LIMITED DESIGNATED SUBSTANCES AND HAZARDOUS MATERIALS SURVEY

CFB Borden, A-150
21 Parade Avenue
Borden, Ontario

DCC Project Number: BN300075
Contract Number: KN71023

Prepared for:

Defence Construction Canada
Building P154, 16 Ramillies Road
Borden, Ontario
L0M 1C0

Melissa Gibson, DCC Coordinator, Environmental Services

DST File No.: GV-OT-038848

DST Consulting Engineers Inc.
2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9
Tel.: (613) 748-1415 Fax: (613) 748-1356 E-mail: ottawa@dstgroup.com

Executive Summary

DST Consulting Engineers Inc., a division of Englobe (DST) was retained by Defence Construction Canada (DCC) on behalf of Department of National Defense (DND) to conduct a non-destructive Limited Designated Substances and Hazardous Materials Survey (DSHMS) at Building A-150 of CFB Borden, located at 21 Parade Avenue, Borden, Ontario.

In general, the objectives of the Limited DSHMS were to:

- Review, compile and summarize past/existing pertinent data for the building with respect to designated substances,
- Collect and analyze the required number of additional suspect Asbestos Containing-Material (ACM) samples to satisfy the requirements of Ontario Regulation (O.Reg.) 278/05 (as amended) where applicable, and *Canada Occupational Health and Safety Regulations (COHSR)*,
- Determine the extent of Designated Substances and Hazardous Materials for the building, and
- Collect sufficient information to subsequently enable DST to recommend appropriate mitigation measures to bring the building into compliance with applicable legislation and/or to mitigate risks to human health and/or the environment.

The Limited DSHMS scope of work included an assessment for the presence of the 11 Designated Substances, as identified in the Ontario Occupational Health and Safety Act, as well as Polychlorinated Biphenyls (PCBs), Ozone Depleting Substances (ODS) and other miscellaneous hazardous materials or chemicals (as deemed prudent).

DST conducted the site visit for Building A-150 on October 1, 2019.

Table I below summarizes the findings and recommendations for the Designated Substances and Hazardous Materials observed as part of the survey.

The Executive Summary should be read in conjunction with and is subject to the limitations outlined in Section 6.0 of this report. Refer to the Department of National Defence (DND) Database *CFB Borden Designated Substances Information System* for details regarding locations, accessibility, condition and action level for asbestos containing materials.

Action(s) provided for ACMs are based upon the Department of National Defence *Asbestos Condition Assessment and Response Chart*.

TABLE I: Summary of DSHMS Findings A-150						
Hazardous Material or Designated Material	**Description of Homogeneous Material**	**Sample Location**	**Estimated Quantity**	**Action Level**	**Abatement**	**Notes**
Asbestos	Friable Asbestos-Containing Materials (ACM):					
	Parging Cement, containing 60% Chrysotile Asbestos	Corridor 140	2 m^2	6	Type 2 as a minimum, Dispose of asbestos-containing waste in accordance with Regulation 347 of the Ontario Environmental Protection Act.	See Photograph 5, Appendix C. Maple Sample ID 12233-S-06A
	Non-Friable ACMs:					
	Exterior Grey Window Caulking, containing 2% Chrysotile Asbestos	Sampled on West Exterior Windows. Assumed to present on all windows.	46 m	6	Type 1, 2 or 3, Dispose of asbestos-containing waste in accordance with Regulation 347 of the Ontario Environmental Protection Act.	See Photograph 2, Appendix C. DST Sample ID A-150-03a-c
	Exterior White Caulking, containing 10% Chrysotile Asbestos	West Entrance Canopies	2 m	6	Type 1, 2 or 3, Dispose of asbestos-containing waste in accordance with Regulation 347 of the Ontario Environmental Protection Act.	See Photograph 1, Appendix C. DST Sample ID A-150-02a-c
	Drywall Joint Compound, containing 1.6% Chrysotile Asbestos	Sampled in room 206A, 207, 316, 307, Corridor 139, 138, 337. Observed throughout.	4556 m^2	6	Type 1, 2 or 3, Dispose of asbestos-containing waste in accordance with Regulation 347 of the Ontario Environmental Protection Act.	Maple Sample ID 12233-S-01a-g. Refer to database to all locations.
	Suspect Asbestos-Containing Materials:					
	Drainage pipe joint caulking is suspected of containing asbestos	Observed in corridor 238	N/A	6	Type 1 or 2, Dispose of asbestos-containing waste in accordance with Regulation 347 of the Ontario Environmental Protection Act.	

TABLE I: Summary of DSHMS Findings A-150						
Hazardous Material or Designated Material	**Description of Homogeneous Material**	**Sample Location**	**Estimated Quantity**	**Action Level**	**Abatement**	**Notes**
	Fire Door Lining	N/A. Observed door in room 110.	N/A	6	Type 1, 2 or 3, Dispose of asbestos-containing waste in accordance with Regulation 347 of the Ontario Environmental Protection Act.	
	Non-ACM Materials:					
	12" x 12" Vinyl Floor Tile, grey with dark brown and white flecks and mastic	Room 126, 224, 324	N/A	N/A	N/A	See Photograph 7, Appendix C. Maple Sample ID 12233-S-02a-c
	Baseboard Mastic	Corridor 138	N/A	N/A	N/A	DST Sample ID A-150-01a-c
	12" x 12" Vinyl Floor Tile, beige with grey streaks and mastic	Room 102	N/A	N/A	N/A	See Photograph 8, Appendix C. Maple Sample ID 12233-S-04a-c
	Exterior Brown Caulking	North Entrance Canopy	N/A	N/A	N/A	See Photograph 3, Appendix C. DST Sample ID A-150-04a-c
	Plaster	Room 124, 204, 207, 323, 304, 307, Corridor 140	N/A	N/A	N/A	Maple Sample ID 12233-S-05a-g
	Fireproofing	Corridor 138 (observed throughout)	N/A	N/A	N/A	See Photograph 4, Appendix C. DST Sample ID A-150-05a-c
	2' x 4' Ceiling Tile (pinhole & fissures)	N/A	N/A	N/A	N/A	See Photograph 6, recent manufacture date stamp
	Texture Coat	North and South Stairwells	N/A	N/A	N/A	Maple Sample ID 12233-S-07a-c
	Texture Coat	Room 126, 122, Corridor 238, 239, 338, 337, 338	N/A	N/A	N/A	Maple Sample ID 12233-S-03a-g

TABLE I: Summary of DSHMS Findings A-150						
Hazardous Material or Designated Material	**Description of Homogeneous Material**	**Sample Location**	**Estimated Quantity**	**Action Level**	**Abatement**	**Notes**
Lead	Three paints sampled contained more than 90 µg/g referencing the Surface Coating Regulations. Lead may be present within building construction materials (i.e. piping, solder, sheet metal, etc.) and building components (equipment, etc.).	Beige Paint, Room 131 (2,010 ppm), White Paint, Room 108 (4,520 ppm), Exterior White Paint (19,300 ppm)	N/A	N/A	If paint is to be disturbed, precautions should be taken by the contractor to protect workers against exposure to lead. The risk of exposure can be mitigated through the application of proper worker health and safety precautions (i.e. work and dust control procedures that reduce dust generation, utilization of PPE and implement a worker hygiene program). For additional details regarding the disturbance of lead, review the Ontario Ministry of Labour publication 'Guideline - Lead on Construction Projects', April 2011, and the EACO Lead Guideline to determine what measures and procedures should be implemented to protect workers from lead exposure.	
Mercury	No Mercury was detected at a concentration greater than the guideline limit of 10 µg/g in paint samples analyzed, Mercury is assumed to be present in fluorescent light tubes throughout the building.	N/A	N/A	N/A	When removal of the fluorescent light tubes is required, the tubes should be removed intact from the fixtures. This prevents worker exposure to mercury vapour, particularly if the tubes were energized shortly before removal. Other sources of	

TABLE I: Summary of DSHMS Findings A-150						
Hazardous Material or Designated Material	**Description of Homogeneous Material**	**Sample Location**	**Estimated Quantity**	**Action Level**	**Abatement**	**Notes**
					liquid mercury should be removed in a similar fashion (intact) to prevent worker exposure.	
Silica	Silica is the primary component of many construction materials, including: brick, concrete, cement and mortar.	N/A	N/A	N/A	If such construction materials are to be disturbed, precautions should be taken by the contractor to protect workers against exposure to silica. The risk of exposure can be mitigated through the application of proper worker health and safety precautions (i.e. work and dust control procedures that reduce dust generation, utilization of PPE and implement a worker hygiene program). For additional details regarding the disturbance of silica, refer to the Ontario Ministry of Labour publication 'Guideline - Silica on Construction Projects', April 2011.	
Arsenic	Arsenic was not detected in any of the five paint samples collected and analyzed.	N/A	N/A	N/A	N/A	

TABLE I: Summary of DSHMS Findings A-150						
Hazardous Material or Designated Material	**Description of Homogeneous Material**	**Sample Location**	**Estimated Quantity**	**Action Level**	**Abatement**	**Notes**
Chromium	Chromium was detected in three of the paint samples analyzed.	Beige Paint, Room 131 (72 ppm), White Paint, Room 108 (806 ppm), Exterior White Paint (9,430 ppm)	N/A	N/A	If paint is to be disturbed, precautions should be taken by the contractor to protect workers against exposure to chromium. The risk of exposure can be mitigated through the application of proper worker health and safety precautions (i.e. work and dust control procedures that reduce dust generation, utilization of PPE and implement a worker hygiene program). Disturbance of surface coatings with elevated chromium concentrations should follow similar procedures to those of lead as outlined within the Ontario Ministry of Labour Guideline: Lead on Construction Projects.	

TABLE I: Summary of DSHMS Findings A-150						
Hazardous Material or Designated Material	**Description of Homogeneous Material**	**Sample Location**	**Estimated Quantity**	**Action Level**	**Abatement**	**Notes**
PCBs	Fluorescent lighting ballasts were present, with T12 lighting tubes installed. PCB ballasts are suspected to be present with these tubes. Paints were not sampled for PCBs as no paints were collected from mechanical rooms as these paints were in good condition and sampling without matrix interreference would have been problematic.	N/A	N/A	N/A	Prior to disposal of fluorescent lighting ballasts, conduct an inspection program to examine all fluorescent lighting ballasts for PCB content. Ballasts which are identified as containing PCBs, or those that cannot be positively identified, should be segregated as PCB waste and shipped off-site for destruction at a licensed facility, in accordance with O. Reg. 362 and O. Reg 347.	
ODS	Small domestic refrigerators/freezers were observed in bedrooms and kitchens. Water fountains were observed in the corridors.	N/A	N/A	N/A	Manufacturer's labels or plates should be inspected to determine if the unit contains ODS prior to dismantling.	
UFFI	Suspect UFFI was not observed during the Survey.	N/A	N/A	N/A	N/A	
Mould	Mould was not observed during the Survey	N/A	N/A	N/A	N/A	N/A

TABLE I: Summary of DSHMS Findings A-150						
Hazardous Material or Designated Material	**Description of Homogeneous Material**	**Sample Location**	**Estimated Quantity**	**Action Level**	**Abatement**	**Notes**
Other Hazardous Materials	Miscellaneous maintenance oils and chemicals were observed in select areas throughout the building.	N/A	N/A	N/A	The handling and use of these materials should be undertaken by those with proper training (e.g. Workplace Hazardous Materials Information System, etc.) and adhere to any applicable guidelines and/or regulations. The transport and disposal of chemical waste is governed by *O. Reg. 347/90 – General – Waste Management*, as amended	N/A

*N/A means Not Applicable

LIMITED DESIGNATED SUBSTANCES AND HAZARDOUS MATERIALS SURVEY

CFB Borden, Building A-150
21 Parade Avenue, Borden, Ontario

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Attached Appendices

List of Tables (as included in Appendix A)

1.0 INTRODUCTION

DST Consulting Engineers Inc., a division of Englobe (DST) was retained by Defence Construction Canada (DCC) on behalf of Department of National Defense (DND) to conduct a Limited Designated and Hazardous Materials Survey (DSHMS) of Building A-150 at CFB Borden, located at 21 Parade Avenue, in Borden, Ontario. This building was constructed in 1953 and is 43,298 square feet (ft^2) (4,023 m^2) in size.

