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Boys and Girls Club of Ottawa
2825 Dumaurier Avenue, Ottawa, ON K2B 7W3
Via email: cmooney@bgcottawa.org

February 7, 2018

Attention: **Colleen Mooney**

RE: Project-Specific Designated Substances Survey
Boys and Girls Club of Ottawa
1463 Prince of Wales Drive, Ottawa, Ontario

DST File No.: TSSO029633

1.0 INTRODUCTION

DST Consulting Engineers Inc. (DST) was retained by the Boys and Girls Club Ottawa to conduct a Project-Specific Designated Substances Survey (DSS) for the Police Youth Centre facility, located at 1463 Prince of Wales Drive, in Ottawa, ON.

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 area. 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 DSS conducted, the client 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 planned renovation work.

DST staff completed a visual inspection of building materials for the presence of suspected designated substances and select hazardous materials that will be affected by the project on June 22, 2017. DST returned to the site on July 18th, 2017 to conduct test cuts and sampling on the roof of the facility. DST returned to the site on January 9th, 2018 during demolition activities at the request of the client, to sample the gymnasium ceiling for due diligence purposes.

2.0 SCOPE OF WORK

The survey implemented by DST included the 11 designated substances listed in Section 30 of the Occupational Health and Safety Act, R.S.O. 1990, Chapter 0.1. Designated Substances, as identified under the Ontario Occupational Health and Safety Act, are as follows:

- Acrylonitrile;
- Arsenic;
- Asbestos-Containing Materials (ACMs) - 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 survey and considered pertinent due to applicable regulations, best practice guidelines and/or potential risks to human health and/or the environment, are:

- Polychlorinated Biphenyls (PCBs);
- Mould;
- Ozone-depleting substances; and
- Other hazardous materials, as deemed pertinent.

3.0 METHODOLOGY

The survey was non-destructive in nature and included all accessible areas of the interior and exterior of the facility. The original field program for the interior and ground level exterior was completed by DST on June 22, 2017. DST returned to the site on July 18th, 2017 to conduct test cuts and sampling on the roof of the facility. DST returned to the site on January 9th, 2018 during demolition activities to sample the gymnasium ceiling for due diligence purposes.

Materials suspected of containing designated substances were visually identified, based on the surveyor's knowledge of the historical composition of building products. Visual identification of materials suspected to contain asbestos was supported by the collection and analysis of a limited number of representative samples, where applicable. Materials suspected of containing designated substances other than asbestos and lead in paint were identified by appearance, age, and knowledge of historical applications. Equipment that may contain polychlorinated biphenyls (e.g. electrical transformers and fluorescent light ballasts) can often be identified by examining manufacturer's labels.

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, as O. Reg. 278/05, as amended. 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, caulking applications, asbestos textile products and asbestos cement products (transite). Some of these products may become friable with time or when disturbed.

Representative bulk samples of suspected ACMs were collected by DST during the site investigation. Samples were collected in order to meet the bulk sampling requirements stipulated in O.Reg. 278/05, as amended. The bulk samples were submitted to and analyzed by Paracel Laboratories Ltd. (Paracel). Paracel is an accredited laboratory through the Canadian Association for Laboratory Accreditation (CALA) and the NVLAP. All bulk samples were analyzed using a combination of dispersion staining and 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.

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. The Environmental Abatement Council of Ontario (EACO) has published the Lead Guideline for Construction, Renovation, Maintenance or Repair (October 2014). This document outlines that Paints or surface coatings containing less than or equal to 0.1% lead by weight (1000 ug/g or 1000 mg/kg or 1000 ppm lead) are considered low-level lead paints or surface coatings. If these materials (and the surfaces to which they are applied) are disturbed in a non-aggressive manner, performed using normal dust control procedures and are completed so that the TWA [Time Weighted Average] for PNOS [Particles Not Otherwise Specified] is not exceeded, then worker protection from the inhalation of lead is not required. For the purposes of this survey, paint applications having a lead concentration above 0.1% (1,000 ppm) are considered to be lead-based.

One (1) paint sample was collected by DST for lead content analysis during the site investigation. All other paints encountered in the project area were in good condition and sampling could not occur without matrix interference (i.e. removing the paint without the substrate material).

Selected photographs are included in Appendix A. Bulk asbestos and lead analytical results are included in Appendix B.

4.0 BACKGROUND INFORMATION REVIEW

Prior to the commencement of field work, DST project personnel reviewed past hazardous materials bulk sampling documentation, as pertinent to the project areas. As part of the project, DST reviewed the following report:

- City of Ottawa- Asbestos Survey Project, Facility No. 1509, 1463 Prince of Wales Drive, Ottawa, Ontario. Prepared by DST Consulting Engineers, DST File Number OE02525, April 2003.
- Asbestos Audit Report, Police Athletic Facility Building, 1463 Prince of Wales Drive, Ottawa, Ontario. Prepared by Seacor Environmental Inc., 2006.

DST referenced the identifiable and applicable sampling and analytical results of the above-noted documentation. DST's field program included the sampling of previously identified ACMs when necessary to meet sampling requirements of O. Reg. 278/05, as amended. DST also sampled any additional suspected ACMs identified and the documented any other Designated Substances encountered.

5.0 FINDINGS

5.1. Asbestos

Based on previous and current laboratory analysis, the following materials contain regulated concentrations of asbestos in the project area:

- Approximately four (4) metres of straight run mechanical pipe insulation, which contain 90% Chrysotile asbestos, observed in the basement mechanical room south-east pipe

chases. The material was in inaccessible but had an exposed end indicating fair to poor condition; (Seacor Sample SA-9);

- Five (5) friable mechanical pipe insulation fittings, which contain 90% Chrysotile asbestos, observed in the basement south east storage room above the lay in ceiling tiles. The material was in good condition; (Seacor Sample SA-9);
- Three (3) friable mechanical pipe insulation fittings, which contain 90% Chrysotile asbestos, observed in the basement south/middle storage room. The material was inaccessible due to height, but appeared to be missing casings indicating fair to poor condition; (Seacor Sample SA-9);
- Non-friable light and dark grey rough textured plaster, which contains 0.5% Chrysotile asbestos, observed on the walls of the former bell tower and two (2) rooms immediately north of the gymnasium. The material was in good condition; (DST Sample 29633-03C);
- Non-friable light and dark grey rough textured plaster, which contains 1% Chrysotile asbestos, observed on the ceilings of the basement electrical room, three (3) basement storage rooms, basement corridor and two (2) rooms immediately north of the gymnasium. The material was in good condition; (DST Sample 29633-11A);
- Approximately fourteen (14) linear metres of cardboard wrap insulation, which contain 5% Chrysotile asbestos, observed in the basement level southeast storage room above lay-in ceiling tiles and in the basement south/middle storage room. This material was in good condition; (DST Sample 29633-12B).
    - Cardboard wrap pipe insulation and tar paper wrap observed in the main floor ceiling space (DST Samples 29633-06A-C) did not contain asbestos (see below). This material was in poor condition and debris was present above the ceiling space. Any insulation material that cannot be distinguished from asbestos-containing cardboard wrap insulation should be treated as such.

Bulk sampling and/or onsite visual observations has confirmed that the following materials do not contain regulated concentrations of asbestos in the project area:

- Concrete block mortar, associated with smooth concrete blocks observed in the gymnasium; (DST Samples 29633-01A-C);
- Drywall joint compound throughout the building; (DST Samples 29633-02A-E);
- 12'x12' vinyl floor tiles (white with grey speckles) and associated yellow mastic observed in the south-west billiards/games room and the two (2) rooms north of the gymnasium; (DST Samples 29633-04A-C);
- Smooth finish plaster (white top layer and grey base layer) observed on ceilings throughout the building (DST Samples 29633-05A-G);
- Smooth finish plaster (white top layer and grey base layer) observed on walls throughout the building (DST Samples 29633-09A-G);
- Cardboard wrap pipe insulation and tar paper wrap observed in the main floor ceiling space (DST Samples 29633-06A-C);
    - Any insulation material that cannot be distinguished from asbestos-containing cardboard wrap insulation (DST Sample 29633-12B) should be treated as such.
- White stipple observed on the ceiling in the office immediately adjacent to the washrooms; (DST Samples 29633-07A-C);

- Texture coating observed on the walls in the office immediately adjacent to the washrooms; (DST Samples 29633-08A-C);
- Beige 12'x12' vinyl floor tiles observed in the main level of the stairwell; (DST Samples 29633-10A-C);
- Concrete block mortar observed throughout the building; (DST Samples 29633-13A-G);
- Brick mortar observed on the exterior walls of the building; (DST Samples 29633-14A-G);
- 2'X4' lay in ceiling tiles observed in the south east basement storage room (based on material);
- Textured plaster observed in the ceiling of the gymnasium (Seacor Sample SA-1-5, DST Sample 29633-16A-E); and
- Roofing materials- tar, membrane, fibreboard and Styrofoam layers (29633-15A-C).

