the basement, one type of parging cement from the exterior of the dwelling, and two types of caulking from the exterior of the dwelling were collected and submitted for laboratory analysis. The insulation observed in the attic consisted of pink fiberglass and white cellulose insulation and is not a suspected ACM and was therefore not sampled. It should be noted that roofing materials were not collected due to the height and safety precautions; however, some roofing materials are known to have been manufactured with asbestos and therefore

these materials are presumed to be ACM. The details for each ACM material are provided below in Section 5.2.1.

### **5.1.2 Lead**

Potential lead-containing paints were visually identified in the building. One paint sample was collected and submitted to the lab for analysis.

### **5.1.3 Halocarbons**

Based on observations made during the site visit, equipment potentially containing halocarbons were identified in a refrigerator in the kitchen.

### **5.1.4 Mercury**

Small quantities of mercury are likely present within fluorescent lighting observed throughout in the building. Thermostats within the dwelling were digital and did not contain mercury. No samples were collected or submitted for laboratory analysis.

### **5.1.5 PCBs**

Light ballasts were observed at the time of the 2019 surveys, however, these are not suspected to contain PCBs as they appeared to be newly installed and were not present during previous surveys.

### **5.1.6 Silica**

Free crystalline silica is expected to be present within all concrete and mortar-based building materials within the building. No samples were collected or submitted for laboratory analysis.

### **5.1.7 Fuel, Oil, and Waste Oil Storage (Containing Benzene)**

A 900-L furnace oil AST was located in the basement for the residential heating system. Furnace oil is benzene-containing. The AST was manufactured in 2005. A photograph of the furnace oil AST is shown in Photo 7 in Appendix C. All fuels and oils should be stored in accordance with the Storage Tank Systems for Petroleum Products and Allied Petroleum Products (SOR/2008-197).

## **5.2 Summary of Laboratory Results**

Figure 1 identifies the sample collection locations for both ACM and lead-based paint on the first floor of the subject building. Figure 2 identifies the sample collection locations for ACM on the second floor of the subject building. Figure 3 identifies the sample collection locations for ACM in the basement of the subject building. Figure 4 identifies the location of the confirmed designated substances on the first floor. Figure 5 identifies the location of the confirmed designated substances on the second floor. Figure 6 identifies the location of the confirmed designated substances in the basement. Laboratory certificates of analysis from the laboratory are provided in Appendix B. Select photographs showing ACM and lead-based paint locations within the building are presented in Appendix C.

**5.2.1 Asbestos Containing Materials**

Table 5 provides a summary of the results of the asbestos analysis for the surveyed areas at the subject building.

**5.2.2 Lead-Based Paint**

Table 6 provides a summary of the paint samples analysed for the surveyed areas within the subject building.

**Table 5 Summary of Asbestos Results**

Sample ID	Sample Description	Location	Asbestos Content	Historic Results	Quantity <sup>1</sup>	Condition <sup>2</sup>	Accessibility <sup>3</sup>	Friability <sup>4</sup>	Action Level <sup>5</sup> (Urgency Level <sup>6</sup> )	Comments	Photo
<b>2019 DSHMS</b>											
614124-VT-01-A,B	White vinyl floor tiles	Kitchen	ND	-	-	-	-	-	-	Resample of 12287-061-1- A,B,C	-
614124-VT-02-A,B,C	Grey and white vinyl floor tiles	Second floor washroom	ND	-	-	-	-	-	-	Resample of 12287-061-4- A,B,C	-
614124-PC-01-A,B,C	Parging cement	Basement rock walls	ND	-	-	-	-	-	-	-	-
614124-PC-02-A,B,C	Parging cement	Exterior foundation	ND	-	-	-	-	-	-	-	-
614124-CK-01-A,B,C	Beige caulking	Exterior window foundation	ND	-	-	-	-	-	-	-	-
614124-CK-02-A,B,C	Grey caulking	Exterior foundation window pane	ND	-	-	-	-	-	-	-	-
<b>Presumed</b>	<b>Roofing materials</b>	<b>Roof</b>	<b>Presumed</b>	-	<b>100 m<sup>2</sup></b>	<b>Good</b>	<b>C (exposed)</b>	<b>Non-Friable</b>	<b>Action 4 or 6</b>	<b>Routine surveillance or Type 1 abatement if required.</b>	<b>Photo 1</b>
<b>2009 DSS</b>											
12287-061-1-A,B,C	Vinyl floor tiles, white with brown squares	Kitchen	ND	ND	-	-	-	-	-	-	-
12287-061-2-A,B,C	Vinyl floor tiles, beige with brown stripes	Family room (Computer room)	Abated	ND	-	-	-	-	-	-	-
12287-061-3-A,B,C	Vinyl floor tiles, with flower design	Hallway between family room (computer room) and washroom	-	ND	-	-	-	-	-	-	-
12287-061-4-A,B,C	Vinyl floor tiles, grey with white stripes	Washroom	-	ND	-	-	-	-	-	-	-



**SURVEY FINDINGS**

Sample ID	Sample Description	Location	Asbestos Content	Historic Results	Quantity <sup>1</sup>	Condition <sup>2</sup>	Accessibility <sup>3</sup>	Friability <sup>4</sup>	Action Level <sup>5</sup> (Urgency Level <sup>6</sup> )	Comments	Photo
12287-061-5-A,B,C	Plaster and cement parging (composite)	Throughout the building	-	0.5% Chrysotile	200 m <sup>2</sup>	Good	A, C (exposed)	Non-Friable	Action 4 or 6	Routine surveillance or Type 3 abatement if required.	Photo 2
12287-061-6-A,B,C	Texture coat (composite)	Living room (main office/reception) walls	-	ND	-	-	-	-	-	Plaster lath beneath the texture coat is ACM.	-
12287-061-7-A,B,C	Texture coat (composite) Rough design	Family room (computer room) and hallway ceiling	-	ND	-	-	-	-	-	Plaster lath beneath the texture coat is ACM.	-
12287-061-8-A,B,C	Texture coat (composite) Smooth design	Throughout second floor ceiling	-	ND	-	-	-	-	-	Plaster lath beneath the texture coat is ACM.	-