The Limited DSHMS scope of work included the assessment for the presence of the eleven (11) Designated Substances, as identified in the Ontario Occupational Health and Safety Act. This report is based upon the findings of a non-destructive survey program.

Designated Substances, as identified under the Ontario Occupational Health & Safety Act, are as follows:

- Acrylonitrile,
- Arsenic,
- Asbestos (both friable and non-friable),
- Benzene,
- Coke Oven Emissions,
- Ethylene Oxide,
- Isocyanates,
- Lead,
- Mercury,
- Silica, and
- Vinyl Chloride.

Other Hazardous Materials, which are not classified as Designated Substances, but were included as part of the DSHMS scope of work include the following:

- Polychlorinated Biphenyls (PCBs),
- Ozone Depleting Substances (ODS),
- Urea Formaldehyde Foam Insulation (UFFI), and
- Other Hazardous Materials.

2.0 REGULATORY REQUIREMENTS

The Ontario Occupational Health and Safety Act stipulates that before beginning a project, the owner shall determine whether any designated substances are present at the project site and shall prepare a list of all designated substances that are present at the site. The Canada Labour Code also stipulates under *Part II, Section 124* that every employer shall ensure that the health and safety at work of every person employed by the employer is protected. This is accomplished with the completion of a designated substances survey.

Designated Substances refer to the eleven chemical or physical agents specified in the Act that are regulated by *Ontario Regulation (O.Reg.) 490/09 - Designated Substances*, as amended. This regulation contains information with respect to employer duties, applicable assessment and control programs and worker exposure limits. Two of the principal and more commonly encountered designated substances on construction projects (asbestos and lead) are outlined below.

2.1 Asbestos

Asbestos is one designated substance and is specifically governed in federal buildings by the *Canada Occupational Health and Safety Regulations (COHSR)*, and in the province of Ontario by the Occupational Health and Safety Act – *O.Reg. 490/09, as amended*, and *O.Reg. 278/05, entitled "Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations, as amended*. These documents include types of abatement operations and their measures and procedures, applicable respirator usages, instruction and training requirements, asbestos work reports and workers register, provision of equivalent measures, notice to inspector requirements, and bulk and air sampling requirements. As per O.Reg. 278/05 an asbestos-containing material in Ontario is defined as a material that contains 0.5% or more asbestos by dry weight. The federal regulation defines a material 1% or more asbestos by dry weight to be asbestos-containing. CFB Borden considers an asbestos-containing material to be 0.5% or more by dry weight asbestos.

As part of this survey, asbestos has been assessed to both protect federal workers and ensure compliance with federal requirements. This survey also considers the DND Asbestos Management Directive, including assigning action levels to identify asbestos containing materials.

2.2 Lead

With regards to lead in paint, although the Ontario Ministry of Labour (MoL) has published a guideline for control of lead exposures on construction projects in Ontario, it does not include criteria for the classification of lead-paint. Instead, it uses presumed airborne lead concentrations for specific tasks as criteria for classifying work. However, in regulations set by the United States (U.S.) Department of Housing and Urban Development, Lead-Based Paint is classified as any paint application containing at least 1.0 milligrams of lead per square centimetre of surface area (1.0 mg/cm^2), or at least 0.5% lead content by weight [(5,000 parts per million (ppm)]. This criterion was widely, although not universally, used in Canada. In Canada, the Federal Canada Consumer Product Safety Act has lowered the allowable concentration of lead in paints for new consumer products to 0.009% lead content by weight (90 ppm). For the purposes of this survey and report, paints having concentrations of lead greater than 90 ppm are considered to be lead-containing.

2.3 Waste Management

The disposal of designated substances is regulated under the *Ontario Environmental Protection Act,* specifically *O. Reg. 347/90, General – Waste Management,* as amended. The regulation details the minimum requirements for the appropriate transport and disposal of wastes, including acceptable Leachate Quality Criteria (Toxicity Characteristic Leaching Procedure – TCLP).

3.0 METHODOLOGY

3.1 Scope of Work

In general, the Limited DSHMS included the following tasks by DST:

- Reference, compile and summarize past/existing pertinent data for the building with respect to designated substances,
- Conduct a data gap analysis and non-destructive investigation and sampling (as required) for any additional materials suspected of containing designated substances (e.g. asbestos, lead) or other hazardous materials not previously identified,
- Collect and analyze the required number of additional suspect ACM samples to satisfy the requirements of O.Reg. 278/05 (as amended) where applicable, and *Canada Occupational Health and Safety Regulations (COHSR)*,
- Determine the extent of Designated Substances and Hazardous Materials for the building, and
- Collect sufficient information to subsequently enable DST to recommend appropriate mitigation measures to bring the building into compliance with applicable legislation and/or to mitigate risks to human health and/or the environment.

The above-noted scope of work only included accessible areas of the building by non-destructive means.

3.2 Background Document Review

Prior to the commencement of field work, DST project personnel received past bulk sampling documentation, as pertinent to the project areas. As part of the project, DST considered the historical findings of the following report(s):

- Designated Substance and Detailed Asbestos Building Materials Survey Report, CFB Borden, 21 Parade Avenue, Building A-150, Borden, Ontario. Prepared by Maple Environmental Inc. Dated March 2011. Project Number 12233.

DST referenced the identifiable sampling and analytical results of the above-noted documentation, where applicable.

3.3 Site Assessment

DST conducted the site visit for Building A-150 on October 1st, 2019 to conduct the base building survey.

DST conducted a non-destructive, room-by-room survey of the subject building (as accessible) to identify observable and readily accessible designated substances and hazardous materials. Although attempts were made by DST to examine concealed conditions, a destructive survey was not completed to examine concealed conditions, or to identify materials that may be present beneath or behind existing interior and/or exterior solid wall, ceiling, flooring materials, or roofing

materials. The building roof was not included in the scope of the project. All locations were available for assessment during the survey.

Materials suspected of containing designated substances and other hazardous materials were visually identified, based on the surveyor's knowledge of the historic composition of building products. Visual identification of materials suspected to contain asbestos or lead, arsenic, mercury, chromium and PCPs (in paint) was supported by the collection and analysis of a limited number of representative samples. Materials suspected of containing designated substances other than asbestos or lead and other metals/PCBs (in paint) were identified by appearance, age, and knowledge of historical applications.

An Analytical Results Table – Asbestos is included in Appendix A. A Surface Coating results Table is included in Appendix B. Select photographs are included in Appendix C. Laboratory Certificates of Analysis or provided in Appendix D. Sample Location Drawings are provided in Appendix E.

3.3.1 Asbestos-Containing Material Methodology

The methodology employed for ACMs included identifying the presence of ACMs via the collection and analysis of suspect bulk material samples. The collection of bulk material samples was performed in accordance with the sampling procedures outlined in O.Reg. 278/05, as amended. O.Reg. 278/05, as amended, Table 1, stipulates the minimum number of bulk asbestos samples that must be collected and analyzed based on the quantity, application, and friability of each material.

ACMs can be divided into two categories: friable and non-friable material. A friable ACM is a material that can be crumbled, powdered, or pulverized by hand pressure and can readily release fibres when disturbed. Common applications of friable ACMs are sprayed or trowelled surfacing materials (e.g., sprayed fireproofing and textured coatings) as well as mechanical and thermal insulation. Non-friable materials are materials that will generally release fibres only when cut or shaped. Common non-friable ACMs include vinyl floor products, drywall joint compound, plaster, asbestos textile products and asbestos cement products (transite). Some of these products may become friable with time or when disturbed.

Bulk samples of suspected ACMs collected by DST were analyzed for their asbestos content at Paracel Laboratories (Paracel). The bulk asbestos samples were analyzed using Polarised Light Microscopy (PLM). This analytical method complies with the United States Environmental Protection Agency (U.S. EPA) Method 600/R-93/116 dated July,1993, which is the regulatory approved protocol for bulk asbestos analysis in Ontario. The laboratories followed a “positive-stop” analysis methodology and stopped analyzing a sample set if any one of the series of samples proved to be positive for the presence of asbestos, except for plaster and drywall joint compound bulk sample series. Therefore, additional samples other than plaster and drywall joint compound collected by DST in order to satisfy the bulk sampling requirements of O.Reg. 278/05,

as amended, were not analyzed if a sample layer in a sample layer series was identified as asbestos-containing.

The methodology followed by DST with respect to asbestos meets the survey requirements of the COHSR, including but not limited to the generation of a detailed ACM inventory.

3.3.2 Paint Chip Sampling - Lead, Mercury, Arsenic, Chromium, and PCBs

Paint chip samples were collected for metals analysis (arsenic, mercury, chromium, lead, and PCBs as applicable). Paracel is certified under the Canadian Association for Laboratory Accreditation Inc. (CALA) to perform paint sample analysis for the parameters listed above. Samples were analysed for metals using Inductively Coupled Plasma Mass Spectrometry (ICP-MS) in accordance with U.S. EPA 6020 and Cold-Vapour Atomic Absorption (CVAA) in accordance with U.S. EPA Method 7471B. PCB analysis (where performed) was based on SW846 8082A - GC-ECD. Paint Samples were collected of prominent paint colours throughout the building based on site observations. Some paints were not sampled if these paints were in good condition and sampling without matrix interreference would have been problematic.

Lead in Paint

In Canada, the Federal Canada Consumer Product Safety Act's Surface Coating Materials Regulations SOR/2016-183 has lowered the allowable concentration of lead in paints for new consumer products to 0.009% lead content by weight (90 ppm), with some material and specific use exceptions.

The Environmental Abatement Council of Ontario (EACO), Lead Guideline for Construction, Renovation, Maintenance or Repair considers paints or surface coatings containing less than or equal to 0.1% lead by weight (1,000 ppm) to be low-level lead paint or surface coatings.

Arsenic in Paint

The Federal Canada Consumer Product Safety Act does not set limits specifically for Arsenic in paint. For the purposes of this survey, paints having detectable concentrations of arsenic are considered arsenic containing.

Mercury in Paint

For mercury in paint Federal Canada Consumer Product Safety Act's Surface Coating Materials Regulations SOR/2016-193 has set the maximum allowable concentration of mercury in paint at 10 ppm.

Chromium in Paint

The Federal Canada Consumer Product Safety Act does not set limits specifically for Chromium in paint. For the purposes of this survey, paints having detectable concentrations of chromium are considered chromium containing.

PCBs in Paint

In Canada, the PCB Regulations, as amended, has set the allowable release of solid PCBs into the environment at 50 ppm.

As per the project scope work, select paint samples collected from mechanical room areas, where possible based upon condition and accessibility, were the only paints analyzed for PCBs.

3.3.3 PCB-Containing Equipment Methodology

Equipment that may contain PCBs (e.g., electrical transformers and fluorescent light ballasts) can often be identified by examining manufacturer's labels. For safety reasons, DST personnel do not remove the ballast shields from fluorescent light fixtures to examine the ballast codes unless the electrical circuit for the lighting had been tagged and locked out by a qualified electrician. When possible, the manufacture name and catalogue number is recorded. Where not clearly labelled as "Non-PCB", the information presented on the ballast labels can be compared with the Environment Canada document entitled "Identification of Lamp Ballasts Containing PCBs (Revised August 1991)" to confirm PCB content, or assumed to contain PCBs, as applicable. An extensive PCB survey and inventory was not completed as part of DST's scope of work.

