SURE Hazmat and Testing

December 21, 2017

City of Vancouver
507 West Broadway, Suite 320
Vancouver, BC
V5Z 0B4

Attention: **Pat Li**
Hazardous Materials Technician

Reference: **Pre-Renovation Building Materials Investigation**
PNE Garden Auditorium, Vancouver, BC

Sure Hazmat and Testing has, in accordance with your request, completed an investigation for hazardous materials and to identify any immediate hazards to workers during the renovation of the PNE Garden Auditorium Located at 2901 East Hastings Street in Vancouver, BC.

The scope of our investigation was based on the client's renovation plans which included re-roofing the entire building. Our inspection included all roofing materials and caulkings associated with the re-roofing project.

Representative samples of suspect asbestos-containing building materials were collected and analyzed. A total of twenty (20) samples were collected and analyzed for the presence of asbestos fibres.

Analytical Methodology

Asbestos

Samples were analyzed at the in-house laboratory of Sure Hazmat and Testing in accordance with the NIOSH 9002 PLM Bulk Sampling Analytical Method using polarized light microscopy and dispersion staining techniques. The detection limit of this method is listed as <1%. A copy of our Asbestos Bulk Results spreadsheet is attached to this report for your information and records. All records should be retained for a period of ten years as required by WorkSafe BC.

All samples will be stored at our laboratory for two months before being disposed of. Should you wish to keep these samples beyond this, please notify us within this period.

Lead-Based Finishes

Suspect leaded paint finishes were submitted to Maxxam Analytics for analysis of lead content. For leaded paint finishes, samples were digested using nitric acid/hydrogen peroxide followed by analysis using Inductively Coupled Plasma Spectroscopy (ICAP) and/or Inductively Coupled Plasma/Mass Spectroscopy (ICPMS).

The federal *Hazardous Products Act* (HPA) under Surface Coating Materials regulation defines leaded paint or lead-based surface coating materials with a total lead concentration of 0.009% or 90 µg/g. This is the current accepted standard by WorkSafe BC for identification of lead-based paint. Paint finishes that contain lead equal to or greater than 90 µg/g are considered to present a risk to pregnant women & children and a risk assessment must be conducted by a qualified person prior to the performance of any work that impacts lead-based paint finishes in work areas with high risk individuals in adjacent occupied areas.

Asbestos-Containing Material Results

Please refer to attached sample location drawings and site photos.

Eight (8) samples of caulking were collected from the following locations:

- Upper Roof, South Section – East Skylight (Sample 13)
- Upper Roof, South Section – West Skylight (Sample 14)
- Upper Roof, South Section – Between metal flashing and concrete wall (Sample 15)
- Upper Roof, South Section – Perimeter Metal Cap Flashing (Sample 16)
- Upper Roof, East – Perimeter Metal Cap Flashing (Sample 17)
- Lower, South Overhang – Perimeter Metal Cap Flashing (Sample 18)
- Lower, Southeast Overhang – Perimeter Metal Cap Flashing (Sample 19)
- Lower, East Roof – Perimeter Metal Cap Flashing (Sample 20)

Samples 13, 15, 16, 17, 19 & 20 were determined to be asbestos-containing. Based on these results all rooftop caulkings are assumed to be asbestos-containing. Caulkings are present on the metal cap flashings, skylights and between the metal flashings and concrete walls.

The exhaust vents on the top of the building were inaccessible at the time of the investigation (See attached site photos). Any caulkings present are assumed to be asbestos-containing.

Non-Asbestos Material Results

Twelve (12) samples of roofing materials were collected from the following locations:

- Sloped Roof, South, East & West (Samples 01, 02 & 03) - asphalt shingles and roofing paper
- Main Upper Roof (Samples 04 & 05)
- Upper Roof Gutter – reinforced rubber (Sample 06)
- Upper Roof, South Section - reinforced rubber (Sample 07)
- Lower South Overhang – SBS roofing materials (Sample 08)
- Lower East Roof – reinforced rubber (Sample 09)
- Lower, West Overhang – mastic and asphalt (Sample 10)
- Lower, Southeast Overhang – rubberized asphalt (Sample 11)
- Lower, Southeast Overhang – underlay (Sample 12)

All twelve samples were determined to be non-asbestos.

