

October 13, 2022 – Revised



TESSERACT
ENVIRONMENTAL CONSULTING INC.

Pre-Renovation Hazardous Materials Assessment



Metcalfe Lift Station
600 Lyndale Drive
Winnipeg, Manitoba

Submitted to:

Mr. Colin Siepman
KGS Group
865 Waverly Street
Winnipeg, Manitoba
R3T 5P4

Hazardous Building Materials



TABLE OF CONTENTS

1.0 INTRODUCTION2

2.0 SCOPE OF WORK2

3.0 REGULATIONS AND GUIDELINES.....2

 3.1 Asbestos-Containing Materials2

 3.2 Lead.....2

 3.3 Polychlorinated Biphenyls.....3

 3.4 Mercury and Silica.....4

4.0 METHODOLOGY4

 4.1 Asbestos4

 4.2 Lead4

 4.5 Other Hazardous Materials4

5.0 RESULTS AND OBSERVATIONS4

 5.1 Asbestos4

 5.2 Lead.....6

 5.3 Other Hazardous Materials.....7

6.0 RECOMMENDATIONS.....7

7.0 LIMITATIONS8

8.0 CLOSURE.....9

Document Attachments:

Appendix A – Laboratory Certificate of Analysis – Asbestos

Appendix B – Laboratory Certificate of Analysis – Lead

Appendix C – Select Site Photographs

1.0 INTRODUCTION

Tesseract Environmental Consulting Inc. (TEC) was retained by the KGS Group (the Client) to complete an assessment of suspect hazardous materials within the Metcalfe Lift Station located at 660 Lyndale Drive in Winnipeg, Manitoba. The assessment was conducted on September 9, 2022, by Mr. Trevor Bage of TEC.

The Site assessment was performed with the objective of identifying hazardous materials that may require abatement or repairs prior to the intended renovations on Site.

This report has been compiled to assist the Client in meeting the requirements of Section 4 – Duties of Employers, of Chapter W210 10/02 The Workplace Safety and Health Act as amended, Manitoba Regulation 217/2006 Part 37, and the Manitoba documents, entitled *The Guide for Asbestos Management (November 2020)*.

2.0 SCOPE OF WORK

The Scope of Work for this project was limited to the following:

- Conduct a visual assessment of the Site to determine the location and condition of potentially asbestos-containing materials, lead-containing materials, poly-chlorinated bi-phenyls, mercury and silica.
- Conduct representative bulk sampling of materials or finishes suspected to contain asbestos or lead to supplement observations at the Site.
- Submit the bulk samples collected to an accredited lab, under chain of custody protocol, for analysis.
- Provide a report outlining our findings and provide recommendations regarding the removal of the identified substances in accordance with planned remediation activities at the Site building.

3.0 REGULATIONS AND GUIDELINES

3.1 Asbestos-Containing Materials

Manitoba Regulation 217/2006 defines asbestos substances that may be present within buildings and prescribes requirements regarding their control or removal. Specifically, control or removal of asbestos and other hazardous substances are prescribed under Parts 33 and 37 of M.R. 217/2006, the purpose of which is to limit or prevent occupational exposures prior to any demolition activities. Specific minimum requirements concerning the handling, removal, and disposal of asbestos within a Manitoba workplace are outlined in the document entitled *Guide for Asbestos Management (November 2020)*. This document clearly outlines monitoring exposure limits, notification and training requirements, personal protection, removal procedures, and general information concerning the safe and effective removal of all asbestos-containing materials (ACM).

3.2 Lead

Lead is regulated under M.R. 217/2006. Generally, removal of lead-containing paint is not required unless work performed on lead-containing materials is likely to produce airborne lead dust or fumes (e.g. during welding, torch cutting, sanding and sandblasting). If these operations are likely to occur during building renovation or alteration, it is recommended that the removal of lead-containing paint be carried out in accordance with M.R. 217/2006; Section 33.3, which states:



An employer must ensure that the demolition work is ... conducted in such a way as to ensure that, so far as is reasonably practicable, workers and other persons are not exposed to risks to their safety and health in connection with the demolition work.

