RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Bid Receiving - PWGSC / Réception des soumissions - TPSGC
11 Laurier St./11 rue Laurier
Place du Portage, Phase III
Core 0A1 / Noyau 0A1
Gatineau, Québec K1A 0S5

SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires
THIS DOCUMENT CONTAINS A SECURITY REQUIREMENT / CE DOCUMENT COMPORTE UNE EXIGENCE EN MATIÈRE DE SÉCURITÉ

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution
Construction Services Division/Division des services de construction
11 Laurier St./11 Rue Laurier
3C2, Place du Portage
Phase III
Gatineau, Québec K1A 0S5

Title - Sujet Heating Plant Decommission & Demoli	
Solicitation No. - N° de l'invitation EJ192-150405/A	**Amendment No. - N° modif.** 002
Client Reference No. - N° de référence du client 20150405	**Date** 2014-09-25
GETS Reference No. - N° de référence de SEAG PW-$$FG-353-65646	
File No. - N° de dossier fg353.EJ192-150405	**CCC No./N° CCC - FMS No./N° VME**
Solicitation Closes - L'invitation prend fin **at - à 02:00 PM** **on - le 2014-09-30**	**Time Zone** **Fuseau horaire** Eastern Daylight Saving Time EDT
F.O.B. - F.A.B. **Plant-Usine:** ☐ **Destination:** ☑ **Other-Autre:** ☐	
Address Enquiries to: - Adresser toutes questions à: Searchwell, Suzette	**Buyer Id - Id de l'acheteur** fg353
Telephone No. - N° de téléphone (819) 956-6645 ( )	**FAX No. - N° de FAX** (819) 956-8335
Destination - of Goods, Services, and Construction: **Destination - des biens, services et construction:** Agriculture Canada Central Experimental Farm 78 Prince of Wales Drive Ottawa, Ontario	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	**Delivery Offered - Livraison proposée**
Vendor/Firm Name and Address **Raison sociale et adresse du fournisseur/de l'entrepreneur** **Telephone No. - N° de téléphone** **Facsimile No. - N° de télécopieur**	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) **Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)** **Signature** **Date**	

This amendment is being raised to reflect the following changes identified as A) in the Invitation to Tender document and B) to incorporate the attached Addendum 02 .

These changes are effective immediately.

A) **SUPPLEMENTARY INFORMATION**

Designated Substance Study

Attached is the Designated Substance Study for the heating plant and the associated tunnels. This document is for information purposes only and is not official documents for the current project. Information judged to be important to this project has already been included in the plans and specification currently posted on buyandsell.gc.ca.

Environmental Site Assessments, Phase I and II

A DVD with the Environmental Site Assessments, Phase I and II can be requested by contacting Suzette Searchwell at the address below. **These documents are for information purposes only** and are not official documents for the current project. Information judged to be important to this project has already been included in the plans and specification currently posted on buyandsell.

Suzette Searchwell
Spécialiste en approvisionnements/Supply Specialist
Division des Services d'experts-conseils/Consultant Services Division
Direction de l'attribtion des marchés immobiliers/Real Property Contracting Directorate
Travaux publics et Services gouvernementaux Canada/Public Works and Government Services Canada
3C2, Place du Portage, Phase III
11 rue Laurier, Gatineau, QC K1A 0S5
Tel:819-956-6645 Fax: 819-956-8335
Courriel/E-Mail: suzette.searchwell@tpsgc-pwgsc.gc.ca
Gouvernement du Canada/Government of Canada

B) **ADDENDUM NO.02**

To incorporate the attached addendum No.02 to the solicitation documents

All other terms and conditions remain unchanged

ADDENDUM NO. 02

The following changes in the bid documents are effective immediately. This addendum will form part of the contract documents.

DRAWINGS

.1 A-101 – Existing Site Conditions:

.1 Refer to keynotes, delete full text of existing keynote 16 and replace full text of keynote 16 to read "Disused 113,500 L underground steel heating oil and diesel fuel storage tanks filled with sand"

.2 Refer to keynotes, delete full text of existing keynote 17 and replace full text of keynote 17 to read "Disused 4,500 L underground fibreglass heating oil and diesel fuel storage tanks filled with sand"

END OF ADDENDUM

Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

Canada

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Designated Substances Survey for the Central Experimental Farm Central Heating Plant Decommissioning and Deconstruction, Building 78, Prince of Wales Drive Ottawa, Ontario (PN: R.010550.009)

Summary Report

2012-12-19

Public Works and Government Services Canada
Real Property Branch
Professional and Technical Service Management
Environmental Services Directorate

Prepared for: El Houcine Faouzi
Environmental Services Directorate
Professional and Technical Services Management
Real Property Branch

Prepared by: Matthew DesRoches, M.Sc.(A), CIH, ROH.
Occupational Hygienist
DST Consulting Engineers Inc.

www.pwgsc-tpsgc.gc.ca

INTRODUCTION

DST Consulting Engineers Inc. (DST) was retained by El Houcine Faouzi, Environmental Analyst, Real Property Branch (RPB), Public Works and Government Services Canada (PWGSC), to conduct a Designated Substance Report (DSR) for the Central Experimental Farm (CEF) Central Heating Plant (CHP) Decommissioning and Deconstruction Project at Building 78, Prince of Wales Drive, Ottawa, Ontario.

The Designated Substances Report is required under the Ontario Occupational Health and Safety Act in order to identify designated substances that may be present within the project areas. 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. By having a DSR conducted, the Project Manager will be able to inform his or her employees, contractors, and tenants of any designated substances that may be present and possibly disturbed throughout the duration of the project. PCBs and Halocarbons have also been considered in order to identify the need to comply with appropriate Environmental legislation.

DST staff completed a visual evaluation of building materials for the presence of suspected designated substances and hazardous materials within the CEF CHP that may be disturbed during the planned demolition. The survey was performed on November 1, 2 & 14, 2012. A limited visual evaluation of the Coal Bunkers was performed from the basement access hatches and a ground floor garage wall opening. DST was informed the CEF CHP was no longer operational at the time of the site visit. The CHP Distribution Tunnel was accessed and surveyed on November 27, 2012. The boilers were accessed for material sample collection on December 5, 2012.

Past survey reports as provided by PWGSC were referenced in completing this report. These are:

- Asbestos Assessment Survey, Central Experimental Farm, Central Heating Plant, Building 78, Ottawa, Ontario, InAIR Environmental Ltd., September 2008;
- Asbestos Update Survey Report, Central Experimental Farm Central Heating Plant, Building 7, Ottawa, DST Consulting Engineers Inc.; and,
- Asbestos-Containing Materials Survey – Central Heating Plant Distribution Tunnels, Central Experimental Farm, Ottawa, Ontario, LRL File No. 08828, Levac Robichaud Leclerc Associates Ltd.

A floor plan, showing sample locations, is included in Appendix A. Laboratory certificates of analysis are included in Appendices B & C. Select Photographs are included in Appendix D.

ASBESTOS

In Ontario, a material is defined as an Asbestos-Containing Material (ACM) if the material has a minimum asbestos content of 0.5 per cent by dry weight. If materials are suspected to contain asbestos based on visual identification, they must be treated as asbestos-containing, unless laboratory analysis of the prescribed number of samples proves otherwise, as per *Ontario Regulation 278/05 – Asbestos on Construction Projects and in Buildings and Repair Operations* (O.Reg. 278/05), as amended. As per O.Reg 278/05, it is not necessary to analyze multiple bulk material samples collected from the same area of homogeneous material if analysis establishes that a bulk material sample contains 0.5 per cent or more asbestos by dry weight. Therefore, duplicate samples collected in order to satisfy the requirements of *O.Reg. 278/05*, as amended, were not analyzed if the initial sample was identified as asbestos-containing (positive stop clause).

As requested by PWGSC, any non-friable materials sampled that were determined to have no asbestos detected by Polarized Light Microscopy (PLM) analysis were to be further analyzed using Transmission Electron Microscopy (TEM)

analysis. Bulk asbestos sample analysis using PLM and TEM / X- Ray Analysis (TEM/EDX) / Gravimetric Analysis complied with the United States Environmental Protection Agency (U.S. EPA) Method 600/R-93/116 dated July, 1993.

Table 1 summarizes the analytical results of building material samples collected from the project area that were analyzed for asbestos content.

Table 1: Asbestos Sample Results by PLM and TEM[1] (denoted by TEM prefix)

Sample number	Material	Sample Location	Asbestos Type	Asbestos content (%)
015686-01A	White Insulation on Pipe Run	Basement, High Temperature Hot Water Pipe Run	n/d	n/a
015686-01B		Basement, High Temperature Hot Water Pipe Run	n/d	n/a
015686-01C	White Insulation on Generator Exhaust	Ground Floor, Diesel Room	n/d	n/a
015686-02	Brown/Gray Fitting Insulation (red fittings)	Basement, Near East Metal Stairs	n/d	n/a
015686-03		Basement, Near East Metal Stairs	n/d	n/a
015686-04		Basement, Northeast corner	n/d	n/a
015686-05	**Metal Clad Cap Insulation**	**Basement, Header**	**20% Chrysotile**	
015686-TEM-06	Drywall Joint Compound	Ground Floor, Washroom Shower Area	n/d	n/a
015686-07	**Drain Pipe Joint Caulking**	**Ground Floor, Garage**	**40% Chrysotile**	
015686-08	**Transite**	**Ground Floor, Circular Stairwell**	**20% Chrysotile**	
015686-09	**End Cap Insulation**	**High Temperature Hot Water Pipe Run, Boiler Side Mezzanine Level**	**60% Chrysotile**	
015686-TEM-10	Plaster (White and Gray Layers)	Basement, Plaster (debris) on top of Tunnel Entrance Ceiling Slab	n/d	n/a
015686-11A	**White Caulking**	**Building Exterior at Copper Flashing**	**5% Chrysotile**	
015686-11B			Not Analysed	
015686-11C			Not Analysed	
015686-TEM-11			Not Analysed	
015686-12A	Roof Core (Multiple Layers Analyzed)	1st Roof level	n/d	n/a
015686-12B		2nd Roof Level	n/d	n/a
015686-12C		3rd Roof Level	n/d	n/a
015686-TEM-12		3rd Roof Level	n/d	n/a
B-01A	**Parging**	**Boiler #1, on floor of Return Header**	**1% Chrysotile**	
B-01B		Boiler #1, on floor of Return Header	Not Analysed	
B-01C		Boiler #1, on side of Return Header	Not Analysed	
B-02A	Castable material	Boiler #1, Return Header Hatch	n/d	n/a
B-02B		Boiler #2, Header Hatch	n/d	n/a
B-02C		Boiler #2, Header Hatch	n/d	n/a
B-03A	Throat Parging	Boiler #1, Fire Box Throat	n/d	n/a
B-03B		Boiler #2, Fire Box Throat	n/d	n/a
B-03C		Boiler #3, Fire Box Throat	n/d	n/a

[1] See Appendix B Laboratory Certificates of Analysis for individual layer results within samples.

Sample number	Material	Sample Location	Asbestos Type	Asbestos content (%)
B-04	Thermal Patch	Boiler # 3, Fire Box	n/d	n/a
B-05A	Fire Brick	Boiler #1, Fire Box Side Wall	n/d	n/a
B-05B		Boiler #2, Fire Box Side Wall	n/d	n/a
B-05C		Boiler #3, Fire Box Side Wall	n/d	n/a
B-06A	Parging	Boiler #1, Fire Box Side Wall	n/d	n/a
B-06B		Boiler #2, Fire Box Side Wall	n/d	n/a
B-06C		Boiler #3, Fire Box Side Wall	n/d	n/a
B-07A	**Castable material**	**Boiler #1, Fire Box Side Wall**	**9.79% Chrysotile**	
B-07B			n/d	n/a
B-07C			n/d	n/a
B-08A	**Parging**	**Boiler #1, Upper Side Wall**	**1% Tremolite**	
B-08B		**Boiler #2, Upper Side Wall**	**1% Chrysotile**	
B-08C		**Boiler #3, Upper Side Wall**	**1% Chrysotile**	
B-08D		Boiler #3, Fire Box Side Wall	n/d	n/a
B-08E		Boiler #3, Fire Box Side Wall	n/d	n/a
B-09A	**Insulation**	**Boiler #1, Concealed beneath Boiler floor**	**40% Amosite**	
B-09B			Not Analysed	
B-09C			Not Analysed	
B-10A	30 cm x 30 cm Fire Brick	Boiler #3, sloped floor from throat	n/d	n/a
B-10B			n/d	n/a
B-10C			n/d	n/a

Bold items exceed the 0.5% regulated concentration of asbestos, as per *O.Reg. 278/05*, as amended.
n/d = none detected, n/a = not applicable

Friable Material

Past investigations and the analytical results from the current bulk sampling program indicate that the following friable materials are present at the building:

- Minor debris on top of the ceiling slab of the Steam Tunnel entrance in the Basement is suspected to consist of asbestos-containing pipe fitting insulation (poor condition);
- Metal clad cap insulation (**Sample 015686-05**) on a header in the Basement (good condition);
- End cap insulation on the High Temperature Hot Water pipe run (**Sample 015686-09**) (good condition);
- Grey pipe elbow insulation on domestic water pipes (good condition);
- Select pipe elbow insulation (painted red) (good condition);
- Antisweat insulation on domestic water pipes and drain pipes (good/fair condition);
- Grey parging insulation over white non-asbestos insulation on Emergency Generator Pipe elbows and hangers (fair condition);
- Insulation on middle section of induced fan units (3 units) (good condition);

- Grey/beige parging insulation on the floor and sides of the Return Header of Boiler #1 (**Sample B01-A**) (good condition). This material is also suspected present in the same areas of Boiler # 2 & 3;

- Grey/beige castable parging insulation in the Fire Box side wall of Boiler #1 (**Sample B07-A**) (good condition). This material was not seen in the same areas of Boiler # 2 & 3;

- Parging insulation on the upper side walls of Boiler #1, #2 & #3 (**Samples B08-A-C**) (good condition);

- Brown insulation concealed beneath the floor of Boiler #1 (**Sample B09-A**) (good condition). This material is also suspected present concealed beneath the floors of Boiler # 2 & 3.