3.3.4 Urea Formaldehyde Foam Insulation

Urea formaldehyde foam insulation ("UFFI") is a type of thermal insulation material applied to walls and ceilings of buildings to form a solid layer of insulation. The sale and installation of UFFI was banned in Canada in 1980, for health-related reasons due to the occurrence of formaldehyde gas, which is produced during natural degeneration of the UFFI.

3.3.5 Ozone Depleting Substances (ODS)

Ozone depleting substances ("ODSs") include chemicals containing chlorofluorocarbon ("CFC"), hydrochlorofluorocarbon ("HCFC"), halon or any other material capable of destroying ozone in the atmosphere. Ozone Depleting Substances are controlled by Ontario Regulation 463/10 and the Federal Halocarbons Regulation.

Equipment that may contain halocarbons (e.g., air conditioning and refrigeration equipment) can often be identified by examining manufacturer's labels. The investigation of halocarbons was performed through the identification of equipment requiring refrigerants as part of the room-by-room survey process followed by an evaluation for labels on the equipment (indicating the type of refrigerant present). A detailed halocarbon inventory was not completed as part of DST's scope of work.

3.3.6 Other Designated Substances and Hazardous Materials Methodology

The methodology for the identification of other Designated Substances and hazardous materials followed the same visual evaluation methodology as the investigation for asbestos and lead in surface coatings. During the survey, other identified Designated Substances/Hazardous Materials

were visually identified based on the surveyor's historical knowledge of these substances. These substances/materials were identified and locations noted, as deemed applicable.

4.0 FINDINGS

The following sections outline the findings of designated substances and hazardous materials assessed at the subject building.

4.1 Acrylonitrile

Acrylonitrile was neither observed in the building, nor suspected of being present, in forms or quantities that would either impact future work or pose risks to human health or the environment.

4.2 Arsenic

Five (5) samples of paint were collected by DST and submitted for arsenic content analysis. All samples were confirmed to have an arsenic content below the Method Detection Limit of 50 ppm. Any paints not sampled by DST should be assumed arsenic-containing until laboratory results can prove otherwise. A summary table of bulk paint samples collected by DST is included in Appendix B.

4.3 Asbestos

The following subsections outline the consolidated asbestos findings from the DSHMS completed by DST. A summary table of bulk material samples collected by DST is included as Appendix A as Table 1a. A summary table of historical bulk materials sampled in included as Appendix A, Table 1b. Details of sampled materials (current and historical) as well as the extent of ACMs have been entered by DST into the *CFB Borden Designated Substances Information System*. Action(s) provided for ACMs are based upon the Department of National Defence *Asbestos Condition Assessment and Response Chart*.

4.3.1 Asbestos-Containing Materials

Based on visual observations and laboratory analysis, the following friable and non-friable asbestos-containing materials were identified:

Thermal Mechanical Insulations:

- Friable Parging cement within canvased duct seams was confirmed to contain 60% Chrysotile asbestos in corridor 140 (Maple Sample ID 12233-S-06A, Photograph 5). This material was identified to be in good condition, total quantity of approximately 2 m^2, DND Action Level 6;

Caulkings:

- Non-friable exterior white caulking was confirmed to contain 2% Chrysotile asbestos, on the exterior canopy (DST Sample ID A-150-02A, Photograph 1). All white exterior caulking should be considered asbestos-containing. This material was identified to be in good condition, total quantity of approximately 2 m, DND Management Action Level 6;

- Non-friable exterior grey window caulking was confirmed to contain 10% Chrysotile asbestos (DST Sample ID A-150-03A, Photograph 2). All exterior grey window caulking should be considered asbestos-containing. This material was identified to be in good condition, total quantity of approximately 46 m, DND Management Action Level 6;

Wall and Ceiling Finishes:

- Non-friable drywall joint compound throughout building was confirmed to contain 1.6% Chrysotile asbestos (Maple Sample ID 12233-S-01A-G). This material was identified to be in good condition, total quantity of approximately 4,556 m^2, DND Management Action Level 6

4.3.2 Suspected Asbestos-Containing Materials

Suspected asbestos-containing materials were not sampled due to the potential to damage the integrity of the material and/or inaccessibility for sampling. The following materials are suspected to contain asbestos, until proven otherwise by bulk sampling and laboratory analysis:

- Cast iron drain joint packing – Corridor 238, and
- Fire door lining.

4.3.3 Non-Asbestos Containing Materials

The following materials were confirmed to not contain regulated amounts of asbestos based on limited observations and sampling performed by DST (2019).

Wall and Ceiling Finishes

- Plaster throughout building (Maple Sample ID 12233-S-05A-G),
- Texture Coat throughout building (Maple Sample ID 12233-S-03A-G),
- Texture Coat stairwells (Maple Sample ID 12233-S-07A-C),

Caulking, Tar and Mastic

- Baseboard Mastic (DST Sample ID A-150-01A-C),
- Exterior brown caulking, north entrance canopy (DST Sample ID A-150-04A-C, Photograph 3)

Ceiling Tiles

- 2’X4’ acoustic ceiling tiles, pinhole and fissures (recent manufacture date stamp, Photograph 6),

Flooring, Associated Mastics and Levelling Compounds

- 12” x 12” Vinyl Floor Tile and associated mastic, grey with brown and white flecks (Maple Sample ID 12233-S-02A-C, Photograph 7)
- 12” x 12” Vinyl Floor Tile and associated mastic, beige with grey streaks (Maple Sample ID 12233-S-04A-C, Photograph 8),

Sprayed Fireproofing

- Sprayed fireproofing applied to the deck (DST Sample ID A-150-05A-C, Photograph 4)

4.4 Benzene

Benzene was neither observed in the building, nor suspected of being present, in forms or quantities that would either impact future work or pose risks to human health or the environment.

4.5 Coke Oven Emissions

Coke Oven Emissions were neither observed in the building, nor suspected of being present, in forms or quantities that would either impact future work or pose risks to human health or the environment.

4.6 Ethylene Oxide

Ethylene Oxide was neither observed in the building, nor suspected of being present, in forms or quantities that would either impact future work or pose risks to human health or the environment.

4.7 Isocyanates

Isocyanates were neither observed in the building, nor suspected of being present, in forms or quantities that would either impact future work or pose risks to human health or the environment.

4.8 Lead

Five (5) samples of paint were collected by DST and submitted for lead content analysis. A summary table of bulk paint samples collected by DST is included in Appendix B. Three (3) of the five (5) samples were confirmed to contain lead at concentrations above the 90 ppm limit established by the Federal Canada Consumer Product Safety Act *Surface Coating Materials Regulations SOR/2016-193*, as amended:

- Beige wall paint sampled in Room 102 (2,010 ppm),
- White wall paint sampled in Room 108 (4,520 ppm), and
- White paint sampled from the exterior – south entrance (19,300 ppm).

These paints also exceeded 1,000 ppm lead limit outlined by the Environmental Abatement Council of Ontario (EACO), Lead Guideline for Construction, Renovation, Maintenance or Repair. Historical paint samples by Maple identified the following paints at concentrations greater than the 90 ppm limit:

- White ceiling paint sampled in the main entrance (1,200 ppm),
- Off-white wall paint sampled in room 102 (2,400 ppm),
- Black handrail paint sampled in the stairwell (3,800 ppm),
- Beige wall paint sample from room 204 (1,800 ppm), and
- Green concrete pad paint sampled from room 111 (1,200 ppm).

All other paints and surface coatings should be assumed to contain elevated lead concentrations unless further sampling or in-situ delineation (e.g. X-Ray Fluorescence [XRF] analysis) confirms otherwise.

Lead is also assumed to be present in the following materials:

- Cast iron drain piping joint packing,
- Solder on the joints of copper piping,
- Ceramic tile glazing,
- Structural steel coatings, and
- Emergency light batteries.

4.9 Mercury

Five (5) samples of paint were collected by DST and submitted for mercury content analysis. A summary table of bulk material samples collected by DST is included in Appendix B. None of the paint samples were confirmed to have a mercury contact above the Federal Canada Consumer Product Safety Act's limit of 10 ppm.

Mercury is assumed to be present in the following:

- Fluorescent lights tubes throughout the building

4.10 Chromium

Five (5) samples of paint were collected by DST and submitted for chromium content analysis. A summary table of bulk material samples collected by DST is included in Appendix B. Three (3) of the paint samples were confirmed to have a chromium content above the Method Detection Limit of 50 ppm:

- Beige wall paint sampled in Room 102 (72 ppm),
- White wall paint sampled in Room 108 (806 ppm), and
- White paint sampled from the exterior – south entrance (9,430 ppm).

4.11 Silica

Based on the historic composition of building materials, silica is assumed to be present in:

- Concrete and cement,
- Interior masonry building materials,
- Plaster building elements,
- Ceramic tiles,
- Drywall building elements,
- Ceiling tiles,
- Flooring compounds and mastics, and
- Vinyl flooring products.

4.12 Vinyl Chloride

Vinyl Chloride was neither observed in the building, nor suspected of being present, in forms or quantities that would either impact future work or pose risks to human health or the environment.

4.13 Ozone Depleting Substances (ODS)

ODS are assumed to be present in:

- Refrigerators,
- Freezers, and
- Drinking water fountains.

4.14 Polychlorinated Biphenyls (PCBs)

None of the five (5) samples of paint collected by DST were submitted for PCB content analysis as no paints were sampled from mechanical rooms.

Light fixtures with T12 lamps are more likely to contain ballasts that were manufactured prior to 1981. T8 lamps are associated with light fixtures that were manufactured after the phase-out of PCB-containing ballasts. The letter “T” denotes the shape of the light fixture (e.g. tubular) and the number which follows indicates the diameter in eights of an inch. Based on limited visual observations, DST observed T12 lamps in select areas of the building. Light fixtures with T12 lamp tubes are assumed to contain light ballasts that contain PCBs, until proven otherwise. As a due diligence measure, prior to removal, all ballasts should be inspected to confirmed PCB content.

4.15 Mould

Mould growth was neither observed in the building, nor suspected of being present, in forms or quantities that would either impact future work or pose risks to human health or the environment.

4.16 Urea Formaldehyde Foam Insulation (UFF)

UFFI was neither observed in the building, nor suspected of being present, in forms or quantities that would either impact future work or pose risks to human health or the environment.

4.17 Other Hazardous Materials

Miscellaneous maintenance oils and chemicals were observed in select areas throughout the building.

5.0 CONCLUSIONS AND RECOMMENDATIONS

DST was retained by DCC to conduct a DSHMS of Building A-150 at CFB Borden, located at 21 Parade Avenue, Borden, Ontario.

The DSHMS scope of work included an assessment for the presence of the 11 Designated Substances, as identified in the Occupational Health and Safety Act, as well as ODS, and other miscellaneous hazardous materials or chemicals.

The following table provides an overview of Designated Substances and Hazardous Materials observed at the Building A-150.

Table II: Overview of Designated Substances and Hazardous Materials	
Designated Substances and Hazardous Materials observed	**Designated Substances and Hazardous Materials not observed**
• Asbestos, • Chromium, • Lead, • Mercury, • Silica, • ODS, • PCBs, • Other Hazardous Materials.	• Acrylonitrile, • Arsenic, • Benzene, • Coke Oven Emissions, • Ethylene Oxide, • Isocyanates, • Vinyl Chloride, • Mould, and • UFFI

The following recommendations apply to only designated substances and hazardous materials observed in the building.

5.1 Asbestos

The disturbance of ACMs on construction and demolition projects is governed by the *Canada Occupational Health and Safety Regulations,* the *DND Asbestos Management Directive*, and in the province of Ontario is governed by *O.Reg. 278/05*, as amended. These regulations classify all asbestos disturbances as Low Risk (Type 1), Moderate Risk (Type 2), or High Risk (Type 3), each of which has defined precautionary measures. All asbestos materials are subject to specific handling and disposal precautions and must be removed prior to demolition. The Ontario Ministry of Labour (MoL) must be notified of any project involving removal of more than a minor amount (e.g. typically 1 square metre) of friable asbestos material. In the event of conflict between regulations, the more stringent procedures apply.