Lead was used as a pigment and drying agent in alkyd oil-based paints. The Surface Coating Materials Regulations (SOR/2005-109) made under the Canada Consumer Product Safety Act restricts the lead content of paints and other liquid coatings on new furniture, household products, children's products, industrial surfaces and exterior and interior surfaces to 90 mg/kg by weight. The Canadian Paint and Coatings Association (CPCA), the national trade association for Canada's paint manufacturers recommended that the Canadian paint industry voluntarily stop using any lead compounds in consumer paints by the end of 1990. Over the years, the amount of lead in paint has continued to decrease, due to the co-operative efforts of government and industry.

Similarly, lead and other heavy metals were commonly used in ceramic tile glaze, and for decorative finishing on other types of glassware.

M.R.217/2006 currently does not prescribe a defining threshold for a quantitative classification of lead-based paint. As such, TEC considers any paint with a detectable presence over 90 mg/kg of lead to be lead-containing paint.

Prior to disposal, Toxicity Character Leachate Procedure (TCLP) testing must be completed on all finishes found to be lead-containing. Sampling should involve the collection of at least 100 grams of the lead-containing finish and the underlying substrate material (mixed). TCLP testing was not completed during the initial hazardous materials assessment as the potential lead-content of each finish was unknown. As per the Manitoba Conservation and Climate document titled "Managing Demolition Debris Containing Hazardous Materials", if the result of the TCLP testing is greater than 5 mg/L, that waste is characterized as leachable toxic waste and must be managed as hazardous waste and disposed of at a hazardous waste disposal facility. Similarly, if the result of the TCLP testing is 5 mg/L or lower, the waste materials can be disposed of at a landfill permitted under the Waste Management Facilities Regulation, M.R. 37/2016 or a licensed facility under The Environment Act.

3.3 Polychlorinated Biphenyls

PCBs were used as a dielectric fluid in electrical equipment such as transformers, light ballasts and capacitors. The use of PCBs in fluorescent lamp ballast capacitors was common up to 1980. The PCB Regulations, SOR/2008-273, prohibits and restricts the use of PCBs pertaining to the manufacture, export, import, sale and or processing of PCBs and PCB-containing products.

SOR/2008-273 prescribes requirements pertaining to the handling, storage and disposal of PCBs and PCB-containing equipment. Revisions to the federal regulation have provided end-of-use deadlines for liquids containing PCBs, as well as PCBs in specified equipment. The first such deadline was December 31, 2009, by which time all equipment containing PCBs at concentrations greater than 500 mg/kg, and equipment within 100 metres of specified sensitive locations and containing PCBs at concentrations greater than 50 mg/kg, must have been phased out of use. These deadlines exclude PCB-containing light ballasts, and pole-mounted transformers.

3.4 Mercury and Silica

Parts 33 (Demolition) and 36 (Chemical and Biological Substances) of M.R. 217/2006 prescribes the requirement for an assessment of hazardous substances, such as mercury and silica, which may present a health risk to workers during renovation, alteration or demolition activities.

4.0 METHODOLOGY

4.1 Asbestos

The surveyor investigated the Site for suspected asbestos-containing materials. The survey was conducted in such a fashion as to limit damage where possible. As such, the surveyor performed non-intrusive inspection and testing, and assessment of materials in concealed locations (i.e. ceiling spaces or wall cavities) was conducted only where access was readily available.

The building visually inspected to confirm the locations of suspect ACM. Where necessary, bulk samples were collected of materials suspected of containing asbestos for confirmation purposes.

Homogeneous materials sampling was utilized during the investigation. Specifically, bulk material sampling was completed on homogeneous materials that are uniform in colour, texture, and installation or construction date.

4.2 Lead

Systematic sampling and visual identification of the most commonly applied colours of suspected lead-containing painted was completed as part of the survey. A visual review for other suspect lead-containing building materials was undertaken and noted if observed.

4.5 Other Hazardous Materials

Polychlorinated biphenyls, mercury and silica were visually assessed, and noted if observed.

5.0 RESULTS AND OBSERVATIONS

5.1 Asbestos

Results of the analysis for suspected asbestos-containing materials are provided below in Table 1: Analytical Results of Suspected Asbestos-Containing Materials. Select photographs have been included in **Appendix C – Select Site Photographs**. Full laboratory analytical results for all samples have been included in **Appendix A – Laboratory Certificate of Analysis – Asbestos**.