Lead-Based Finish Results

Suspect leaded paint finishes were sampled from the renovation area. Table 1 shows the concentration of lead in paint for these samples.

Table 1 – Paint Sample Results

Sample #	Sample Location	Lead Concentration (µg/g)	HPA Standard Level (µg/g)
L01	Metal cap flashing – beige paint	<90	90
L02	Exterior wall – beige paint	**956**	90
L03	Main upper roof – silver paint	<6.0	90

Note: Bold values exceed standard level

The concentration of lead was above the HPA standard level of 90 µg/g for the beige exterior wall paint. The concentration of lead was below the HPA standard level of 90 µg/g for the metal flashing cap paint and silver paint on the Main Upper Roof.

Conclusions and Recommendations

Asbestos

Asbestos-containing materials are present in the following locations:

- Caulkings present on the metal cap flashings
- Skylight caulkings – upper roof, south section
- Caulkings present between metal flashings and exterior walls
- Caulkings assumed to be present on upper exhaust flashings

All asbestos-containing materials must be removed prior to demolition activities by a qualified hazardous materials contractor using appropriate work procedures as defined by WorkSafe BC.

The survey was based on the client's renovation plans. If the renovation activities change to include any materials or areas not included in this investigation Sure Hazmat and Testing should be contacted to investigate.

Lead

Lead based finishes are present in the following locations:

- Beige paint on exterior walls

The presence of lead based paint finishes does not pose an immediate hazard to building occupants when present in good condition and left undisturbed. If exterior wall paint is to be distrubed during renovation acitivites a site specific risk assessment should be conducted by a qualified person.

As per the WorkSafe BC publication "Lead-Containing Paints and Coatings Preventing Exposure in the Construction Industry" all lead-containing waste materials must be sampled and analyzed using the standard Toxicity Characteristic Leaching Procedure (TCLP). This procedure is designed to determine the leachability of lead in liquid and solid wastes.

Leaded vent flashings should be removed and properly recycled, or disposed of as hazardous waste at an approved facility.

WorkSafe-BC Requirements

This section is intended to aid in compliance with WorkSafe BC regulations, and is not intended to replace a Risk Assessment conducted on site by a qualified person prior to the start of asbestos abatement work.

Prior to the performance of any work that impacts asbestos-containing materials, it is a regulatory requirement that a qualified person perform a Risk Assessment. This requirement is in compliance with the WorkSafe-BC Occupational Health & Safety (OH&S) Regulation *Part 6 "Substance Specific Requirements";* specifically Section 6.6 subsections (1), (2), (3) and (4). The following recommendations are presented:

During the removal of asbestos-containing caulkings, **Moderate Risk** asbestos safe work procedures must be followed, including the following at a minimum:

- Supply appropriate notification to WorkSafe BC,
- Personal Protective Equipment must include tight-fitting half face piece respiratory protection fitted with P100 filters and approved disposable coveralls with head and foot covers,
- Application of amended water to the asbestos materials being disturbed,
- Use of asbestos barrier tape and warning signs around the perimeter of the work area,
- HEPA-equipped vacuum for local exhaust ventilation and to ensure removal of all asbestos materials,
- Hand and face wash station,
- Air monitoring.

To comply with Part 6 of the WorkSafe-BC OH&S Regulation, specifically Section 6.32 relating to documentation, the client should acquire copies of the asbestos abatement contractor's Notice of Project (NOP), abatement procedures, air monitoring results and any documentation issued to WorkSafe-BC. These documents are required to be stored and held for 10 years.