**SURVEY FINDINGS**

Sample ID	Sample Description	Location	Asbestos Content	Historic Results	Quantity <sup>1</sup>	Condition <sup>2</sup>	Accessibility <sup>3</sup>	Friability <sup>4</sup>	Action Level <sup>5</sup> (Urgency Level <sup>6</sup> )	Comments	Photo
<p><b>Notes:</b></p> <p><b>ND</b> Asbestos not detected.</p> <p><b>Bold</b> Asbestos containing material with a concentration equal to or greater than 0.5% asbestos.</p> <ol style="list-style-type: none"> <li>Quantity is provided for only materials found or suspected to be asbestos-containing.</li> <li>Condition is ranked as Good, Fair, or Poor in accordance with PCA Asbestos Management Guide – 2014.</li> <li>Accessibility is rated (for friable, asbestos-containing samples only) as discussed in Section 4.3.3: <ul style="list-style-type: none"> <li>A - Areas of the building within reach (from floor level) of all building users;</li> <li>B - Frequently entered maintenance areas within reach of maintenance staff, without the need of a ladder;</li> <li>C (exposed) - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos-containing material;</li> <li>C (concealed) - Areas of the building that require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems;</li> <li>D - Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment etc. where demolition of the ceiling, wall or equipment, etc. is required to reach the asbestos containing material.</li> </ul> </li> <li>Friability is assessed as friable or non-friable.</li> <li>Action Level is ranked based on PCA Asbestos Management Guide – 2014 as discussed in Section 4.3.3: <ul style="list-style-type: none"> <li>ACTION 1 Immediate clean-up of debris that is likely to be disturbed;</li> <li>ACTION 2 Limit/Restrict entry into areas where ACM is present and likely to be disturbed by access, or where ACM debris is present, until ACM or ACM debris is removed;</li> <li>ACTION 3 ACM removal;</li> <li>ACTION 4 Optional ACM removal (cost/benefit analysis);</li> <li>ACTION 5 ACM repair (Arrange for repair ACM found in FAIR condition, and not likely to be damaged again or disturbed by normal use of the area or room. Upon completion of the repair work, treat ACM as material in GOOD condition and implement ACTION 6. If ACM is likely to be damaged or disturbed, during normal use of the area or room, implement ACTION 4); and</li> <li>ACTION 6 Routine surveillance.</li> </ul> </li> <li>Urgency Level: Identified for ACMs in poor condition only. Additional information provided in Section 6.0 for each material. <ul style="list-style-type: none"> <li>(High): Immediate repairs required.</li> <li>(Moderate): Repairs required.</li> </ul> </li> </ol>											

**Table 6 Summary of Suspect Lead-Based Paint Results**

Sample Number	Description	Location	Concentration Lead, Parts per million (ppm)	Historic Results (ppm)	Approximate Quantity (square metres)	Condition	Action Level (Urgency Level)	Photo
<b>2019 DSHMS</b>								
614124-P-01	White paint	Porch	720	-	10	Poor	Remove chipped or flaking paint and paint over damaged areas. (Moderate)	Photo 5
<b>2015 DSS</b>								
P-1	Orange/beige paint	Kitchen	-	3,120	-	Unknown (replaced)	None	-
P-2	White paint	Kitchen	-	< 10	-	-	-	-
P-3	Cream paint	Kitchen	-	123	-	Unknown (replaced)	None	-
P-4	Green paint	Kitchen door. Visually similar paint on west door and exterior window frames.	-	364	-	Poor	Remove chipped or flaking paint and paint over damaged areas. (Moderate)	Photo 3
P-5	White paint	Living room/dining (main office/reception and board room)	-	13	-	-	-	-
P-6	Brown and beige paint (two layers)	Basement door frame	-	151,000	4	Good (repainted)	None	-
P-7	Turquoise/blue paint	Basement stair walls	-	111,000	4	Good	None	-
P-8	White paint	Basement rock walls	-	552	30	Good	None	Photo 4
P-9	Blue/grey paint	Basement	-	15	-	-	-	-
P-10	Sky blue paint	Bedroom N (Office N) trim	-	171	5	Good (repainted)	None	-

Sample Number	Description	Location	Concentration Lead, Parts per million (ppm)	Historic Results (ppm)	Approximate Quantity (square metres)	Condition	Action Level (Urgency Level)	Photo
P-11	Baby blue paint	Bedroom N (Office N)	-	53	-	-	-	-
P-12	Beige/pink paint	Bedroom N (Office N) closet door	-	160	2	Good (repainted)	None	-
P-13	Beige paint	Bedroom SW (Office SW) ceiling and trim	-	1,960	11	Good (repainted)	None	-
P-14	Brown/dark beige paint	Bedroom SW (Office SW) ceiling	-	1,060	12	Good (repainted)	None	-
P-15	Cream paint	Bedroom SW (Office SW) door	-	165,000	4	Good (repainted)	None	-
P-16	Light green/grey paint	Bedroom SW (Office SW) walls	-	313	30	Good (repainted)	None	-
P-17	Purple paint	Bedroom SW (Office SW)	-	81	-	-	-	-
P-18	Brown/green paint	Bedroom SW (Office SW) closet walls	-	2,900	3	Good (repainted)	None	-
P-19	Beige paint	Family room (computer room)	-	30	-	-	-	-
P-29	Grey paint	Porch	-	87	-	-	-	-
<p><b>Notes:</b></p> <p><b>Bold</b> Lead-based paint with a concentration equal to or greater than 90 ppm.</p> <p>Urgency Level: Identified for lead-based paint in poor condition only. Additional information provided in Section 6.0 for each material.</p> <p>(High): Immediate repairs required.</p> <p>(Moderate): Repairs required.</p> <p>-: Not applicable</p>								

Table A-1 provides a summary of the results of the asbestos analysis and presumed ACM for the subject building. Table A-2 provides a summary of the paint samples analysed for lead in the surveyed areas within the subject building. Table A-3 provides a summary of mercury and PCB-containing equipment observed within the subject building. Tables A-1 to A-3 are presented in Appendix A.

Figure 1 identifies the sample collection locations for both ACM and lead-based paint on the first floor of the subject building. Figure 2 identifies the sample collection locations for ACM on the second floor of the subject building. Figure 3 identifies the sample collection locations for ACM in the basement of the subject building. Figure 4 identifies the location of the confirmed designated substances on the first floor. Figure 5 identifies the location of the confirmed designated substances on the second floor. Figure 6 identifies the location of the confirmed designated substances in the basement.

Laboratory certificates of analysis from the laboratory are provided in Appendix B. Select photographs showing the designated substance locations within the building are presented in Appendix C and identified on Tables 5 and 6, above.

## **6. DISCUSSION AND RECOMMENDATIONS**

Asbestos-containing materials were historically confirmed and lead-based paint was confirmed in select samples collected from the building. Building materials or equipment suspected to contain mercury, halocarbons, and silica were observed at the subject building. Chemical storage consisted of fire extinguishers. Furnace oil was stored in an AST located in the basement, used for heating purposes. Based on the conditions observed, building materials containing designated substances or potentially hazardous materials can remain in place provided they are managed accordingly and not damaged or disturbed.