5.2. Lead

Based on visual observations and bulk sampling analytical results for samples collected by DST, the following paint contains concentrations of lead greater than the Federal Canada Consumer Product Safety Act's limit of 90 ppm:

- Grey floor paint, containing 212 parts per million (ppm) of lead, located on concrete floors throughout the basement floor (DST sample LP-01).

No other lead paint samples were collected by DST for lead content analysis, as other paints and surface coatings encountered in the project areas were in good condition and sampling without matrix interference (i.e. removing the paint without the substrate material) would have proved difficult. All other paints and surface coatings in the project areas shall be assumed to contain detectable concentrations of lead, unless specific bulk sampling and laboratory analysis confirms otherwise.

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

- Ceramic tile glazing;
- Joint filler between terrazzo floor slabs;
- Cast-iron drainpipe joint caulking;
- Solder on the joints of copper piping; and
- Emergency light batteries.

5.3. Mercury

Mercury is suspected to be present in the following equipment:

- Fluorescent light fixtures containing fluorescent light tubes were observed. Fluorescent light tubes contain mercury in a vapour form and in the phosphor coating on the lamp tube; and
- The tilt switch mechanism in wall-mounted Thermostats.

5.4. Silica

Based on the historical composition of building materials, silica is expected to be present in:

- Concrete block mortar,
- Terra cotta mortar;
- Concrete and cement materials;
- Ceramic tile;
- Vinyl floor tiles;
- Drywall;
- 2'x4' ceiling tiles; and
- Roofing materials.

5.5. Polychlorinated Biphenyls (PCBs)

Polychlorinated Biphenyls (PCBs), also known as Chlorobiphenyls, are hazardous chemicals which were used in the manufacturing of a variety of equipment, such as electrical equipment, heat exchangers, hydraulic systems, and for several other specialized applications. PCBs are commonly found within electrical ballasts manufactured prior to 1981, found within fluorescent light fixtures and high intensity discharge lamps.

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.

DST did not disassemble any of the light fixtures in the project areas to identify the presence of ballasts, as the light fixtures were energized at the time of site visit. Based on limited visual observations, DST observed T12 and T8 lamps throughout the project areas. Light fixtures with T12 light ballasts are suspected to contain PCBs, until proven otherwise.

5.6. Rodent Feces

Approximately one (1) square metre of suspected rodent droppings were observed above the ceiling tiles of the basement south-east storage room.

5.7. Other Designated Substances and Hazardous Materials

The following Designated Substances and Hazardous Materials were neither observed, nor suspected of being present, in forms or quantities that would impact the renovation work:

- Acrylonitrile;
- Arsenic;
- Benzene;
- Coke Oven Emissions;
- Ethylene Oxide;
- Isocyanates;
- Vinyl Chloride; and

- Ozone-depleting substances (ODSs).

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the site investigation, sampling and analysis, the following Designated Substances and hazardous materials are present in forms and quantities expected to have a measurable impact for the project at 1463 Prince of Wales Drive, in Ottawa, ON::

- Asbestos;
- Lead;
- Mercury;
- Silica;
- PCBs; and
- Rodent feces.

DST's recommendations for each material, which are based upon both regulatory compliance and best practice guidelines, are included in the following sections below.

6.1. Asbestos

The disturbance of asbestos-containing materials on construction and demolition projects in the province of Ontario is governed by *O. Reg. 278/05, Asbestos on Construction Projects and in Buildings and Repair Operations* enabled under the *Occupational Health and Safety Act (R.S.O. 1990, Chapter 0.1),* as amended. This regulation classifies all asbestos disturbances as either 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 or renovation. The Ontario Ministry of Labour (MOL) must be notified of any project involving removal of more than a minor amount (e.g. typically one square metre) of friable asbestos material.

Identified asbestos-containing friable pipe fitting insulation and cardboard wrap insulation require a minimum of Type 2 abatement procedures under Ontario Regulation 278/05, as amended, when disturbing/removing/repairing one (1) square metre or less of this material. Should renovation or disturbance be required of more than one (1) square metre of friable ACM, Type 3 abatement procedures are required. It should also be noted that pipe insulation and/or pipe fitting insulation in good condition can be removed using Type 2 glove-bag procedures, provided the glove-bag seal can be maintained throughout the removal and cleaning process. If these conditions cannot be met, then more stringent procedures will be required.

The removal or disturbance of non-friable ACMs (textured plaster) can be completed using Type 1 asbestos precautionary measures, provided the material is wetted and only non-powered hand-held tools are used. If these conditions cannot be met, than more stringent (Type 2 or Type 3) procedures are required.

The time weight average exposure limit (TWAEL) for airborne asbestos 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 asbestos levels that exceed this TWAEL.

The following recommendations apply to ACMs:

1. In general, materials must be maintained in good condition;
2. The condition of material(s) identified in this report must be inspected at least annually, and this record must be updated accordingly;
3. Appropriate work procedures and precautionary measures must be used, as outlined in O. Reg. 278/05, as amended, when performing work that may disturb ACMs or suspected ACMs, including prior to building demolition;
4. 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, as amended; and
5. Disposal of asbestos waste is controlled by the Ontario Environmental Protection Act, R.R.O., 1990, Regulation 347, *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).

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.

6.2. Lead

The Occupational Health and Safety Branch of the Ontario MoL has 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. In the absence of specific legislation for lead on construction projects, this guideline should be followed when disturbing lead-containing materials.

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

Although the Federal Canada Consumer Product Safety Act's *Surface Coating Materials Regulations SOR/2005-109*, as amended, has set a limit of 90 ppm for surface coating materials, there may be a potential for exposure to 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 should be performed to determine the need to follow procedures such as those in the MoL guideline referenced above.

The 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.

DST recommends that any future disturbance of lead-containing materials avoid operations that generate high levels of dust (e.g. sanding, grinding) and that should these operations be required, appropriate precautionary measures be implemented for worker exposure.

Prior to or during renovation work, the following additional procedures should be performed with respect to other anticipated lead-containing materials:

- Type 1 lead precautionary measures can be used for the disturbance of ceramic tile glazing and the joint filler materials between terrazzo floor slabs, provided non-powered handtools are used. If this condition cannot be met, more stringent precautionary measures would ne necessary.
- Copper piping and cast iron drain pipe joint caulking can be cut a small distance (e.g. 50 mm) from the joints to avoid direct disturbance of the lead material;
- Emergency light batteries and other batteries should be removed when decommissioned and disposed of as lead-containing waste.

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 Transportation of Dangerous Goods Act (TDGA), 1992.

6.3. Mercury

There are no regulations that specifically govern the disturbance of mercury on construction projects. However, the Occupational Health and Safety Division of the Ontario MoL has published *The Safe Handling of Mercury: A Guide for the Construction Industry*. This document provides advice on how to reduce the risk of mercury exposure, and outlines clean-up methods for spills. In the absence of specific legislation for mercury on construction projects, this guideline would serve as a reasonable, peer reviewed standard for work procedures.

When the removal of fluorescent light tubes is required, the tubes should be removed intact from the fixtures. This prevents worker exposure to mercury vapour, particularly if the tube was energized shortly before removal.

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 exposure limit.

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. It is now common practice to recycle fluorescent light tubes and avoiding the generation of hazardous waste.

6.4. Silica

The Occupational Health and Safety Branch of the Ontario Ministry of Labour have 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.

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 exposure limit.

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.