TABLE 1: Analytical Results of Suspected Asbestos Containing Materials

SAMPLE NUMBER	SAMPLE DESCRIPTION	ASBESTOS CONTENT
MLS-1	Lowest Level – Cementitious Ceiling Patch	None Detected
MLS-2	Lowest Level – Cementitious Ceiling Patch	None Detected
MLS-3	Lowest Level – Cementitious Ceiling Patch	None Detected



SAMPLE NUMBER	SAMPLE DESCRIPTION	ASBESTOS CONTENT
MLS-4	Lowest Level, Flange on Pump Line – Gasket	None Detected
MLS-5	Lowest Level, Flange on Pump Line – Gasket	None Detected
MLS-6	Lowest Level, Flange on Pump Line – Gasket	None Detected
MLS-7	Third Level, Flange on Pump Line – Gasket	None Detected
MLS-8	Lower Exterior – Stucco	None Detected
MLS-9	Lower Exterior – Stucco	None Detected
MLS-10	Lower Exterior – Stucco	None Detected
MLS-11	Upper Exterior, Brick and Mortar – Brick	None Detected
MLS-12	Upper Exterior, Brick and Mortar – Brick	None Detected
MLS-13	Upper Exterior, Brick and Mortar – Brick	None Detected
MLS-14	Upper Exterior, Brick and Mortar – Mortar	None Detected
MLS-15	Upper Exterior, Brick and Mortar – Mortar	None Detected
MLS-16	Upper Exterior, Brick and Mortar – Mortar	None Detected
MLS-17	Roof – Top Layer	None Detected
MLS-18	Roof – Top Layer	None Detected
MLS-19	Roof – Top Layer	None Detected
MLS-20	Roof – Sealant around Chimney	None Detected
MLS-21	Roof – Sealant around Chimney	None Detected
MLS-22	Roof – Sealant around Chimney	None Detected

Based on the analytical results presented in the above table and Appendix A, as well as visual assessments during the Site visit, the following observations can be made with regards to the ACMs found within the Site area:

WALLS, FLOORING & CEILING FINISHES

Walls and ceilings in within the superstructure were found to be non-suspect plywood. Beneath the plywood on the walls was a rigid foam insulation. Walls and ceilings of the superstructure were not opened to assess for the presence of additional suspect hazardous materials within wall and ceiling cavities.

Walls in the first level of the substructure were also noted to be plywood with rigid foam insulation – concrete is presumed to be located beneath the plywood. Ceiling and flooring in this level were non-suspect concrete.

Walls, ceilings and floors in the third and fourth levels of the substructure were non-suspect concrete.

On the fourth level of the substructure, cementitious patches were observed in the ceiling and (samples MLS-1, MLS-2 and MLS-3) were found to contain no detectable levels of asbestos.

MECHANICAL

Gaskets were noted in the flanges of the pump lines and (samples MLS-4, MLS-5, MLS-6 and MLS-7) were found to contain no detectable levels of asbestos.

ROOF AND EXTERIOR

The lower portion of the exterior was noted to be stucco (samples MLS-8, MLS-9 and MLS-10) and the upper portion of the exterior was noted to be brick (samples MLS-11, MLS-12 and MLS-13) and mortar (samples MLS-14, MLS-15 and MLS-16). All exterior finishes were found to contain no detectable levels of asbestos.

The roof was observed to be tar and gravel and samples of the top layer beneath the gravel (samples MLS-17, MLS-18 and MLS-19) was found to contain no detectable levels of asbestos. To prevent damage to the structure, TEC did not complete destructive sampling of the roofing materials to assess all layers that may be present.

Around the chimney on the roof, a black sealant was observed and (samples MLS-20, MLS-21 and MLS-22) was found to contain no detectable levels of asbestos.

5.2 Lead

Results of the analysis for suspected lead-containing paints are provided below in Table 2: Analytical Results of Suspected Lead-Containing Paints. Select photographs have been included in **Appendix C – Photo Index**. Full laboratory analytical results for all samples have been included in **Appendix B – Laboratory Certificate of Analysis – Lead**.

TABLE 2: Analytical Results of Suspected Lead-Containing Paints

SAMPLE NUMBER	SAMPLE DESCRIPTION	LEAD IN PAINT (mg/kg)	TREAT AS LEAD CONTAINING?
MLS-LP-1	Second Level – Red Paint on Floor	341	Yes
MLS-LP-2	Lowest Level – Red Paint on Floor	238.6	Yes



SAMPLE NUMBER	SAMPLE DESCRIPTION	LEAD IN PAINT (mg/kg)	TREAT AS LEAD CONTAINING?
MLS-LP-3	Lowest Level – White on Walls/Ceiling	< D.L.	No
MLS-LP-4	Third Level – Blue on Mechanical Lines	< D.L.	No
MLS-LP-5	Second Level – Blue on Ladder	482.93	Yes
MLS-LP-6	First Level White on Plywood Walls/Ceiling	< D.L.	No
MLS-LP-7	First Level – Red on Flooring	208	Yes
MLS-LP-8	First Level – Blue on Mechanical Lines	< D.L.	No
MLS-LP-9	Light Brown with Blue beneath – On Flashing	16,316.32	Lead Based
MLS-LP-10	Brown – On Door and Frame	< D.L.	No

As outlined in section 3.2 above, TEC considers any paint with a detectable presence over 90 mg/kg of lead to be lead-containing paint, while paints above 5,000 mg/kg are considered lead-based.

As such, the red paint applied to the floors and the blue paint applied to the ladders are considered lead-containing. The blue paint applied to the ladders was visually similar to the blue paint applied to the mechanical lines which should also be presumed to be lead-containing as the paints are visually indistinguishable.

On the roof flashing, a brown paint with a light blue layer beneath was noted and is considered to be lead-based.

5.3 Other Hazardous Materials

Where observed, TEC did not note the light bulbs to be compact fluorescents, which are known to contain mercury. However, if light fixtures are to be removed and disposed of, all fluorescent bulbs should be individually assessed for the presence of mercury.

As all light fixtures were energized at the time of the assessment, however the light fixtures were all single bulb fixtures and do not contain PCB ballasts.

Finishes on the interior and exterior of the Site are presumed to contain silica, such as the concrete, brick, mortar and stucco.

No other hazardous materials were noted throughout the Site.

6.0 RECOMMENDATIONS

Asbestos:

In discussion with representatives from the Client and the City of Winnipeg, it was determined that the best course of action to assess the wall and ceiling systems of the superstructure is to open the walls following proper



abatement procedures prior to tender. The non-suspect plywood wall and ceiling materials should be removed following **Type 2** procedures to assess and additional materials that may be present within the wall and ceiling cavities.

Intrusive sampling of the roofing materials should also be completed prior to tender or the intended demolition of the superstructure.

Lead:

The red paint on flooring throughout and the blue paint found on ladders and mechanical items throughout was found to be lead-containing. These finishes may be removed following general demolition methods, provided that abrasive methods such as cutting, grinding and sanding are avoided. If abrasive methods are required, these removals may safely proceed within a negatively pressured enclosure.

The light brown and light blue paint applied on the flashing on the exterior is considered to be lead-based. Any impact to this material should proceed inside of a negatively pressured enclosure with the exception of manual removal by hand.

Lead leachability testing should be conducted on finishes with lead-containing or lead-based paints applied to determine any additional disposal methods required.

Miscellaneous Hazardous Materials:

Many of the items on Site are presumed to contain silica. Workers completing superstructure demolition or any renovations impacting the concrete on lower levels should wear appropriate personal protective equipment such as protective coveralls and a minimum of half face respirators with P100 filters.

7.0 LIMITATIONS

This report was prepared for the exclusive use of KGS Group (the “Client”) and the City of Winnipeg. This report is based on data and information collected during site visit conducted by Tesseract Environmental Consulting (TEC) and is based solely on site conditions encountered at the time of the site visit. Any use which a third party makes of this report, or any reliance on or discussion to be made based on it, are the sole responsibility of the third party.

The conclusions and recommendations contained in this report are based upon professional opinions with regard to the subject matter. These opinions are in accordance with currently accepted environmental assessment standards and practices applicable to this location and are subject to the following inherent limitations:

- The data and findings presented in this report are valid as of the date of the investigation. The passage of time, manifestation of latent conditions or occurrence of future events may warrant further exploration at the properties, analysis of the data, and re-evaluation of the findings, observations, and conclusions expressed in this report.
- Additional hazardous building materials not identified in this report may become evident during renovation or demolition activities. Should additional information become available, TEC requests that this information be brought to our attention so that we may re-assess the conclusions presented herein.

- The findings, observations and conclusions expressed by TEC in this report are not, and should not be considered, an opinion concerning compliance of any past or present owner or operator of the Site with any federal, provincial or local laws or regulations.
- TEC will not be responsible for any real or perceived decrease in a property value, its saleability or ability to gain financing through the reporting of information in this report.
- TEC report presents professional opinions and findings of a scientific and technical nature. While attempts were made to relate the data and findings to applicable environmental and occupational health & safety laws and regulations, the report shall not be construed to offer legal opinion or representations as to the requirements of, nor compliance with, environmental and occupational health & safety laws, rules, regulations or policies of federal, provincial, or local government agencies. Any use of this assessment report constitutes acceptance of the limits of TEC liability. TEC liability extends only to its client and not to other parties who may obtain this assessment report. Issues raised by the report should be reviewed by appropriate legal counsel.
- In evaluating the Site conditions, TEC has relied in good faith on information provided by others. We accept no responsibility for any deficiency, misstatements or inaccuracies contained in this report as a result of omissions, misinterpretations or fraudulent acts of the persons involve.

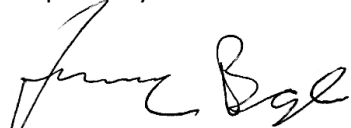
Any quantities of identified designated substances noted herein are estimated quantities for reporting purposes, and this report is limited in that regard. In the event that designated substances are scheduled to be removed in the future, it is solely the responsibility of the “abatement contractor” to confirm the exact quantities of designated substances to be removed, prior to their removal.

8.0 CLOSURE

If you have any questions regarding the information presented in this report, or require further assistance with environmental health and safety issues related to this, or any other Site, please feel free to contact the undersigned at (204) 250-0125. Thank you for the opportunity to offer our services.

TESSERACT ENVIRONMENTAL CONSULTING INC.

Prepared By:



Trevor Bage
HEALTH AND SAFETY FIELD TECHNOLOGIST

Reviewed By:



Ann McEachern, BSc.
OCCUPATIONAL HYGIENE CONSULTANT

Attachments:

- Appendix A – Laboratory Certificate of Analysis – Asbestos**
- Appendix B – Laboratory Certificate of Analysis – Lead**
- Appendix C – Select Site Photographs**



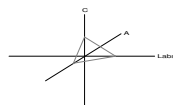
TESSERACT
ENVIRONMENTAL CONSULTING INC.

APPENDIX A

Laboratory Certificate of Analysis – Asbestos

CA Labs
Dedicated to Quality

Crisp Analytical, L.L.C.
1929 Old Denton Road
Carrollton, TX 75006
Phone 972-242-2754
Fax 972-242-2798



CA Labs, L.L.C.
12232 Industriplex, Suite 32
Baton Rouge, LA 70809
Phone 225-751-5632
Fax 225-751-5634

Materials Characterization - Bulk Asbestos Analysis

Laboratory Analysis Report - Polarized Light

Tesseract Environmental Consulting

179 McDermot Avenue Suite 111
Winnipeg, MB R3B 0S1

Customer Project: 22-KGS-0001 SPT-20000 Metcalfe Lift S
Reference #: CAL22099130RL Date: 09/16/22

Analysis and Method

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are performed. Calibrated liquid refractive oils are used as liquid mounting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjunction with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

Discussion

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". **In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.**

Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

Overview of Project Sample Material Containing Asbestos

Customer Project:		22-KGS-0001 SPT-20000 Metcalfe Lift Station		CA Labs Project #: CAL22099130RL	
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types

No Asbestos Detected.

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate	pe - perlite	fg - fiberglass	pa - palygorskite (clay)
gypsum - gypsum	qu - quartz	mw - mineral wool	
bi - binder		wo - wollastinite	
or - organic		ta - talc	
ma - matrix		sy - synthetic	
mi - mica		ce - cellulose	
ve - vermiculite		br - brucite	
ot - other		ka - kaolin (clay)	

This report relates to the items tested. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, AIHA LAP, LLC, or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company's standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples.

Polarized Light Asbestiform Materials Characterization

Customer Info: Tesseract Environmental Consulting 179 McDermot Avenue Suite 111 Winnipeg, MB R3B 0S1	Attn:	Customer Project: 22-KGS-0001 SPT-20000 Metcalfe Lift Station	CA Labs Project #: CAL22099130RL
Phone # 204-801-9358		Turnaround Time: 5 Days	Date: 9/16/2022
Fax #			Samples Rec'd: 9/12/22 10:30am
			Date Of Sampling: 9/9/2022
			Purchase Order #: 22-KGS-0001 SPT-20000

Laboratory Sample ID	Sample #	Com ment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
81141	MLS-1		1-1	Cementitious/ white surfaced white and gray plaster	n	None Detected		100% qu,bi,ca
81142	MLS-2		2-1	Cementitious/ white surfaced white and gray plaster	n	None Detected		100% qu,bi,ca
81143	MLS-3		3-1	Cementitious/ white surfaced white and gray plaster	n	None Detected		100% qu,bi,ca
81144	MLS-4		4-1	Gasket/ black gasketing	y	None Detected	10% ce	90% qu,bi
81145	MLS-5		5-1	Gasket/ black gasketing	y	None Detected	10% ce	90% qu,bi
81146	MLS-6		6-1	Gasket/ black gasketing	y	None Detected	10% ce	90% qu,bi
81147	MLS-7		7-1	Gasket/ black gasketing	y	None Detected	10% ce	90% qu,bi


Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

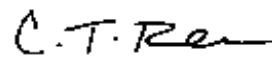
AIHA LAP, LLC Laboratory #102929

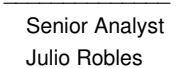
Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted.
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate	mi - mica	fg - fiberglass	ce - cellulose
gy - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot - other	wo - wollastonite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:


Julio Robles
Analyst


Technical Manager
Tanner Rasmussen


Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested

Polarized Light Asbestiform Materials Characterization

Customer Info: Tesseract Environmental Consulting 179 McDermot Avenue Suite 111 Winnipeg, MB R3B 0S1	Attn:	Customer Project: 22-KGS-0001 SPT-20000 Metcalfe Lift Station Turnaround Time: 5 Days	CA Labs Project #: CAL22099130RL Date: 9/16/2022 Samples Rec'd: 9/12/22 10:30am Date Of Sampling: 9/9/2022 Purchase Order #: 22-KGS-0001 SPT-20000
Phone #	204-801-9358		
Fax #			

Laboratory Sample ID	Sample #	Com ment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
81148	MLS-8		8-1	Stucco/ gray stucco	y	None Detected		100% qu,bi,ca
81149	MLS-9		9-1	Stucco/ gray stucco	y	None Detected		100% qu,bi,ca
81150	MLS-10		10-1	Stucco/ gray stucco	y	None Detected		100% qu,bi,ca
81151	MLS-11		11-1	Brick/ gray surfaced tan bricking	n	None Detected		100% qu,bi,ot
81152	MLS-12		12-1	Brick/ gray surfaced tan bricking	n	None Detected		100% qu,bi,ot
81153	MLS-13		13-1	Brick/ gray surfaced tan bricking	n	None Detected		100% qu,bi,ot
81154	MLS-14		14-1	Mortar/ gray mortar	y	None Detected		100% qu,ca


Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

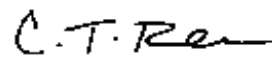
AIHA LAP, LLC Laboratory #102929

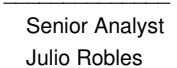
Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted.
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate	mi - mica	fg - fiberglass	ce - cellulose
gy - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot - other	wo - wollastonite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:


Julio Robles
Analyst


Technical Manager
Tanner Rasmussen


Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested

Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tesseract Environmental Consulting
179 McDermot Avenue Suite 111
Winnipeg, MB R3B 0S1

Customer Project:
22-KGS-0001 SPT-20000
Metcalfe Lift Station
Turnaround Time:
5 Days

CA Labs Project #:
CAL22099130RL

Date: 9/16/2022
Samples Rec'd: 9/12/22 10:30am
Date Of Sampling: 9/9/2022
Purchase Order #: 22-KGS-0001 SPT-20000

Phone # 204-801-9358
Fax #

Laboratory Sample ID	Sample #	Com ment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
----------------------	----------	----------	---------	--	-------------------	--	-----------------------------------	----------------------------

81155	MLS-15		15-1	Mortar/ gray mortar	y	None Detected		100% qu,ca
-------	--------	--	------	----------------------------	---	----------------------	--	------------

81156	MLS-16		16-1	Mortar/ gray mortar	y	None Detected		100% qu,ca
-------	--------	--	------	----------------------------	---	----------------------	--	------------

81157	MLS-17		17-1	Roofing material/ black tar and black felt	n	None Detected	10% ce 10% fg	80% qu,bi
-------	--------	--	------	---	---	----------------------	------------------	-----------

81158	MLS-18		18-1	Roofing material/ black tar and black felt	n	None Detected	10% ce 10% fg	80% qu,bi
-------	--------	--	------	---	---	----------------------	------------------	-----------

81159	MLS-19		19-1	Roofing material/ black tar and black felt	n	None Detected	10% ce 10% fg	80% qu,bi
-------	--------	--	------	---	---	----------------------	------------------	-----------

81160	MLS-20		20-1	Sealant/mastic/ black tar	y	None Detected		100% qu,bi
-------	--------	--	------	----------------------------------	---	----------------------	--	------------

81161	MLS-21		21-1	Sealant/mastic/ black tar	y	None Detected		100% qu,bi
-------	--------	--	------	----------------------------------	---	----------------------	--	------------


Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted.
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate	mi - mica	fg - fiberglass	ce - cellulose
gy - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot - other	wo - wollastonite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:


Julio Robles
Analyst


Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested

Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tesseract Environmental Consulting
179 McDermot Avenue Suite 111
Winnipeg, MB R3B 0S1

Phone # 204-801-9358
Fax #

Customer Project:
22-KGS-0001 SPT-20000
Metcalfe Lift Station
Turnaround Time:
5 Days

CA Labs Project #:
CAL22099130RL

Date: 9/16/2022
Samples Rec'd: 9/12/22 10:30am
Date Of Sampling: 9/9/2022
Purchase Order #: 22-KGS-0001 SPT-20000

Laboratory Sample ID	Sample #	Comment	Layer #	Analysts	Physical Description of Subsample	Homo-geneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
----------------------	----------	---------	---------	----------	-----------------------------------	--------------------	--	-----------------------------------	----------------------------

81162	MLS-22	22-1	Sealant/mastic/ black tar	y	None Detected				100% qu,bi
-------	--------	------	---------------------------	---	---------------	--	--	--	------------

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted.
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

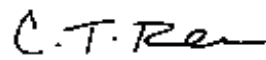
ca - carbonate	mi - mica	fg - fiberglass	ce - cellulose
gy - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot - other	wo - wollastonite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:



Julio Robles
Analyst

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze



Technical Manager
Tanner Rasmussen

6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested

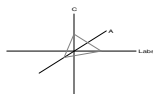
Senior Analyst
Julio Robles



TESSERA CT
ENVIRONMENTAL CONSULTING INC.

APPENDIX B

Laboratory Certificate of Analysis – Lead



Atomic Absorption Lead Report

Analysis Method: Lead in Paint analyzed by Atomic Absorption (AA)/SW-846-7420;
This analysis is not covered by the scope of accreditation by NVLAP or AIHA.

Sample Prep Method: Samples are dissolved in nitric acid, extracted, and analyzed on a properly calibrated AA; Absorbency curve was calculated, bandwidth corrected, and wavelength at the time of the analysis was measured and recorded.

Client Information:

Tesseract Environmental
Consulting
179 McDermot Ave – Suite 111
Winnipeg, MB R3B 0S1
Phone: (204) 801-9358
Fax: (204) 480-4348

Client Project:

22-KGS-0001 SPT-20000 Metcalfe Lift Station

Turnaround Time: 5 Days

Attn:

CA Labs Project #:

CAL22099131RL

Date of Sampling: None Given

Report Date: 9/16/22

Samples Received: 9/12/22 10:30am

Purchase Order #: 22-KGS-0001
SPT-20000

Sample#	Sample Concentration: parts per million (ppm)	Weight Percent:
MLS-LP-1	341.00	0.0341
MLS-LP-2	238.60	0.0239
MLS-LP-3	<100.00	<0.0100
MLS-LP-4	<136.43	<0.0136
MLS-LP-5	482.93	0.0483
MLS-LP-6	<128.53	<0.0129
MLS-LP-7	208.00	0.0208
MLS-LP-8	<230.95	<0.0231
MLS-LP-9	16,316.32	1.6316
MLS-LP-10	<100.45	<0.0100
Lab Blank	< 1.00	----

Quality Control:

Duplicate: 1.0 RPD
Spike: 99.1 % Recovery

All samples received in good condition unless noted

NVLAP # 200349-0

Approved Signatories:

Julio Robles
Analyst

TDH # 30-0235

Page 1 of 1

Julio Robles
Senior Analyst

Tanner Rasmussen
Technical Manager

Notes:
The current guidelines for lead in paint from the Consumer Products Safety Council (CPSC) is 0.06% by weight; the Housing and Urban Development (HUD) guideline is 0.5% by weight.