Prior to any demolition or renovation activities, PCA, and their selected contractors must ensure that the materials are properly handled and disposed of in accordance with the PCA Asbestos Management Guide as applicable, OHSA and associated regulations, as summarized below.

### ***Asbestos-Containing Materials***

At the time of the Designated Substances Survey conducted in 2009, eight types of materials were submitted for laboratory analysis. The plaster and cement parging (composite) was confirmed to be ACM. In this survey (2019), six types of materials were submitted for laboratory analysis of asbestos, none of the samples analyzed were ACM. It should be noted that roofing materials were not collected due to the height and safety precautions, however some roofing materials are known to have been manufactured with asbestos and therefore these materials are presumed to be ACM.

Airborne asbestos fibres can be generated through such processes as drilling, grinding, cutting, and abrading non-friable asbestos-containing material, or by crumbling or deteriorating friable asbestos-containing materials. Precautions must be taken to prevent asbestos-containing particles from becoming airborne during the application of such processes. All handling and removal of asbestos should be conducted as specified in O. Reg. 278/05 (amended to O. Reg. 493/09) and PCA Guide.

The type of repair and/or removal procedures to be conducted is defined on a case-by-case basis. The ACM plaster and cement parging (historically confirmed ACM) in good condition is not a concern in its present condition if left undisturbed. Routine surveillance is recommended and use Type 2 procedures if <math>1\text{m}^2</math> abatement is required and Type 3 procedures if >  $1\text{m}^2$  abatement is required (Action 4 or 6). Prior to disturbance, it is recommended to sample all roofing material layers to confirm ACM or undertake Type 1 abatement if required. All ACM materials should remain undisturbed by building occupants.

Any suspect material encountered should be treated as asbestos-containing unless otherwise indicated by sampling and analytical testing. If additional asbestos materials (currently hidden or inaccessible) are identified as future renovation or demolition work proceeds, these materials should be examined, tested, and handled appropriately. Any asbestos removal should be completed by a trained abatement contractor.

### ***Lead***

In 2015, twenty paint samples were collected and submitted for lead analysis. Thirteen of the samples were more than 90 ppm therefore the paints are considered lead-based.

The paints were generally observed to be in good to fair conditions with the exception of the beige paint and brown paint in the bedroom SW (office SW) which was observed to be in poor condition. During this survey (2019), one white paint sample was collected and submitted for lead analysis and was found to have a lead concentration of 720 parts per million (ppm). At the time of the survey, most of the lead-based paints identified in 2015 with the exception of green paint from the kitchen door, turquoise paint from the basement stairwell walls were observed to be repainted. The kitchen cabinets had been replaced. Therefore, all the lead-based paints were observed to be in good condition with an exception of the green paint (historical sample) on the door frame in the kitchen and west entrance door and frame, and white lead-based paint on the west porch which were observed to be in poor condition and had locations of flaking or peeling paint. Based on the location of the exterior porch paint and the small quantity on the interior door frame, the urgency level for repair is considered moderate.

If lead-containing paints are not flaking, they may be painted over to reduce further deterioration. Flaking paints should be cleaned up or removed to limit the potential for the spread of lead dust, including the use of a drop-sheet and a HEPA filter equipped vacuum. This should be done following, at minimum, Type 1 procedures as outlined in the MOL guideline “*Lead on Construction Projects*” dated April 2011. Lead based paints should not be disturbed by sanding, heat gun removal etc. as this leads to airborne lead. If paint is to be disturbed, the MOL guideline “*Lead on Construction Projects*” dated April 2011, outlines a classification system and control measures to limit worker exposure and should be consulted. In particular, if flaking paints are to be removed by scraping or sanding using non-powered hand tools, the use of a half-mask particulate respirator with N-, R-, or P-series filter and 95, 99, or 100% efficiency is recommended.

During any demolition or renovation activities, lead based paints should be managed in accordance with O. Reg. 490/09 and the MOL guideline “*Lead on Construction Projects*” dated April 2011. Any suspect lead-based paint encountered should be treated as such unless otherwise indicated by sampling and analytical testing. If additional lead-based paint (currently hidden or inaccessible) is identified, these materials should be examined, tested, and handled appropriately.

Given the age of the building, it is possible that some of the plumbing might contain lead-based solder and/or lead-based pipe. Disturbance of lead-based materials should be managed to ensure lead dust is not generated during any demolition or renovation activities. During any demolition or renovation activities, these materials should be managed in accordance with O. Reg. 490/09. If the materials are not to be recycled, the materials should be disposed of in accordance with O. Reg. 347 as amended.

### **Halocarbons**

Based on observations made during the site visit, equipment potentially containing halocarbons identified at the subject building was limited to a refrigerator. Removal or disposal of any refrigeration equipment and/or refrigerant containers is regulated under the Federal Halocarbons Regulation, 2003 and should only be undertaken by qualified licensed individuals.

**Mercury**

Small quantities of mercury are likely present within the fluorescent lighting observed throughout the building. No samples were collected or submitted for laboratory analysis. There is no occupational or environmental concern associated with the small amount of mercury that might be present in the light fixtures. Prior to any demolition or renovations to the building, the fluorescent lights that may be disturbed must be handled and if necessary, disposed of in accordance with O. Reg. 490/09 (as amended).

**Silica**

Concrete and mortar-based building materials were observed at the building and are likely to contain silica. Exposure to airborne silica is regulated under O. Reg. 490/09 (as amended). Airborne silica can be generated through such processes as drilling, grinding, cutting, and abrading silica-containing material. Precautions must be taken to prevent silica-containing particles from becoming airborne during the application of such processes. Such precautions include wetting of silica-containing area(s) to be disturbed and daily wet sweeping or HEPA vacuuming of silica dust. Additionally, appropriate respiratory protection, personal protective clothing, hand and face washing, and ventilation must be utilized during disturbance of silica-containing structures.

**Fuel, Oil, and Waste Oil Storage (Containing Benzene)**

A 900-L furnace oil AST was located in the basement. Furnace oil is benzene-containing. All fuels and oils should be stored in accordance with the Storage Tank Systems for Petroleum Products and Allied Petroleum Products (SOR/2008-197) requirements.