The removal of non-friable materials (caulking and cast-iron drain joint packing) can be completed using Low-Risk procedures, provided only non-powered hand tools are used and the material is wetted during removal. If these conditions cannot be met, then more stringent (Moderate Risk or High-Risk) procedures are required.

The removal or disturbance of less than one square metre of drywall in which the joint compound is asbestos-containing can be performed using Low Risk (Type 1) precautions. The removal or disturbance of one square metre or more of drywall in which the joint compound is asbestos-containing must be performed using Moderate Risk (Type 2) precautions as a minimum.

The breaking, cutting, drilling, abrading, grinding, sanding, or vibrating of non-friable asbestos-containing materials if the work is done by means of a power tool that is attached to a dust-collecting device equipped with HEPA filters, can be performed using Moderate-Risk asbestos work procedures. The breaking, cutting, drilling, abrading, grinding, sanding, or vibrating of non-friable asbestos-containing materials, if the work is done by means of a power tool that is not attached to a dust-collecting device equipped with HEPA filters, requires High-Risk asbestos work procedures.

Disturbance of one (1) square metre or less of friable asbestos-containing material (i.e. parging cement within canvased duct seams) requires a minimum of Type 2 abatement procedures under O.Reg. 278/05, as amended. Should abatement be required of more than 1 square metre of friable ACM, Type 3 abatement procedures are required.

The transport and disposal of asbestos waste is governed by *O. Reg. 347/90 – General – Waste Management*, as amended. This regulation requires that asbestos waste be sealed in appropriately labelled, double containers resistant to puncture and tears. The waste must be disposed at a licensed waste disposal site.

The time weight average exposure limit (TWAEL) for airborne asbestos is prescribed *by O.Reg. 490/09 Designated Substances*, as amended and the *Canada Labour Code, Occupational Health and Safety Regulations*. Work procedures and personal protective equipment must be used to ensure that workers are not exposed to airborne asbestos levels that exceed this TWAEL.

The following recommendations apply to ACMs and suspected ACMs:

- Appropriate work procedures and precautionary measures must be used, as outlined in *O.Reg. 278/05, and the Canada Occupational Health and Safety Regulations*, as amended, when performing work that may disturb ACMs or suspected ACMs, including prior to building demolition. This includes complying with requirements for air sampling during abatement within enclosure systems including glove bags.
- Disturbance and/or removal of ACMs must be appropriately recorded as part of the building's Asbestos Management Plan.
- Before undertaking any work activity that involves asbestos-containing materials, an Asbestos Exposure Control Plan shall be developed, in accordance with the requirements of the *Canada Occupational Health and Safety Regulations*, which includes classification of asbestos specific work activities, onsite labelling of ACMs, and education/training of applicable federal employees specific to ACMs.
- If ACMs or suspected ACMs become damaged and worker exposure to the material is likely to occur, the damaged material must be repaired or removed following work procedures outlined in *O. Reg. 278/05, and Canada Labour Code, Occupational Health and Safety Regulations, as amended.*
- Disposal of asbestos waste is controlled by the Ontario Environmental Protection Act, *Regulation 347/90, General – Waste Management,* as amended. This regulation requires that asbestos waste be sealed in double containers resistant to puncture and tears, and

appropriately labelled. The waste must be disposed at a licensed waste disposal site. Proper notification must be issued to the site representative prior to transportation of waste. The transport of the waste to the disposal site is controlled by the federal *Transportation of Dangerous Goods Act, 1992* (TDGA) *and Ontario Dangerous Goods Transportation Act.*

DST made the attempt to evaluate the project areas to identify hazardous materials present. In spite of these efforts, some ACMs may be concealed and not observed at the time of the survey. As such, should any previously unidentified suspect ACMs be encountered as part of future work, these materials are to be treated as ACMs and handled accordingly, unless sampling proves otherwise. Materials that have not been analyzed but are visibly similar to other materials identified as asbestos-containing, must be considered asbestos-containing unless proven otherwise by laboratory analysis.

5.2 Lead

The Occupational Health and Safety Branch (OHS) of the Ontario MoL have published *Guideline: Lead on Construction Projects*. This document classifies all lead disturbances as Type 1, Type 2a, Type 2b, Type 3a or Type 3b work, and assigns different levels of respiratory protection and work procedures for each classification. Disturbance of lead-containing coatings shall follow the procedures of this guideline document.

Paints and other surface coatings containing elevated concentrations of lead can pose a health risk to humans if ingested or inhaled. Such lead-containing surface coatings are also a risk to the environment with the potential to contaminate soil and groundwater. Surface coatings with elevated lead content can also pose a health risk to workers while completing renovations within the building.

Although the Canada Consumer Product Safety Act's *Surface Coating Materials Regulations SOR/2016-109*, as amended, has set a limit of 90 parts per million (ppm) for surface coating materials, there may be a potential for exposure to high levels of airborne lead depending on the work activities performed that disturb the lead-containing materials, even at low lead content concentrations. Conducting a risk assessment to assess the potential for exposure to lead should be performed to determine the need to follow work procedures such as those in the MoL guideline referenced above.

In the event of conflict between lead precautionary measures and other precautionary measures (e.g. asbestos, silica), the more stringent procedures shall apply.

The time weighted average exposure limit (TWAEL) for airborne lead is prescribed by *Ontario Regulation 490/09* Designated Substances, as amended. Work procedures and personal protective equipment must be used to ensure that workers are not exposed to airborne lead levels that exceed this TWAEL.

The disposal of construction waste containing lead is governed by *O. Reg. 347/90* - General – Waste Management, as amended. The transport of the waste to the disposal site is controlled by the federal TDGA and the Ontario Dangerous Goods Transportation Act. Materials with elevated concentrations of lead should be subject to Toxicity Characteristic Leaching Procedure (TCLP) testing to determine toxicity with respect to lead prior to disposal, in accordance with *O. Reg. 347/90, as amended*.
Prior to or during renovation work, the following procedures should be performed for lead-containing materials that are anticipated to be disturbed:

- Copper piping can be cut a small distance (e.g. 50 mm) from the soldered joints to avoid direct disturbance of the lead material,
- Cast iron drain pipes can be cut away from the joints to avoid direct disturbance of the lead caulking in the joints,
- Ceramic tiles, can be removed using Type 1 work procedures and respiratory protection provided that only non-powered hand tools are used,
- Emergency light batteries and other batteries should be removed when decommissioned and disposed of as lead-containing waste.

5.3 Mercury

There is no regulation that specifically governs the disturbance of mercury on construction projects.

When removal of the fluorescent light tubes is required, the tubes should be removed intact from the fixtures. This prevents worker exposure to mercury vapour, particularly if the tubes were energized shortly before removal. Other sources of liquid mercury should be removed in a similar fashion (intact) to prevent worker exposure.

The TWAEL for mercury is prescribed by *Ontario Regulation 490/09 Designated Substances*, as amended. Work procedures and personal protective equipment must be used to ensure that workers are not exposed to airborne mercury levels that exceed this TWAEL.

Liquid mercury is classified as a hazardous waste under *O. Reg. 347/90,* as amended. The transport of the waste to a disposal site is controlled by *O. Reg. 347/90* and by the federal TDGA and the Ontario Dangerous Goods Transportation Act. It is now common practice to recycle fluorescent light tubes, and other items containing mercury, recovering the component materials, and avoiding the generation of hazardous waste.

5.4 Chromium

If paint containing elevated levels of chromium are to be disturbed, precautions should be taken by the contractor to protect against exposure to chromium. The risk of exposure can be mitigated through the application of proper worker health and safety precautions (i.e. work and dust control procedures that reduce dust generations, utilization of PPE and implement a worker hygiene program).

Disturbance of surface coatings with elevated chromium concentrations should follow similar procedures to those of lead as outlined within MoL Guideline: Lead on Construction Projects.

5.5 Silica

The Occupational Health and Safety Branch of the Ontario MoL has published *Guideline: Silica on Construction Projects*. This document classifies all silica disturbances as Type 1, Type 2 or Type 3 work, and assigns different levels of respiratory protection and work procedures for each classification. In the absence of specific legislation for silica on construction projects, this guideline would serve as a reasonable, peer reviewed standard for work procedures.

The TWAEL for airborne silica is prescribed by Ontario Regulation 490/09 *Designated Substances*, as amended. Work procedures and personal protective equipment must be used to ensure that workers are not exposed to airborne silica levels that exceed this TWAEL.

As a general rule, it is preferable to use more stringent dust suppression techniques and engineering controls as opposed to relying on respiratory protection to control worker exposure. Respiratory protection should only be relied on as a last resort when dust suppression techniques and engineering controls fail to control worker exposure to silica.

5.6 Ozone Depleting Substances (ODS)

The handling, transport and disposal of halocarbons is governed by the following:

- Federal Halocarbon Regulations (FHR), 2003,
- Ozone-depleting Substances and Halocarbon Alternatives Regulations, 2016,
- Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems, 2015,
- O.Reg. 463/10, Ozone Depleting Substances and Other Halocarbons, and
- Federal Transport of Dangerous Goods Act and Ontario Dangerous Goods Transportation Act.

When suspected halocarbon-containing equipment is taken out of service, the halocarbons must be captured and reclaimed by a certified service technician using methods and containers that are designed to contain the halocarbon. The service technician must provide written acknowledgement of the requirements of the FHR. Appropriate records of service technician certification and records of equipment decommissioning must be provided and maintained in accordance with requirements of the FHR.

5.7 PCBs

Prior to removal or disposal, the PCB content of equipment and/or liquids should be confirmed to determine proper procedures to be followed, unless conservatively assumed to contain PCBs.
When the fluorescent light fixtures are taken out of service, these ballasts, as well as other ballasts, should be examined to determine whether they contain PCBs. This can be done by comparing the manufacturer date codes stamped on the ballasts to information contained in the

document titled Identification of Lamp Ballasts Containing PCBs, published by Environment Canada. Ballasts that contain PCBs must be packaged, transported and disposed of in accordance with all appropriate provincial and federal regulations.

If PCB-containing equipment and/or materials are identified and must be removed, they should be disposed of in accordance with the Canadian Environment Protection Act's PCB Regulations, *O. Reg. 362/90 – Waste Management, PCBs* and O. Reg. 347, *General – Waste Management,* as amended, are regulated under the Environmental Protection Act to regulate the handling, storage and transportation of hazardous substances and waste dangerous goods. The transport of PCB waste to the disposal site is controlled by the federal Transportation of Dangerous Goods Act.

5.8 Other Hazardous Materials

The handling and use of these materials should be undertaken by those with proper training (e.g. Workplace Hazardous Materials Information System, etc.) and adhere to any applicable guidelines and/or regulations. The transport and disposal of chemical waste is governed by *O. Reg. 347/90 – General – Waste Management*, as amended.

6.0 LIMITATIONS OF REPORT

This report is intended for client use only. Any use of this document by a third party, or any reliance on or decisions made based on the findings described in this report, are the sole responsibility of such third parties, and DST Consulting Engineers Inc. accepts no responsibility for damages, suffered by any third party as a result of decisions made or actions conducted based on this report. No other warranties are implied or expressed.

The data, conclusions and recommendations which are presented in this report, and the quality thereof, are based on a scope of work authorized by the client. The sampling program included non-destructive asbestos bulk sampling and paint sampling in select representative areas for laboratory analysis. There is a practical limitation on the number of samples that can be collected in an occupied building. This requires the investigator to extrapolate observations and analytical results between sample locations. The uncertainty, and inherent risk, associated with this necessity increases with the distance between sampling locations. Note, however, that no scope of work, no matter how exhaustive, can guarantee to identify all contaminants. This report therefore cannot warranty that all building conditions are represented by those identified at specific locations.
Recommendations, when included, are made in good faith and are based on several successful experiences.