CA Labs is participating in ELPAT rounds sponsored by American Industrial Hygiene Association (AIHA) and National Lead Laboratory Program (NLLAP). This test reports relates only to the items tested. Neither AIHA, NVLAP nor EPA accreditation implies endorsement by any US Government agency. CA Labs is accredited by the American Industrial Hygiene Association (AIHA LAP, LLC.) in the TEM, PLM, and PCM asbestos fields of testing for Industrial Hygiene and in the culturable fungi field of testing for Environmental Microbiology. This report may not be reproduced except in full without written permission from CA Labs. This Method is not covered by the AIHA accreditation for Environmental Hygiene.

These results are submitted pursuant to CA Labs' current terms and condition of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping and handling fee may be assessed for the return of any samples.

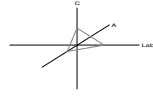
Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006; phone (972) 242-2754, fax (972) 242-2798.

CA Labs

Dedicated to
Quality

Crisp Analytical, L.L.C.

1929 Old Denton Road
Carrollton, TX 75006
Phone 972-242-2754
Fax 972-242-2798



CA Labs, L.L.C.

12232 Industriplex, Suite 32
Baton Rouge, LA 70809
Phone 225-751-5632
Fax 225-751-5634

**ATOMIC ABSORPTION
LEAD ANALYSIS
LABORATORY ANALYSIS REPORT**

Tesseract Environmental Consulting

179 McDermot Ave – Suite 111
Winnipeg, MB R3B 0S1

Reference number: CAL22099131RL

LABORATORY ANALYSIS:

Summary of lead analysis by atomic absorption in all relevant media using the method described in SW-846-7420. All analysts have received the necessary in-house and extramural training to perform analysis of samples for the presence of lead. A duplicate analysis is performed on greater than ten percent of all samples. A spiked concentration sample is analyzed with each sample group for instrument calibration. All analysts are required to participate in quality control analysis rounds. Instrument calibrations are performed on a daily, weekly, and monthly basis.

CA Labs is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM) and by the USEPA for analysis of asbestos in drinking water. CA Labs is accredited by the American Industrial Hygiene Association (AIHA LAP, LLC) PLM, TEM and PCM Asbestos fields of testing for industrial hygiene. This analysis is not covered by the scope of accreditation by NVLAP. This method is not covered by the AIHA accreditation for Industrial Hygiene.

This report must not be used to claim product endorsement by AIHA or any agency of the U.S. Government. This test relates only to the items described and tested herein. This report may not be reproduced except in full, without written permission by CA Labs.

METHOD:

The procedure for paint chip analysis follows AOAC5.009(974.02) and SW-846-7420. The analysis of soil, wipes, and wastewater for the presence of lead is also referenced by SW-846-7420. Methodology for the analysis of lead in air samples follows NIOSH Method 7082.

Analysis performed at Crisp Analytical Labs, L.L.C. 1929 Old Denton Road Carrollton, TX 75006: phone (972) 242-2754; fax (972) 242-2798.



TESSERACT
ENVIRONMENTAL CONSULTING INC.

APPENDIX C

Photo Index

Appendix C – Select Site Photographs

Photo 1:
Metcalfe Lift Station
superstructure.



Photo 2:
Tar and gravel roof of the
superstructure. City of
Winnipeg representative
informed TEC that the roof
structure may be in poor
condition – intrusive
sampling was not
completed.



Appendix C – Select Site Photographs

Photo 3:

Non-ACM sealant around the chimney.



Photo 4:

Exterior flashing – brown paint and the blue paint beneath are lead based.



Appendix C – Select Site Photographs

Photo 5:

Lowest level of the substructure – non-ACM cementitious ceiling patches.



Photo 6:

Accessible gasket materials within the flanges were found to be non-ACM



Appendix C – Select Site Photographs

Photo 7:

Red paint on flooring throughout and blue paint on the ladders and mechanical lines are lead-containing.



Photo 8:

Plywood present on the walls and ceiling of the superstructure and first level of the substructure.