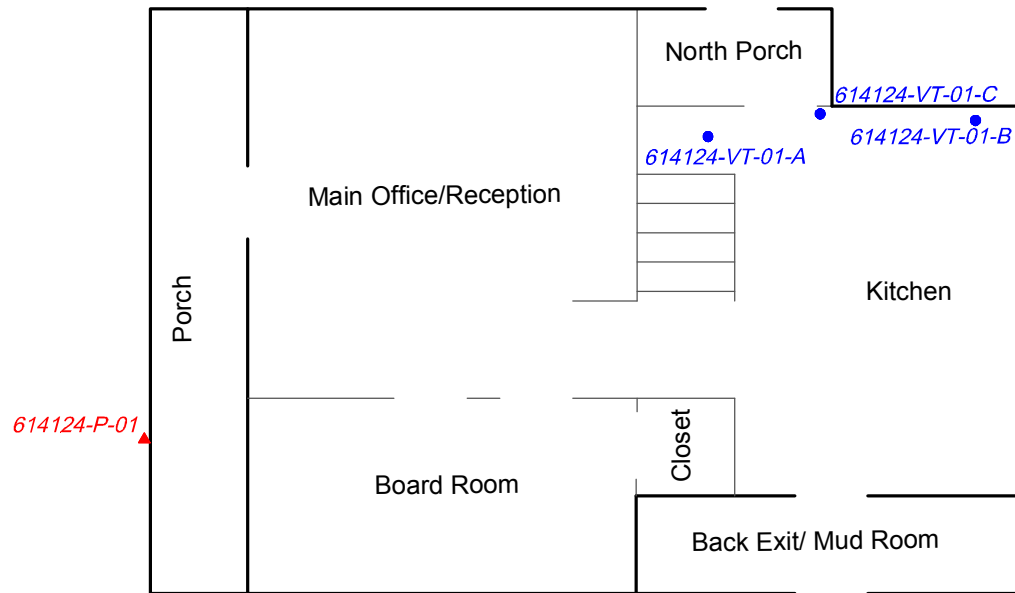
**7. LIMITATIONS**

Limited sampling of building materials and paints was undertaken as part of this investigation. As such, detailed investigations or testing in subsequent studies may encounter conditions not apparent at this time or at other locations. While every attempt was made to ensure that samples collected were representative of the general sampling area, it is possible that conditions outside specific sampling locations may differ. Therefore, users of this report are advised to observe conditions prior to conducting any demolition or renovation activities. COLE Engineering & XCG Consulting Joint Venture cannot be held responsible for conditions that were not apparent from documentation supplied to COLE Engineering & XCG Consulting Joint Venture.

The conclusions presented in this report are professional opinions based on visual observations, limited information provided by persons familiar with the subject building and analytical results. As such, COLE Engineering & XCG Consulting Joint Venture cannot be held responsible for environmental conditions at the building that were not apparent from the available information.

The scope of this work is limited to the matters expressly covered. This report is prepared for the sole benefit of the current owner and the current owner's authorized contractors, and should not be relied upon by any other person or entity. The scope of services performed in the execution of this investigation may not be appropriate to satisfy the needs of other users, and any use or reuse of this document or the findings and conclusions represented herein is at the sole risk of the said users.

**8. FIGURES**



- NON-ASBESTOS CONTAINING SAMPLES
- CONFIRMED ASBESTOS CONTAINING SAMPLES
- ▲ PAINT SAMPLES NOT EXCEEDING LEAD STANDARDS
- ▲ CONFIRMED LEAD CONTAINING PAINT SAMPLES



NOT TO SCALE

SAMPLING LOCATIONS  
FIRST FLOOR

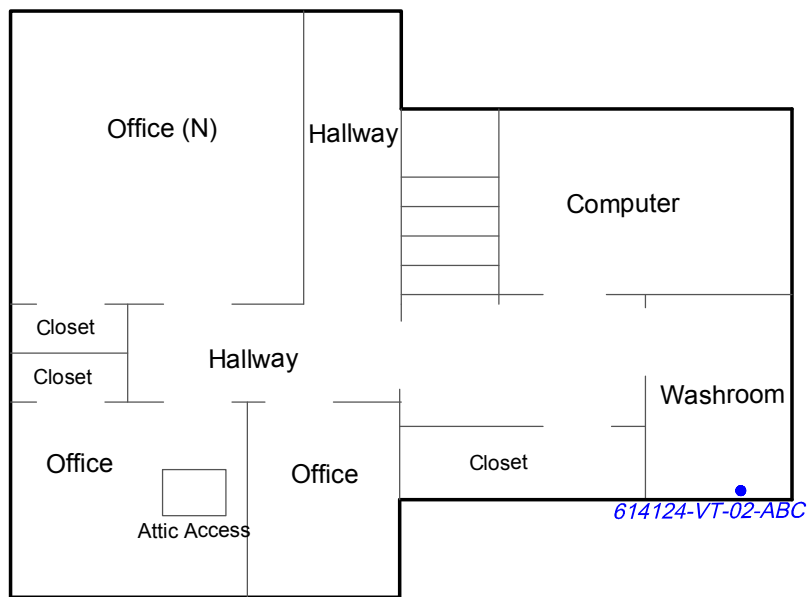
PIN 614124  
10725 REESOR ROAD  
MARKHAM, ONTARIO



DATE	JOB NO.	FIGURE NO.
MAR. 2019	2018-0565	1

DRAWING REFERENCE: Figure based on York Region online mapping and COLE field notes.  
NOTE: Location of building, underground utilities, etc. are for reference only and should not be relied upon for detailed design, renovation, or construction purposes. Property boundary and building locations shown may not represent actual surveyed boundaries.

SHEET: DSS53620001023FIG01.pdf  
FILE: 614124-10725 Reesor Road.dwg



- NON-ASBESTOS CONTAINING SAMPLES
- CONFIRMED ASBESTOS CONTAINING SAMPLES
- ▲ PAINT SAMPLES NOT EXCEEDING LEAD STANDARDS
- ▲ CONFIRMED LEAD CONTAINING PAINT SAMPLES