6.5. Polychlorinated Biphenyls (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..

O. Reg. 347, General – Waste Management, as amended, is 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, 1992. Proper notification must be issued to the site representative prior to transportation of waste. Use, storage, labelling, and reporting requirements are also outlined within the federal PCB Regulation under the Canadian Environmental Protection Act (CEPA).

6.6. Rodent Feces

Fecal matter from animals has been associated with a variety of human health and safety concerns. Feces may contain moulds that may cause disease in humans. If the feces are disturbed, the toxic moulds may become airborne and pose a respiratory health risk.

It is recommended that animal droppings be removed using a combination of High Efficiency Particulate Aerosol (HEPA) filtered vacuum and wet cleaning (disinfecting) methods. Workers should use consider the use of appropriate respiratory protection and protective clothing in order to reduce exposure to mould when disturbing animal fecal matter or building materials contaminated with animal fecal matter.

7.0 CLOSURE

A Limitations of Report section, which forms an integral part of this report, is attached.

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.

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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 asbestos/paint bulk sampling in select representative areas for laboratory analysis. There is a practical limitation on the number of intrusive test cuts that can be made and the number of samples that can be collected in an occupied building. This requires the investigator to extrapolate observations and analytical results between test cut 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.

Any recommendations and conclusions provided that are based on conditions or assumptions reported herein will inherently include any uncertainty associated with those conditions or assumptions.

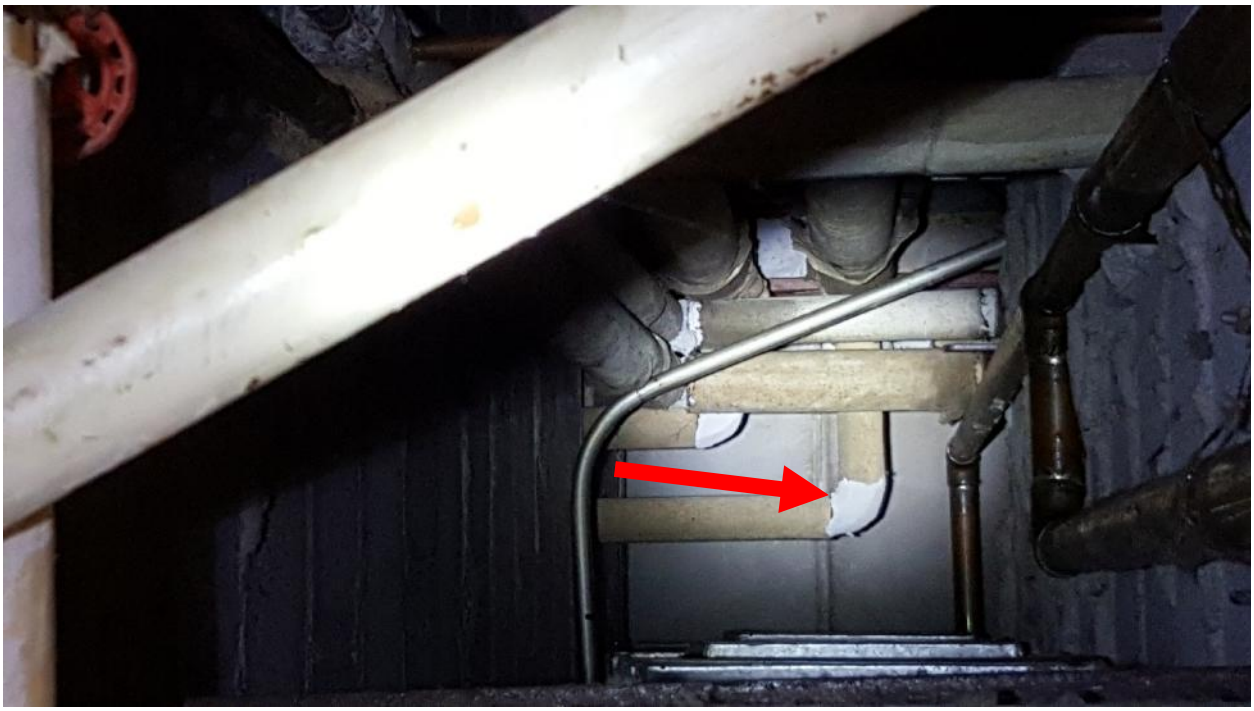
Note also that standards, guidelines and practices related to environmental investigations may change with time. Those which were applied at the time of this investigation may be obsolete or unacceptable at a later date.

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.

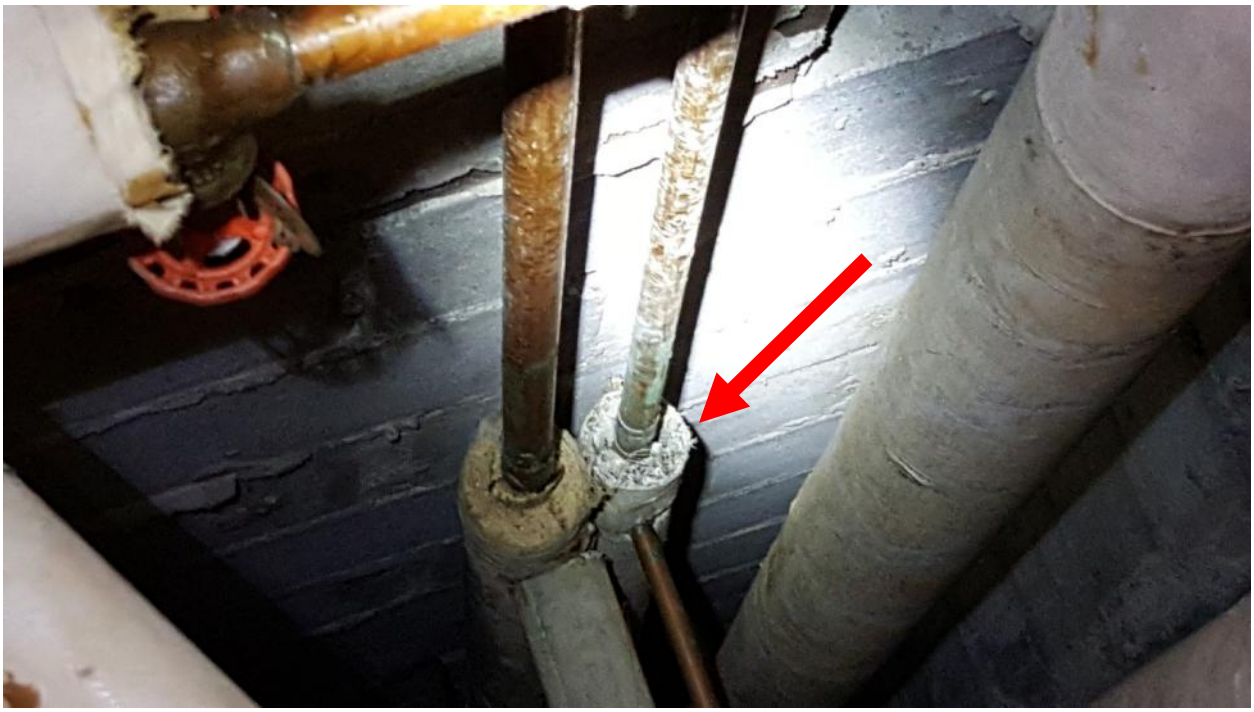
Any results from an analytical laboratory or other subcontractor reported herein have been carried out by others, and DST Consulting Engineers Inc. cannot warranty their accuracy. Similarly, DST cannot warranty the accuracy of information supplied by the client.