Much of the pipe insulation in the Basement is non-asbestos (e.g. fiberglass, non-asbestos white insulation, etc.). However, pipe fitting insulation type was inconsistent and varied between asbestos and non-asbestos applications, and in some cases both applications present on the same fitting. As intensive destructive testing would be required to delineate fitting insulation type in the Basement, it may be more practical to consider all pipe fitting insulation as asbestos-containing for abatement purposes. There are approximately 110 of these fittings throughout the Basement. One (1) asbestos-containing elbow was noted associated with the heater in the Diesel Room. One (1) suspect asbestos-containing elbow was noted associated with a pipe beneath the North most make-up tank at the make-up tank level. Approximately four (4) elbows insulated with suspect asbestos-containing material at the Return Header at the boiler base are associated with each Boiler.

Asbestos-containing grey parging insulation over white non-asbestos insulation was noted on Emergency Generator Pipe elbows and hangers in the Ground Floor Diesel Room. Asbestos precautions must be used when disturbing materials at these locations.

It was reported that boiler materials were removed and replaced with other material as part of boiler fit-ups over the years. These fit-ups are not well documented. The Boiler sampling program indicates that older asbestos-containing materials are indeed present at the boiler base and concealed beneath the boiler floors while firebox materials did not contain asbestos with the exception of Castable material noted at the Boiler #1, Fire Box Side Wall. Asbestos-containing Side Wall parging was then noted at the upper level of all three boilers. Given the inconsistencies between boiler material sampling results, it may be more practical to treat all boiler materials as asbestos-containing for abatement purposes.

Non-Friable Material

Past investigations and the analytical results from the current bulk sampling indicate that the following non-friable materials are present at the Building:

- Cast Iron Drain Pipe Bell Joint Caulking at cleanout in ground floor garage (**Sample 015686-07**)(good condition);

- Transite panel (**Sample 015686-08**), East stairwell and circular stairwell walls, ceiling of ground floor storage room off Garage (some mechanical breakage in a few areas but no debris – good condition);

- Transite ceiling tile remnants (suspect) on concealed ceiling tracking in ceiling space of Ground Floor Kitchen and Front Office (mechanical breakage – good condition);

- Light heat shielding (suspect), ground floor storage room off garage (good condition);

- Mechanical ventilation dampeners (suspect), basement and 5th floor (good condition);

- Gasket material on soot (”heavies”) collectors, and select boiler hatches (suspect) (good condition);
- White exterior caulking at copper flashing at building entrance (**Sample 015686-11A**)(good condition);
- Metal fire doors on the ground floor have an “aircell” insulation core which is assumed to contain asbestos (concealed, good condition).

The majority of drain pipe bell joint caulking contained lead rather than asbestos (see below). Asbestos-containing drain pipe bell joint caulking was only observed in one instance.

Non-Asbestos-Containing Materials

The following materials sampled either during the past or current survey, and analysed, were determined not to contain regulated amounts of asbestos:

- Pipe insulation on large pipes situated against metal grate/catwalk floor, induced fan units, East side of Level 4;
- White insulation on high temperature hot water pipe run and emergency generator muffler exhaust (Samples 015686-01A-C);
- Brown/grey pipe fitting insulation (select red painted fittings) (Samples 015686-02, 03 & 04);
- Pipe fitting parging cement in CHP Distribution Tunnel;
- Tar paper on pipes in CHP Distribution Tunnel;
- Lay-in ceiling tiles, ground floor;
- Drywall joint compound (Sample 015686-TEM-07**)**;
- Grey/brown speck vinyl floor tile and mastic, Ground Floor Maintenance Office (Office and floor tiles no longer present);
- Wall plaster, ground floor and basement (Sample 015686-TEM-10**)** ;
- Black baseboard and mastic, ground floor;
- Grey loose powder on red painted fittings;
- Roofing materials (Samples 015686-12A-C and TEM-12**)**.
- Select boiler insulation materials (See Table 1); however, it may be more practical to treat these materials as asbestos-containing for abatement purposes (See Above).

Asbestos Recommendations

Appropriate asbestos abatement practices should be followed, including the use of proper respiratory protection and ventilation if asbestos-containing materials (ACMs) are disturbed, as per *O.Reg 278/05,* as amended, and *PWGSC*

Departmental Policy 057 – Asbestos Management (PWGSC DP 057). In the event of conflict between *DP-057* and *O.Reg 278/05, as amended*, the more stringent shall apply.

Given that the boiler materials at the base of the boilers, Fire Box side wall of Boiler #1, and at the upper levels of the boilers contain asbestos, DST recommends that it would be more practical to treat all boiler materials as asbestos-containing for abatement purposes. Repairing, altering or demolishing all or part of a kiln, metallurgical furnace or similar structure (e.g. Boiler) that is made in part of refractory materials that are asbestos-containing materials must be conducted using Type 3 asbestos work procedures. Waste segregation and cleaning of non-asbestos refractory materials for disposal as non-hazardous should be considered.

The removal or disturbance of one square metre or less of friable asbestos-containing materials (pipe insulation, Emergency Generator Pipe elbows and hangers, induced fan unit insulation) must be conducted using a minimum of Type 2 asbestos work procedures. The removal or disturbance of more than one square metre of friable asbestos-containing materials must be conducted using Type 3 asbestos work procedures. Type 3 asbestos abatement operations performed in occupied buildings require daily asbestos air monitoring outside of each asbestos work area, as per PWGSC DP 057. It should be noted that the removal of good condition asbestos-containing pipe insulation and pipe fitting insulation can be conducted using Type 2 glove bag procedures, provided the material is in good condition, and a proper seal can be maintained.

The removal or disturbance of non-friable asbestos-containing drain pipe joint caulking, ventilation dampeners, gasket material, light heat shielding, exterior white caulking, fire doors, and transite panels (and tile remnants) can be conducted using a minimum of Type 1 asbestos work procedures, provided the material is wetted to control the spread of dust or fibres, and the work is done only be means of non-powered hand-held tools. If these conditions cannot be met, then more stringent (Type 2 or Type 3) work procedures are required.

The "General – Waste Management" *O.Reg 347* governs the disposal of waste containing asbestos. The waste must be disposed at a licensed waste disposal site. Again, consideration for waste segregation and cleaning of non-asbestos refractory materials for disposal as non-hazardous should be given.

If you have any questions or concerns about asbestos in your project area, please contact Paul von Schoenberg, Regional Asbestos Coordinator, PWGSC, at (613) 957-1316.

LEAD

Table 2 summarizes the analytical results of representative paint samples collected from the building that were analyzed for lead content.

Table 2: Lead Paint Sample Results

Sample Number	Description	Location	Lead Content (µg/g)[1]
015686 - LP01	**Grey/red floor paint**	**Basement – Laundry Area**	**298**
015686 - LP02	**Grey wall paint**	**Basement – Chemical Storage Room**	**124**
015686 - LP03	**Grey duct paint**	**Basement – Laundry Area**	**2,870**
015686 - LP04	**Grey wall paint**	**Ground Floor – Kitchen**	**1,490**
015686 - LP05	**Red floor paint**	**Ground Floor – Electrical Room**	**3,050**
015686 - LP06	**Green wall paint**	**Ground Floor – Circular Stairwell**	**7,080**

[1] One µg/g is the equivalent of one part per million (ppm)
Bold items exceed the 90 ppm limit for lead, as per Hazardous Products Act's *Surface Coating Materials Regulations SOR/2005-109*

All paints sampled had a lead concentration greater than 90 ppm.

Samples were collected, where possible, from poor condition paint, as sampling of good condition paints was not practical without matrix interference (i.e. removing paint without also removing non-paint substrate) or damaging the materials. The sample locations of paints collected as part of the site investigations are included on floor plans, attached as Appendix A. Laboratory certificates of analysis are attached as Appendix C.

Various equipment (e.g. boilers, etc.), doors and door frames are also painted with paint suspected to contain lead.

Metal supports for the pipes in the CHP Distribution Tunnel are also painted with paint suspected to contain lead.

Drain pipe joint caulking (majority of joints), Emergency light batteries, ceramic tile glazing, and solder on copper piping are also suspected to contain lead.

The Occupational Health and Safety (OHS) Branch of the Ontario Ministry of Labour (MoL) has published the document entitled "*Guideline: Lead on Construction Projects*". This document classifies the disturbance of materials containing lead as Type 1, Type 2a, Type 2b or Type 3a Type 3b work, and assigns different levels of respiratory protection and work procedures for each classification. These procedures should be followed when performing work involving the disturbance of lead-containing materials.

Although the Hazardous Products Act, *Surface Coating Materials Regulations SOR/2005-109*, as amended, has set a limit of 90 parts per million (ppm) for surface coating materials, there may be a potential for exposure to very high levels of lead depending on the activities performed that disturb the lead-containing materials, even at low lead 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. As an example, greater precautionary measures must be implemented for work procedures that create a higher risk of worker exposure to lead (e.g. sanding or grinding operations that have a higher risk of generating airborne lead-containing dust).

Requirements for allowable lead worker exposure levels, as outlined in the Ontario Occupational Health and Safety Act's "Designated Substances" *O.Reg 490/09*, as amended, must be met.

The *Ontario General – Waste Management Regulation, O.Reg 347* governs the disposal of waste containing lead.

The *Federal Transportation of Dangerous Goods Act* controls the transport of the waste to a disposal site.

If you have any questions or concerns about lead in your project area with regards to airborne contamination, please contact Rejean Bergeron, A/Program Manager, Emergency Management and Tenant Health & Safety, Asset & Facilities Management Directorate, PWGSC, at (613) 736-3173.

SILICA

During the site investigation materials such as plaster, ceramic tiles, ceiling tiles, concrete building materials, and brick and mortar were observed within the building. The CHP Distribution Tunnel also consists of a concrete structure. Free crystalline silica is present in these materials. Appropriate work practices including adequate ventilation and respiratory protection must be utilized should the demolition and modification of these structures be required as per "Designated Substances – Silica" *O.Reg 845/90* amended by *O.Reg 490/09*.

The OHS Branch of the Ontario MoL has published the document entitled "*Guideline: Silica on Construction Projects"*. This document classifies the disturbance of materials containing silica as Type 1, Type 2 or Type 3 work, and assigns different levels of respiratory protection and work procedures for each classification. These procedures should be followed when performing work involving the disturbance of silica-containing materials.

If you have any questions or concerns about silica in your project area, please contact Rejean Bergeron, A/Program Manager, Emergency Management and Tenant Health & Safety, Asset & Facilities Management Directorate, PWGSC, at (613) 736-3173.

MERCURY

During the site investigation, several fluorescent light tubes and High-intensity Discharge (HID) lamps which contain mercury vapour were observed throughout the building and the CHP Distribution Tunnel. If removed or relocated, requirements for allowable exposure levels, as outlined in the Ontario Occupational Health and Safety Act's *Regulation 844* as amended by *Regulation 490/00,* must be met. In addition, the OHS Branch of the Ontario MoL publication *The Safe Handling of Mercury: A Guide for the Construction Industry*, should be followed during the disturbance of materials containing mercury.

It is estimated that there are approximately 60 fluorescent light tubes, and approximately 100 HID lamps within the building.

Mercury is also suspected present within electrical switches in equipment throughout the building.

Mercury waste is considered a hazardous waste under *Ontario Regulation 347* of the *Ontario Environmental Protection Act*, therefore, proper storage and disposal of mercury must be followed in accordance with this *regulation.* Where possible, fluorescent light tubes should be recycled.

Requirements for allowable mercury exposure levels, as outlined in the Ontario Occupational Health and Safety Act's "Designated Substances" *O.Reg 490/09*, as amended must be met.

Recycling or disposal arrangements can be made by contacting Brian Stoneman, Hazardous Waste Supervisor, PWGSC Environmental Services Directorate – Environmental Regulations and Assessments Unit at (613) 993-5639.

POLYCHLORINATED BIPHENYLS (PCBs)

During the site investigation, several fluorescent light fixtures and High Intensity Discharge (HID) lamps were observed throughout the CHP. DST did not disassemble the light fixtures as they were energized at the time of the site investigation. One (1) derelict ballast being stored in a basement stock room was exposed to view, and DST was able to observe ballast label information. This ballast was an *Advance* brand ballast and labeled "No PCB's". Also, fluorescent light fixtures in the CHP Distribution Tunnel contained mostly T-8 tubes. Two (2) ballasts within the CHP Distribution Tunnel were observed, an *Advance* brand and *Sylvania* brand, and labeled "No PCB's. Given this information and the type of fluorescent light fixture (i.e. T-8 type) observed, light ballasts within the CHP Distribution Tunnel are not anticipated to contain PCBs.

However, some fluorescent light fixtures within the CHP were observed in which their ballasts could not be verified. These fixtures appeared to be of vintage when PCB-containing ballasts were in use. These ballasts are suspected to contain PCBs. It is estimated that there are approximately 30 suspect PCB-containing ballasts in the building.

Derelict *Halophane* brand HID lamp fixtures were found in the northeast corner corridor. Date codes on the fixtures indicated that the fixtures were manufactured in 1997. Given this date of manufacture, ballasts associated with light fixtures manufactured in 1997 are not suspected to contain PCBs. HID light fixtures throughout the building appeared to be *Halophane* brand HID lamp fixtures similar to the ones observed manufactured in 1997.

Transformers observed within the Electrical Room and CHP Distribution Tunnel were dry-cool type. These transformers do not contain oil and thus are not suspected to contain oils with PCBs.

One (1) oil-cooled transformer was observed disconnected and on a wood skid along the exterior west side lot of the building. It appears that this transformer may have been removed from the Electrical room of the building. This transformer may contain oil which contains PCBs.

One (1) pad mounted oil-cooled transformer was observed on the Southwest lawn adjacent to the building. This transformer may contain oil which contains PCBs.

The transformer adjacent the pad mounted oil cooled transformer mentioned above was labeled LB-22 with a date code of 1993. Assuming any oil contained within this transformer would also be of 1993 vintage, the oil should not contain PCBs given the date of manufacture.

Should any light ballast suspected of containing PCBs be encountered during this project, please refer to the Environment Canada, "Identification of Lamp Ballasts Containing PCBs", August 1991 report, for assistance with PCB identification. If PCB-containing equipment is identified and must be removed, it should be disposed of in accordance with the Canadian Environment Protection Act's *PCB Regulations,* the Federal Transportation of Dangerous Goods Act and Ontario Environmental Protection Act's "Waste Management – PCB's" *Regulation 362/90 (O.Reg 33/07, French version).*

If you have any questions or concerns about PCBs in your project area, please contact Brian Stoneman, Hazardous Waste Supervisor, PWGSC Environmental Services Directorate – Environmental Regulations and Assessments Unit at (613) 993-5639

HALOCARBONS

The following halocarbon-containing equipment was noted:

A compressed air dryer was located in the basement and was charged with R-134a.