Limitations

This report is intended for the exclusive use of the client to determine the likely locations of hazardous materials prior to the planned renovation of the building. **This report is not a Specification or Scope of Work and the use of this document as such will be at the sole risk of the user.**

The contents of this report were based on a site visit conducted by Sure Hazmat and Testing personnel. Please note that some asbestos products may not have been accessible on the day of our survey and may remain unidentified. Asbestos products are sometimes used behind wall partitions, on mechanical systems located in pipe chases, in sub-floors or other concealed areas, and assumptions have been made as to the likely contents of those areas. Should a suspect material be encountered, all work must be stopped and Sure Hazmat will investigate immediately. Hazardous materials investigation does not include investigation for the presence of subsurface contamination or underground storage tanks.

If further clarification is required, please contact our office. Thank you for having Sure Hazmat and Testing perform this work for you.

Prepared by:

Ryan Verhelst, B.Sc, *Project Manager*
Sure Hazmat and Testing

Reviewed by:

John Shaw, *Principal*
Sure Hazmat and Testing

Encl. Laboratory Bulk Report
Maxxam Analytics Lab Report
Sample Location Drawings
Site Photos

Ref: 12438-R01

Photo # 1 – Asbestos-containing mastic on the skylight – upper roof, south section

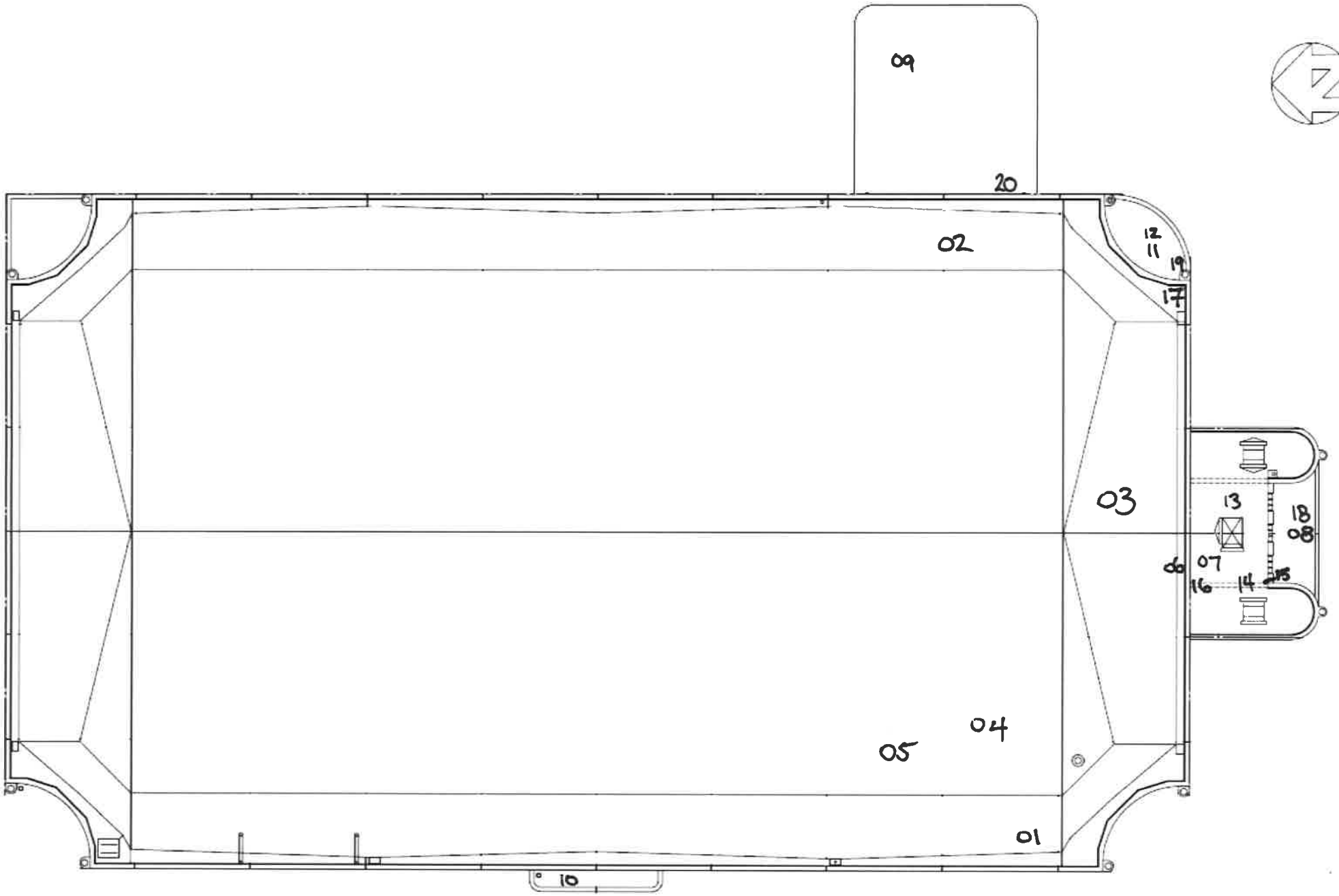
Photo # 2 – Asbestos-containing caulking between the metal flashing and exterior wall