NOT TO SCALE

SAMPLING LOCATIONS  
SECOND FLOOR

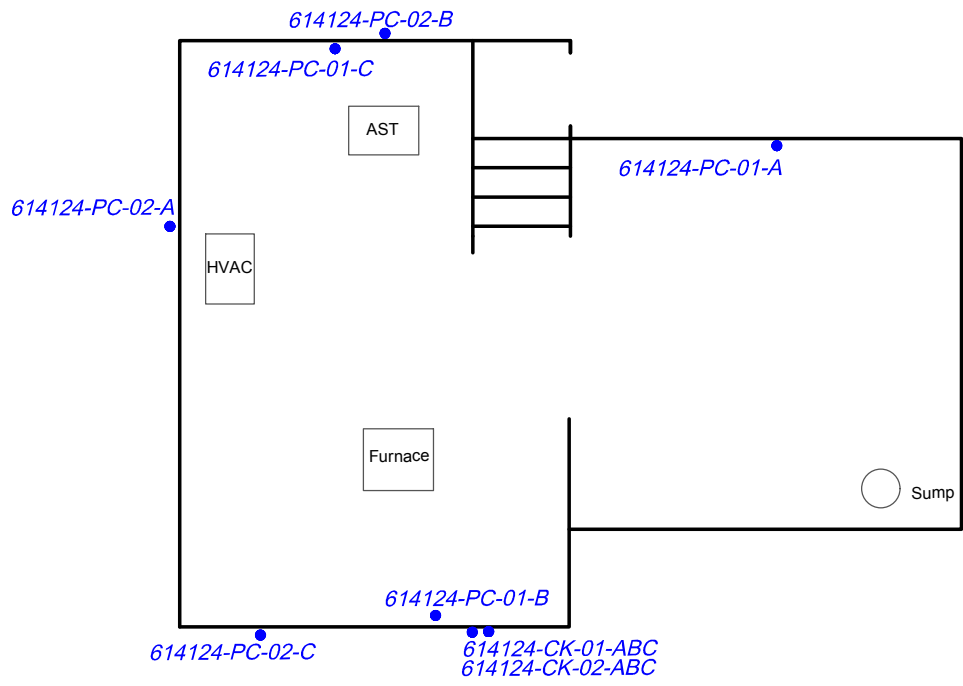
PIN 614124  
10725 REESOR ROAD  
MARKHAM, ONTARIO



DATE	JOB NO.	FIGURE NO.
MAR. 2019	2018-0565	2

DRAWING REFERENCE: Figure based on York Region online mapping and COLE field notes.  
NOTE: Location of building, underground utilities, etc. are for reference only and should not be relied upon for detailed design, renovation, or construction purposes. Property boundary and building locations shown may not represent actual surveyed boundaries.

SHEET: DSS33620001023FIG01.pdf  
FILE: 614124-10725 Reesor Road.dwg



- NON-ASBESTOS CONTAINING SAMPLES
- CONFIRMED ASBESTOS CONTAINING SAMPLES
- ▲ PAINT SAMPLES NOT EXCEEDING LEAD STANDARDS
- ▲ CONFIRMED LEAD CONTAINING PAINT SAMPLES



NOT TO SCALE

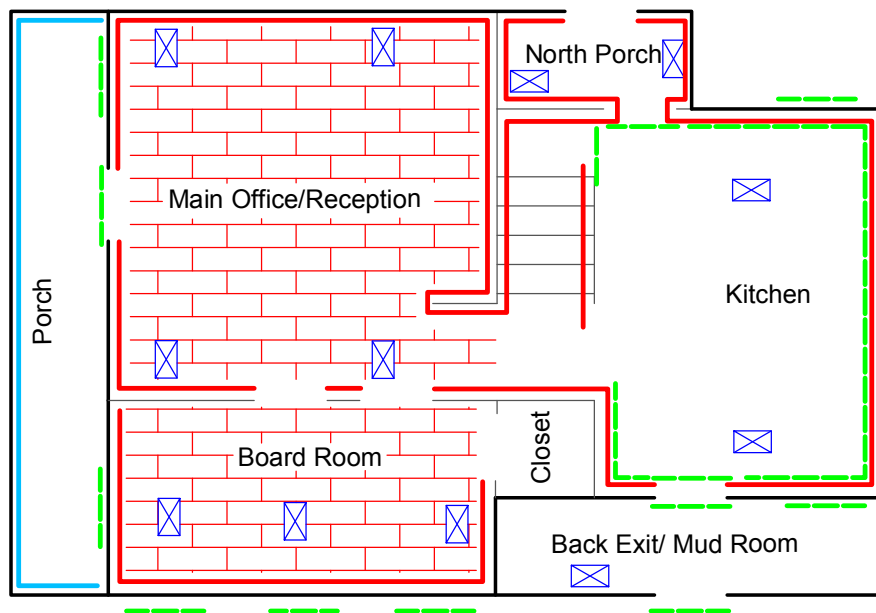
SAMPLING LOCATIONS  
BASEMENT






PIN 614124  
10725 REESOR ROAD  
MARKHAM, ONTARIO



DATE	JOB NO.	FIGURE NO.
MAR. 2019	2018-0565	3

DRAWING REFERENCE: Figure based on York Region online mapping and COLE field notes.  
NOTE: Location of building, underground utilities, etc. are for reference only and should not be relied upon for detailed design, renovation, or construction purposes. Property boundary and building locations shown may not represent actual surveyed boundaries.



-  CONFIRMED LEAD BASED PAINT ON RAILS
-  CONFIRMED LEAD BASED PAINT ON WINDOWS, DOORS, WAINSCOTING AND TRIM (HISTORICAL SAMPLE)
-  FLUORESCENT LIGHT AND BALLAST
-  CONFIRMED ACM PLASTER LATH WALLS (HISTORICAL SAMPLE)
-  CONFIRMED ACM PLASTER LATH CEILINGS (HISTORICAL SAMPLE)



NOT TO SCALE

DSS LOCATIONS  
FIRST FLOOR

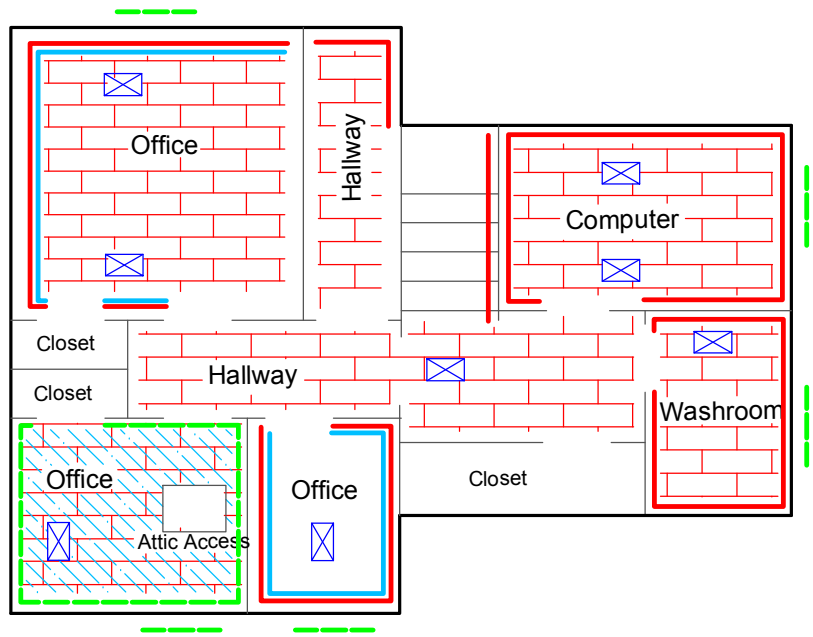
PIN 614124  
10725 REESOR ROAD  
MARKHAM, ONTARIO









DATE	JOB NO.	FIGURE NO.
MAR, 2019	2018-0565	4

DRAWING REFERENCE: Figure based on York Region online mapping and COLE field notes.  
NOTE: Location of building, underground utilities, etc. are for reference only and should not be relied upon for detailed design, renovation, or construction purposes. Property boundary and building locations shown may not represent actual surveyed boundaries.