A refrigerator was located in the kitchen as well as just outside of the kitchen. These units were charged with R-134a and R-12 respectively.

A soft drink cooler which was charged with R-12 was located just outside of the Kitchen.

A drinking fountain, charged with R-12, was located in the main entrance area of the building.

Six (6) A/C units were located in various rooms on the Ground Floor of the building including the control booth, chief office, kitchen, men's washroom, maintenance office and drawing office. These units were charged with R-22 with the exception of the ones located in the men's washroom and chief office which were charged with R-410a.

There are no chillers located at this building.

When units containing halocarbons are to be decommissioned, a licensed contractor specializing in the maintenance of halocarbon-containing equipment must conduct all work involving the removal of halocarbons. All halocarbons are to be recovered. All work involving halocarbons is to be done following the requirements of the *Federal Halocarbon Regulations* (2003) and "Refrigerants" *O.Reg 189/94*, as amended.

If you have any questions or concerns about halocarbons in your project area, please contact Gilles Brasseur, Manager, PWGSC Environmental Services Directorate at (613) 993-5735.

OTHER HAZARDOUS MATERIALS

Miscellaneous chemicals (e.g. acids, bases, water treatment chemicals, aerosols, spray sealants, lubricants, cleaners, degreasers, compressor fluid, etc.) for maintenance operations were located in Flammable storage

cabinets in the Basement Chemical Storage Room, and ground floor of the building. A bulk storage vat marked as containing a corrosive liquid was observed in the basement of the building. Solid water treatment materials (possibly ion exchange beads) spilling out from bags onto the concrete floor in the northeast section of the Make-up tank Level were also observed.

Waste oil drums (approx. 200 L) were observed in the Basement and Garage area of the building. Two drums (approx. 200 L) with unknown contents were located on the exterior Southwest side of the building.

The handling and use of miscellaneous chemicals 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. Prior to building decommissioning, they should be re-used elsewhere (if appropriate) or disposed of appropriately. The transport and disposal of chemical waste is governed by the Transportation of Dangerous Goods Act, and O. Reg. 347/90 – General – Waste Management, as amended.

Two (2) large propane tanks were located on the exterior West side of the building. These tanks, and any contents, should be handled and disposed of appropriately.

A limited visual evaluation of the Coal Bunkers showed some dust but no obvious coal debris. Soot and other debris were noted in the soot ('heavies") collector at one of the induced fan units. Characterization of this debris as per O. Reg. 347/90 – General – Waste Management, as amended, may be required prior to disposal. During decommissioning, measures to control residual dust levels (e.g. wetting) should be used to control possible dust emissions. Dermal and respiratory protection may be required.

Rodent droppings were observed on the Kitchen counter top and above the false ceiling in a few areas of the Ground Floor. Due to the health threat of microbials associated with fecal matter, it is recommended that prior to disturbance, animal fecal matter be cleaned and removed following the appropriate work procedures given in the document *Mould Guidelines for the Canadian Construction Industry CCA 82-2004* published by the Canadian Construction Association (*CCA 82-2004*). Following clean-up, packaging and disposal of all animal fecal matter impacted waste should be performed in such a manner as to avoid cross-contamination of unaffected areas. Disposal of waste should be performed in accordance with local, municipal, provincial, and/or federal jurisdictions having authority.

Pipe insulation canvas on the pipes in the CHP Distribution Tunnel leading to Sir John Carling Building showed suspected mould growth. These pipes are no longer active. If these pipes are to be disturbed by workers during the CHP Decommissioning project, workers should be notified of the presence of this suspect mould and appropriate Personal Protective Equipment (PPE) (e.g. respiratory and dermal protection) may be required.

If you have any questions or concerns about hazardous waste removal in your project area, please contact Brian Stoneman, Hazardous Waste Supervisor, PWGSC Environmental Services Directorate – Environmental Regulations and Assessments Unit at (613) 993-5639.

If you have any questions or concerns about mould in your project area with regards to airborne contamination, please contact Rejean Bergeron, A/Program Manager, Emergency Management and Tenant Health & Safety, Asset & Facilities Management Directorate, PWGSC, at (613) 736-3173.

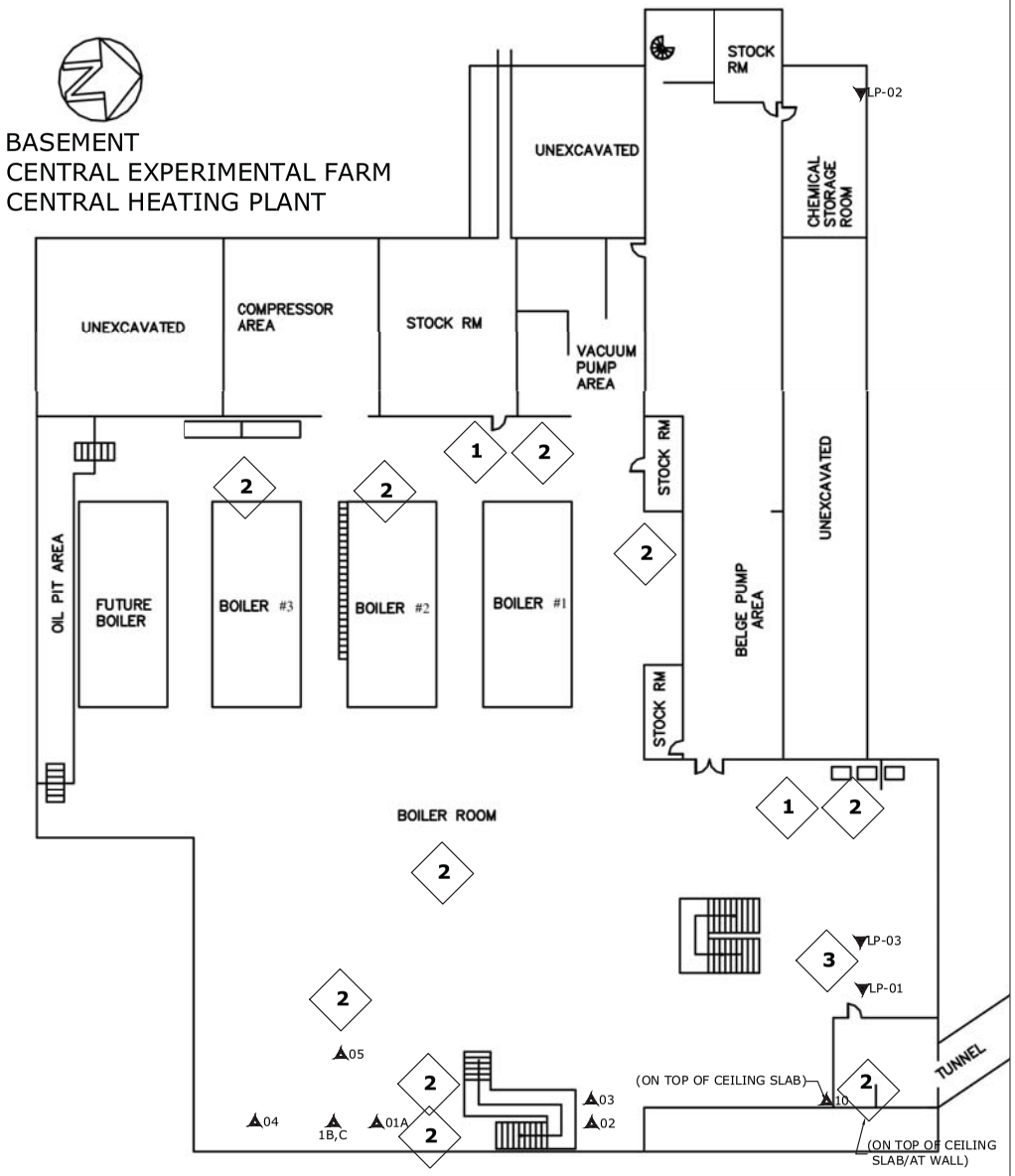
SURVEY LIMITATIONS

A reasonable effort was made to capture all potential designated substances, and hazardous materials deemed pertinent. Note, however, that no scope of work, no matter how exhaustive, can identify all potential contaminants. Should any designated substance (or potential hazardous materials) not apparent from the survey be encountered in the course of demolition or renovation work, work shall be stopped, preventative measures taken, and the Departmental Representative notified immediately. Do not proceed until written instructions have been received.

Appendix A

Floor Plan with Sample Locations

BASEMENT
CENTRAL EXPERIMENTAL FARM
CENTRAL HEATING PLANT



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NOTES:

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2. DO NOT SCALE DRAWING.
3. ALL SAMPLE IDENTIFIERS ARE PREFIXED WITH '015686-' WHICH WAS LEFT OUT FOR DRAWING CLARITY.
4. BASE DRAWING SUPPLIED BY CLIENT.

LEGEND:

- BULK PAINT SAMPLE LOCATION
- BULK ASBESTOS SAMPLE LOCATION
- 1 — ASBESTOS CONTAINING ANTISWEAT INSULATION
- 2 — ASBESTOS CONTAINING PIPE FITTING INSULATION
- 3 — SUSPECT ASBESTOS CONTAINING DAMPENER INSULATION

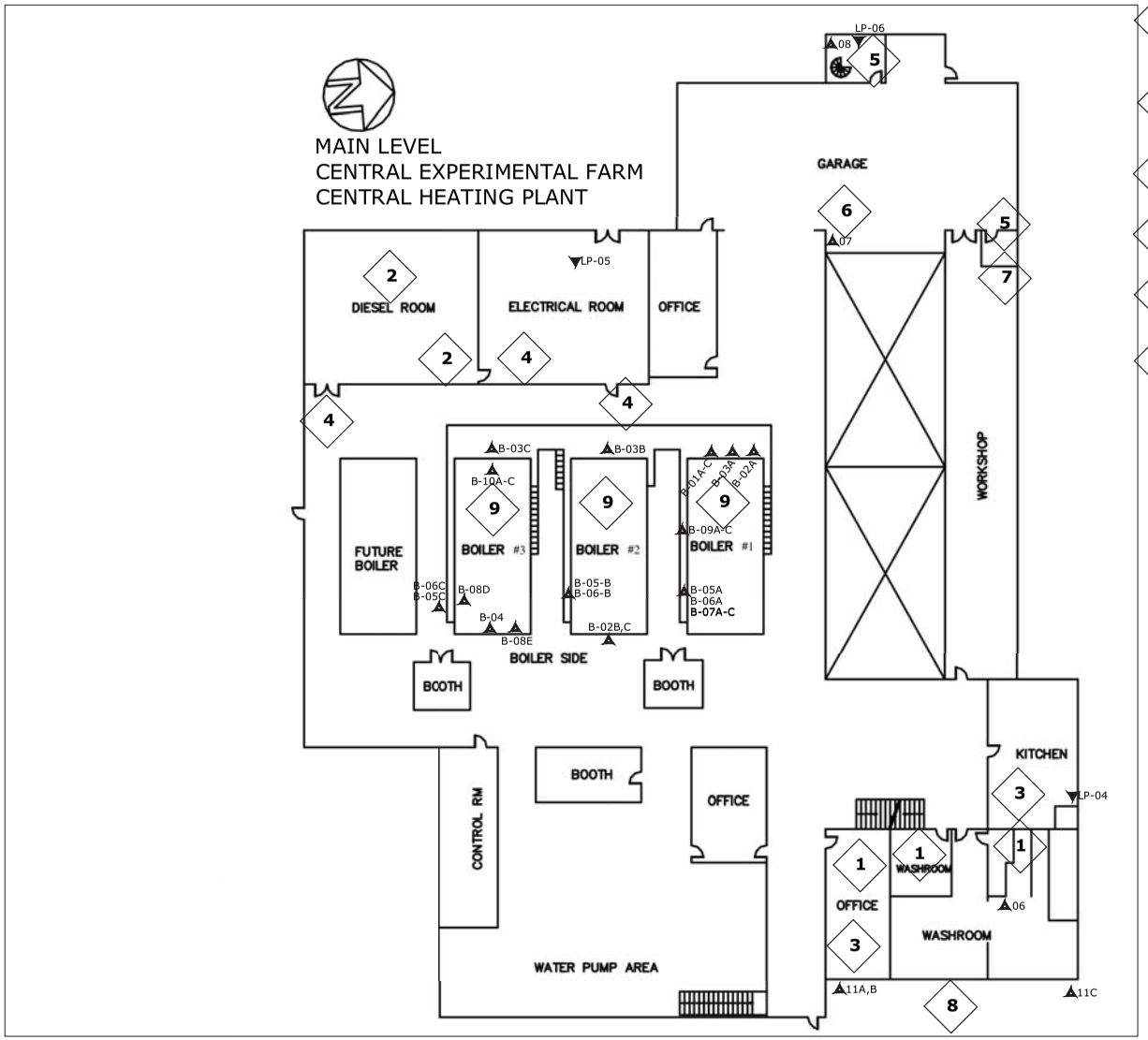
REV	DATE	ISSUE	APPROVAL
A	18/12/12	PRELIMINARY	M.D.

PROJECT TITLE
DESIGNATED SUBSTANCES SURVEY
CENTRAL EXPERIMENTAL FARM
CHP

DRAWING TITLE
SITE AND SAMPLE LOCATION PLAN

DESIGNED BY: M.D.	SCALE: NTS
DRAWN BY: D.L.	DATE: December 2012
APPROVED BY: M.D.	PROJECT NO.: BE-OT-015686

FIGURE 1



LEGEND CONTINUED

4 ASBESTOS CONTAINING FIRE DOOR

5 ASBESTOS CONTAINING TRANSITE PANEL

6 ASBESTOS CONTAINING DRAIN PIPE JOINT CAULKIKING

7 SUSPECT ASBESTOS CONTAINING LIGHT HEAT SHILEDING

8 ASBESTOS CONTAINING EXTERIOR WHITE CAULKING.

9 ASBESTOS CONTAINING BOILER MATERIALS

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LEGEND:

BULK PAINT SAMPLE LOCATION

BULK ASBESTOS SAMPLE LOCATION

1 ASBESTOS CONTAINING ANTISWEAT INSULATION

2 ASBESTOS CONTAINING PIPE FITTING INSULATION

3 ASBESTOS CONTAINING TRANSITE REMNANT IN CEILING.

REV	DATE	ISSUE	APPROVAL
A	18/12/12	PRELIMINARY	M.D.

PROJECT TITLE

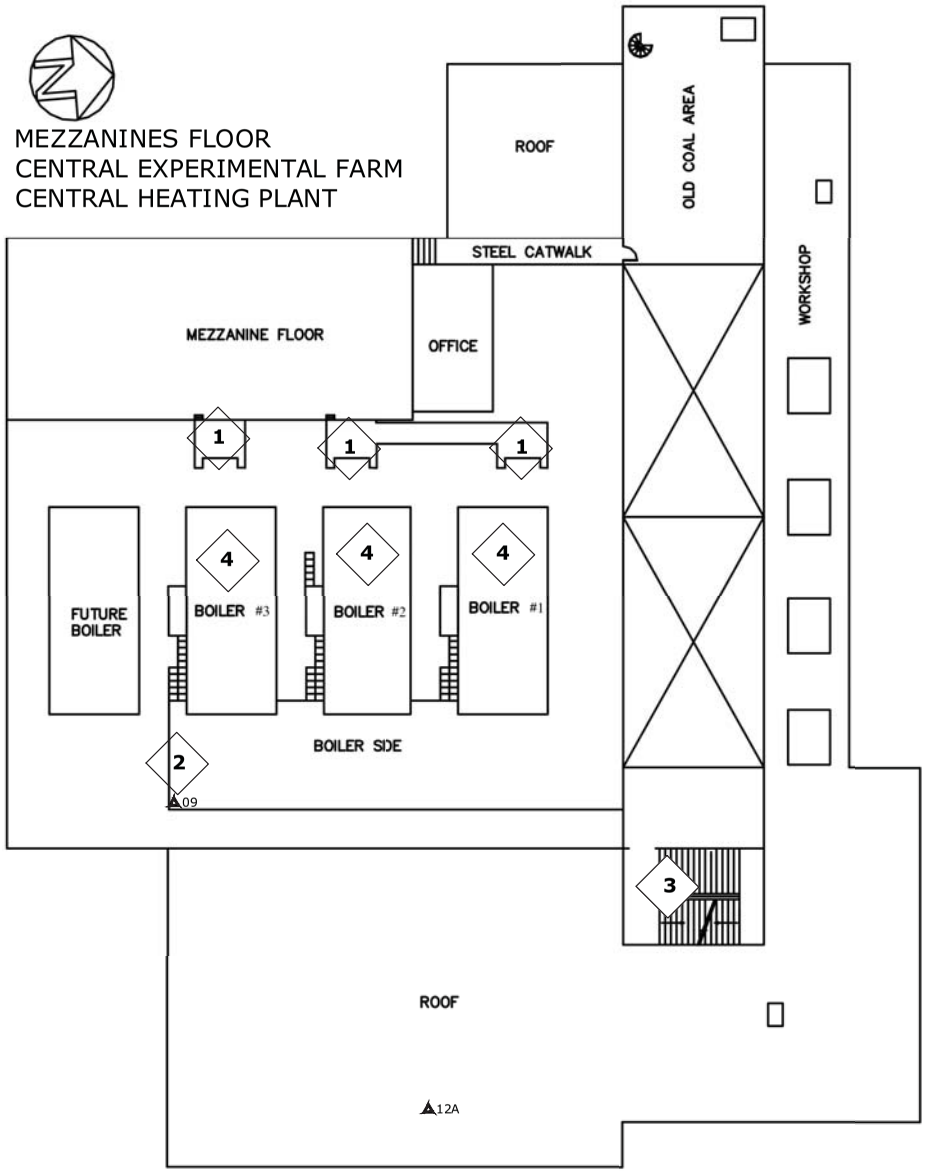
DESIGNATED SUBSTANCES SURVEY
CENTRAL EXPERIMENTAL FARM
CHP

DRAWING TITLE

SITE AND SAMPLE LOCATION PLAN

DESIGNED BY: M.D.	SCALE: NTS
DRAWN BY: D.L.	DATE: December 2012
APPROVED BY: M.D.	PROJECT NO.: BE-OT-015686

FIGURE 2



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LEGEND:

- BULK PAINT SAMPLE LOCATION
- BULK ASBESTOS SAMPLE LOCATION
- 1 — SUSPECT ASBESTOS CONTAINING GASKET
- 2 — ASBESTOS CONTAINING ENDCAP
- 3 — ASBESTOS CONTAINING TRANSITE PANEL
- 4 — ASBESTOS CONTAINING BOILER MATERIALS

REV	DATE	ISSUE	APPROVAL
A	18/12/12	PRELIMINARY	M.D.

PROJECT TITLE

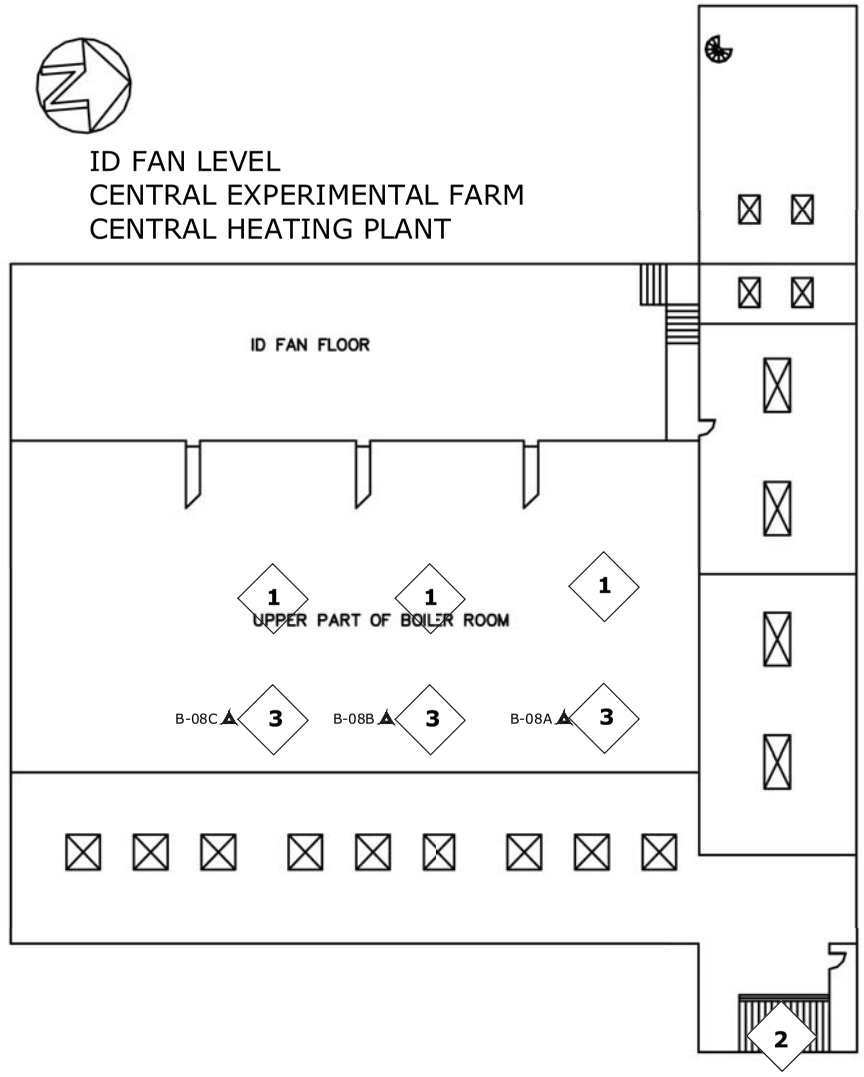
DESIGNATED SUBSTANCES SURVEY
CENTRAL EXPERIMENTAL FARM
CHP

DRAWING TITLE

SITE AND SAMPLE LOCATION PLAN

DESIGNED BY: M.D.	SCALE: NTS
DRAWN BY: D.L.	DATE: December 2012
APPROVED BY: M.D.	PROJECT NO.: BE-OT-015686

FIGURE 3



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4. BASE DRAWING SUPPLIED BY CLIENT.

LEGEND:

- BULK PAINT SAMPLE LOCATION
- BULK ASBESTOS SAMPLE LOCATION
- 1 — ASBESTOS CONTAINING INSULATION
- 2 — ASBESTOS CONTAINING TRANSITE PANEL
- 3 — ASBESTOS CONTAINING BOILER MATERIALS

REV	DATE	ISSUE	APPROVAL
A	18/12/12	PRELIMINARY	M.D.

PROJECT TITLE

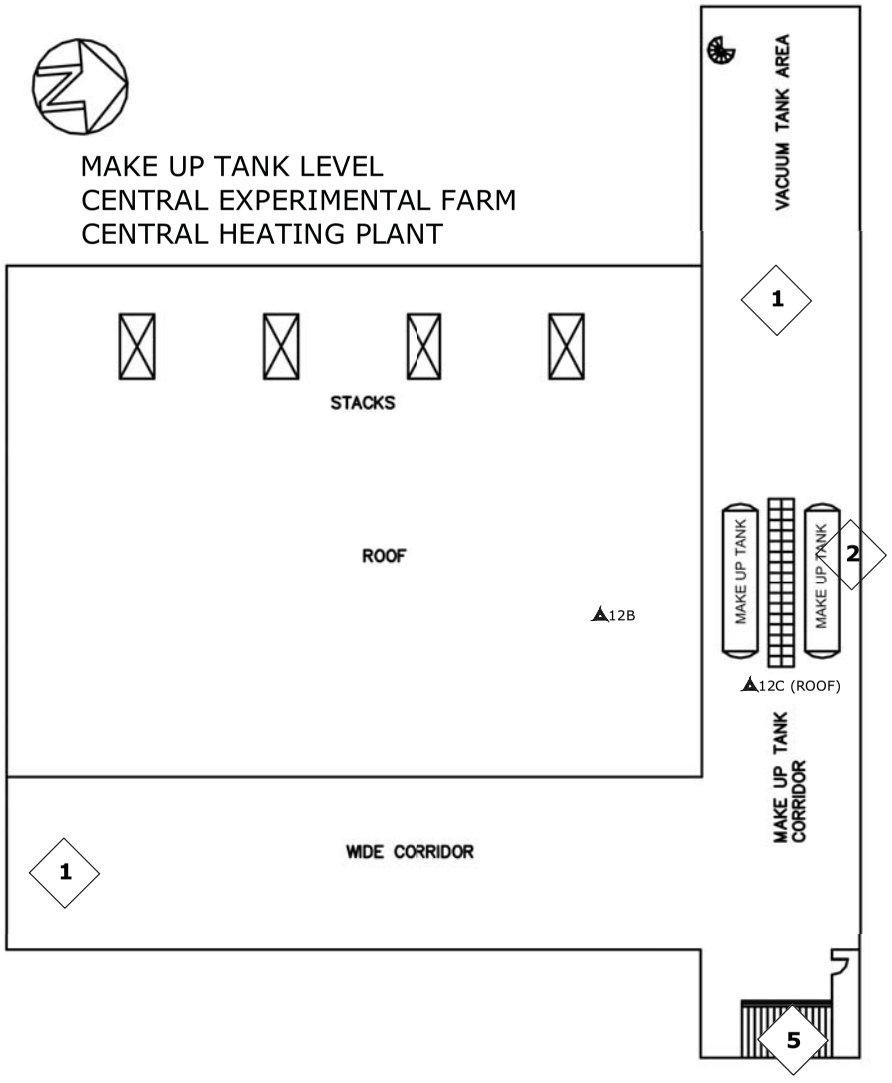
DESIGNATED SUBSTANCES SURVEY
CENTRAL EXPERIMENTAL FARM
CHP

DRAWING TITLE

SITE AND SAMPLE LOCATION PLAN

DESIGNED BY: M.D.	SCALE: NTS
DRAWN BY: D.L.	DATE: December 2012
APPROVED BY: M.D.	PROJECT NO.: BE-OT-015686

FIGURE 4



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4. BASE DRAWING SUPPLIED BY CLIENT.

LEGEND:

- BULK PAINT SAMPLE LOCATION
- BULK ASBESTOS SAMPLE LOCATION
- 1 — SUSPECT ASBESTOS CONTAINING DAMPNER
- 2 — ASBESTOS CONTAINING PIPE FITTING INSULATION
- 3 — ASBESTOS CONTAINING TRANSITE PANEL

REV	DATE	ISSUE	APPROVAL
A	21/11/12	PRELIMINARY	M.D.

PROJECT TITLE

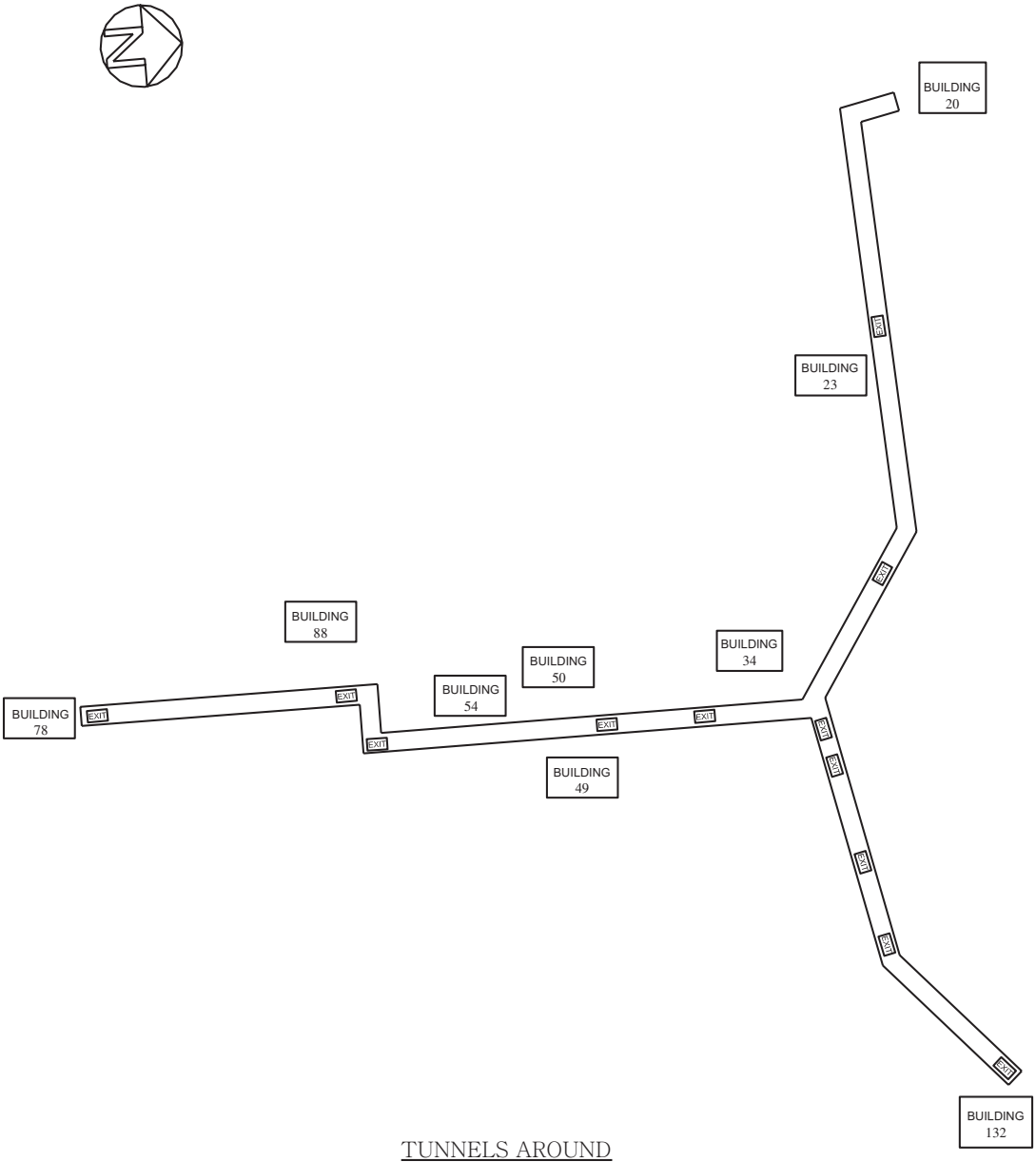
DESIGNATED SUBSTANCES SURVEY
CENTRAL EXPERIMENTAL FARM
CHP

DRAWING TITLE

SITE AND SAMPLE LOCATION PLAN

DESIGNED BY: M.D.	SCALE: NTS
DRAWN BY: D.L.	DATE: November 2012
APPROVED BY: M.D.	PROJECT NO.: BE-OT-015686

FIGURE 5



TUNNELS AROUND
CENTRAL EXPERIMENTAL FARM
CENTRAL HEATING PLANT

BL–6

Appendix B

Laboratory Certificates of Analysis:
Asbestos Bulk Samples

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Certificate of Analysis

DST Consulting Engineers Inc. (Ottawa)
203-2150 Thurston Dr.
Ottawa, ON K1G 5T9
Attn: Matt Desroches

Phone: (613) 748-1415
Fax: (613) 748-1356

Client PO:
Project: BE OT 015686
Custody: 1169

Report Date: 12-Nov-2012
Order Date: 6-Nov-2012
Order #: 1245126

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

Paracel ID	Client ID
1245126-01	015686-01A
1245126-02	015686-01B
1245126-03	015686-01C
1245126-04	015686-02
1245126-05	015686-03
1245126-06	015686-04
1245126-07	015686-05
1245126-08	015686-07
1245126-09	015686-08
1245126-10	015686-09

Approved By:

Heather S.H. McGregor, BSc
Laboratory Director - Microbiology

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising shall be limited to the amount paid by you for this work, and that our employees or agents shall not under circumstances be liable to you in connection with this work

PARACEL LABORATORIES LTD.

Client: DST Consulting Engineers Inc. (Ottawa)
203-2150 Thurston Dr.
Ottawa, ON K1G 5T9

Attn: Matt Desroches
Tel: (807) 548-2383
Fax: (807) 548-1967

Project: BE OT 015686
Paracel Report No.: 1245126

Received Date: 06-Nov-12
Report Date: 12-Nov-12

Asbestos by PLM **MDL - 0.5%**

Paracel I.D.	Sample Date	Layers Analyzed	Colour	Description	Asbestos Detected:	Material Identification	% Content
1245126-01	01-Nov-12	sample homogenized	White	Insulation	No	**Client ID: 015686-01A**	
						MMVF	1
						Non-Fibers	94
						Other fibers	5
1245126-02	01-Nov-12	sample homogenized	White	Insulation	No	**Client ID: 015686-01B**	
						MMVF	1
						Non-Fibers	94
						Other fibers	5
1245126-03	01-Nov-12	sample homogenized	White	Insulation	No	**Client ID: 015686-01C**	
						MMVF	1
						Non-Fibers	94
						Other fibers	5
1245126-04	01-Nov-12	sample homogenized	Gray	Unknown	No	**Client ID: 015686-02** [AS-PRE]	
						Cellulose	10
						MMVF	1
						Non-Fibers	89
1245126-05	01-Nov-12	sample homogenized	Gray	Unknown	No	**Client ID: 015686-03** [AS-PRE]	
						Cellulose	10
						MMVF	5
						Non-Fibers	85
1245126-06	01-Nov-12	sample homogenized	Gray	Plaster	No	**Client ID: 015686-04** [AS-PRE]	
						Cellulose	10
						Non-Fibers	90
1245126-07	01-Nov-12	sample homogenized	Gray	Pipe Wrap	**Yes**	**Client ID: 015686-05**	
						Chrysotile	20
						MMVF	40
						Non-Fibers	40
1245126-08	02-Nov-12	sample homogenized	Gray	Unknown	**Yes**	**Client ID: 015686-07**	
						Chrysotile	40
						Cellulose	5
						Non-Fibers	55

PARACEL LABORATORIES LTD.

Client:	DST Consulting Engineers Inc. (Ottawa) 203-2150 Thurston Dr. Ottawa, ON K1G 5T9	**Attn:**	Matt Desroches Tel: (807) 548-2383 Fax: (807) 548-1967
Project:	BE OT 015686	**Received Date:**	06-Nov-12
Paracel Report No.:	1245126	**Report Date:**	12-Nov-12

Asbestos by PLM **MDL - 0.5%**

Paracel I.D.	Sample Date	Layers Analyzed	Colour	Description	Asbestos Detected:	Material Identification	% Content
1245126-09	02-Nov-12	sample homogenized	Gray	Trans	**Yes**	**Client ID: 015686-08**	
						Chrysotile	20
						Non-Fibers	80
1245126-10	02-Nov-12	sample homogenized	Gray	Pipe Wrap	**Yes**	**Client ID: 015686-09**	
						Chrysotile	60
						MMVF	1
						Non-Fibers	39

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

Analytes in bold indicate asbestos content which may include:
Actinolite, Amosite, Anthopyllite, Chrysotile, Crocidolite and/or Tremolite.

Analysis Summary Table

Analysis	Method Reference/Description	Lab Location	NVLAP Lab Code *	Analysis Date
Asbestos by PLM	by EPA 600/R-93/116	Ottawa West Lab	200812-0	12-Nov-12

** 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.*

Report Notes

AS-PRE	Due to the difficult nature of the bulk sample (interfering fibers/binders), additional NOB preparation was required prior to analysis

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Ottawa, Ontario K1G 4J8
p: 1-800-749-1947
e: paracel@paracellabs.com
www.paracellabs.com

Chain of Custody
(Lab Use Only)
Nº 1169

Page 1 of 1

Client Name: DST	Project Reference: BEE0156 86
Contact Name: MATT DESROCHES	Quote #
Address: 2150 THURSTON DR - 203 OTTAWA ON	PO #
Telephone: 6133740724	Email Address: mdesroches@dststgroup.com

TAT: [X] Regular [ ] 2 Day [ ] 1 Day [ ] Same Day

Date Required: _____

ASBESTOS ANALYSIS

Matrix Type: A (Air) O (Other) Regulatory/Guideline Requirements: _____ Required Analyses: [ ] PCM [X] PLM [ ] PLM 400PC [ ] PLM 1000PC [ ] Chatfield

Paracel Order Number: 124126

	Sample ID	Matrix	Matrix Description	Sampling Date	Air Volume (L)	Positive Stop?	Is the Sample Layered?	If Yes, Describe Sample Layer(s) to be Analysed Separately
1	015686-01A	O	INSULATION	NOV 1/12	N/A	Y	NO	
2	015686-01B					Y		
3	015686-01C					Y		
4	015686-02					NO		
5	015606-03							
6	015686-04							
7	015686-05							
8	015686-07		DRAIN PIPE CAULKING	NOV 2/12				
9	015686-08		TRANSITE					
10	015686-09		INSULATION					
11								
12								
13								
14								
15								

Comments: SAMPLE 015686-06 DOES NOT EXIST

Method of Delivery: Walk-in

Relinquished By (Print & Sign): NOV 6/12 MATT DESROCHES	Received by Driver/Depot:	Received at Lab:	Verified By:
Date/Time: NOV 6/12 14:46	Date/Time: Nov 6/12 2:07pm	Date/Time: Nov 6/12 3:20	Date/Time: Nov 6/12 3:20

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Subcontracted Analysis

DST Consulting Engineers Inc. (Ottawa)
203-2150 Thurston Dr.
Ottawa, ON K1G 5T9
Attn: Matt Desroches

Tel: (613) 748-1415
Fax: (613) 748-1356

Paracel Report No.: **1245129**
Client Project(s): **BE OT 015686**
Client PO:
Reference:
CoC Number: **1170**

Order Date: 06-Nov-12
Report Date: 12-Nov-12

Sample(s) from this project were subcontracted for the listed parameters. A copy of the subcontractor's report is attached

Paracel ID	Client ID	Analysis
1245129-01	015686-TEM-06	Asbestos, TEM % by VAE (EPA 600/R-93)
1245129-02	015686-TEM-10 (white)	Asbestos, TEM % by VAE (EPA 600/R-93)
1245129-03	015686-TEM-10 (brown)	Asbestos, TEM % by VAE (EPA 600/R-93)

2 0 3 - 1 5 T h 1 u T r s

t o 1 n D . T O a 1 w a N C K G T , 9 1 A : 1 1 0 , M M M e c K 1 (1 1 - 6 (1 -)
7 4 . T O 8 n F x (P) R p R R O p i j o P ' 1 8 h P) R b f R R O p i j o C
4 9 9 f x 8 8 d d d s O v M 8 r . v 1 8 9 a T 9 D S y O v M 8 r . v

2 0 3 - 1 5 T h 1 a h O : 6 6 t P o 6 t C)
5 e M 9 v O a 1 u w x 6 6 7 ' E ' P t '
5 e M 9 v O a f 7 I x
7 a % r 9 1 u w x

Attn: H O 9 4 O a f 0 r G a O c . a
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5 . D D r 9 O h x 1 1 1 1 1 1
E O r O , N O h x 1 1 1 1 1 t t 8 o C 8 P o t P
' T D V / O h x 1 1 1 1 1 t t 8 1 o 8 P o t P

Proj: t P i 6 t P R

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

Client Sample ID: ot 6j) j pT 2 0 ppj — ***Lab Sample ID:*** **551205178-0001**

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
T 2 0 1 G a N s t E O h e r 9 . T	t t 8 1 o 8 P o t P	W 4 , 9 O	o s o %	t o o %	(. T O 1 w O 9 O r 9 O h	

Client Sample ID: ot 6j) j pT 2 0 pt o 1 H W V H u T 2 b — ***Lab Sample ID:*** **551205178-0002**

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
T 2 0 1 G a N s t E O h e r 9 . T	t t 8 1 o 8 P o t P	W 4 , 9 O	o s o %	t o o %	(. T O 1 w O 9 O r 9 O h	

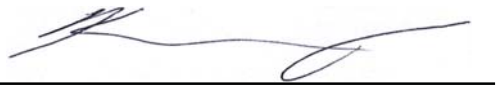
Client Sample ID: ot 6j) j pT 2 0 pt o 1 H B E l W (b — ***Lab Sample ID:*** **551205178-0003**

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
T 2 0 1 G a N s t E O h e r 9 . T	t t 8 1 o 8 P o t P	B a d T	o s o %	t o o %	(. T O 1 w O 9 O r 9 O h	

Analyst(s)

K O N , T 1 7 T c — T 2 0 1 G a N s t E O h e r 9 . T — m b



Kevin Pang
or other Approved Signatory

' T V 1 q e O M 9 . T M f f D D M O 1 r . T 9 r 9 1 K O N , T 1 7 T c s

(. T O 1 w O 9 O r 9 O h 1 = 1 < o s 6 % s t 2 0 3 - 1 v , T 9 , T M D S , D 9 V 1 D v , 9 O h 1 9 1 r . M 9 1 f 1 T D V M M s 1 T 4 , M 8 a O f . a 9 8 a O D 9 O M 1 T D V 1 9 1 9 4 O f M v f D D M 8 a O f . a 9 O h 1 S . N O 1 T h 1 v V 1 T . 9 1 S O 1 e O f a h e r O h K O F r O f 9 (T f 1 e D 9 t d , 9 4 . e 9 t d a 9 9 O T 1 f f a N D S V 1
2 0 3 - s t 2 0 3 - 1 S O a M T . 1 a O M . T M S , D 9 V 1 . a f M v f D D r . D D D r 9 . T 1 r 9 N , 9 O M 1 a f 1 T D V 9 r D v O 9 4 . h 1 D v , 9 9 . T M s 1 J T 9 O a f a O 9 9 . T 1 T h 1 e M O 1 f 1 9 O M 8 a O M 8 9 M 1 a O 1 9 4 O 1 a O M . T M S , D 9 V 1 f 1 9 4 O r D O T 9 s t 3 v f D D M 8 a O r O , N O h 1 , T 1 c . . h 1
r . T h , 9 . T 1 e T D D M M 1 9 4 O a d , M O f T . 9 O h s f T 4 , M 8 a O f . a 9 M v e M 9 f T . 9 1 S O 1 e M O h 1 9 1 r D , v 1 f a h e r 9 1 O T h . a M D v O T 9 1 S V 1 (V - ' 7 1 f 1 T V 1 c O T r V 1 f 1 9 4 O T G s 3 s f G . N O 8 a T v O T 9 s

3 v f D D M 1 T D V / O h 1 S V 1 2 0 3 - 1 5 T h 1 u T r s t D , M M M e c K 1 (1 (V - ' 7 1 - S 1 5 . h O ' P o o) C C p o

u T , 9 D 8 a O f . a 9 f a v x t t 8 1 o 8 P o t P t i x o 6 x i

T O M 9 E O f . a 9 a 2 7 ' 0 e l 9 T O M M M j O s P j s o 1 1 7 a T 9 O h x t t 8 1 P 8 P o t P 1 t o x o t ' 0

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Nº 1170

Page 1 of 1

Client Name: DST	Project Reference: BEDT015686
Contact Name: MATT DESROCHES	Quote #
Address: 2150 THURSTON DR - 203 OTTAWA ON	PO #
Telephone: 6133240724	Email Address: mdesroches@dstgroup.com

TAT: ☒ Regular | | 2 Day | | 1 Day | | Same Day

Date Required: _____

ASBESTOS ANALYSIS

Matrix Type: A (Air) O (Other) Regulatory/Guideline Requirements: _____ **Required Analyses:** | | PCM | | PLM | | PLM 400PC | | PLM 1000PC | | Chatfield

Paracel Order Number: 124529

	Sample ID	Matrix	Matrix Description	Sampling Date	Air Volume (L)	Positive Stop?	Is the Sample Layered?	If Yes, Describe Sample Layer(s) to be Analysed Separately
1	015686-TEM-06	O	DRYWALL JOINT COMPOUND	NOV 2/12	NA	NO	NO	
2	015686-TEM-10	O	PLASTER	1	1	NO	YES	WHITE, BROWN
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Comments: TEM

Method of Delivery: Walk-in

Relinquished By (Print & Sign): MATT DESROCHES	Received by Driver/Depot:	Received at Lab:	Verified By:
Date/Time: NOV 6/12 14:06	Date/Time: NOV 6/12 2:07p	Date/Time:	Date/Time: NOV 6/12 2:48p

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Certificate of Analysis

DST Consulting Engineers Inc. (Ottawa)
203-2150 Thurston Dr.
Ottawa, ON K1G 5T9
Attn: Matt Desroches

Phone: (613) 748-1415
Fax: (613) 748-1356

Client PO:
Project: BE OT 015686
Custody: 1171

Report Date: 20-Nov-2012
Order Date: 14-Nov-2012
Order #: 1246211

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

Paracel ID	Client ID
1246211-01	015686-11A
1246211-02	015686-11B
1246211-03	015686-11C
1246211-04	015686-12A (Black)
1246211-05	015686-12B (Black)
1246211-06	015686-12C (Black)
1246211-07	015686-12A (Brown)
1246211-08	015686-12B (Yellow)
1246211-09	015686-12C (Yellow)
1246211-10	015686-12A (Black)
1246211-11	015686-12B (Black)
1246211-12	015686-12C (Black)

Approved By:

Heather S.H. McGregor, BSc
Laboratory Director - Microbiology

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising shall be limited to the amount paid by you for this work, and that our employees or agents shall not under circumstances be liable to you in connection with this work

PARACEL LABORATORIES LTD.

Client: DST Consulting Engineers Inc. (Ottawa)
203-2150 Thurston Dr.
Ottawa, ON K1G 5T9

Attn: Matt Desroches
Tel: (807) 548-2383
Fax: (807) 548-1967

Project: BE OT 015686
Paracel Report No.: 1246211

Received Date: 14-Nov-12
Report Date: 20-Nov-12

Asbestos by PLM **MDL - 0.5%**

Paracel I.D.	Sample Date	%ayers AnalyWed	Colour	Description	Asbestos Detected:	Material Identification	z Content
1246211-01	14-Nov-12	sample homogeniWed	GreyWGreen	Caulking	Les	**Client ID: 015686-11A**	
						Chrysotile	5
						Cellulose	5
						Non-Fibers	90
1246211-02	14-Nov-12					**Client ID: 015686-11B**	
						not analyWed	
1246211-03	14-Nov-12					**Client ID: 015686-11C**	
						not analyWed	
1246211-04	14-Nov-12	sample homogeniWed	Black	Roofing	No	**Client ID: 015686-12A (Black)** [AS-PRE]	
						Cellulose	40
						MMUF	1
						Non-Fibers	59
1246211-05	14-Nov-12	sample homogeniWed	Black	Roofing	No	**Client ID: 015686-12B (Black)** [AS-PRE]	
						Cellulose	30
						MMUF	10
						Non-Fibers	60
1246211-06	14-Nov-12	sample homogeniWed	Black	Roofing	No	**Client ID: 015686-12C (Black)** [AS-PRE]	
						Cellulose	30
						Non-Fibers	70
1246211-07	14-Nov-12	sample homogeniWed	Brown	Roofing	No	**Client ID: 015686-12A (Brown)** [AS-PRE]	
						Cellulose	80
						Non-Fibers	20
1246211-08	14-Nov-12	sample homogeniWed	Lellow	Roofing	No	**Client ID: 015686-12B (Lellow)**	
						MMUF	80
						Non-Fibers	20
1246211-09	14-Nov-12	sample homogeniWed	Lellow	Roofing	No	**Client ID: 015686-12C (Lellow)**	
						MMUF	80
						Non-Fibers	20
1246211-10	14-Nov-12	sample homogeniWed	Black	Roofing	No	**Client ID: 015686-12A (Black)** [AS-PRE]	
						MMUF	50
						Non-Fibers	50

PARACEL LABORATORIES LTD.

Client:	DST Consulting Engineers Inc. (Ottawa) 203-2150 Thurston Dr. Ottawa, ON K1G 5T9	**Attn:**	Matt Desroches Tel: (807) 548-2383 Fax: (807) 548-1967
Project:	BE OT 015686	**Received Date:**	14-Nov-12
Paracel Report No.:	1246211	**Report Date:**	20-Nov-12

Asbestos by PLM **MDL - 0.5%**

Paracel I.D.	Sample Date	%ayers AnalyWed	Colour	Description	Asbestos Detected:	Material Identification	z Content
1246211-11	14-Nov-12	sample homogeniWed	Black	Roofing	No	**Client ID: 015686-12B (Black)** [AS-PRE]	
						MMUF	50
						Non-Fibers	50
1246211-12	14-Nov-12	sample homogeniWed	Black	Roofing	No	**Client ID: 015686-12C (Black)** [AS-PRE]	
						MMUF	50
						Non-Fibers	50

MMUF: Man Made Uitreous Fibers: Fiberglass, Mineral Yool, Rockwool, Glasswool
Analytes in bold indicate asbestos content which may include:
Actinolite, Amosite, Anthopyllite, Chrysotile, Crocidolite and\or Tremolite.

Analysis Summary Table

Analysis	Method Reference\Description	%ab %ocation	NU%AP %ab Code 2	Analysis Date
Asbestos by P%M	by EPA 600\R-93\116	Ottawa Yest %ab	200812-0	16-Nov-12

** 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.*

Report Notes

03-15 Thurst rsourn D.IDharw, shNurt .rsourKhaG9, A : aurNBvsuNuNDver.IXuN9dKDvnuN9l(r, nnGIDw, a6) 7r: Nu: , N,sDwr4 , 9rNu8hDunr: NDNst r , w, aF9l9

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(Lab Use Only)
Nº 1171

Page 1 of 1

Client Name: DST	Project Reference: BEDT015686	TAT: (X) Regular
Contact Name: MATT DESROCHES	Quote #	| | 2 Day
Address: 2150 THURSTON DR J03 OTTAWA ON	PO #	| | 1 Day
Telephone: 6133740724	Email Address: mdesrochers@dstgroup.com	| | Same Day
		Date Required:

ASBESTOS ANALYSIS

Matrix Type: A (Air) O (Other) Regulatory/Guideline Requirements: _____ **Required Analyses:** \| \| PCM \|X\| PLM \| \| PLM 400PC \| \| PLM 1000PC \| \| Chatfield

Paracel Order Number: 1246211

	Sample ID	Matrix	Matrix Description	Sampling Date	Air Volume (L)	Positive Stop?	Is the Sample Layered?	If Yes, Describe Sample Layer(s) to be Analysed Separately
1	015686-11A	O	CAULKING	NOV 14/12	N/A	YES	NO	
2	015686-11B	↓	↓	↓	↓	↓	↓	
3	015686-11C	↓	↓	↓	↓	↓	↓	
4	TEM-11	↓	↓	↓	↓	↓	↓	
5	015686-12A	↓	ROOF CORES	↓	↓	↓	YES	BLACK, BROWN, BLACK
6	015686-12B	↓	↓	↓	↓	↓	↓	BLACK, YELLOW, BLACK
7	015686-12C	↓	↓	↓	↓	↓	↓	↓
8	TEM-12	↓	↓	↓	↓	↓	↓	↓
9								
10								
11								
12								
13								
14								
15								

Comments: ONLY ANALYZE TEM-11 AND TEM-12 IF 11A-C AND 12A-C ARE ALL NEGATIVE. TEM 11 AND 12 TO BE ANALYZED BY TEM.

Method of Delivery: Walk-in

Relinquished By (Print & Sign):	Received by Driver/Depot:	Received at Lab:	Verified By:
MATT DESROCHES			
Date/Time: NOV 14/12	Date/Time: Nov 14/12 1:24p	Date/Time:	Date/Time: Nov 14/12 1:45p

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Subcontracted Analysis

DST Consulting Engineers Inc. (Ottawa)
203-2150 Thurston Dr.
Ottawa, ON K1G 5T9
Attn: Matt Desroches

Tel: (613) 748-1415
Fax: (613) 748-1356

Paracel Report No.:	**1246211**	Order Date:	14-Nov-12
Client Project(s):	**BE OT 015686**	Report Date:	26-Nov-12
Client PO:			
Reference:			
CoC Number:	**1171**		

Sample(s) from this project were subcontracted for the listed parameters. A copy of the subcontractor's report is attached

Paracel ID	Client ID	Analysis
1246211-13	TEM-12	Asbestos, TEM % by VAE (EPA 600/R-93)

EMSL

2 0 3 - 1 5 T h 1 u T r s

t o 1 n D . T C a 1 w a N C K G T , 9 1 A : 1 1 0 , M M M e c K 1 (1 1 - 6 (1 -)
7 4 . T C 8 n F x P) R p R R C p i j o P ' 1 8 n P) R b R R C p i j o C
4 9 9 f x 8 8 d d d s O v M 8 r . v 1 8 9 a T 9 D S y O v M 8 r . v

2 0 3 - 1 5 T h 1 a h C : 6 6 t P o 6 i R P
5 e M 9 v C a 1 u w x 6 6 7 ' E ' P t '
5 e M 9 v C a 7 I x t P i j P t t
7 a % r 9 1 u w x

Attn: H O 9 4 - C a 1 0 r G a C c . a
7 a r C D - S . a 9 a C M - 9 h s
j j j 6 1 K , 9 v 9 1 E . h K G T , 9 1 P C
0 , M M M e c K 1 (1 1 1 1 - 6 (1 j J :

7 4 . T C x 1 1 1 1 1 R o 6 b j t P p C C) C
n F x 1 1 1 1 1 1
5 . D D r 9 C h x 1 1 1 1 1 1
E C r C , N C h x 1 1 1 1 1 t t 8 P o 8 P o t P
' T D V C h x 1 1 1 1 1 t t 8 P t 8 P o t P

Proj: t P i j P t t

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

Client Sample ID: T 2 0 p t P
Lab Sample ID: **551205492-0001**
Sample Description: E l l n 1 5 l (2

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
T 2 0 1 G a N s t E C h e r 9 . T	t t 8 P t 8 P o t P	W D r B 1 8 q C D D d	o s o %	t o o %	(. T O 1 w C 9 8 O r 9 C h	

Analyst(s)

K C N , T 1 7 T c T 2 0 1 G a N s t E C h e r 9 . T r m b

Kevin Pang
or other Approved Signatory

' T V 1 = e C M 9 . T M f D D M O 1 r . T 9 r 9 1 K C N , T 1 7 T c s

(. T O 1 w C 9 8 O r 9 C h 1 < f o s 6 % s t 2 0 3 - 1 v , T 9 , T M D S , D 9 V 1 D v , 9 C h 1 9 1 r . M 9 1 V 1 T D M V M s 1 T 4 , M 8 a C f . a 9 8 a C D 9 C M 1 T D V 1 9 1 9 4 O M v f D D M 8 a C f . a 8 C h 1 S . N O 1 T h 1 v V 1 T . 9 1 S O 1 8 a C f a h e r C h K C F r C f 9 (T 1 v D D k d , 9 4 . e 9 d a 9 8 O T 1 f f a N D S V 1
2 0 3 - s t 2 0 3 - 1 S O a M T . 1 a C M . T M S , D 9 V 1 V a f M v f D D r . D D r 9 . T 1 r 9 N , 9 C M 1 a f 1 T D V 9 r D v O 9 4 . h 1 D v , 9 9 . T M s 1 J T 9 O a f a C 9 9 . T 1 T h 1 e M O 1 V 8 C M 8 a C M e D M 1 a C 9 4 O 1 a C M . T M S , D 9 V 1 V 8 4 O r D O T 9 s t 3 v f D D M 8 a C r C , N C h 1 , T 1 c . . h 1
r . T h , 9 . T 1 e T D D M M 1 9 4 C a d , M O f T . 9 O h s f T 4 , M 8 a C f . a 9 v e M 9 f T . 9 1 S O 1 e M C h 1 9 1 r D , v 1 f a h e r 9 1 O T h . a M D v O T 9 1 S V 1 (V - ' 7 1 V 1 T V 1 c O T r V 1 V 8 4 O T G s 3 s f G . N C a T v O T 9 s

3 v f D D M 1 T D V C h 1 S V 1 2 0 3 - 1 5 T h 1 u T r s t D , M M M e c K 1 (1 (V - ' 7 1 - S 1 5 . h O ' P o o) C C p o

u T , 9 D a C f . a 9 M a v x t t 8 P t 8 P o t P t) x 6 o x t j

T O M 9 E C f . a 9 2 7 ' 0 e D 9 T O M M M j C s P j s o 1 1 7 a T 9 O h x t t 8 P t 8 P o t P ' t o j x 6 o 7 0

7 c O t t 1 V t

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Page 1 of 1

Client Name: DST	Project Reference: BEOT015686
Contact Name: MATT DESROCHES	Quote #
Address: 2150 THURSTON DR 203 OTTAWA ON	PO #
Telephone: 6133240724	Email Address: mdesrochers@dstgroup.com

TAT: (X) Regular | | 2 Day | | 1 Day | | Same Day

Date Required: _____

ASBESTOS ANALYSIS

Matrix Type: A (Air) O (Other) Regulatory/Guideline Requirements: _____ **Required Analyses:** | | PCM |X| PLM | | PLM 400PC | | PLM 1000PC | | Chatfield

Paracel Order Number: 1246211

	Sample ID	Matrix	Matrix Description	Sampling Date	Air Volume (L)	Positive Stop?	Is the Sample Layered?	If Yes, Describe Sample Layer(s) to be Analysed Separately
1	015686-11A	O	CAULKING	NOV 14/12	N/A	YES	NO	
2	015686-11B							
3	015686-11C							
4	TEM-11							
5	015686-12A		ROOF CORES				YES	BLACK, BROWN, BLACK
6	015686-12B							BLACK, YELLOW, BLACK
7	015686-12C							
8	TEM-12							
9								
10								
11								
12								
13								
14								
15								

Comments: ONLY ANALYZE TEM-11 AND TEM-12 IF 11A-C AND 12A-C ARE ALL NEGATIVE. TEM 11 AND 12 TO BE ANALYZED BY TEM.

Method of Delivery: Walk-in

Relinquished By (Print & Sign):	Received by Driver/Depot:	Received at Lab:	Verified By:
MATT DESROCHES			
Date/Time: NOV 14/12	Date/Time: NOV 14/12 1:24 PM	Date/Time:	Date/Time: NOV 14/12 1:45 PM

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Certificate of Analysis

DST Consulting Engineers Inc. (Ottawa)
203-2150 Thurston Dr.
Ottawa, ON K1G 5T9
Attn: Matt Desroches

Phone: (613) 748-1415
Fax: (613) 748-1356

Client PO:
Project: BE OT 015746
Custody: 2398, 1173

Report Date: 11-Dec-2012
Order Date: 5-Dec-2012
Order #: 1249203

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

Paracel ID	Client ID
1249203-01	B-01A
1249203-02	B-01B
1249203-03	B-01C
1249203-04	B-02A
1249203-05	B-02B
1249203-06	B-02C
1249203-07	B-03A
1249203-08	B-03B
1249203-09	B-03C
1249203-10	B-04
1249203-11	B-05A
1249203-12	B-05B
1249203-13	B-05C
1249203-14	B-06A
1249203-15	B-06B
1249203-16	B-06C
1249203-17	B-07A
1249203-18	B-07B
1249203-19	B-07C
1249203-20	B-08A
1249203-21	B-08B
1249203-22	B-08C
1249203-23	B-08D
1249203-24	B-08E
1249203-25	B-09A
1249203-26	B-09B
1249203-27	B-09C
1249203-28	B-10A
1249203-29	B-10B
1249203-30	B-10C

Approved By:

Heather S.H. McGregor, BSc
Laboratory Director - Microbiology

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising shall be limited to the amount paid by you for this work, and that our employees or agents shall not under circumstances be liable to you in connection with this work

PARACEL LABORATORIES LTD.

Client: DST Consulting Engineers Inc. (Ottawa)
203-2150 Thurston Dr.
Ottawa, ON K1G 5T9

Attn: Matt Desroches
Tel: (807) 548-2383
Fax: (807) 548-1967

Project: BE OT 015746
Paracel Report No.: 1249203

Received Date: 05-Dec-12
Report Date: 11-Dec-12

Asbestos by PLM **MDL - 0.5%**

Paracel I.D.	Sample Date	Layers Analyzed	Colour	Description	Asbestos Detected:	Material Identification	% Content
1249203-01	05-Dec-12	sample homogenized	Gray	Parg	Yes	Client ID: B-01A	
						Chrysotile	1
						Non-Fibers	99
1249203-02	05-Dec-12					Client ID: B-01B	
						not analyzed	
1249203-03	05-Dec-12					Client ID: B-01C	
						not analyzed	
1249203-04	05-Dec-12	sample homogenized	Gray	Hatch Castable	No	Client ID: B-02A	
						Non-Fibers	100
1249203-05	05-Dec-12	sample homogenized	Gray	Hatch Castable	No	Client ID: B-02B	
						Non-Fibers	100
1249203-06	05-Dec-12	sample homogenized	Gray	Hatch Castable	No	Client ID: B-02C	
						Non-Fibers	100
1249203-07	05-Dec-12	sample homogenized	White	Parg	No	Client ID: B-03A	
						MMVF	5
						Non-Fibers	95
1249203-08	05-Dec-12	sample homogenized	White	Parg	No	Client ID: B-03B	
						Non-Fibers	100
1249203-09	05-Dec-12	sample homogenized	White/Beige	Parg	No	Client ID: B-03C	
						Non-Fibers	100
1249203-10	05-Dec-12	sample homogenized	Gray /Red	Thesmal Patch	No	Client ID: B-04 [AS-PRE]	
						Non-Fibers	100
1249203-11	05-Dec-12	sample homogenized	Yellow/Black	Brick	No	Client ID: B-05A	
						Non-Fibers	100
1249203-12	05-Dec-12	sample homogenized	Yellow/Black	Brick	No	Client ID: B-05B	
						Non-Fibers	100
1249203-13	05-Dec-12	sample homogenized	Yellow/Black	Brick	No	Client ID: B-05C	
						Non-Fibers	100
1249203-14	05-Dec-12	sample homogenized	Brown	Parg	No	Client ID: B-06A	
						Non-Fibers	100

PARACEL LABORATORIES LTD.

Client:	DST Consulting Engineers Inc. (Ottawa) 203-2150 Thurston Dr. Ottawa, ON K1G 5T9	**Attn:**	Matt Desroches Tel: (807) 548-2383 Fax: (807) 548-1967
Project:	BE OT 015746	**Received Date:**	05-Dec-12
Paracel Report No.:	1249203	**Report Date:**	11-Dec-12

Asbestos by PLM **MDL - 0.5%**

Paracel I.D.	Sample Date	Layers Analyzed	Colour	Description	Asbestos Detected:	Material Identification	% Content
1249203-15	05-Dec-12	sample homogenized	Brown	Parg	No	**Client ID: B-06B**	
						Non-Fibers	100
1249203-16	05-Dec-12	sample homogenized	Brown	Parg	No	**Client ID: B-06C**	
						Non-Fibers	100
1249203-17	05-Dec-12	sample homogenized	Gray/Beige	Castable	**Yes**	**Client ID: B-07A** [AS-PRE]	
						Chrysotile	9.79
						MMVF	19.59
						Non-Fibers	70.62
1249203-18	05-Dec-12	sample homogenized	Gray/Beige	Castable	No	**Client ID: B-07B** [AS-PRE]	
						MMVF	40
						Non-Fibers	60
1249203-19	05-Dec-12	sample homogenized	Gray/Beige	Castable	No	**Client ID: B-07C** [AS-PRE]	
						MMVF	60
						Non-Fibers	40
1249203-20	05-Dec-12	sample homogenized	Gray	Parg	**Yes**	**Client ID: B-08A**	
						Tremolite	1
						Non-Fibers	99
1249203-21	05-Dec-12	sample homogenized	Green/Beige	Parg	**Yes**	**Client ID: B-08B**	
						Chrysotile	1
						Non-Fibers	99
1249203-22	05-Dec-12	sample homogenized	Green/Beige	Parg	**Yes**	**Client ID: B-08C**	
						Chrysotile	1
						Non-Fibers	99
1249203-23	05-Dec-12	sample homogenized	Beige	Parg	No	**Client ID: B-08D**	
						Non-Fibers	100
1249203-24	05-Dec-12	sample homogenized	Beige	Parg	No	**Client ID: B-08E**	
						Non-Fibers	100
1249203-25	05-Dec-12	sample homogenized	Brown	Insulation	**Yes**	**Client ID: B-09A**	
						Amosite	40
						MMVF	40
						Non-Fibers	20

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Client: DST Consulting Engineers Inc. (Ottawa)
203-2150 Thurston Dr.
Ottawa, ON K1G 5T9

Attn: Matt Desroches
Tel: (807) 548-2383
Fax: (807) 548-1967

Project: BE OT 015746
Paracel Report No.: 1249203

Received Date: 05-Dec-12
Report Date: 11-Dec-12

Asbestos by PLM **MDL - 0.5%**

Paracel I.D.	Sample Date	Layers Analyzed	Colour	Description	Asbestos Detected:	Material Identification	% Content
1249203-26	05-Dec-12					Client ID: B-09B	
						not analyzed	
1249203-27	05-Dec-12					Client ID: B-09C	
						not analyzed	
1249203-28	05-Dec-12	sample homogenized	Beige	Fire Brick	No	Client ID: B-10A	
						Non-Fibers	100
1249203-29	05-Dec-12	sample homogenized	Beige	Fire Brick	No	Client ID: B-10B	
						Non-Fibers	100
1249203-30	05-Dec-12	sample homogenized	Beige	Fire Brick	No	Client ID: B-10C	
						Non-Fibers	100

MMVF: Man Made Vitreous Fibers: Fiberglass, Mineral Wool, Rockwool, Glasswool
Analytes in bold indicate asbestos content which may include:
Actinolite, Amosite, Anthopyllite, Chrysotile, Crocidolite and/or Tremolite.

Analysis Summary Table

Analysis	Method Reference/Description	Lab Location	NVLAP Lab Code *	Analysis Date
Asbestos by PLM	by EPA 600/R-93/116	Ottawa West Lab	200812-0	11-Dec-12

** 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.*

Report Notes

AS-PRE Due to the difficult nature of the bulk sample (interfering fibers/binders), additional NOB preparation was required prior to analysis

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Ottawa, Ontario K1G 4J8
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e: paracel@paracellabs.com
www.paracellabs.com

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No. 2398

Page 1 of 2

Client Name: DST	Project Reference: BE0T015746
Contact Name: MATT DESROCHES	Quote #
Address: 2150 THURSTON DR - 203 OTTAWA, ON	PO #
Telephone: 6133240724	Email Address:

TAT: [X] Regular [ ] 2 Day [ ] 1 Day [ ] Same Day

Date Required: _____

ASBESTOS ANALYSIS

Matrix Type: A (Air) O (Other) Regulatory/Guideline Requirements: _____ Required Analyses: [ ] PCM [X] PLM [ ] PLM 400PC [ ] PLM 1000PC [ ] Chatfield

Paracel Order Number: 1249203

	Sample ID	Matrix	Matrix Description	Sampling Date	Air Volume (L)	Positive Stop?	Is the Sample Layered?	If Yes, Describe Sample Layer(s) to be Analysed Separately
1	B-01A	O	HEADER PARGING	DEC 5/12	MA	YES	NO	
2	B-01B		↓					
3	B-01C		↓					
4	B-02A		HATCH CASTABLE					
5	B-02B		↓					
6	B-02C		↓					
7	B-03A		THROAT PARGING					
8	B-03B		↓					
9	B-03C		↓					
10	B-04		THERMAL PATCH					
11	B-05A		BRICK					
12	B-05B		↓					
13	B-05C		↓					
14	B-06A		PARGING					
15	B-06B		↓					

Comments:

Method of Delivery: Walk-in

Relinquished By (Print & Sign):	Received by Driver/Depot:	Received at Lab:	Verified By:
MATT DESROCHES		Karen Wiggins	Karen Wiggins
Date/Time: DEC 5/12 16:02	Date/Time: Dec 5/12 4:04pm	Date/Time: Dec 6/12 8:30	Date/Time: Dec 6/12 9:56

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Page 2 of 2

Client Name: DST	Project Reference: BEOT01574G	TAT: (X) Regular	
Contact Name: MATT DESROCHES	Quote #	[ ] 2 Day	
Address: 2150 THURSTON DR - 203 OTTAWA	PO #	[ ] 1 Day	
Telephone: 613 324 0724	Email Address:	[ ] Same Day	
		Date Required:	

ASBESTOS ANALYSIS

Matrix Type: A (Air) O (Other) Regulatory/Guideline Requirements: ____ **Required Analyses:** [ ] PCM [X] PLM [ ] PLM 400PC [ ] PLM 1000PC [ ] Chatfield

	Paracel Order Number: 1249203 / Sample ID	Matrix	Matrix Description	Sampling Date	Air Volume (L)	Positive Stop?	Is the Sample Layered?	If Yes, Describe Sample Layer(s) to be Analysed Separately
1	B-06C	O	PARGING	DEC 5/12	N/A	XB	NO	
2	B-07A		CASTABLE					
3	B-07B							
4	B-07C							
5	B-08A		SIDEWALL PARGING			NO		
6	B-08B					NO		
7	B-08C					NO		
8	B-08D					NO		
9	B-08E					NO		
10	B-09A		FLOOR INSULATION			XB		
11	B-09B							
12	B-09C							
13	B-10A		FIRE BRICK			XB		
14	B-10B							
15	B-10C							

Comments: NO STOP POSITIVE FOR B-08 SERIES PLEASE.

Method of Delivery: Walk

Relinquished By (Print & Sign):	Received by Driver/Depot:	Received at Lab:	Verified By:
MATT DESROCHES		Karen Wiggins	Karen Wiggins
Date/Time: DEC 5/12 16:08	Date/Time: Dec 5/12 4:04	Date/Time: Dec 6/12 8:30	Date/Time: Dec 6/12 9:56

Appendix C

Laboratory Certificates of Analysis:
Lead in Paint Samples

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e: paracel@paracellabs.com
www.paracellabs.com

Certificate of Analysis

DST Consulting Engineers Inc. (Ottawa)
203-2150 Thurston Dr.
Ottawa, ON K1G 5T9
Attn: Matt Desroches

Phone: (613) 748-1415
Fax: (613) 748-1356

Client PO:
Project: BE OT 015686
Custody: 91661

Report Date: 8-Nov-2012
Order Date: 6-Nov-2012
Order #: 1245123

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

Paracel ID	Client ID
1245123-01	015686-LP-01
1245123-02	015686-LP-02
1245123-03	015686-LP-03
1245123-04	015686-LP-04
1245123-05	015686-LP-05
1245123-06	015686-LP-06

Approved By: Mark Foto

Mark Foto, M.Sc. For Dale Robertson, BSc
Laboratory Director

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising shall be limited to the amount paid by you for this work, and that our employees or agents shall not under circumstances be liable to you in connection with this work

PARACEL LABORATORIES LTD.

Order #: 1245123

Certificate of Analysis

Report Date: 08-Nov-2012
Order Date:6-Nov-2012

Client: **DST Consulting Engineers Inc. (Ottawa)**
Client PO: Project Description: BE OT 015686

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals	EPA 6020 - Digestion, ICP-MS	7-Nov-12	7-Nov-12

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.

PARACEL LABORATORIES LTD.

Order #: 1245123

Certificate of Analysis

Report Date: 08-Nov-2012
Order Date:6-Nov-2012

Client: **DST Consulting Engineers Inc. (Ottawa)**
Client PO: Project Description: BE OT 015686

Sample Results

Lead

Matrix: Paint
Sample Date: 01-Nov-12

Paracel ID	Client ID	Units	MDL	Result
1245123-01	015686-LP-01	ug/g	5	298
1245123-02	015686-LP-02	ug/g	5	124
1245123-03	015686-LP-03	ug/g	5	2870
1245123-04	015686-LP-04	ug/g	5	1490
1245123-05	015686-LP-05	ug/g	5	3050
1245123-06	015686-LP-06	ug/g	5	7080

Laboratory Internal QA/QC

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Matrix Blank									
Lead	ND	5	ug/g						
Matrix Duplicate									
Lead	33000	5	ug/g	33100			0.3	50	
Matrix Spike									
Lead	1360		ug/L	1320	73.5	70-130			

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p: 1-800-749-1947
e: paracel@paracellabs.com
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Nº 91661

Page 1 of 1

Client Name: DST	Project Reference: BEAT013686	TAT: X Regular / 2 Day / 1 Day
Contact Name: MATT DESROCHES	Quote #	
Address: 1150 MORRISON DR - 203 OTTAWA ON	PO #	
Telephone: 6133407784	Email Address: mdesroches@dstgroup.com	Date Required:

Criteria: | | O. Reg. 153/04 Table _ | | O. Reg 179/11 Table _ | | RSC Filing | | O. Reg. 558/00 | | PWQO | | CCME | | SUB (Storm) | | SUB (Sanitary) Municipality:_____ | | Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Paracel Order Number: 124523

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	Required Analyses: LEAD IN PAINT
1	015686-LP-01	P	MA	1	NOV 1/12	AM	X
2	015686-LP-02	"	"	"	"	"	X
3	015686-LP-03	"	"	"	"	"	X
4	015686-LP-04	"	"	"	NOV 2/12	PM	X
5	015686-LP-05	"	"	"	"	"	X
6	015686-LP-06	"	"	"	"	"	X
7							
8							
9							
10							

Comments:

Method of Delivery: Walk-in

Relinquished By (Print & Sign): MATT DESROCHES	Received by Driver/Depot:	Received at Lab:	Verified By:
Date/Time: NOV 6/12 14:06	Date/Time:	Date/Time: NOV 6/12	Date/Time: NOV 6/12 2:19
	Temperature: _____ °C	Temperature: _____ °C 2.0°C	pH Verified | | By: N/A

Review Items

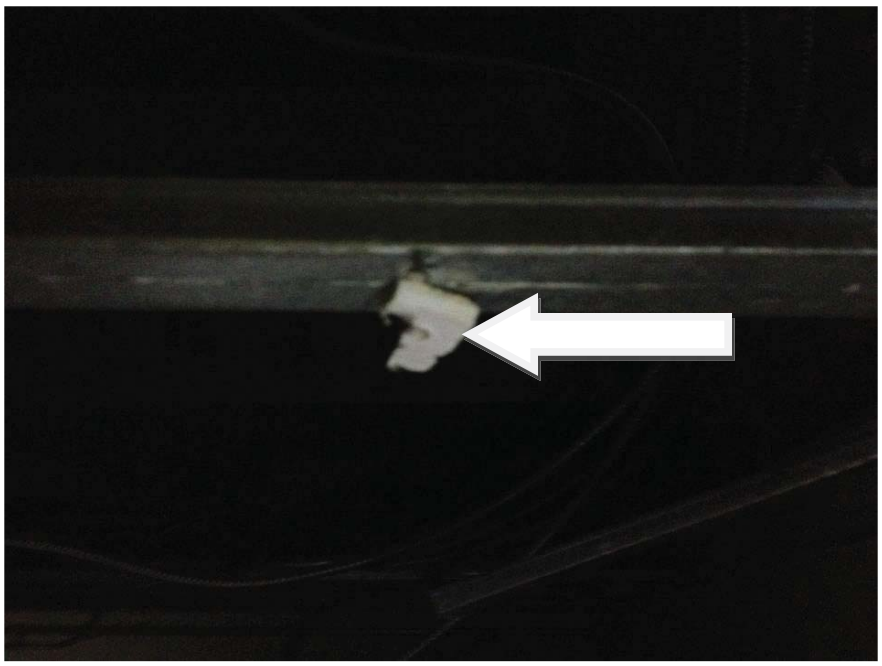
Lab Number	Analysis	Analyte		Exception
				Default Report (not modified)
				VERSION 6.08:2031
		Lead by ICP-MS	(Paint)	Special Units: (ug/g)
		Prep - Metals	(Paint)	Special Units: (ug/g)

Appendix D

Select Photographs

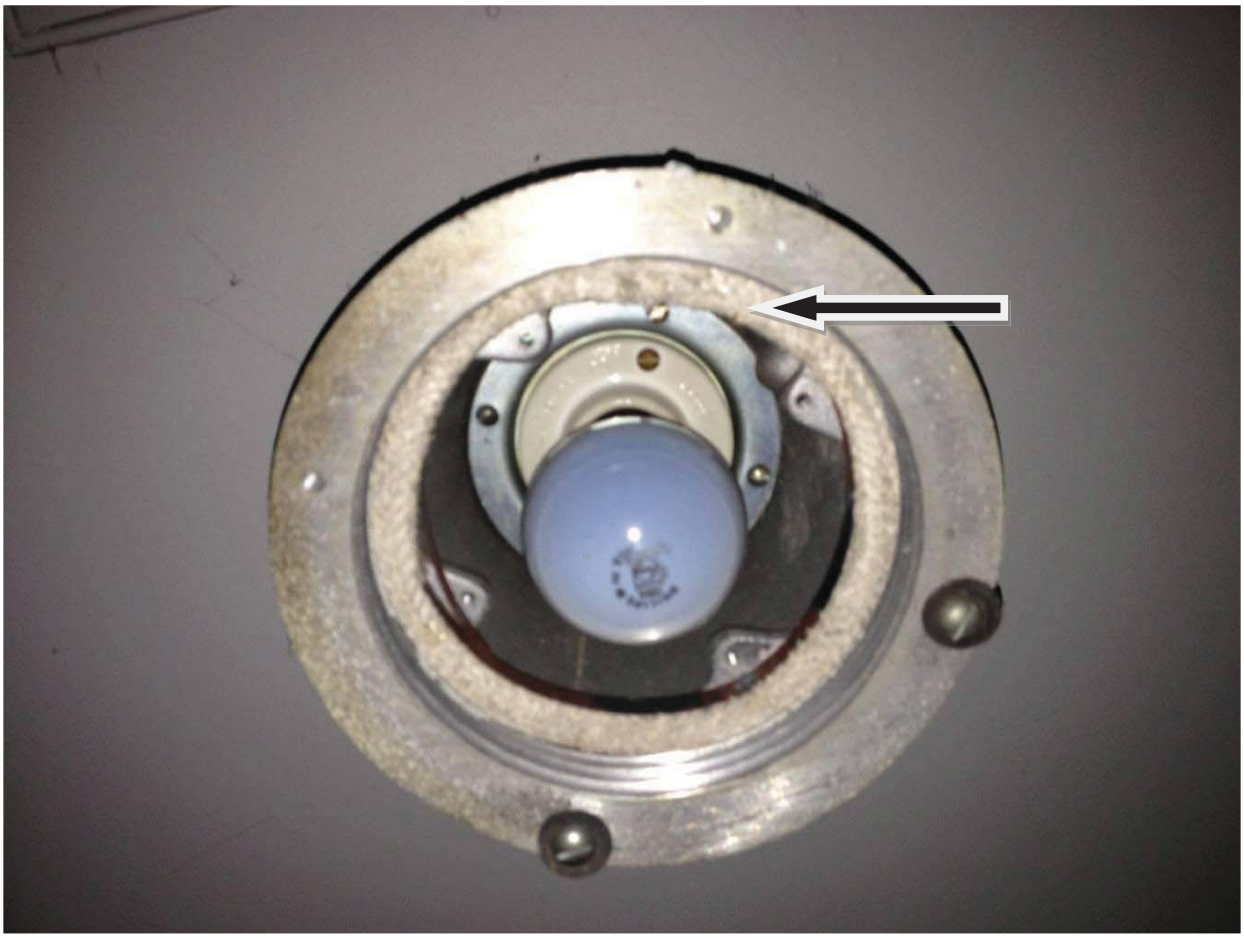
Photograph 1 – Basement, on top of ceiling slab of Steam Tunnel entrance, Debris on top of the ceiling slab of the Steam Tunnel entrance in the Basement is suspected to consist of asbestos-containing pipe fitting insulation.

Photograph 2 – Mechanical ventilation dampeners in the Basement and on the 5th Level are suspected to contain asbestos.

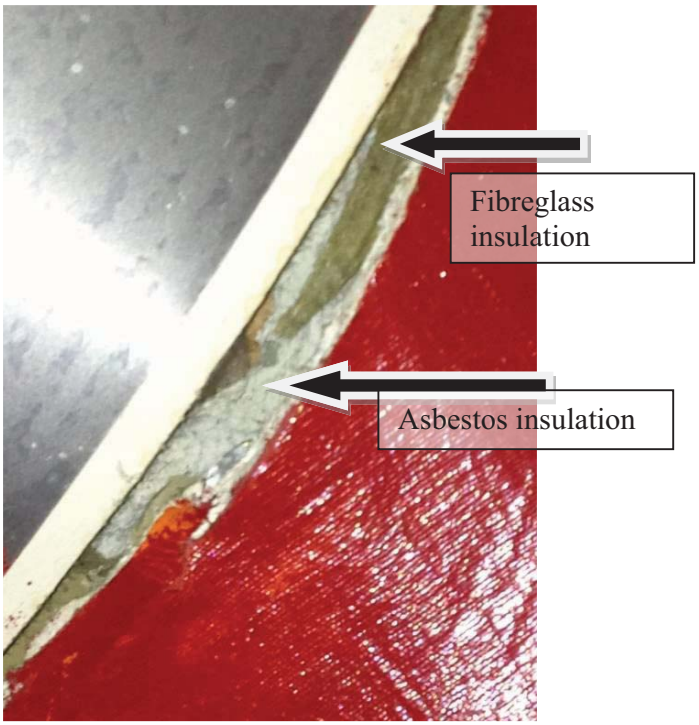


Photograph 3 – Transite ceiling tile remnants (suspect) were noted on concealed ceiling tracking in ceiling space of Ground Floor Kitchen and Front Office.

Photograph 4 – Mezzanines Floor Level, Gasket material on soot (”heavies”) collectors are suspected to contain asbestos.

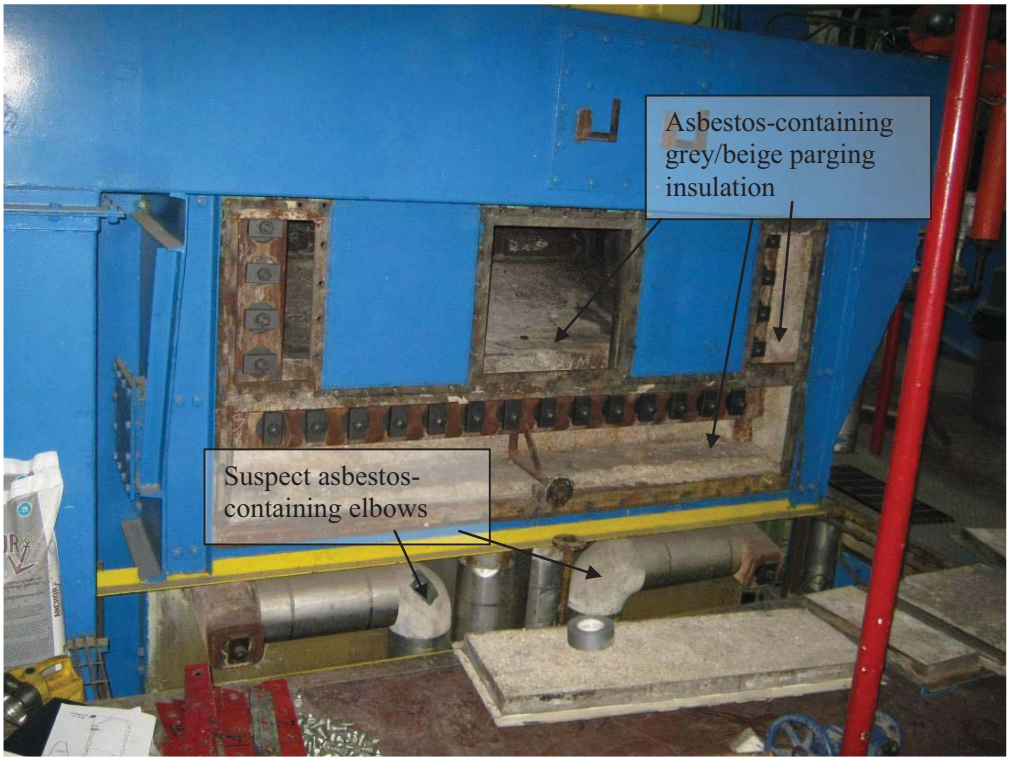


Photographs 5 – Ground Floor Storage Room off Garage, Light heat shielding suspected to contain asbestos.



Photographs 6 & 7 – Basement, Pipe fitting insulation type is inconsistent and varies between asbestos and non-asbestos applications, and in some cases both applications present on the same fitting

Photograph 8 – Ground Floor, **Electrical Room,** Metal Fire Doors on the Ground Floor have an "aircell" insulation core which is assumed to contain asbestos



Photograph 9 – Ground Floor, **Base of Boiler #1,** Grey/beige parging insulation on the floor and sides of the Return Header of Boiler #1 (**Sample B01-A**) contains asbestos. Pipe elbows at the base of the boiler are assumed to contain asbestos.

Photograph 10 – Upper Level, **Boiler #2,** Hatch gasket is assumed to contain asbestos.

This report titled:

Designated Substances Survey for the Central Experimental Farm Central Heating Plant Decommissioning and Deconstruction, Building 78, Prince of Wales Drive Ottawa, Ontario

December 19, 2012

ESD Project Number: R.010550.009
has been prepared by DST Consulting Engineers Inc.:

Signature:

Occupational Hygienist

Matthew DesRoches, M.Sc.(A), CIH, ROH