APPENDIX A

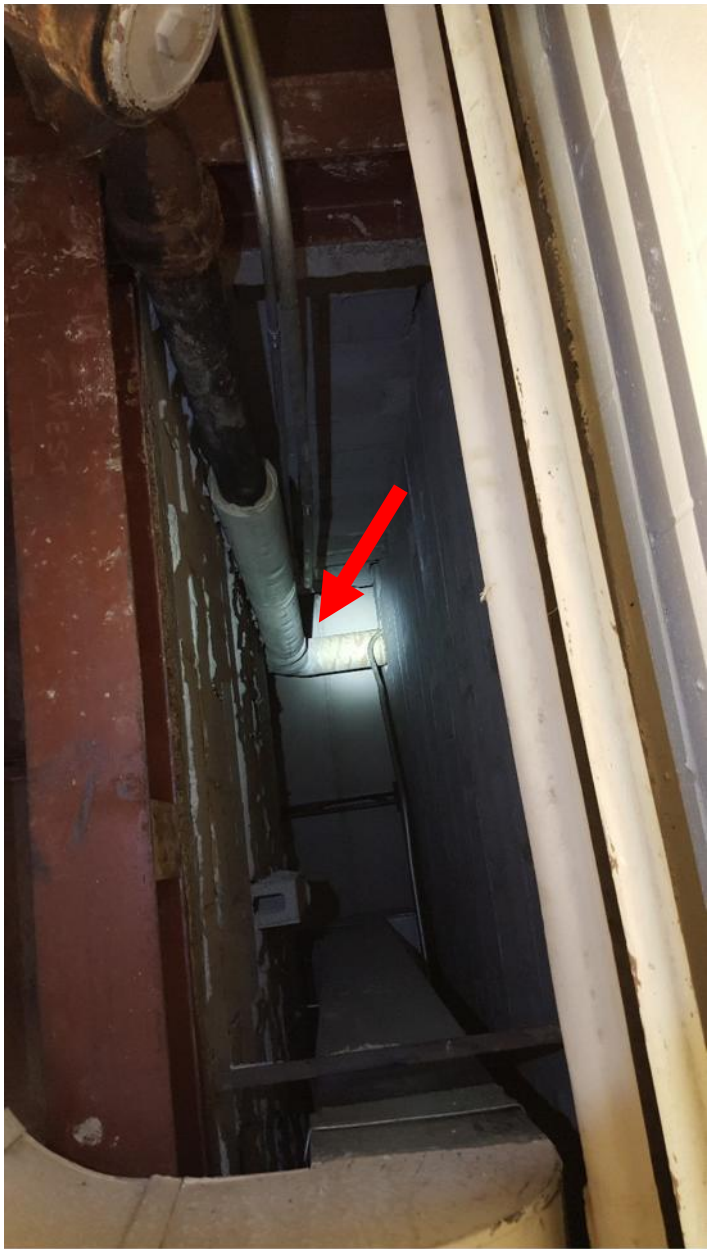
Select Photographs



Photograph 1: Friable mechanical pipe insulation fittings which contain 90% Chrysotile asbestos (Seacor Sample SA-9) were observed in the basement mechanical room south-east pipe chase.



Photograph 2: Friable mechanical pipe straight run insulation which contain 90% Chrysotile asbestos (Seacor Sample SA-9) were observed in the basement mechanical room south-east pipe chase.



Photograph 3: Friable mechanical pipe insulation fittings which contain 90% Chrysotile asbestos (Seacor Sample SA-9) were observed in the basement mechanical room south pipe chase.

Photograph 4: Friable mechanical pipe insulation fittings which contain 90% Chrysotile asbestos (Seacor Sample SA-9) were observed in the basement south-east storage room above the ceiling tiles.

Photograph 5: Non-friable rough textured plaster, which contains 0.5% Chrysotile asbestos, observed on the walls of the former bell tower.

Photograph 6: Non-friable rough textured plaster, which contains 0.5% Chrysotile asbestos, observed on the walls of the rooms north of the gymnasium.

Photograph 7: Non-friable rough textured plaster, which contains 1% Chrysotile asbestos, observed on the ceilings of all basement storage rooms and the basement corridor.

Photograph 8: Non-friable rough textured plaster, which contains 1% Chrysotile asbestos, observed on the ceilings on the main level in the two rooms north of the gymnasium.

Photograph 9: Friable cardboard wrap pipe straight run insulation which contains 5% Chrysotile asbestos (DST Sample 12A-C) were observed in the basement south-east and south/middle storage rooms.

Photograph 10: Rodent feces and signs of rodents feeding were observed in the basement south-east storage room above the ceiling tiles.

APPENDIX B

Laboratory Certificates of Analysis – Asbestos and Lead

PARACEL LABORATORIES LTD.
TRUSTED. RESPONSIVE. RELIABLE.

300 - 2319 St. Laurent Blvd
Ottawa, ON, K1G 4J8
1-800-749-1947
www.paracellabs.com

Certificate of Analysis

DST Consulting Engineers Inc. (Ottawa)

203-2150 Thurston Dr.
Ottawa, ON K1G5T9
Attn: Andrew Cooney

Client PO: 1463 Prince of Wales Drive, Ottawa ON
Project: TS SO 029633
Custody: 17206

Report Date: 29-Jun-2017
Order Date: 23-Jun-2017

Order #: 1725517

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

Paracel ID	Client ID
1725517-01	29633-01A
1725517-02	29633-01B
1725517-03	29633-01C
1725517-04	29633-02A
1725517-05	29633-02B
1725517-06	29633-02C
1725517-07	29633-02D
1725517-08	29633-02E
1725517-09	29633-03A (Dark Grey)
1725517-10	29633-03B (Dark Grey)
1725517-11	29633-03C (Dark Grey)
1725517-12	29633-03D (Dark Grey)
1725517-13	29633-03E (Dark Grey)
1725517-14	29633-03C (Light Grey)
1725517-15	29633-03D (Light Grey)
1725517-16	29633-04A (VFT)
1725517-17	29633-04B (VFT)
1725517-18	29633-04C (VFT)
1725517-19	29633-04A (Mastic)
1725517-20	29633-04B (Mastic)
1725517-21	29633-04C (Mastic)
1725517-22	29633-05A (Grey)
1725517-23	29633-05B (Grey)
1725517-24	29633-05C (Grey)
1725517-25	29633-05D (Grey)
1725517-26	29633-05E (Grey)

Approved By:

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

1725517-27	29633-05F (Grey)
1725517-28	29633-05G (Grey)
1725517-29	29633-05A (White)
1725517-30	29633-05B (White)
1725517-31	29633-05C (White)
1725517-32	29633-05D (White)
1725517-33	29633-05E (White)
1725517-34	29633-05F (White)
1725517-35	29633-05G (White)
1725517-36	29633-06A (Tar Paper)
1725517-37	29633-06B (Tar Paper)
1725517-38	29633-06C (Tar Paper)
1725517-39	29633-06A (Cardboard Insulation)
1725517-40	29633-06B (Cardboard Insulation)
1725517-41	29633-06C (Cardboard Insulation)
1725517-42	29633-07A
1725517-43	29633-07B
1725517-44	29633-07C
1725517-45	29633-08A
1725517-46	29633-08B
1725517-47	29633-08C
1725517-48	29633-09A (Grey)
1725517-49	29633-09B (Grey)
1725517-50	29633-09C (Grey)
1725517-51	29633-09D (Grey)
1725517-52	29633-09E (Grey)
1725517-53	29633-09F (Grey)
1725517-54	29633-09G (Grey)
1725517-55	29633-09A (White)
1725517-56	29633-09B (White)
1725517-57	29633-09C (White)
1725517-58	29633-09D (White)
1725517-59	29633-09E (White)
1725517-60	29633-09F (White)
1725517-61	29633-09G (White)
1725517-62	29633-10A
1725517-63	29633-10B
1725517-64	29633-10C
1725517-65	29633-11A (Light Grey)
1725517-66	29633-11B (Light Grey)
1725517-67	29633-11C (Light Grey)
1725517-68	29633-11A (Dark Grey)
1725517-69	29633-11B (Dark Grey)
1725517-70	29633-11C (Dark Grey)

1725517-71	29633-12A
1725517-72	29633-12B
1725517-73	29633-12C
1725517-74	29633-13A
1725517-75	29633-13B
1725517-76	29633-13C
1725517-77	29633-13D
1725517-78	29633-13E
1725517-79	29633-13F
1725517-80	29633-13G
1725517-81	29633-14A
1725517-82	29633-14B
1725517-83	29633-14C
1725517-84	29633-14D
1725517-85	29633-14E
1725517-86	29633-14F
1725517-87	29633-14G

Certificate of Analysis

Client: DST Consulting Engineers Inc. (Ottawa)