Photo # 3 – Asbestos-containing caulking between the metal flashing and exterior wall

Photo # 4 – Asbestos-containing caulking between the metal flashing and exterior wall

Photo # 5 – Upper exhaust flashings that were inaccessible during our investigation, all caulkings are assumed to be asbestos-containing

Photo # 6 – Asbestos-containing caulking on the perimeter metal cap flashing



ROOF PLAN
1/8"=1'-0"

Asbestos Analytical Services Ltd.
7 - 2883 East Kent Avenue N., Vancouver, BC, V5S 3T9

ASBESTOS ANALYSIS REPORT

Project Location: PNE Garden Auditorium,
2901 East Hastings Street, Vancouver, BC
Reference #s: 12438
Number of Samples: 20

AASL Report #: **B02023**
Analyst: Gabrielle Sutton
Report Date: 14DEC2017
Method: NIOSH Method 9002

# B02023	Sample	Sub-Sample	Sample Description / Location	Results	ASB
1 **	**01**	Single Phase - green & white pebbles / black-brown fibrous	Shingle, West Sloped Roof	Asbestos Fibres Not Detected 30 - 50 % Cellulose Fibres > 50 % Non-Fibrous	---
2. 1 **	**02**	Layer 1 - green & white pebbles / black-brown fibrous	Shingle and Paper, East Sloped Roof	Asbestos Fibres Not Detected 30 - 50 % Cellulose Fibres > 50 % Non-Fibrous	---
2. 2 **	02	Layer 2 - brown fibrous / black tar, thin / brown fibrous	Shingle and Paper, East Sloped Roof	Asbestos Fibres Not Detected 50 - 70 % Cellulose Fibres > 30 % Non-Fibrous	---
3. 1 **	**03**	Layer 1 - white, light grey & black pebbles / black-brown fibrous	Shingle and Paper, South Sloped Roof	Asbestos Fibres Not Detected 20 - 40 % Fibrous Glass > 65 % Non-Fibrous	---
3. 2 **	03	Layer 2 - dark grey pebbles / black-brown fibrous	Shingle and Paper, South Sloped Roof	Asbestos Fibres Not Detected 20 - 40 % Fibrous Glass > 65 % Non-Fibrous	---
4. 1 **	**04**	Layer 1 - thin silver (coating) / thin, fibrous	Roofing Material, Main Upper Roof	Asbestos Fibres Not Detected 10 - 30 % Fibrous Glass > 70 % Non-Fibrous	---
4. 2 **	04	Layer 2 - black fibrous	Roofing Material, Main Upper Roof	Asbestos Fibres Not Detected 20 - 40 % Fibrous Glass > 65 % Non-Fibrous	---
4. 3 **	04	Layer 3 - brown fibrous / black tar, thin / brown fibrous	Roofing Material, Main Upper Roof	Asbestos Fibres Not Detected 50 - 70 % Cellulose Fibres > 30 % Non-Fibrous	---
5. 1 **	**05**	Layer 1 - thin silver (coating) / thin, fibrous	Roofing Material, Main Upper Roof	Asbestos Fibres Not Detected 10 - 30 % Fibrous Glass > 70 % Non-Fibrous	---
5. 2 **	05	Layer 2 - black fibrous	Roofing Material, Main Upper Roof	Asbestos Fibres Not Detected 20 - 40 % Fibrous Glass > 65 % Non-Fibrous	---
5. 3 **	05	Layer 3 - brown fibrous / black tar, thin / brown fibrous	Roofing Material, Main Upper Roof	Asbestos Fibres Not Detected 50 - 70 % Cellulose Fibres > 30 % Non-Fibrous	---