Note also that standards, guidelines and practices related to DST's scope of work may change with time. Those which were applied at the time of this program may be obsolete or unacceptable at a later date.

Any comments given in this report on potential remediation problems and possible methods are intended only for the guidance of the designer. The scope of work may not be sufficient to determine all of the factors that may affect construction, clean-up methods and/or costs. Contractors bidding on this project or undertaking clean-ups should, therefore, make their own interpretation of the factual information presented and draw their own conclusions as to how the conditions may affect their work.

Any results from an analytical laboratory or other subcontractor reported herein have been carried out by others, and DST Consulting Engineers Inc. cannot warranty their accuracy. Similarly, DST cannot warranty the accuracy of information supplied by the client.

7.0 CLOSURE

We trust that the information contained herein meets your needs. Should you have any questions or comments, please do not hesitate to contact us.

DST CONSULTING ENGINEERS INC.

Justin Seedial *B.Sc.*,
Environmental Scientist
jseedial@dstgroup.com

Matthew DesRoches, *M.Sc.(A), CIH, ROH*
Senior Technical Advisor, Associate
mdesroches@dstgroup.com

8.0 REFERENCES

General	Ontario Government, *Occupational Health and Safety Act*, R.S.O. 1990 Ontario Regulation 490/09*, Occupational Health and Safety Act: Designated Substances* *The Canada Labour Code*
Asbestos-Containing Materials	*Regulations Amending Certain Regulations Made Under the Canada Labour Code*, Canada Occupational Health and Safety Regulations, SOR/2017-132 *Asbestos on Construction Projects and in Buildings and Repair Operations – made under the Occupational Health and Safety Act.* Ontario Regulation 278/05 as amended *DND Asbestos Management Directive*
Lead-Containing Paint	Health Canada. August 2006. Workplace Health and Public Safety – Programme Guidelines on Lead in Paint, Dust and Soil August 2006 Ontario Ministry of Labour. 2011. Lead on Construction Projects http://www.labour.gov.on.ca/english/hs/pdf/gl_lead.pdf Lead Guideline for Construction, Renovation, Maintenance or Repair, published by the Environmental Abatement Council of Ontario, dated October 2014 ("EACO Lead Guideline") Canada Consumer Product Safety Act*: Surface Coating Materials Regulations*, SOR/2016-193.
PCB-Containing Equipment	R.R.O 1990, Regulation 362: Waste Management – PCBs, amended O. Reg. 232/11 Canadian Environmental Protection Act (CEPA), 1999 Environment Canada. 1991. Environmental Protection Series. Identification of Lamp Ballasts Containing PCBs. Report EPS 2/CC/2 (revised) Federal PCB Regulation, SOR/2008-273
Mercury-Containing Equipment	Canadian Council of Ministers of the Environment. Canada Wide Standard for Mercury-Containing Lamps, May 2001 http://www.ccme.ca/assets/pdf/merc_lamp_standard_e.pdf Canadian Council of Ministers of the Environment. Canada Wide Standards for Mercury Emissions, June 2000 http://www.ccme.ca/assets/pdf/mercury_emis_std_e1.pdf

Ozone Depleting Substances	Canadian Council of Ministers of the Environment. National Action Plan for the Environmental Control of Ozone-Depleting Substances (ODS) and their Halocarbon Alternatives, 2001 http://www.ccme.ca/assets/pdf/nap_update_e.pdf Canadian Environmental Protection Act. Ozone-Depleting Substances Regulations, 1998 http://laws-lois.justice.gc.ca/eng/regulations/SOR-99-7/index.html Canadian Environmental Protection Act. Federal Halocarbons Regulations, 2003 http://laws-lois.justice.gc.ca/eng/regulations/SOR-2003-289/index.html Ontario Regulation 463/10, *Environmental Protection Act- Ozone Depleting Substances and Other Halocarbons*
Silica	Ontario Ministry of Labour – Occupational Health and Safety Branch. 2011. Guideline – Silica on Construction Projects. http://www.labour.gov.on.ca/english/hs/pdf/gl_silica.pdf
Waste Disposal	Ontario Regulation 347 R.R.O 1990*, Waste Management – General*, R.R.O. 1990, as amended by: O.Reg. 558/00

Appendix A

Analytical Results Tables - Asbestos

Table 1a: Summary of Bulk Samples Analyzed for Asbestos – PLM Analysis (DST, 2019)									
Sample I.D.	**Sample Location**	**Material Description**	**Asbestos Type & %**	**Condition**	**Accessibility**	**Friability**	**DND Action Level**	**Potential to Release Fibres**	**Abatement Type**
A-150-01a	Corridor 138	Tan Baseboard Mastic	None Detected	N/A	N/A	N/A	N/A	N/A	N/A
A-150-01b			None Detected						
A-150-01c			None Detected						
A-150-02a	**Exterior**	**White Caulking**	**2% Chrysotile**	**Good**	**A**	**Non-Friable**	**6**	**Low**	**Low Risk, Moderate Risk, or High Risk (Type 1, Type 2, or Type 3) Abatement, as per O.Reg 278/05**
A-150-02b			**Not Analyzed – Positive Stop**						
A-150-02c			**Not Analyzed – Positive Stop**						
A-150-03a	**Exterior**	**Grey Caulking**	**10% Chrysotile**	**Good**	**A**	**Non-Friable**	**6**	**Low**	**Low Risk, Moderate Risk, or High Risk (Type 1, Type 2, or Type 3) Abatement, as per O.Reg 278/05**
A-150-03b			**Not Analyzed – Positive Stop**						
A-150-03c			**Not Analyzed – Positive Stop**						
A-150-04a	Exterior	Brown Caulking	<MDL Chrysotile	N/A	N/A	N/A	N/A	N/A	N/A
A-150-04b			None Detected						
A-150-04c			None Detected						

Table 1a: Summary of Bulk Samples Analyzed for Asbestos – PLM Analysis (DST, 2019)									
Sample I.D.	**Sample Location**	**Material Description**	**Asbestos Type & %**	**Condition**	**Accessibility**	**Friability**	**DND Action Level**	**Potential to Release Fibres**	**Abatement Type**
A-150-05a	Corridor 138	Grey Fireproofing	None Detected	N/A	N/A	N/A	N/A	N/A	N/A
A-150-05b			None Detected						
A-150-05c			None Detected						

Note: *Bold items exceed the 0.5% regulated concentration of asbestos, as per O.Reg. 278/05, as amended.
N/A = Not Applicable

Accessibility
A – Areas of the building within reach (from floor level) of all building users.
B – Frequently entered maintenance areas with reach of maintenance staff, without the need for a ladder.
C – Areas of the building above 3 metres where use of a ladder is required to reach the ACM.
D – Areas of the building which require the removal of a building component, incl. lay-in ceilings, and access panels into solid ceilings.
E – Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc., where demolition of ceiling, wall or equipment, etc. is required to access the ACM.

Table 1b: Summary of Historical Bulk Samples Analyzed for Asbestos – PLM Analysis (Maple, 2011)									
Sample I.D.	**Sample Location**	**Material Description**	**Asbestos Type & %**	**Condition**	**Accessibility**	**Friability**	**DND Action Level**	**Potential to Release Fibres**	**Abatement Type**
S-01A	**Corridor 139**	**Drywall Joint Compound**	**1.6% Chrysotile**	**Good**	**A**	**Non-Friable**	**6**	**Low, unless disturbed**	**Low Risk, Moderate Risk, or High Risk (Type 1, Type 2, or Type 3) Abatement, as per O.Reg 278/05**
S-01B	Corridor 138		None Detected						
S-01C	206A		None Detected						
S-01D	207		None Detected						
S-01E	316		None Detected						
S-01F	Corridor 337		None Detected						
S-01G	307		None Detected						
S-02A	126	Vinyl Floor Tile 01 Mastic Backing	None Detected	N/A	N/A	N/A	N/A	N/A	N/A
S-02B	224		None Detected						
S-02C	324		None Detected						
S-03A	126	Texture Coat	None Detected	N/A	N/A	N/A	N/A	N/A	N/A
S-03B	122		None Detected						
S-03C	Corridor 238		None Detected						
S-03D	Corridor 239		None Detected						
S-03E	Corridor 339		None Detected						
S-03F	Corridor 337		None Detected						
S-03G	Corridor 338		None Detected						
S-04A	102	Vinyl Floor Tile 02	None Detected	N/A	N/A	N/A	N/A	N/A	N/A
S-04B			None Detected						
S-04C			None Detected						

Table 1b: Summary of Historical Bulk Samples Analyzed for Asbestos – PLM Analysis (Maple, 2011)									
Sample I.D.	**Sample Location**	**Material Description**	**Asbestos Type & %**	**Condition**	**Accessibility**	**Friability**	**DND Action Level**	**Potential to Release Fibres**	**Abatement Type**
S-05A	Corridor 140	Plaster	None Detected	N/A	N/A	N/A	N/A	N/A	N/A
S-05B	124		None Detected						
S-05C	204	Plaster Layer 1 Plaster Layer 2	None Detected						
S-05D	207	Plaster Layer 1 Plaster Layer 2	None Detected						
S-05E	323	Plaster	None Detected						
S-05F	304	Plaster Layer 1 Plaster Layer 2	None Detected						
S-05G	307	Plaster Layer 1 Plaster Layer 2	None Detected						
S-06A	**Corridor 140**	**Parging Cement**	**60% Chrysotile**	**Good**	**C**	**Friable**	**6**	**Low, unless disturbed**	**Moderate Risk or High Risk (Type 2 or Type 3) Abatement, as per O.Reg 278/05**
S-07A	North Stairwell Window Ledge	Texture Coat	None Detected	N/A	N/A	N/A	N/A	N/A	N/A
S-07B			None Detected						
S-07C			None Detected						

Note: *Bold items exceed the 0.5% regulated concentration of asbestos, as per O.Reg. 278/05, as amended.
N/A = Not Applicable

Accessibility
A – Areas of the building within reach (from floor level) of all building users.
B – Frequently entered maintenance areas with reach of maintenance staff, without the need for a ladder.
C – Areas of the building above 3 metres where use of a ladder is required to reach the ACM.
D – Areas of the building which require the removal of a building component, incl. lay-in ceilings, and access panels into solid ceilings.
E – Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc., where demolition of ceiling, wall or equipment, etc. is required to access the ACM.

Appendix B

Surface Coatings Table

Surface Coating - Sampling Summary

Building Name and Number: A-150 - Jr. NCO Quarters
Consultant: DST Consulting Engineers Inc.
Title of Building Survey: Designated Substances and Hazardous Materials Survey
Project Number: BN300075
Survey Date: October 01, 2019

Analytical results:
* No
current regulated amount, any concentration above detection limit highlighted.
^SOR/2016-193 Surface Coating
Materials Regulations.
"SOR/2008-273 PCB Regulation.
N/A Not
applicable.

Sample ID	Sample Location	Substrate Material	Sample Description	Condition	Other Locations with Surface Coating	Analytical Results (µg/g)				
						Arsenic (50 µg/g*)	Chromium (50 µg/g*)	Lead (90 µg/g^)	Mercury (10 µg/g^)	PCBs (50 µg/g")
A-150-LO1	Room 102 - West Wall	Drywall	Beige Paint	Good	Throughout	<50	72	**2,010**	<2	N/A
A-150-LO2	Room 103 - West Wall	Drywall	Grey Paint	Good	N/A	<50	<50	<5	<2	N/A
A-150-LO3	Room 108 - North Wall	Drywall	White Paint	Good	Throughout	<50	806	**4,520**	<2	N/A
A-150-LO4	Room 123 - North Wall	Drywall	Purple Paint	Good	N/A	<50	<50	<5	<2	N/A
A-150-LO5	Exterior - South Entrance	Wood	White Paint	Good	N/A	<50	9,430	**19,300**	4	N/A
Previous Analytical Results - Maple, March 2011										
Pb-01	Main Entrance	Ceiling	White Paint	Good	N/A	N/A	N/A	**1,200**	N/A	N/A
Pb-02	102	Wall	Off-White Paint	Good	N/A	N/A	N/A	**2,400**	N/A	N/A
Pb-03	Corridor 139	Baseboard	Grey Paint	Good	N/A	N/A	N/A	<65	N/A	N/A
Pb-04	Stairwell	Handrail	Black Paint	Good	All Stairs and Railings	N/A	N/A	**3,800**	N/A	N/A
Pb-05	204	Wall	Beige Paint	Good	N/A	N/A	N/A	**1,800**	N/A	N/A
Pb-06	111	Concrete Pad	Green Paint	Good	N/A	N/A	N/A	**1,200**	N/A	N/A

Bolded areas indicate elevated levels of contaminants. Use Caution. Follow MOL Guideline for Lead, wet surfaces down before disturbing them. Notify Base Environmental Officer of the need to dispose of contaminated paint prior to disurbing it.

Appendix C

Representative Photographs

Photo 1: Non-Friable exterior white (weathered) caulking was confirmed to contain 2% Chrysotile Asbestos (DST Sample ID A-150-02A-C). The material was observed on the south entrance canopy.

Photo 2: Non-Friable exterior grey window caulking was confirmed to contain 10% Chrysotile Asbestos (DST Sample ID A-150-03A-C).

Photo 3: Exterior brown caulking was confirmed to not contain asbestos (DST Sample ID A-150-04A-C).

Photo 4: Fireproofing, observed in Corridor 138, was confirmed to not contain asbestos (DST Sample ID A-150-05A-C).

Photo 5: Friable parging cement within canvased duct seams confirmed to contain 60% Chrysotile asbestos, sampled in Corridor 140 (Maple Sample ID 12233-S-06A).

Photo 6: 2’ x 4’ Acoustic Ceiling Tile, pinhole and fissures confirmed to not contain asbestos (recent manufacture date stamp).

Photo 7: 12” x 12” Vinyl Floor Tile, grey with brown and white flecks confirmed to not contain asbestos, sampled in Room 126, 224 and 324 (Maple Sample ID 12233-S-02a-c).

Photo 8: 12” x 12” Vinyl Floor Tile, beige with grey streaks confirmed to not contain asbestos, sampled from room 102 (Maple Sample ID 12233-S-04a-c).

Appendix D

Laboratory Certificates of Analysis

PARACEL LABORATORIES LTD.

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15 - 6800 Kitimat Rd
Mississauga, ON, L5N 5M1
1-800-749-1947
www.paracellabs.com

Certificate of Analysis

DST Consulting Engineers Inc. (Toronto)

3397 American Drive, #15
Mississauga, ON L4V 1T8
Attn: Justin Seedial

Client PO:
Project: GV OT 038848-A-150
Custody:

Report Date: 18-Oct-2019
Order Date: 8-Oct-2019

Order #: 1941212

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1941212-01	A-150-01A
1941212-02	A-150-01B
1941212-03	A-150-01C
1941212-04	A-150-02A
1941212-05	A-150-02B
1941212-06	A-150-02C
1941212-07	A-150-03A
1941212-08	A-150-03B
1941212-09	A-150-03C
1941212-10	A-150-04A
1941212-11	A-150-04B
1941212-12	A-150-04C
1941212-13	A-150-05A
1941212-14	A-150-05B
1941212-15	A-150-05C

Approved By:

Emma Diaz

Senior Analyst

Certificate of Analysis

Report Date: 18-Oct-2019

Client: **DST Consulting Engineers Inc. (Toronto)**

Order Date: 8-Oct-2019

Client PO:

Project Description: GV OT 038848-A-150

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Paracel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1941212-01	01-Oct-19	Tan	Mastic	No	**Client ID: A-150-01A**	
					Non-Fibers	100
1941212-02	01-Oct-19	Tan	Mastic	No	**Client ID: A-150-01B**	
					Non-Fibers	100
1941212-03	01-Oct-19	Tan	Mastic	No	**Client ID: A-150-01C**	
					Non-Fibers	100
1941212-04	01-Oct-19	Grey	Caulking	**Yes**	**Client ID: A-150-02A**	
					Chrysotile	2
					Non-Fibers	98
1941212-05	01-Oct-19				**Client ID: A-150-02B**	
					not analyzed	
1941212-06	01-Oct-19				**Client ID: A-150-02C**	
					not analyzed	
1941212-07	01-Oct-19	Grey	Caulking	**Yes**	**Client ID: A-150-03A**	
					Chrysotile	10
					Non-Fibers	90
1941212-08	01-Oct-19				**Client ID: A-150-03B**	
					not analyzed	
1941212-09	01-Oct-19				**Client ID: A-150-03C**	
					not analyzed	
1941212-10	01-Oct-19	Brown	Caulking	**Yes**	**Client ID: A-150-04A**	[AS-PT]
				[ASTrc]	**Chrysotile**	<MDL
					MMVF	5
					Non-Fibers	95

PARACEL LABORATORIES LTD.

Order #: 1941212

Certificate of Analysis

Report Date: 18-Oct-2019

Client: DST Consulting Engineers Inc. (Toronto)

Order Date: 8-Oct-2019

Client PO:

Project Description: GV OT 038848-A-150

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Paracel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1941212-11	01-Oct-19	Brown	Caulking	No	**Client ID: A-150-04B**	
					MMVF	5
					Non-Fibers	95
1941212-12	01-Oct-19	Brown	Caulking	No	**Client ID: A-150-04C**	
					MMVF	5
					Non-Fibers	95
1941212-13	01-Oct-19	Grey	Fireproofing	No	**Client ID: A-150-05A**	
					Cellulose	40
					Non-Fibers	60
1941212-14	01-Oct-19	Grey	Fireproofing	No	**Client ID: A-150-05B**	
					Cellulose	40
					Non-Fibers	60
1941212-15	01-Oct-19	Grey	Fireproofing	No	**Client ID: A-150-05C**	
					Cellulose	40
					Non-Fibers	60

* MMVF: Man Made Vitreous Fibers: Fiberglass, Mineral Wool, Rockwool, Glasswool

** **Analytes in bold indicate asbestos mineral content.**

Analysis Summary Table

Analysis	Method Reference/Description	Lab Location	NVLAP Lab Code *	Analysis Date
Asbestos, PLM Visual Estimation	by EPA 600/R-93/116	1 - Mississauga	200863-0	17-Oct-19

* Reference to the NVLAP term does not permit the user of this report to claim product certification , approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Mississauga Lab: 15 - 6800 Kitimat Rd Mississauga, Ontario, L5N 5M1

Certificate of Analysis

Report Date: 18-Oct-2019

Client: DST Consulting Engineers Inc. (Toronto)

Order Date: 8-Oct-2019

Client PO:

Project Description: GV OT 038848-A-150

Qualifier Notes

Sample Qualifiers :

AS-PT: Asbestos quantitation by PLM Point Count method.

ASTrc: Trace asbestos was observed below the noted detection limit but could not be accurately quantified.

Work Order Revisions | Comments

None

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Certificate of Analysis

DST Consulting Engineers Inc. (Ottawa)

203-2150 Thurston Dr.
Ottawa, ON K1G 5T9
Attn: Justin Seedial

Client PO: A-150
Project: GV-OT-038848
Custody:

Report Date: 15-Oct-2019
Order Date: 8-Oct-2019

Order #: 1941314

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1941314-01	A-150-L01/Beige Paint
1941314-02	A-150-L02/Grey Paint
1941314-03	A-150-L03/White Paint
1941314-04	A-150-L04/Purple Paint
1941314-05	A-150-L05/Exterior White Paint, South Entrance

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: DST Consulting Engineers Inc. (Ottawa)
Client PO: A-150

Report Date: 15-Oct-2019
Order Date: 8-Oct-2019
Project Description: GV-OT-038848

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Mercury by CVAA	EPA 7471B - CVAA, digestion	11-Oct-19	11-Oct-19
Metals, ICP-MS	EPA 6020 - Digestion - ICP-MS	10-Oct-19	11-Oct-19

PARACEL LABORATORIES LTD.

Order #: 1941314

Certificate of Analysis

Report Date: 15-Oct-2019

Client: DST Consulting Engineers Inc. (Ottawa)

Order Date: 8-Oct-2019

Client PO: A-150

Project Description: GV-OT-038848

	Client ID:	A-150-L01/Beige Paint	A-150-L02/Grey Paint	A-150-L03/White Paint	A-150-L04/Purple Paint
	Sample Date:	01-Oct-19 08:45	01-Oct-19 08:45	01-Oct-19 08:45	01-Oct-19 08:45
	Sample ID:	1941314-01	1941314-02	1941314-03	1941314-04
	MDL/Units	Paint	Paint	Paint	Paint
Metals					
Arsenic	50 ug/g	<50	<50	<50	<50
Chromium	50 ug/g	72	<50	806	<50
Lead	5 ug/g	2010	<5	4520	<5
Mercury	2 ug/g	<2	<2	<2	<2

	Client ID:	A-150-L05/Exterior White Paint, South Entrance	-	-	-
	Sample Date:	01-Oct-19 08:45	-	-	-
	Sample ID:	1941314-05	-	-	-
	MDL/Units	Paint	-	-	-
Metals					
Arsenic	50 ug/g	<50	-	-	-
Chromium	50 ug/g	9430	-	-	-
Lead	5 ug/g	19300	-	-	-
Mercury	2 ug/g	4	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Arsenic	ND	50	ug/g						
Chromium	ND	50	ug/g						
Lead	ND	5	ug/g						
Mercury	ND	2	ug/g						

Certificate of Analysis
Client: DST Consulting Engineers Inc. (Ottawa)
Client PO: A-150

Report Date: 15-Oct-2019
Order Date: 8-Oct-2019
Project Description: GV-OT-038848

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Arsenic	ND	50	ug/g	ND			0.0	50	
Chromium	ND	50	ug/g	ND			0.0	30	
Lead	77.2	5	ug/g	57.1			29.9	50	
Mercury	ND	2	ug/g	ND			0.0	30	

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Arsenic	1260	50	ug/g	ND	101	70-130			
Chromium	1250	50	ug/g	ND	100	70-130			
Lead	1260	5	ug/g	57.1	96.4	70-130			
Mercury	17	2	ug/g	ND	114	70-130			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