Client PO: 1463 Prince of Wales Drive, Ottawa ON

Report Date: 29-Jun-2017

Order Date: 23-Jun-2017

Project Description: TS SO 029633

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

Paracel I.D.	*Sample Date*	*Layers Analyzed*	*Colour*	*Description*	*Asbestos Detected:*	*Material Identification*	*% Content*
1725517-01	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-01A	
						Non-Fibers	100
1725517-02	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-01B	
						Non-Fibers	100
1725517-03	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-01C	
						Non-Fibers	100
1725517-04	22-Jun-17	sample homogenized	Grey	Drywall Joint Compound	No	Client ID: 29633-02A	
						Non-Fibers	100
1725517-05	22-Jun-17	sample homogenized	Grey	Drywall Joint Compound	No	Client ID: 29633-02B	
						Non-Fibers	100
1725517-06	22-Jun-17	sample homogenized	Grey	Drywall Joint Compound	No	Client ID: 29633-02C	
						Non-Fibers	100
1725517-07	22-Jun-17	sample homogenized	Grey	Drywall Joint Compound	No	Client ID: 29633-02D	
						Non-Fibers	100
1725517-08	22-Jun-17	sample homogenized	Grey	Drywall Joint Compound	No	Client ID: 29633-02E	
						Non-Fibers	100
1725517-09	22-Jun-17	sample homogenized	Dark Grey	Plaster	**Yes**	Client ID: 29633-03A (Dark Grey) [AS-PT]	
						[ASTrc] **Chrysotile**	<MDL
						Non-Fibers	100
1725517-10	22-Jun-17	sample homogenized	Dark Grey	Plaster	**Yes**	Client ID: 29633-03B (Dark Grey) [AS-PT]	
						[ASTrc] **Chrysotile**	<MDL
						Non-Fibers	100
1725517-11	22-Jun-17	sample homogenized	Dark Grey	Plaster	**Yes**	Client ID: 29633-03C (Dark Grey) [AS-PT]	
						Chrysotile	0.5
						Non-Fibers	99.5
1725517-12	22-Jun-17					Client ID: 29633-03D (Dark Grey)	
						not analyzed	
1725517-13	22-Jun-17					Client ID: 29633-03E (Dark Grey)	
						not analyzed	
1725517-14	22-Jun-17	sample homogenized	Light Grey	Plaster	**Yes**	Client ID: 29633-03C (Light Grey) [AS-PT]	
						Chrysotile	0.5
						Non-Fibers	99.5
1725517-15	22-Jun-17					Client ID: 29633-03D (Light Grey)	
						not analyzed	

Certificate of Analysis

Client: DST Consulting Engineers Inc. (Ottawa)

Client PO: 1463 Prince of Wales Drive, Ottawa ON

Report Date: 29-Jun-2017

Order Date: 23-Jun-2017

Project Description: TS SO 029633

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

Paracel I.D.	*Sample Date*	*Layers Analyzed*	*Colour*	*Description*	*Asbestos Detected:*	*Material Identification*	*% Content*
1725517-16	22-Jun-17	sample homogenized	Grey	Floor Tile	No	Client ID: 29633-04A (VFT)	
						Non-Fibers	100
1725517-17	22-Jun-17	sample homogenized	Grey	Floor Tile	No	Client ID: 29633-04B (VFT)	
						Non-Fibers	100
1725517-18	22-Jun-17	sample homogenized	Grey	Floor Tile	No	Client ID: 29633-04C (VFT)	
						Non-Fibers	100
1725517-19	22-Jun-17	sample homogenized	Yellow	Mastic	No	Client ID: 29633-04A (Mastic)	
						Non-Fibers	100
1725517-20	22-Jun-17	sample homogenized	Yellow	Mastic	No	Client ID: 29633-04B (Mastic)	
						Non-Fibers	100
1725517-21	22-Jun-17	sample homogenized	Yellow	Mastic	No	Client ID: 29633-04C (Mastic)	
						Non-Fibers	100
1725517-22	22-Jun-17	sample homogenized	Grey	Plaster	No	Client ID: 29633-05A (Grey)	
						Non-Fibers	100
1725517-23	22-Jun-17	sample homogenized	Grey	Plaster	No	Client ID: 29633-05B (Grey)	
						Non-Fibers	100
1725517-24	22-Jun-17	sample homogenized	Grey	Plaster	No	Client ID: 29633-05C (Grey)	
						Non-Fibers	100
1725517-25	22-Jun-17	sample homogenized	Grey	Plaster	No	Client ID: 29633-05D (Grey)	
						Non-Fibers	100
1725517-26	22-Jun-17	sample homogenized	Grey	Plaster	No	Client ID: 29633-05E (Grey)	
						Non-Fibers	100
1725517-27	22-Jun-17	sample homogenized	Grey	Plaster	No	Client ID: 29633-05F (Grey)	
						Non-Fibers	100
1725517-28	22-Jun-17	sample homogenized	Grey	Plaster	No	Client ID: 29633-05G (Grey)	
						Non-Fibers	100
1725517-29	22-Jun-17	sample homogenized	White	Plaster	No	Client ID: 29633-05A (White)	
						Non-Fibers	100
1725517-30	22-Jun-17	sample homogenized	White	Plaster	No	Client ID: 29633-05B (White)	
						Non-Fibers	100
1725517-31	22-Jun-17	sample homogenized	White	Plaster	No	Client ID: 29633-05C (White)	
						Non-Fibers	100
1725517-32	22-Jun-17	sample homogenized	White	Plaster	No	Client ID: 29633-05D (White)	
						Non-Fibers	100

Certificate of Analysis

Client: DST Consulting Engineers Inc. (Ottawa)

Client PO: 1463 Prince of Wales Drive, Ottawa ON

Report Date: 29-Jun-2017

Order Date: 23-Jun-2017

Project Description: TS SO 029633

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

Paracel I.D.	*Sample Date*	*Layers Analyzed*	*Colour*	*Description*	*Asbestos Detected:*	*Material Identification*	*% Content*
1725517-33	22-Jun-17	sample homogenized	White	Plaster	No	Client ID: 29633-05E (White)	
						Non-Fibers	100
1725517-34	22-Jun-17	sample homogenized	White	Plaster	No	Client ID: 29633-05F (White)	
						Non-Fibers	100
1725517-35	22-Jun-17	sample homogenized	White	Plaster	No	Client ID: 29633-05G (White)	
						Non-Fibers	100
1725517-36	22-Jun-17	sample homogenized	Black	Tar Paper	No	Client ID: 29633-06A (Tar Paper)	
						Cellulose	80
						Non-Fibers	20
1725517-37	22-Jun-17	sample homogenized	Black	Tar Paper	No	Client ID: 29633-06B (Tar Paper)	
						Cellulose	80
						Non-Fibers	20
1725517-38	22-Jun-17	sample homogenized	Black	Tar Paper	No	Client ID: 29633-06C (Tar Paper)	
						Cellulose	80
						Non-Fibers	20
1725517-39	22-Jun-17	sample homogenized	Brown	Cardboard Insulation	No	Client ID: 29633-06A (Cardboard Insulation)	
						Cellulose	95
						Non-Fibers	5
1725517-40	22-Jun-17	sample homogenized	Brown	Cardboard Insulation	No	Client ID: 29633-06B (Cardboard Insulation)	
						Cellulose	95
						Non-Fibers	5
1725517-41	22-Jun-17	sample homogenized	Brown	Cardboard Insulation	No	Client ID: 29633-06C (Cardboard Insulation)	
						Cellulose	95
						Non-Fibers	5
1725517-42	22-Jun-17	sample homogenized	White	Stipple	No	Client ID: 29633-07A	
						Non-Fibers	100
1725517-43	22-Jun-17	sample homogenized	White	Stipple	No	Client ID: 29633-07B	
						Non-Fibers	100
1725517-44	22-Jun-17	sample homogenized	White	Stipple	No	Client ID: 29633-07C	
						Non-Fibers	100
1725517-45	22-Jun-17	sample homogenized	Grey	Texture Coat	No	Client ID: 29633-08A	
						Non-Fibers	100
1725517-46	22-Jun-17	sample homogenized	Grey	Texture Coat	No	Client ID: 29633-08B	
						Non-Fibers	100

Certificate of Analysis

Report Date: 29-Jun-2017

Client: DST Consulting Engineers Inc. (Ottawa)

Order Date: 23-Jun-2017

Client PO: 1463 Prince of Wales Drive, Ottawa ON

Project Description: TS SO 029633

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

Paracel I.D.	*Sample Date*	*Layers Analyzed*	*Colour*	*Description*	*Asbestos Detected:*	*Material Identification*	*% Content*
1725517-47	22-Jun-17	sample homogenized	Grey	Texture Coat	No	Client ID: 29633-08C	
						Non-Fibers	100
1725517-48	22-Jun-17	sample homogenized	Grey	Plaster	No	Client ID: 29633-09A (Grey)	
						Non-Fibers	100
1725517-49	22-Jun-17	sample homogenized	Grey	Plaster	No	Client ID: 29633-09B (Grey)	
						Non-Fibers	100
1725517-50	22-Jun-17	sample homogenized	Grey	Plaster	No	Client ID: 29633-09C (Grey)	
						Non-Fibers	100
1725517-51	22-Jun-17	sample homogenized	Grey	Plaster	No	Client ID: 29633-09D (Grey)	
						Non-Fibers	100
1725517-52	22-Jun-17	sample homogenized	Grey	Plaster	No	Client ID: 29633-09E (Grey)	
						Non-Fibers	100
1725517-53	22-Jun-17	sample homogenized	Grey	Plaster	No	Client ID: 29633-09F (Grey)	
						Non-Fibers	100
1725517-54	22-Jun-17	sample homogenized	Grey	Plaster	No	Client ID: 29633-09G (Grey)	
						Non-Fibers	100
1725517-55	22-Jun-17	sample homogenized	White	Plaster	No	Client ID: 29633-09A (White)	
						Non-Fibers	100
1725517-56	22-Jun-17	sample homogenized	White	Plaster	No	Client ID: 29633-09B (White)	
						Non-Fibers	100
1725517-57	22-Jun-17	sample homogenized	White	Plaster	No	Client ID: 29633-09C (White)	
						Non-Fibers	100
1725517-58	22-Jun-17	sample homogenized	White	Plaster	No	Client ID: 29633-09D (White)	
						Non-Fibers	100
1725517-59	22-Jun-17	sample homogenized	White	Plaster	No	Client ID: 29633-09E (White)	
						Non-Fibers	100
1725517-60	22-Jun-17	sample homogenized	White	Plaster	No	Client ID: 29633-09F (White)	
						Non-Fibers	100
1725517-61	22-Jun-17	sample homogenized	White	Plaster	No	Client ID: 29633-09G (White)	
						Non-Fibers	100
1725517-62	22-Jun-17	sample homogenized	Beige	Floor Tile	No	Client ID: 29633-10A	
						Non-Fibers	100
1725517-63	22-Jun-17	sample homogenized	Beige	Floor Tile	No	Client ID: 29633-10B	
						Non-Fibers	100

Certificate of Analysis

Report Date: 29-Jun-2017

Client: DST Consulting Engineers Inc. (Ottawa)

Order Date: 23-Jun-2017

Client PO: 1463 Prince of Wales Drive, Ottawa ON

Project Description: TS SO 029633

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

Paracel I.D.	*Sample Date*	*Layers Analyzed*	*Colour*	*Description*	*Asbestos Detected:*	*Material Identification*	*% Content*
1725517-64	22-Jun-17	sample homogenized	Beige	Floor Tile	No	Client ID: 29633-10C	
						Non-Fibers	100
1725517-65	22-Jun-17	sample homogenized	Light Grey	Plaster	**Yes**	Client ID: 29633-11A (Light Grey)	
						Chrysotile	1
						Non-Fibers	99
1725517-66	22-Jun-17					Client ID: 29633-11B (Light Grey)	
						not analyzed	
1725517-67	22-Jun-17					Client ID: 29633-11C (Light Grey)	
						not analyzed	
1725517-68	22-Jun-17	sample homogenized	Grey	Plaster	**Yes**	Client ID: 29633-11A (Dark Grey)	
						Chrysotile	1
						Non-Fibers	99
1725517-69	22-Jun-17					Client ID: 29633-11B (Dark Grey)	
						not analyzed	
1725517-70	22-Jun-17					Client ID: 29633-11C (Dark Grey)	
						not analyzed	
1725517-71	22-Jun-17	sample homogenized	Brown	Cardboard Wrap Insulation	No	Client ID: 29633-12A	
						Cellulose	85
						Non-Fibers	15
1725517-72	22-Jun-17	sample homogenized	Brown	Cardboard Wrap Insulation	**Yes**	Client ID: 29633-12B	
						Chrysotile	5
						Cellulose	80
						Non-Fibers	15
1725517-73	22-Jun-17					Client ID: 29633-12C	
						not analyzed	
1725517-74	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-13A	
						Non-Fibers	100
1725517-75	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-13B	
						Non-Fibers	100
1725517-76	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-13C	
						Non-Fibers	100
1725517-77	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-13D	
						Non-Fibers	100

PARACEL LABORATORIES LTD.

Order #: 1725517

Certificate of Analysis

Client: DST Consulting Engineers Inc. (Ottawa)

Client PO: 1463 Prince of Wales Drive, Ottawa ON

Report Date: 29-Jun-2017

Order Date: 23-Jun-2017

Project Description: TS SO 029633

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

Paracel I.D.	Sample Date	Layers Analyzed	Colour	Description	Asbestos Detected:	Material Identification	% Content
1725517-78	22-Jun-17	sample homogenized	Grey	Mortar	**Yes**	Client ID: 29633-13E	[AS-PT]
					[ASTrc]	**Chrysotile**	<MDL
						Non-Fibers	100
1725517-79	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-13F	
						Non-Fibers	100
1725517-80	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-13G	
						Non-Fibers	100
1725517-81	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-14A	
						Non-Fibers	100
1725517-82	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-14B	
						Non-Fibers	100
1725517-83	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-14C	
						Non-Fibers	100
1725517-84	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-14D	
						Non-Fibers	100
1725517-85	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-14E	
						Non-Fibers	100
1725517-86	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-14F	
						Non-Fibers	100
1725517-87	22-Jun-17	sample homogenized	Grey	Mortar	No	Client ID: 29633-14G	
						Non-Fibers	100

**** 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	2 - Ottawa West Lab	200812-0	29-Jun-17

** 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.*

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

PARACEL LABORATORIES LTD.

Paracel ID: 1725517

Office
19 St. Laurent Blvd.
, Ontario K1G 4J8
0-749-1947
cel@paracellabs.com

Chain of Custody
(Lab Use Only)
№ 17206

Page 1 of 2

Client Name: DST Consulting Engineers
Contact Name: Andrew Cooney
Address: 2150 Thurston
Ottawa, ON
Telephone: 613-290-0101 / 613-748-1415

Project Reference: 7550 029633
Quote #: 16-117
PO #: 1463 Prince of Wales Drive Ottawa, ON
Email Address: acooney@dstgroup.com nstrang@

Turnaround Time:
☐ Immediate ☐ 1 Day
☐ 4 Hour ☐ 2 Day
☐ 8 Hour ☐ 3 Day
☒ ~~Regular~~
Date Required:

ASBESTOS & MOLD ANALYSIS

Matrix: ☐Air ☑Bulk ☐Tape Lift ☐Swab ☐Other Regulatory Guideline:

Required Analyses: ☐Microscopic Mold ☐Culturable Mold ☐Bacteria GRAM ☐PCM ☑PLM ☐Chatfield ☐TEM

Paracel Order Number: 1725517

	Sample ID	Sampling Date	Air Volume (L)	Analysis Required	Asbestos - Bulk: Matrix Description	Positive Stop? (Y/N)	Is the Sample Layered? (Y/N)	If layered, Describe Layer(s) to be Analyzed Separately* or Homogenize all **
1	01 A-C	June 22/17		PLM	C/B Mortar	y	N	
2					DJC	y	N	
3	02 A-E				Textured Plaster	y	*	Analyze layers if found.
4					VFT	y	*	Analyze mastic if found
5	03 A-E				Plaster	y	y	Grey/white layers
6					Cardboard Wrap Insulation	y	y	Analyze layers
7	04 A-C				Stipple	y	N	
8					Texture Coat	y	N	* Texture coat only
9	05 A-G							
10								
11	06 A-C							
12								
13	07 A-C							
14								
15	08 A-C							

*Each layer will be analyzed and charged separately **Homogenize = All layers are blended into a single uniform sample.