SHEET: DSS533620001023FIG01.pdf  
FILE: 614124-10725 Reesor Road.dwg



-  CONFIRMED LEAD-BASED PAINT ON WALLS (HISTORICAL SAMPLE)
-  CONFIRMED LEAD BASED PAINT ON TRIMS, DOORS, AND WINDOWS (HISTORICAL SAMPLE)
-  CONFIRMED LEAD BASED PAINT ON CEILING (HISTORICAL SAMPLE)
-  FLUORESCENT LIGHT AND BALLAST
-  CONFIRMED ACM PLASTER LATH WALLS (HISTORICAL SAMPLE)
-  CONFIRMED ACM PLASTER LATH CEILING (HISTORICAL SAMPLE)



NOT TO SCALE

DSS LOCATIONS  
SECOND FLOOR

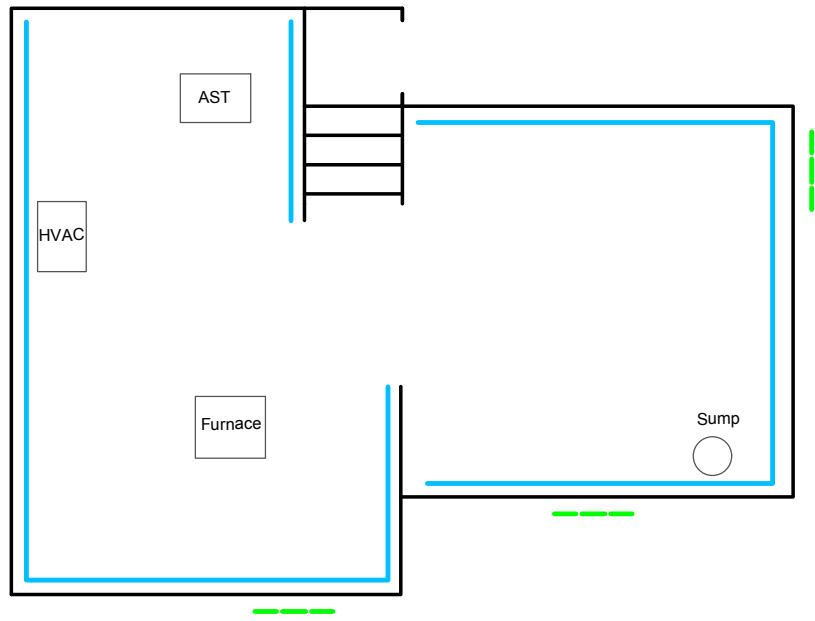
PIN 614124  
10725 REESOR ROAD  
MARKHAM, ONTARIO



DATE	JOB NO.	FIGURE NO.
MAR. 2019	2018-0565	5

DRAWING REFERENCE: Figure based on York Region online mapping and COLE field notes.  
NOTE: Location of building, underground utilities, etc. are for reference only and should not be relied upon for detailed design, renovation, or construction purposes. Property boundary and building locations shown may not represent actual surveyed boundaries.

SHEET: DSS533620001023FIG01.pdf  
FILE: 614124-10725 Reesor Road.dwg



- - - - - CONFIRMED LEAD BASED PAINT ON WINDOWS (HISTORICAL SAMPLE)
- \_ \_ \_ \_ \_ CONFIRMED LEAD-BASED PAINT ON WALLS (HISTORICAL SAMPLE)



NOT TO SCALE

DSS LOCATIONS  
BASEMENT

PIN 614124  
10725 REESOR ROAD  
MARKHAM, ONTARIO



DATE	JOB NO.	FIGURE NO.
MAR. 2019	2018-0565	6

DRAWING REFERENCE: Figure based on York Region online mapping and COLE field notes.  
NOTE: Location of building, underground utilities, etc. are for reference only and should not be relied upon for detailed design, renovation, or construction purposes. Property boundary and building locations shown may not represent actual surveyed boundaries.

SHEET: DSS533620001023FIG01.pdf  
FILE: 614124-10725 Reesor Road.dwg



***APPENDIX A***  
***TABLES***

# Asbestos Inventory - 10725 Reesor Road, Markham

Location Reference	Floor	Room	Specific Location	Material Description	Accessibility	Friability (Friable, Non-Friable)	Asbestos Type	% Present	Condition (Good, Fair, Poor, Abated, None)	Approximate Quantity	Sample I.D.	Date	Control Action (Urgency Level)	Comments
614124	Roof	Roof	Roof	Roofing materials	C (exposed)	Non-Friable	-	Presumed	Good	100 m <sup>2</sup>	Presumed	07-Feb-19	Action 4 or 6 – routine surveillance. Type 1 abatement if required.	
614124	Basement	Stairwell to basement. Similar material observed throughout the building ceilings and walls.	Walls	Plaster and cement parging (composite)	A, C (exposed)	Non-Friable	Chrysotile	0.5%	Good	200 m <sup>2</sup>	12287-061-5-A,B,C	26-Aug-15	Action 4 or 6 – routine surveillance. Type 3 abatement if required.	Similar material observed throughout the building ceilings and walls.

- Notes:
1. Asbestos disturbance, abatement, transportation, and disposal shall be performed in accordance with requirements of (O.Reg. 278/05, O.Reg. 347/90).
  2. All quantities, as provided, are approximations. Quantities, conditions, and locations of asbestos-containing materials are to be confirmed on-site by contractors prior to project bidding, removal or disturbance.
  3. The survey did not include an intrusive, destructive investigation for concealed materials in every room. As a result, materials that may be present behind or above solid building material finishes are not included as part of the above database, unless otherwise stated.
  4. '-' indicates 'not applicable'.
  5. Urgency levels identified for ACMs in poor condition only. High: Immediate repairs required. Moderate: Repairs required.