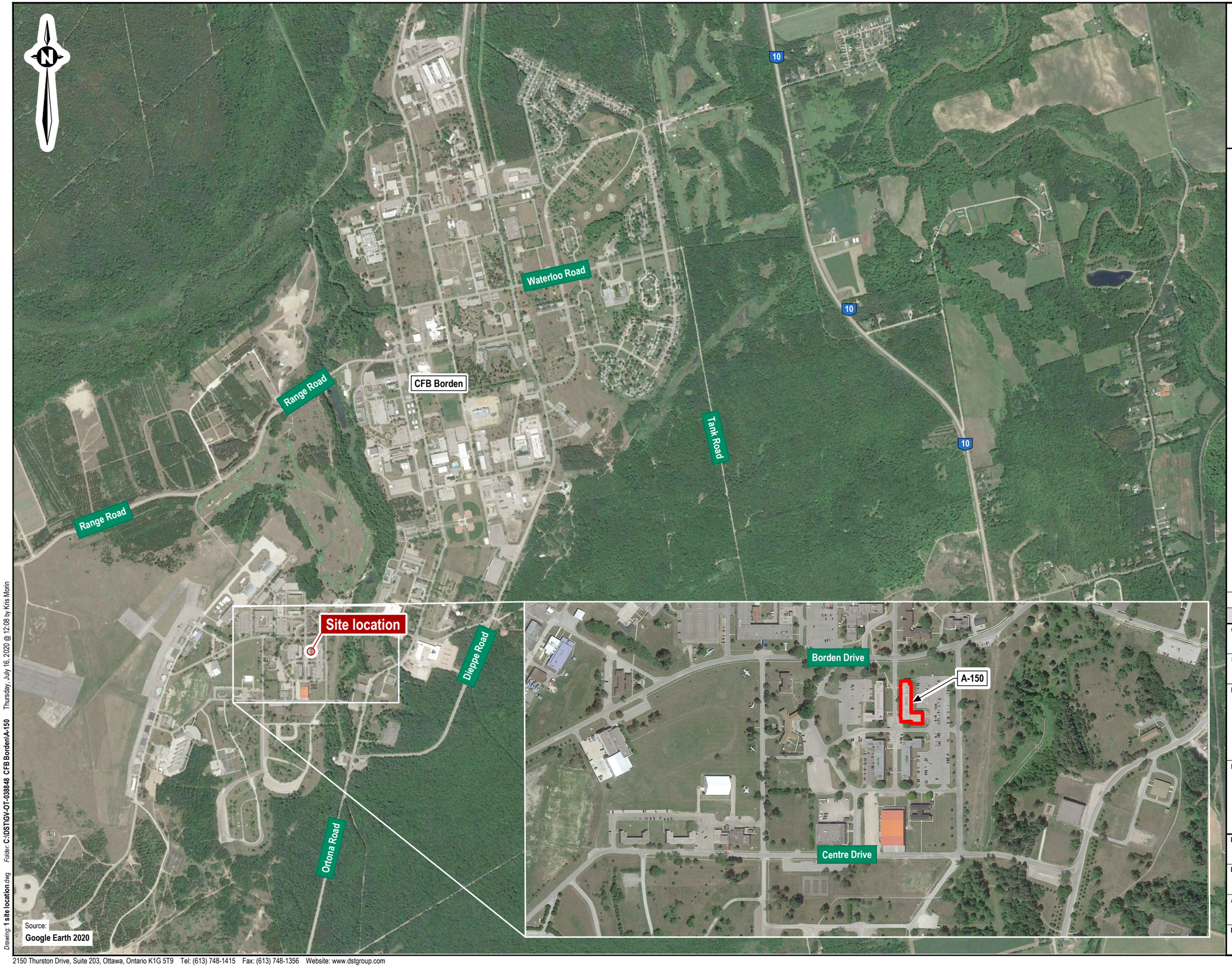
None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Appendix E

Floor Plan – Sample Locations



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Note

1. This drawing shall be read in conjunction with the associated technical report.

Legend

Site location

1:20 000

0 0.2 0.4 0.6 0.8 1.0 km

0 1:1 5 cm

Scale accurate when printed at 100% using paper size ANSI full bleed B (11.0 x 17.0 Inches)

Revision	Date	Issue	Approval
0	05/01/2020	Original	KB

Client: Defence Construction Canada

Site: Borden, ON

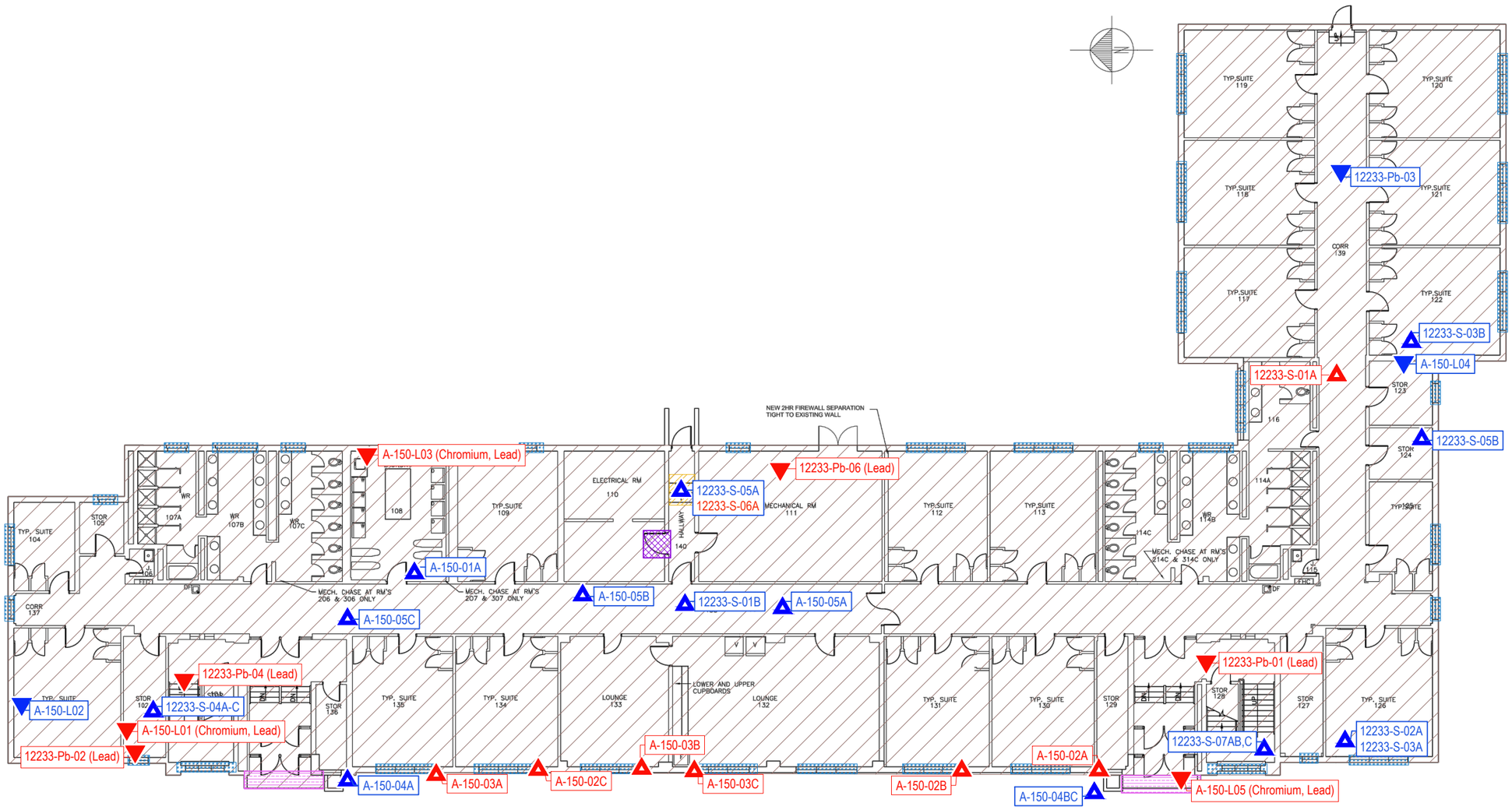
Report Title: DSR CFB Borden

Drawing Title: Site Location Plan

Designed By: J.S.	Scale: As shown
Drawn By: K.M.	Date: April 2020
Approved By: K.B.	Project No.: GV-OT-038848
Figure No.: 1	

Drawing: 1 site location.dwg Folder: C:\DST\GV-OT-038848 CFB Borden\A-150 Thursday, July 16, 2020 @ 12:08 by Kris Morin

2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9 Tel: (613) 748-1415 Fax: (613) 748-1356 Website: www.dstgroup.com



FIRST FLOOR PLAN - BLDG A-150
SCALE 1:100

GROSS AREA: 1325.22 m²
2012-07-24

TOTAL GROSS AREA: 3978.42 m²
FIRST FLR: 1325.22 m²
SECOND FLR: 1326.49 m²
THIRD FLR: 1326.71 m²
2012-07-24

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Note

1. This drawing shall be read in conjunction with the associated technical report.
2. Do not scale drawing.
3. Base plan provided by client.
4. Suspected asbestos-containing pipe joint caulking on cast iron pipes present in building.
5. DST samples are prefixed with 'A-150'

Legend

- Approximate ACM sample location - negative ACM results
- Approximate ACM sample location - positive ACM results
- Approximate paint sample location - no exceedance
- Approximate paint sample location - with exceedance
- Asbestos-containing drywall joint compound
- Asbestos-containing parging cement fitting insulation
- Asbestos-containing exterior caulking (canopy)
- Asbestos-containing exterior caulking (windows)
- Suspected asbestos

0	05/01/2020	Original	KB
Revision	Date	Issue	Approval

Client: Defence Construction Canada

Site: Borden, ON

Report Title: DSR CFB Borden

Drawing Title: A-150 First Floor Sample Location Plan

Designed By	Scale
J.S.	NTS
Drawn By	Date
K.M.	April 2020
Approved By	Project No.
K.B.	GV-OT-038848

Figure No. 2

Drawing 2 first.dwg Folder: C:\DST\GV-OT-038848 CFB Borden\A-150 Thursday, July 16, 2020 @ 12:08 by Kris Morin

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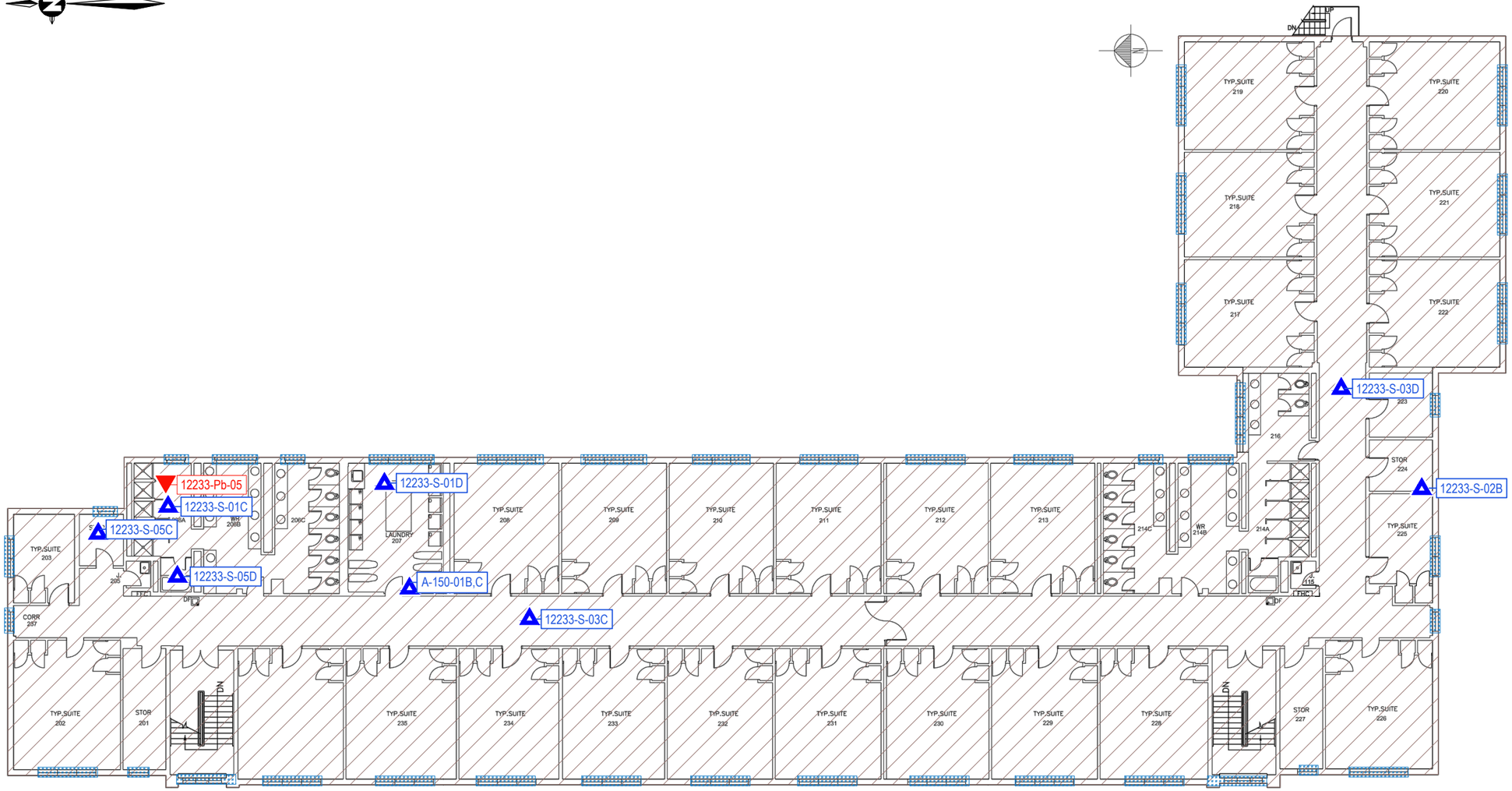

SECOND FLOOR PLAN - BLDG A-150
SCALE 1:100

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Note

1. This drawing shall be read in conjunction with the associated technical report.
2. Do not scale drawing.
3. Base plan provided by client.
4. Suspected asbestos-containing pipe joint caulking on cast iron pipes present in building.
5. DST samples are prefixed with 'A-150'

Legend

- Approximate ACM sample location - negative ACM results
- Approximate ACM sample location - positive ACM results
- Approximate paint sample location - no exceedance
- Approximate paint sample location - with exceedance
- Asbestos-containing drywall joint compound
- Asbestos-containing exterior caulking (windows)

0	05/01/2020	Original	KB
Revision	Date	Issue	Approval

Client: **Defence Construction Canada**

Site: **Borden, ON**

Report Title: **DSR CFB Borden**

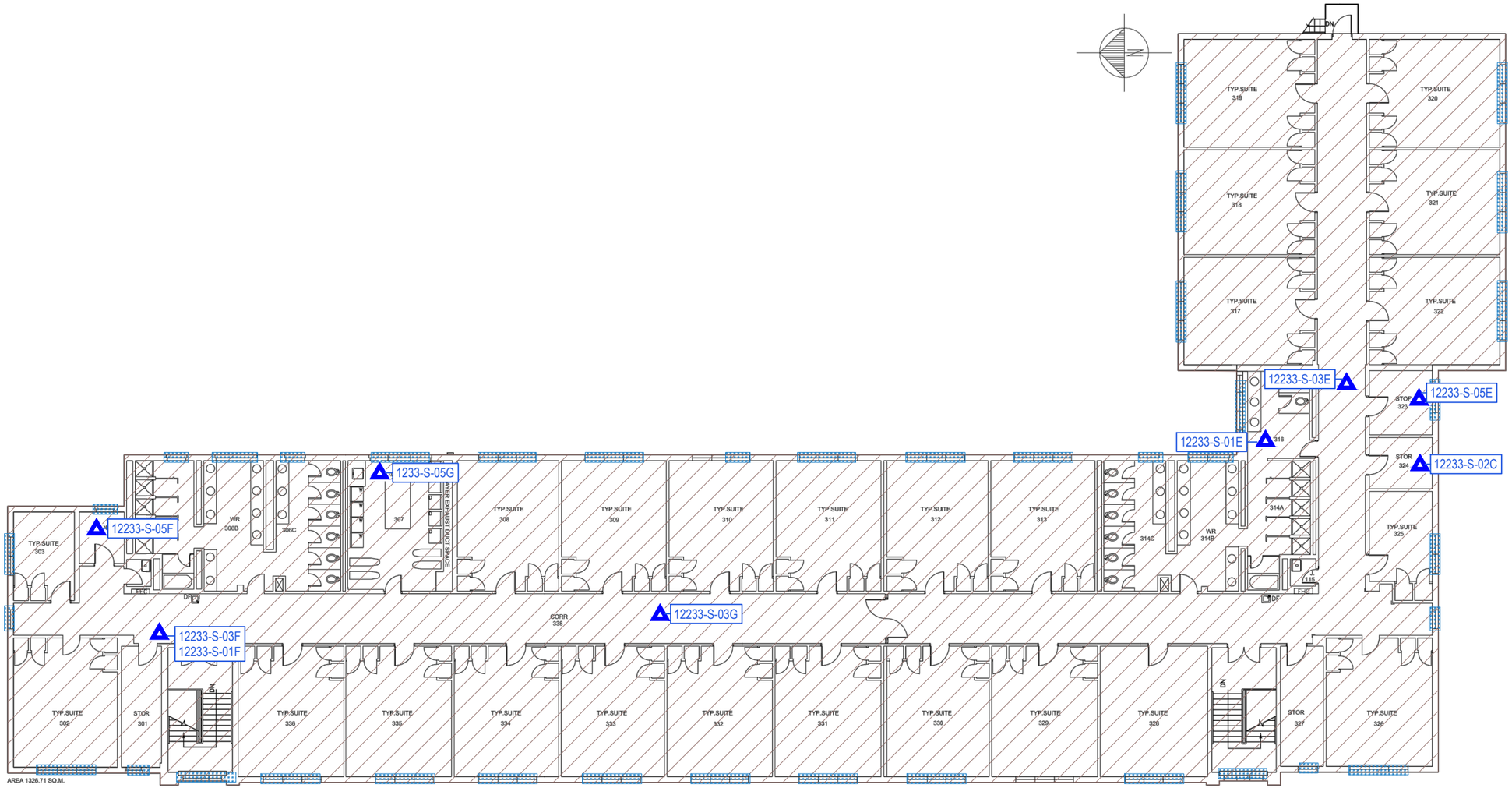
Drawing Title: **A-150 Second Floor Sample Location Plan**

Designed By	Scale
J.S.	NTS
Drawn By	**Date**
K.M.	April 2020
Approved By	**Project No.**
K.B.	GV-OT-038848

Figure No. **3**

Drawing: 3 second.dwg Folder: C:\DST\GV-OT-038848 CFB Borden\A-150 Thursday, July 16, 2020 @ 12:08 by Kris Morin

2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9 Tel: (613) 748-1415 Fax: (613) 748-1356 Website: www.dstgroup.com



THIRD FLOOR PLAN - BLDG A-150
1:100

GROSS AREA: 1326.71 m2
2012-07-24

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Note

1. This drawing shall be read in conjunction with the associated technical report.
2. Do not scale drawing.
3. Base plan provided by client.
4. Suspected asbestos-containing pipe joint caulking on cast iron pipes present in building.
5. DST samples are prefixed with 'A-150'

Legend

- Approximate ACM sample location - negative ACM results
- Approximate ACM sample location - positive ACM results
- Approximate paint sample location - no exceedance
- Approximate paint sample location - with exceedance
- Asbestos-containing drywall joint compound

0	05/01/2020	Original	KB
Revision	Date	Issue	Approval

Client: Defence Construction Canada

Site: Borden, ON

Report Title: DSR CFB Borden

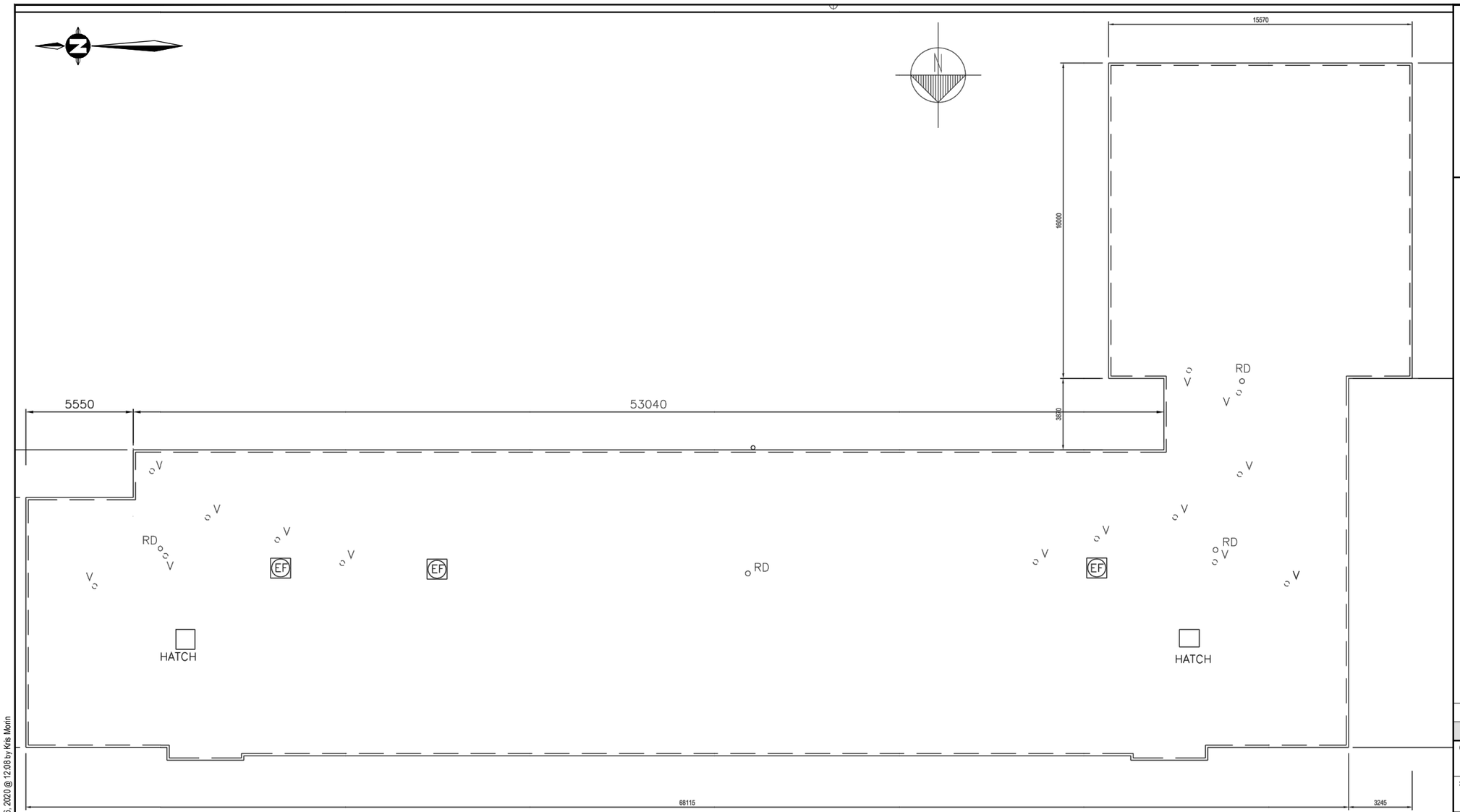
Drawing Title: A-150 Third Floor Sample Location Plan

Designed By	Scale
J.S.	NTS
Drawn By	Date
K.M.	April 2020
Approved By	Project No.
K.B.	GV-OT-038848

Figure No. 4

Drawing 4 third.dwg Folder: C:\DST\GV-OT-038848 CFB Borden\A-150 Thursday, July 16, 2020 @ 12:08 by Kris Morin

2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9 Tel: (613) 748-1415 Fax: (613) 748-1356 Website: www.dstgroup.com



Note

1. This drawing shall be read in conjunction with the associated technical report.
2. Do not scale drawing.
3. Base plan provided by client.
4. Only sample locations are shown, not the extent of the material found in the building.
5. DST samples are prefixed with 'A-150'

Legend

- Approximate ACM sample location - negative ACM results
- Approximate ACM sample location - positive ACM results
- Approximate paint sample location - no exceedance
- Approximate paint sample location - with exceedance

Revision	Date	Issue	Approval
0	05/01/2020	Original	KB

Client: **Defence Construction Canada**

Site: **Borden, ON**

Report Title: **DSR CFB Borden**

Drawing Title: **A-150 Roof Sample Location Plan**

Designed By	Scale
J.S.	NTS
Drawn By	**Date**
K.M.	April 2020
Approved By	**Project No.**
K.B.	GV-OT-038848

Figure No. **5**

2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9 Tel: (613) 748-1415 Fax: (613) 748-1356 Website: www.dstgroup.com