# B02023	Sample	Sub-Sample	Sample Description / Location	Results	ASB
6. 1 **	**06**	Layer 1 - black, rubbery / weave	Reinforced Rubber, Upper Gutter, Roof	Asbestos Fibres Not Detected 10 - 30 % Synthetic Fibres > 75 % Non-Fibrous	---
6. 2 **	06	Layer 2 - black tar	Reinforced Rubber, Upper Gutter, Roof	Asbestos Fibres Not Detected 0.5 - 1 % Fibrous Glass > 99 % Non-Fibrous	---
6. 3 **	06	Layer 3 - black-brown fibrous	Reinforced Rubber, Upper Gutter, Roof	Asbestos Fibres Not Detected 40 - 60 % Cellulose Fibres > 45 % Non-Fibrous	---
7. 1 **	**07**	Layer 1 - black, rubbery / weave	Reinforced Rubber, Upper South Section, Roof	Asbestos Fibres Not Detected 10 - 30 % Synthetic Fibres > 75 % Non-Fibrous	---
7. 2 **	07	Layer 2 - black tar	Reinforced Rubber, Upper South Section, Roof	Asbestos Fibres Not Detected 0.5 - 1 % Fibrous Glass > 99 % Non-Fibrous	---
7. 3 **	07	Layer 3 - black-brown fibrous	Reinforced Rubber, Upper South Section, Roof	Asbestos Fibres Not Detected 40 - 60 % Cellulose Fibres > 45 % Non-Fibrous	---
8. 1 **	**08**	Layer 1 - dark grey pebbles / black-brown fibrous	SBS Roofing Materials, South Overhang at Entrance, Roof	Asbestos Fibres Not Detected 10 - 30 % Synthetic Fibres 1 - 10 % Fibrous Glass > 65 % Non-Fibrous	---
8. 2 **	08	Layer 2 - black fibrous tar	SBS Roofing Materials, South Overhang at Entrance, Roof	Asbestos Fibres Not Detected 30 - 50 % Fibrous Glass > 55 % Non-Fibrous	---
9. 1 **	**09**	Layer 1 - black, rubbery / weave	Reinforced Rubber, East Lower Roof	Asbestos Fibres Not Detected 10 - 30 % Synthetic Fibres > 75 % Non-Fibrous	---
9. 2 **	09	Layer 2 - black tar	Reinforced Rubber, East Lower Roof	Asbestos Fibres Not Detected 0.5 - 1 % Fibrous Glass > 99 % Non-Fibrous	---
9. 3 **	09	Layer 3 - black-brown fibrous	Reinforced Rubber, East Lower Roof	Asbestos Fibres Not Detected 40 - 60 % Cellulose Fibres > 45 % Non-Fibrous	---
10 **	**10**	Single Phase - black tar	Mastic and Asphalt, West Overhang, Roof	Asbestos Fibres Not Detected 0.5 - 1 % Fibrous Glass > 99 % Non-Fibrous	---
11. 1 **	**11**	Layer 1 - black, rubbery / weave	Rubberized Asphalt and Underlay, Top and Middle Layers, Southeast Overhang, Roof	Asbestos Fibres Not Detected 20 - 40 % Synthetic Fibres > 60 % Non-Fibrous	---
11. 2 **	11	Layer 2 - black, rubbery, thick	Rubberized Asphalt and Underlay, Top and Middle Layers, Southeast Overhang, Roof	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
12. 1 **	**12**	Layer 1 - black tar, thin	Underlay, Bottom Layer, Southeast Overhang, Roof	Asbestos Fibres Not Detected 0.5 - 1 % Fibrous Glass > 99 % Non-Fibrous	---
12. 2 **	12	Layer 2 - black rubbery	Underlay, Bottom Layer, Southeast Overhang, Roof	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---