## Lead Paint Inventory - 10725 Ressor Road, Markham

Location Reference	Floor	Room	Specific Location	Material Description	Lead Content	Condition (Good, Fair, Poor, Abated, None)	Approximate Quantity	Sample I.D.	Date	Recommendation (Urgency Level)	Comments
614124	Exterior	Porch	Rail	White paint	720	Poor	10 m <sup>2</sup>	614124-P-01	07-Feb-19	Remove chipped or flaking paint and paint over damaged areas. (Moderate)	-
614124	First	Kitchen	Door frame, doors, wainscoting	Orange/beige paint	3,120	Unknown (door frame, doors and wainscoting repainted)	Unknown	P-1	26-Aug-15	None	Historical Sample
614124	First	Kitchen	Front door	Green paint	364	Poor	-	P-4	26-Aug-15	Remove chipped or flaking paint and paint over damaged areas. (Moderate)	Historical Sample
614124	Basement	Basement	Door frame	Brown and beige paint (two layers)	151,000	Good (repainted)	Unknown	P-6	26-Aug-15	None	Historical Sample
614124	Basement	Basement	Wall	Turquoise/blue paint	111,000	Good	4 m <sup>2</sup>	P-7	26-Aug-15	None	Historical Sample
614124	Basement	Basement	Wall	White paint	552	Good	30 m <sup>2</sup>	P-8	26-Aug-15	None	Historical Sample
614124	Second	Bedroom / Office N	Trim	Sky blue paint	171	Good (repainted)	Unknown	P-10	26-Aug-15	None	Historical Sample
614124	Second	Bedroom / Office N	Inside of closet door	Beige/pink paint	160	Good (repainted)	Unknown	P-12	26-Aug-15	None	Historical Sample
614124	Second	Bedroom / Office SW	Ceiling, trim	Beige paint	1,960	Good (repainted)	Unknown	P-13	26-Aug-15	None	Historical Sample
614124	Second	Bedroom / Office SW	Ceiling	Brown/dark beige paint	1,060	Good (repainted)	Unknown	P-14	26-Aug-15	None	Historical Sample
614124	Second	Bedroom/ Office SW	Door	Cream paint	165,000	Good (repainted)	Unknown	P-15	26-Aug-15	None	Historical Sample
614124	Second	Bedroom/ Office SE	Wall	Light green/grey paint	313	Good (repainted)	Unknown	P-16	26-Aug-15	None	Historical Sample
614124	Second	Bedroom / Office SE closet	Wall	Brown/green paint	2,900	Good (repainted)	Unknown	P-18	26-Aug-15	None	Historical Sample

**Notes:**

1. Lead disturbance, abatement, transportation and disposal shall be performed in accordance with requirements of O. Reg. 490/09, as amended, O. Reg. 347, as amended, and the Ontario Ministry of Labour "Guideline – Lead on Construction Projects," dated April 2011.
2. All quantities, as provided, are approximations. Quantities, conditions, and locations of lead-based materials are to be confirmed on-site by contractors prior to project bidding, removal or disturbance.
3. The survey did not include an intrusive, destructive investigation for concealed materials in every room. As a result, materials that may be present behind or above solid building material finishes are not included as part of the above database, unless otherwise stated.
4. '-' indicates 'not applicable'.
5. Urgency levels identified for paints in poor condition only. High: Immediate repairs required. Moderate: Repairs required.

## Mercury/PCB Inventory - 10725 Ressor Road, Markham

Location Reference	Floor	Room	Specific Location	Material Description	Equipment Type	Approximate Quantity	Date	Control Action	Comments
614124	-	-	-	Mercury	Thermostat	-	Pre-2019	-	Historic Information, however, no mercury-containing thermostats observed in 2019. Digital thermostat observed.
614124	Throughout	Throughout	Ceiling	Mercury	Fluorescent light tubes	37	07-Feb-19	Handle and if necessary, disposed of in accordance with O. Reg. 490/09 (as amended).	-

**Notes:**

1. The survey did not include an intrusive, destructive investigation for concealed materials in every room. As a result, materials that may be present behind or above solid building material finishes are not included as part of the above database, unless otherwise stated.

- Not applicable



**APPENDIX B**  
**LABORATORY CERTIFICATES OF ANALYSIS**



# 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 ~~55~~1901604  
 Customer ID: 55XCGC34  
 Customer PO: 614124  
 Project ID: RNUP

**Attn:** Rhona Scott  
 XCG Consulting Limited  
 820 Trillium Dr.  
 Kitchener, ON N2R 1K4

**Phone:** (519) 741-5774  
**Fax:** (519) 741-5627  
**Collected:** 2/ 7/2019  
**Received:** 2/11/2019  
**Analyzed:** 2/19/2019

**Proj:** 5-336-200-01-614124 (RNUP)

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

**Client Sample ID:** 614124-VT-1A **Lab Sample ID:** 551901604-0001

**Sample Description:** VT - White (under new VT & plywood)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	2/19/2019	White	0.0%	100.0%	None Detected	

**Client Sample ID:** 614124-VT-1B **Lab Sample ID:** 551901604-0002

**Sample Description:** VT - White (under new VT & plywood)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	2/19/2019	White	0.0%	100.0%	None Detected	

**Client Sample ID:** 614124-VT-2A **Lab Sample ID:** 551901604-0003

**Sample Description:** VT - Grey & white (under new tile & plywood)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	2/19/2019	Gray	0.0%	100.0%	None Detected	

**Client Sample ID:** 614124-VT-2B **Lab Sample ID:** 551901604-0004

**Sample Description:** VT - Grey & white (under new tile & plywood)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	2/19/2019	Gray	0.0%	100.0%	None Detected	

**Client Sample ID:** 614124-VT-2C **Lab Sample ID:** 551901604-0005

**Sample Description:** VT - Grey & white (under new tile & plywood)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
TEM Grav. Reduction	2/19/2019	Gray	0.0%	100.0%	None Detected	

**Client Sample ID:** 614124-PC-1A **Lab Sample ID:** 551901604-0006

**Sample Description:** Parge Cement - Basement rock walls

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	2/19/2019	Gray	0.0%	100.0%	None Detected	

**Client Sample ID:** 614124-PC-1B **Lab Sample ID:** 551901604-0007

**Sample Description:** Parge Cement - Basement rock walls

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	2/19/2019	Gray	0.0%	100.0%	None Detected	



# EMSL Canada Inc.

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<http://www.EMSL.com> / [torontolab@emsl.com](mailto:torontolab@emsl.com)

EMSL Canada Order ~~55~~1901604  
 Customer ID: 55XCGC34  
 Customer PO: 614124  
 Project ID: RNUP

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

**Client Sample ID:** 614124-PC-1C **Lab Sample ID:** 551901604-0008

**Sample Description:** Parge Cement - Basement rock walls

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	2/19/2019	Gray	0.0%	100.0%	None Detected	

**Client Sample ID:** 614124-PC-2A **Lab Sample ID:** 551901604-0009

**Sample Description:** Parge Cement - Exterior foundation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	2/19/2019	Gray	0.0%	100.0%	None Detected	

**Client Sample ID:** 614124-PC-2B **Lab Sample ID:** 551901604-0010

**Sample Description:** Parge Cement - Exterior foundation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	2/19/2019	Gray	0.0%	100.0%	None Detected	

**Client Sample ID:** 614124-PC-2C **Lab Sample ID:** 551901604-0011

**Sample Description:** Parge Cement - Exterior foundation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	2/19/2019	Gray	0.0%	100.0%	None Detected	

**Client Sample ID:** 614124-CK-1A **Lab Sample ID:** 551901604-0012

**Sample Description:** Caulking beige - exterior window foundation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	2/19/2019	Gray	0.0%	100.0%	None Detected	

**Client Sample ID:** 614124-CK-1B **Lab Sample ID:** 551901604-0013

**Sample Description:** Caulking beige - exterior window foundation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	2/19/2019	Gray	0.0%	100.0%	None Detected	

**Client Sample ID:** 614124-CK-1C **Lab Sample ID:** 551901604-0014

**Sample Description:** Caulking beige - exterior window foundation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	2/19/2019	Gray	0.0%	100.0%	None Detected	

**Client Sample ID:** 614124-CK-2A **Lab Sample ID:** 551901604-0015

**Sample Description:** Caulking grey - exterior foundation window pane

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	2/19/2019	Gray	0.0%	100.0%	None Detected	



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<http://www.EMSL.com> / [torontolab@emsl.com](mailto:torontolab@emsl.com)

EMSL Canada Order **551901604**  
Customer ID: 55XCGC34  
Customer PO: 614124  
Project ID: RNUP

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

**Client Sample ID:** 614124-CK-2B

**Lab Sample ID:** 551901604-0016

**Sample Description:** Caulking grey - exterior foundation window pane

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	2/19/2019	Gray	0.0%	100.0%	None Detected	

**Client Sample ID:** 614124-CK-2C

**Lab Sample ID:** 551901604-0017

**Sample Description:** Caulking grey - exterior foundation window pane

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	2/19/2019	Gray	0.0%	100.0%	None Detected	

### Analyst(s):

Anne Balayboa TEM Grav. Reduction (5)  
 Harman Sohi PLM (10)  
 Michelle Lung PLM (2)

### Reviewed and approved by:

Matthew Davis or other approved signatory  
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. 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: 02/19/2019 16:27:31





**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	551901589
CustomerID:	55XCGC34
CustomerPO:	RNUP
ProjectID:	RNUP

Attn: <b>Rhona Scott</b> <b>XCG Consulting Limited</b> <b>820 Trillium Dr.</b> <b>Kitchener, ON N2R 1K4</b>	Phone: (519) 741-5774 Fax: (519) 741-5627 Received: 02/12/19 9:00 AM Collected: 2/7/2019
Project: 5-336-200-01-614124	

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

<i>Client SampleDescription</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>RDL</i>	<i>Lead Concentration</i>
614124-P-1	2/7/2019	2/13/2019	0.2433 g	82 ppm	720 ppm
551901589-0001	Site: White Paint Exterior Porch Rail				

Rowena Fanto, Lead Supervisor  
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 unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Cert #2845.08; AIHA-LAP, LLC - ELLAP #196142

Initial report from 02/19/2019 08:01:22

**APPENDIX C**  
**SITE PHOTOGRAPHS**



**Photo 1: View of the exterior of the residential dwelling.**



**Photo 2: View of the asbestos-containing plaster walls and ceiling throughout the subject dwelling.**



**Photo 3: View of the green lead-based paint on the west door frame of the subject dwelling.**



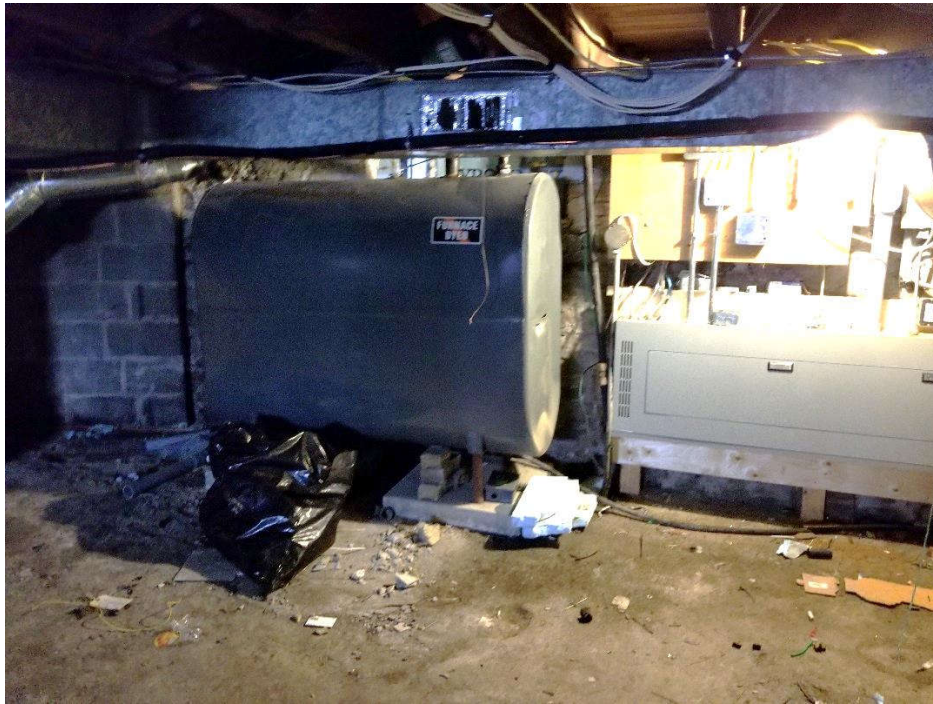
**Photo 4: View of the white lead-based paint on the wall in the basement of the subject dwelling.**



**Photo 5: View of the white lead-based paint in the porch of the subject dwelling.**



**Photo 6: View of suspect mercury-containing fluorescent light tubes on the ceiling throughout the subject dwelling.**



**Photo 7: View of the furnace oil AST located in the basement of the subject dwelling.**