Comments: * For report please include 29633 at beginning of samples eg. 29633-01 A-C, 29633-02 A-E, etc.

Method of Delivery: Walk in

Relinquished By (Sign):	Received at Depot:	Received at Lab:	Verified By:
Relinquished By (Print): Andrew Cooney	Date/Time: June 23/17 12:39p	Date/Time: Jun 23/17 1:30	Date/Time: Jun 23/17 2:59
Date/Time: June 23/17.			

PARACEL LABORATORIES LTD. | TRU RES REL

Paracel ID: 1725517

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G 4J8

ibs.com

Chain of Custody
(Lab Use Only)

Page 2 of 2

Client Name: DST Consulting Engineers	Project Reference: TS0029633
Contact Name: Andrew Cooney	Quote #: 16-117
Address: 2150 Thurston Ottawa, ON	PO #: 1463 Prince of Wales, Ottawa ON
Telephone: 613-290-0101 / 613-748-1415	Email Address: acooney@dstgroup.com nstrang

Turnaround Time:
☐ Immediate ☐ 1 Day
☐ 4 Hour ☐ 2 Day
☐ 8 Hour ☐ 3 Day
☑ Regular
Date Required: _____

ASBESTOS & MOLD ANALYSIS

Matrix: ☐ Air ☑ Bulk ☐ Tape Lift ☐ Swab ☐ Other **Regulatory Guideline:** ☑ ON ☐ QC ☐ AB ☐ SK ☐ Other: _____

Analyses: ☐ Microscopic Mold ☐ Culturable Mold ☐ Bacteria GRAM ☐ PCM Asbestos ☑ PLM Asbestos ☐ Chatfield Asbestos ☐ TEM Asbestos

	Paracel Order Number: 1725517 / Sample ID	Sampling Date	Air Volume (L)	Analysis Required	Asbestos - Bulk: Identify Distinct Building Materials to Be Analyzed * see below	Combine Identified Materials? **see below	Positive Stop?
1	09 A-C	June 22/17		PLM	Plaster - grey, white	☐	☑
2						☐	☐
3	10 A-C				VFT - Beige + Mastic if found.	☐	☑
4						☐	☐
5	11 A-C				Rough Grey Plaster	☐	☑
6						☐	☐
7	12 A-C				Cardboard Wrap Insulation	☐	☑
8						☐	☐
9	13 A-C				C/B Mortar	☑	☑
10						☐	☐
11	14 A-C				Brick Mortar	☑	☑
12						☐	☐

* If left blank, Paracel will analyze all materials identified during analysis ** If left blank, Paracel will analyze all materials as individual samples **(at additional cost)** per EPA 600/R -93/116

Comments: Please insert 29633 in front of sample nos on report - eg: 29633-01 A-C

Method of Delivery: Walk-in

Relinquished By (Sign):	Received at Depot:	Received at Lab:	Verified By:
Relinquished By (Print): Andrew Cooney		Karen Auld	Karen Auld
Date/Time: June 23/17	Date/Time: June 23/17 12:39p	Date/Time: Jun 23/17 1:30	Date/Time: Jun 23/17 2:59

PARACEL LABORATORIES LTD.

TRUSTED.
RESPONSIVE.
RELIABLE.

300 - 2319 St. Laurent Blvd
Ottawa, ON, K1G 4J8
1-800-749-1947
www.paracellabs.com

Certificate of Analysis

DST Consulting Engineers Inc. (Ottawa)

203-2150 Thurston Dr.
Ottawa, ON K1G5T9
Attn: Andrew Cooney

Client PO: 1463 Prince of Wales Drive, Ottawa, Ontario
Project: TS SO 029633
Custody:

Report Date: 25-Jul-2017
Order Date: 19-Jul-2017

Order #: 1729324

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

Paracel ID	Client ID
1729324-01	29633-15A (Tar)
1729324-02	29633-15B (Tar)
1729324-03	29633-15C (Tar)
1729324-04	29633-15A (Roofing Membrane)
1729324-05	29633-15B (Roofing Membrane)
1729324-06	29633-15C (Roofing Membrane)
1729324-07	29633-15A (Fibreboard)
1729324-08	29633-15B (Fibreboard)
1729324-09	29633-15C (Fibreboard)

Approved By:

Emma Diaz

Senior Analyst

PARACEL LABORATORIES LTD.

Order #: 1729324

Certificate of Analysis

Client: DST Consulting Engineers Inc. (Ottawa)

Client PO: 1463 Prince of Wales Drive, Ottawa, Ontario

Report Date: 25-Jul-2017

Order Date: 19-Jul-2017

Project Description: TS SO 029633

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

Paracel I.D.	Sample Date	Layers Analyzed	Colour	Description	Asbestos Detected:	Material Identification	% Content
1729324-01	18-Jul-17	sample homogenized	Black	Tar	No	Client ID: 29633-15A (Tar)	
						MMVF	5
						Non-Fibers	75
						Other fibers	20
1729324-02	18-Jul-17	sample homogenized	Black	Tar	No	Client ID: 29633-15B (Tar)	
						MMVF	5
						Non-Fibers	75
						Other fibers	20
1729324-03	18-Jul-17	sample homogenized	Black	Tar	No	Client ID: 29633-15C (Tar)	
						MMVF	5
						Non-Fibers	75
						Other fibers	20
1729324-04	18-Jul-17	sample homogenized	Black	Roofing Membrane	No	Client ID: 29633-15A (Roofing Membrane)	
						Cellulose	10
						MMVF	5
						Non-Fibers	85
1729324-05	18-Jul-17	sample homogenized	Black	Roofing Membrane	No	Client ID: 29633-15B (Roofing Membrane)	
						Cellulose	10
						MMVF	5
						Non-Fibers	85
1729324-06	18-Jul-17	sample homogenized	Black	Roofing Membrane	No	Client ID: 29633-15C (Roofing Membrane)	
						Cellulose	10
						MMVF	5
						Non-Fibers	85
1729324-07	18-Jul-17	sample homogenized	Brown	Fiberboard	No	Client ID: 29633-15A (Fibreboard)	
						Cellulose	95
						Non-Fibers	5
1729324-08	18-Jul-17	sample homogenized	Brown	Fiberboard	No	Client ID: 29633-15B (Fibreboard)	
						Cellulose	95
						Non-Fibers	5
1729324-09	18-Jul-17	sample homogenized	Brown	Fiberboard	No	Client ID: 29633-15C (Fibreboard)	
						Cellulose	95
						Non-Fibers	5

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

Analysis Summary Table

Analysis	Method Reference/Description	Lab Location	NVLAP Lab Code *	Analysis Date
Asbestos, PLM Visual Estimation	by EPA 600/R-93/116	2 - Ottawa West Lab	200812-0	25-Jul-17

** 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.*

Work Order Revisions / Comments

None

PARACEL LABORATORIES LTD.

T R R

Paracel ID: 1729324

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Chain of Custody
(Lab Use Only)

Page 1 of 1

Client Name: DST Consulting Engineers	Project Reference: TSSO029633	**Turnaround Time:**	
Contact Name: Andrew Cooney	Quote #: 16-117	☐ Immediate	☐ 1 Day
Address: 2150 Thurston Drive, Ottawa, ON	PO #: 1463 Prince of Wales Drive, Ottawa, Ontario	☐ 4 Hour	☐ 2 Day
	Email Address: acooney@dstgroup.com	☐ 8 Hour	☐ 3 Day
			☑ Regular
Telephone: 613-290-0101 / 613-748-1415		Date Required:	

ASBESTOS & MOLD ANALYSIS

Matrix: ☐ Air ☑ Bulk ☐ Tape Lift ☐ Swab ☐ Other **Regulatory Guideline:** ☑ ON ☐ QC ☐ AB ☐ SK ☐ Other:

Analyses: ☐ Microscopic Mold ☐ Culturable Mold ☐ Bacteria GRAM ☐ PCM Asbestos ☑ PLM Asbestos ☐ Chatfield Asbestos ☐ TEM Asbestos

Paracel Order Number: 1729324		Sampling Date	Air Volume (L)	Analysis Required	Asbestos - Bulk		
	Sample ID				Identify Distinct Building Materials to Be Analyzed * see below	Combine Identified Materials? **see below	Positive Stop?
1	29633-15-A-C	07/18/17		PLM	Roofing material- please analyze all layers except foam	☐	☑
2						☐	☐
3						☐	☐
4						☐	☐
5						☐	☐
6						☐	☐
7						☐	☐
8						☐	☐
9						☐	☐
10						☐	☐
11						☐	☐
12						☐	☐

* If left blank, Paracel will analyze all materials identified during analysis ** If left blank, Paracel will analyze all materials as individual samples **(at additional cost)** per EPA 600/R -93/116

Comments:

Method of Delivery: Walkin

Relinquished By (Sign):	Received at Depot:	Received at Lab:	Verified By:
Relinquished By (Print): Andrew Cooney			
Date/Time: 07/19/2017	Date/Time: July 19/17 11:44a	Date/Time: July 19/17 3:40	Date/Time: July 19/17 4:15

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Certificate of Analysis

DST Consulting Engineers Inc. (Ottawa)

203-2150 Thurston Dr.
Ottawa, ON K1G5T9
Attn: Andrew Cooney

Client PO: Boys and Girls Club, Police Youth Centre
Project: TS SO 029633
Custody:

Report Date: 10-Jan-2018
Order Date: 9-Jan-2018

Order #: 1802206

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

Paracel ID	Client ID
1802206-01	29633-16A
1802206-02	29633-16B
1802206-03	29633-16C
1802206-04	29633-16D
1802206-05	29633-16E

Approved By:

Heather S.H. McGregor, BSc

Laboratory Director - Microbiology

PARACEL LABORATORIES LTD.

Order #: 1802206

Certificate of Analysis

Report Date: 10-Jan-2018

Client: DST Consulting Engineers Inc. (Ottawa)

Order Date: 9-Jan-2018

Client PO: Boys and Girls Club, Police Youth Centre

Project Description: TS SO 029633

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

Paracel I.D.	*Sample Date*	*Layers Analyzed*	*Colour*	*Description*	*Asbestos Detected:*	*Material Identification*	*% Content*
1802206-01	09-Jan-18	sample homogenized	Grey	Plaster	No	Client ID: 29633-16A	
						Non-Fibers	100
1802206-02	09-Jan-18	sample homogenized	Grey	Plaster	No	Client ID: 29633-16B	
						Non-Fibers	100
1802206-03	09-Jan-18	sample homogenized	Grey	Plaster	No	Client ID: 29633-16C	
						Non-Fibers	100
1802206-04	09-Jan-18	sample homogenized	Grey	Plaster	No	Client ID: 29633-16D	
						Non-Fibers	100
1802206-05	09-Jan-18	sample homogenized	Grey	Plaster	No	Client ID: 29633-16E	
						Non-Fibers	100

Analysis Summary Table

Analysis	Method Reference/Description	Lab Location	NVLAP Lab Code *	Analysis Date
Asbestos, PLM Visual Estimation	by EPA 600/R-93/116	2 - Ottawa West Lab	200812-0	10-Jan-18

** 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.*

Work Order Revisions / Comments

None

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Paracel ID: 1802206

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Page 1 of 1

Client Name:	DST Consulting Engineers	Project Reference: TSSO-029633	**Turnaround Time:**
Contact Name:	Andrew Cooney	Quote #: 16-117	☐ Immediate ☑ 1 Day
Address:	2150 Thurston Drive, Ottawa, ON	PO #: Boys and Girls Club, Police Youth Centre	☐ 4 Hour ☐ 2 Day
		Email Address: acooney@dstgroup.com	☐ 8 Hour ☐ 3 Day
Telephone:	613-290-0101 / 613-748-1415		☐ Regular
			Date Required:_____

ASBESTOS & MOLD ANALYSIS

Matrix: ☐ Air ☑ Bulk ☐ Tape Lift ☐ Swab ☐ Other **Regulatory Guideline:** ☑ ON ☐ QC ☐ AB ☐ SK ☐ Other:____

Analyses: ☐ Microscopic Mold ☐ Culturable Mold ☐ Bacteria GRAM ☐ PCM Asbestos ☑ PLM Asbestos ☐ Chatfield Asbestos ☐ TEM Asbestos

Paracel Order Number: 1802206	Sample ID	Sampling Date	Air Volume (L)	Analysis Required	Asbestos - Bulk: Identify Distinct Building Materials to Be Analyzed * see below	Asbestos - Bulk: Combine Identified Materials? **see below	Asbestos - Bulk: Positive Stop?
1	29633-16A-E	01/09/2018		PLM	Please analyze all layers	☐	☑
2						☐	☐
3						☐	☐
4						☐	☐
5						☐	☐
6						☐	☐
7						☐	☐
8						☐	☐
9						☐	☐
10						☐	☐
11						☐	☐
12						☐	☐

* If left blank, Paracel will analyze all materials identified during analysis ** If left blank, Paracel will analyze all materials as individual samples (**at additional cost**) per EPA 600/R -93/116

Comments:

Method of Delivery: Walk in

Relinquished By (Sign):	Received at Depot:	Received at Lab:	Verified By:
Relinquished By (Print): Andrew Cooney			
Date/Time: 01/09/2018	Date/Time: Jan 9/18 3:55p	Date/Time: Jan 10/18 9:50	Date/Time: Jan 10/18 9:54

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Certificate of Analysis

DST Consulting Engineers Inc. (Ottawa)

203-2150 Thurston Dr.
Ottawa, ON K1G5T9
Attn: Andrew Cooney

Client PO: 1463 Prince of Wales Ottawa, ON
Project: TS SO 029633
Custody: 34455

Report Date: 29-Jun-2017
Order Date: 23-Jun-2017

Order #: 1725510

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

Paracel ID	Client ID
1725510-01	LP-01- Grey Paint

Approved By:

Dale Robertson, BSc
Laboratory Director

Certificate of Analysis
Client: DST Consulting Engineers Inc. (Ottawa)
Client PO: 1463 Prince of Wales Ottawa, ON

Report Date: 29-Jun-2017
Order Date: 23-Jun-2017
Project Description: TS SO 029633

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-MS	EPA 6020 - Digestion - ICP-MS	28-Jun-17	28-Jun-17

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 #: 1725510

Certificate of Analysis
Client: DST Consulting Engineers Inc. (Ottawa)
Client PO: 1463 Prince of Wales Ottawa, ON

Report Date: 29-Jun-2017
Order Date: 23-Jun-2017
Project Description: TS SO 029633

Sample Results

Lead

Matrix: Paint
Sample Date: 22-Jun-17

Paracel ID	Client ID	Units	MDL	Result
1725510-01	LP-01- Grey Paint	ug/g	5	212

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	**955**	**5**	**ug/g**	**794**			**18.4**	**50**	
Matrix Spike									
Lead	92.1		ug/L	31.8	121	70-130			

Paracel ID: 1725510

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№ 34455

Page 1 of 1

Client Name: DST Consulting Engineers	Project Reference: TSS 029633
Contact Name: Andrew Cooney	Quote #: 16-117
Address: 2150 Thurston Ottawa, ON	PO #: 1463 Prince of Wales Ottawa, ON
Telephone: 613 290-0601 / 613 748 1415	Email Address: acooney@dstgroup.com nstrang@dstgroup.com

Turnaround Time:
☐ 1 Day ☐ 3 Day
☐ 2 Day ☑ Regular
Date Required: _____

Criteria: ☐ O. Reg. 153/04 (As Amended) 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)

Required Analyses

Paracel Order Number: 1725510

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	Lead										
1	LP-01 - Grey Paint	P		1	June 22/17	10:00am	+										✓
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Method of Delivery: Walk-in

Comments:

Relinquished By (Sign):	Received by Driver/Depot:	Received at Lab:	Verified By:
Relinquished By (Print): Andrew Cooney	Date/Time:	Date/Time: June 23/17	Date/Time: 06/23/17 1:07pm
Date/Time: June 23/17	Temperature: ____°C	Temperature: ____°C 13.3	pH Verified [ ] By:

Chain of Custody (Blank) - Rev 0.4 Feb 2016