# B02023	Sample	Sub-Sample	Sample Description / Location	Results	ASB
13. 1 **	**13**	Layer 1 - light beige, rubbery	Caulking, East Skylight, South Section, Upper Roof	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
13. 2 **	13	Layer 2 - black fibrous tar residue, thin	Caulking, East Skylight, South Section, Upper Roof	10 - 20 % Chrysotile Asbestos > 85 % Non-Fibrous	**T**
14 **	**14**	Single Phase - light beige, rubbery	Caulking, West Skylight, South Section, Upper Roof	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
15. 1	**15**	Layer 1 - thin off-white / pale green (paint)	Caulking, Between Metal Flashing and Concrete, South Section, Upper Roof	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
15. 2 **	15	Layer 2 - black fibrous tar	Caulking, Between Metal Flashing and Concrete, South Section, Upper Roof	20 - 40 % Chrysotile Asbestos > 65 % Non-Fibrous	**T**
16 **	**16**	Single Phase - cream mastic	Caulking, Parapet Flashing, South Section, Upper Roof	10 - 20 % Chrysotile Asbestos > 85 % Non-Fibrous	**T**
17 **	**17**	Single Phase - cream mastic	Caulking, Parapet Flashing, East Upper Roof	10 - 20 % Chrysotile Asbestos > 85 % Non-Fibrous	**T**
18. 1	**18**	Layer 1 - thin grey (paint)	Caulking, Parapet Flashing, South Overhang	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
18. 2 **	18	Layer 2 - creamy-white mastic	Caulking, Parapet Flashing, South Overhang	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
18. 3	18	Layer 3 - thin peach / pale green (paint)	Caulking, Parapet Flashing, South Overhang	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
19. 1	**19**	Layer 1 - thin grey (paint)	Caulking, Parapet Flashing, Southeast Overhang	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
19. 2 **	19	Layer 2 - cream mastic	Caulking, Parapet Flashing, Southeast Overhang	10 - 20 % Chrysotile Asbestos > 85 % Non-Fibrous	**T**
19. 3	19	Layer 3 - thin peach / pale green (paint)	Caulking, Parapet Flashing, Southeast Overhang	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
20. 1	**20**	Layer 1 - thin grey (paint)	Caulking, Parapet Flashing, East Lower Roof	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
20. 2 **	20	Layer 2 - cream mastic	Caulking, Parapet Flashing, East Lower Roof	10 - 20 % Chrysotile Asbestos > 85 % Non-Fibrous	**T**

Comments

Samples analyzed in accordance with NIOSH Laboratory Method 9002
American Industrial Hygiene Association (AIHA) BAPAT Program Laboratory Number 204301
Estimated Limit of Detection is <0.5 %
ASB = Asbestos present/absent in material
T = Asbestos Present
AASL Asbestos Analytical Services Ltd. will not accept any responsibility as to the manner of interpretation or application of these results.

** Sample preparation included ashing process.

Analyst: ***Original Signed By***
Gabrielle Sutton, B.A.
Date: December 14, 2017

Original Signed By
Reviewed By: Gabrielle Sutton, B.A.

Maxxam
A Bureau Veritas Group Company

Success Through Science®

Your Project #: 12438
Site Location: CITY OF VANCOUVER PNE GARDEN
Your C.O.C. #: 526591-157-01

Attention:Ryan Verhelst

Sure Hazmat & Testing
101-4268 Lozells Avenue
BURNABY, BC
CANADA V5A 0C6

Report Date: 2017/12/14
Report #: R2491151
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7A9095
Received: 2017/12/08, 11:22

Sample Matrix: PAINT
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Elements by ICP-AES (acid extr. solid)	1	2017/12/10	2017/12/13	BBY7SOP-00018	EPA 6010c R3 m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Maxxam
14 Dec 2017 10:14:50

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Graham Rudkin, Project Manager, Environmental
Email: GRudkin@maxxam.ca
Phone# (604)638-5926 Ext:5926

==========

This report has been generated and distributed using a secure automated process.
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B7A9095
Report Date: 2017/12/14

Sure Hazmat & Testing
Client Project #: 12438
Site Location: CITY OF VANCOUVER PNE GARDEN
Sampler Initials: RV

LEAD IN PAINT CHIPS (PAINT)

Maxxam ID		SQ3819		
Sampling Date		2017/12/07		
COC Number		526591-157-01		
	UNITS	L03-UPPER ROOF-SILVER PAINT	RDL	QC Batch
Total Metals by ICP				
Total Lead (Pb)	mg/kg	<6.0 (1)	6.0	8857943

RDL = Reportable Detection Limit
(1) Detection limits raised due to insufficient sample volume.

Maxxam Analytics International Corporation o/a Maxxam Analytics Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Maxxam Job #: B7A9095
Report Date: 2017/12/14

Sure Hazmat & Testing
Client Project #: 12438
Site Location: CITY OF VANCOUVER PNE GARDEN
Sampler Initials: RV

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Maxxam Job #: B7A9095
Report Date: 2017/12/14

QUALITY ASSURANCE REPORT

Sure Hazmat & Testing
Client Project #: 12438
Site Location: CITY OF VANCOUVER PNE GARDEN
Sampler Initials: RV

			Method Blank		RPD		QC Standard	
QC Batch	**Parameter**	**Date**	**Value**	**UNITS**	**Value (%)**	**QC Limits**	**% Recovery**	**QC Limits**
8857943	Total Lead (Pb)	2017/12/13	<3.0	mg/kg	3.1	40	90	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Maxxam Analytics International Corporation o/a Maxxam Analytics Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

MaxXam
A Bureau Veritas Group Company

Maxxam Analytics International Corporation o/a Maxxam Analytics
#606 Canada Way, Burnaby, British Columbia Canada V5G 1K5 Tel:(604) 734 7276 Toll-free:800-563-6266 Fax:(604) 731 2386 www.maxxam.ca

B7A9095_COC

C#526591-157-01

age of

rder #:

31

Project Manager: Graham Rudkin

INVOICE TO:		Report Information		Project Information	
Company Name	#4212 Sure Hazmat & Testing	Company Name		Quotation #	B01683
Contact Name	Karen Smith	Contact Name	Ryan Verhelst	P.O. #	
Address	101-4268 Lozells Avenue BURNABY BC V5A 0C6	Address		Project #	12438
				Project Name	CITY OF VANCOUVER
Phone	(604) 444-0204 x Fax: (604) 420-9559 x	Phone	Fax:	Site #	PNE Garden
Email	ksmith@surehazmat.com	Email	RVERHELST@SUREHAZMAT.COM	Sampled By	RV

Regulatory Criteria:
- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☐ Other _____

Special Instructions:

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	Lead (in Paint)	Lead (in Glazing/Tile/Other Solid)	TCLP Lead Leachate	Lead (in Swab)	Lead (in Air)	PCBs in Oil	Respirable Silica (Quartz)	# of Bottles	Comments
1	L03-Upper	ROOF- SILVER PAINT	Dec 7				✓								
2															
3															
4															
5															
6															
7															
8															
9															
10															

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____ ☐
Rush Confirmation Number: _____ *(call lab for #)*

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
[signature]	17/12/08	11:21	EVA SYKORA	2017/12/08	11:22	

Lab Use Only: Time Sensitive ☐ | Temperature (°C) on Receipt: N/A | Custody Seal Intact on Cooler? N/A ☐ Yes ☐ No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

White: Maxxam Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

Maxxam
A Bureau Veritas Group Company

Success Through Science®

Site Location: CITY OF VANCOUVER PNE GARDEN
Your C.O.C. #: 526591-150-01

Attention:Ryan Verhelst

Sure Hazmat & Testing
101-4268 Lozells Avenue
BURNABY, BC
CANADA V5A 0C6

Report Date: 2017/12/14
Report #: R2491149
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7A9135
Received: 2017/12/08, 12:24

Sample Matrix: PAINT
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Elements by ICP-AES (acid extr. solid)	2	2017/12/10	2017/12/13	BBY7SOP-00018	EPA 6010c R3 m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Maxxam
14 Dec 2017 10:14:40

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Graham Rudkin, Project Manager, Environmental
Email: GRudkin@maxxam.ca
Phone# (604)638-5926 Ext:5926

==========

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Maxxam Job #: B7A9135
Report Date: 2017/12/14

Sure Hazmat & Testing
Site Location: CITY OF VANCOUVER PNE GARDEN
Sampler Initials: RV

LEAD IN PAINT CHIPS (PAINT)

Maxxam ID		SQ3994		SQ3995		
Sampling Date		2017/12/07		2017/12/07		
COC Number		526591-150-01		526591-150-01		
	UNITS	L01-FLASHING PAINT-BEIGE	RDL	L02-CONCRETE WALL-BEIGE	RDL	QC Batch
Total Metals by ICP						
Total Lead (Pb)	mg/kg	<90	90	956	3.0	8857943
RDL = Reportable Detection Limit						

Maxxam Analytics International Corporation o/a Maxxam Analytics Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Maxxam Job #: B7A9135
Report Date: 2017/12/14

Sure Hazmat & Testing
Site Location: CITY OF VANCOUVER PNE GARDEN
Sampler Initials: RV

GENERAL COMMENTS

LEAD IN PAINT CHIPS (PAINT) Comments

Sample SQ3994 [L01-FLASHING PAINT-BEIGE] Elements by ICP-AES (acid extr. solid): Detection limits raised due to matrix interference.

Results relate only to the items tested.

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Maxxam Job #: B7A9135
Report Date: 2017/12/14

QUALITY ASSURANCE REPORT

Sure Hazmat & Testing
Site Location: CITY OF VANCOUVER PNE GARDEN
Sampler Initials: RV

			Method Blank		RPD		QC Standard	
QC Batch	**Parameter**	**Date**	**Value**	**UNITS**	**Value (%)**	**QC Limits**	**% Recovery**	**QC Limits**
8857943	Total Lead (Pb)	2017/12/13	<3.0	mg/kg	3.1	40	90	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Page of

B7A9135_COC

Bottle Order #: 526591

Project Manager: Graham Rudkin

C#526591-150-01

INVOICE TO:

Company Name: #4212 Sure Hazmat & Testing
Contact Name: Karen Smith
Address: 101-4268 Lozells Avenue, BURNABY BC V5A 0C6
Phone: (604) 444-0204 x Fax: (604) 420-9559 x
Email: ksmith@surehazmat.com

Report Information

Company Name:
Contact Name: Ryan VERHELST
Address:
Phone: Fax:
Email: RVERHELST@SURETHAZMAT.COM

Project Information

Quotation #: B01683
P.O. #:
Project #:
Project Name: City of Vancouver PNE Garden
Site #:
Sampled By: RV

Regulatory Criteria:
- [ ] CSR
- [ ] CCME
- [ ] BC Water Quality
- [ ] Other

Special Instructions:

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: [X]
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
1 DAY [ ] 2 Day [ ] 3 Day [ ] Date Required: _____ [ ]
Rush Confirmation Number: _____ *(call lab for #)*

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	Lead (in Paint)	Lead (in Glazing/Tile/Other Solid)	TCLP Lead Leachate	Lead (in Swab)	Lead (in Air)	PCBs in Oil	Respirable Silica (Quartz)	# of Bottles	Comments
1	L01 - Flashing	Paint - Beige	DEC. 7				✓								
2	L02 - Concrete	WALL - Beige	↓				✓								
3															
4															
5															
6															
7															
8															
9															
10															

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
Ryan Verhelst	17/12/08	~~09:30~~ 12:24	PEDRO TACK	2017/12/08	12:24		[ ]	N/A	[ ] Yes [X] No CS: N/A

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

White: Maxxam Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics