

Kouchibouguac National Park
186 Route 117, New Brunswick

Hazardous Materials Assessment – FINAL REPORT

Outdoor Theatre, Kelly Building, Ryan Building &
Administration/ VRC Building



File No. TF196450-0000-CD10-RPT-0001

Submitted to:

**Ekistics Planning &
Design**

Attn: Chris Crawford
1 Starr Lane
Dartmouth, NS
B2Y 4V7

Submitted by:

**Amec Foster Wheeler Environment & Infrastructure,
a Division of Amec Foster Wheeler Americas Limited**

130 Eileen Stubbs Ave, Suite 201
Dartmouth, Nova Scotia B3B 2C4

September 12, 2017



amec
foster
wheeler

12 September, 2017

TE174006.1000

Mr. Chris Crawford
Director of Architecture
Ekistics Plan & Design
1 Starr lane
Dartmouth, NS B2Y 4V7

Dear Mr. Crawford:

**Re: Summary Report – Hazardous Materials Assessment – Various Sites,
Kouchibouguac National Park, 186 Route 117, New Brunswick**

Amec Foster Wheeler Environment & Infrastructure, a Division of Amec Foster Wheeler Americas Limited (Amec Foster Wheeler), was retained by Ekistics Plan & Design to conduct a hazardous materials assessment including the identification, sampling and reporting of potential asbestos containing materials (ACM) and lead based paint throughout various structures within Kouchibouguac National Park (the Park).

The purpose of the hazardous materials assessment is to advise the Parks Canada Agency of the presence of any known hazardous material in the locations within the Park listed below:

1. interior and exterior of the Visitor Reception Centre (VRC)/Admin Building;
2. interior and exterior of Kelly's Building;
3. interior and exterior of Ryan's Building; and
4. interior and exterior of the Outdoor Theatre Building.

These structures are scheduled for renovations and repairs in 2017/2018.

1.0 SCOPE OF WORK

The scope of work consisted of the following tasks:

- Documentation of potential ACMs. Potential ACMs may include (but not limited to) roofing shingles, flooring, mortar, caulking, drywall compound, plaster, fire proofing materials, sound proofing material, and transite board etc.
- Collection of samples or analysis of ACMs.
- Documentation of painted surfaces on both the interior and exterior of the residences that appeared to be deteriorating or flaking.
- Collection of samples for analysis of lead based paint.

TE174006_Kouchibouguac_Hazmat_4 Bldgs_Final

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2.0 SITE DESCRIPTION

Kouchibouguac National Park is located along the Acadian Coastal Drive on the eastern shore of New Brunswick. The Park was founded in the late 1960's and covers an approximate area of 240 square kilometres (km²) (Parks Canada, 2017¹). For the purpose of this report, the "site" pertains to the four building structures listed above. All areas of the site were accessible at the time of the site visit and sampling.

2.1 Outdoor Theatre

The outdoor theatre consists of a main building, reel building and outdoor seating area. The main building consists of two large stage doors, stage area, podium and back-stage storage area. The main building is a wooden, unstained structure with a slanted, shingled roof constructed on a concrete slab. The reel building is located up-gradient of the main building with similar construction as the main building (likely constructed in the same time period). The outdoor seating area consist of unstained/unpainted wooden benches.



2.2 Kelly's Building



Kelly's building consists of a kitchen/canteen that prepares and serves food to the public. It is a wooden, unstained/unpainted structure on a concrete slab with a large wooden deck area with picnic tables. Attached to the kitchen/canteen area are public washrooms and a mechanical room.

¹ Parks Canada. 2017. Website: <http://www.pc.gc.ca/en/pn-np/nb/kouchibouguac/info>.

2.3 Ryan's Building

Ryan's Building is located near the shoreline and provides boat and bicycle rentals to the public. It is a wooden, unstained/unpainted structure with a pitched, shingled roof. The foundation appeared to be a mix of wood, concrete and cinder blocks. A wheelchair accessible deck runs along the front and side of the building. Public washrooms are also located within the building (accessible from outside only).



2.4 Administration/ Visitor Reception Centre (VRC) Building



The Administration and VRC Building is located near the entrance to the Park. The exterior of the building is a mix of metal sheathing and rock and mortar walls with a metal roof. Wooden pillars extend along the entrance into the buildings. The building consists of 2 floors constructed on a concrete slab. The interior of the VRC building (building area to the right in the picture shown) includes a tourist area, theatre, washrooms that are accessible from

the exterior and interior, and utility/mechanical room. The interior of the Administration Building (building located to the left in the picture shown) primarily consists of office spaces, kitchen/lunch room, interpretive workshop, washrooms, and utility room.

3.0 METHODOLOGY

Amec Foster Wheeler performed a hazardous materials assessment of the structures between the 2nd and 3rd of August, 2017. Site photographs are provided in Attachment A. The assessment included a visual inspection and sampling program of suspected hazardous materials including ACMs and lead-based paint. The assessment was performed by Mr. Daniel Michaud. Suspected hazardous materials were visually inspected and sampled using industry standard protocols and procedures.

3.1 Potential Asbestos Containing Material (ACM) Sampling Methodology

During the site assessment, accessible areas of the building were examined for the presence of suspected hazardous materials. Suspect ACMs were obtained by cutting an approximate 2.0 centimetres (cm) x 2.0 cm section of material using a clean knife and placing it in a labelled plastic Ziploc®-type sealable bag. Sample locations containing potentially friable asbestos materials were sealed with duct tape adhesive, following sample collection.

Bulk material samples suspected of containing asbestos were submitted to the EMSL Canada Inc. (EMSL) laboratory located in Mississauga, Ontario (ON) for the analysis of asbestos using Polarized Light Microscopy (PLM) with dispersion staining. The analysis was conducted in accordance with the United States Environmental Protection Agency (USEPA) Method EPA 600/R-93/116 (*Method for the Determination of Asbestos in Bulk Building Materials*)². EMSL is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) and the American Industrial Hygiene Association (AIHA) for bulk asbestos fibre analysis by PLM.

3.2 Lead Paint Sampling Methodology

Paint samples were obtained by cutting and scraping areas of flaking paint using clean knives and scrapers. Paint samples were stored in a plastic Ziploc®-type sealable bag. A minimum of five grams (where possible) of paint was obtained from each sampling location; however, for areas where the paint was well adhered and could not be scraped, a sample containing paint and substrate material was collected. A minimum of 25 grams of paint and substrate was obtained at sample locations when required.

Paint samples were also submitted to EMSL for lead paint analysis. The lead analysis was conducted in accordance with the EPA 6020A, method analysis for metals using inductively coupled plasma – mass spectrometry (ICP-MS)³. Samples requiring further leachate testing were sent to the Maxxam Analytics Inc. (Maxxam) laboratory located in Bedford, Nova Scotia for analysis using the toxicity characteristic leaching procedure (TCLP) method. Maxxam is accredited under the Standards Council of Canada (SCC) to perform analysis of lead in paint samples.

3.3 Nomenclature

Sampling locations with potential asbestos were denoted as ACM and potential lead based paint samples were denoted as Paint. The presence, location, and condition of each suspect lead based paint and asbestos sample were recorded. Each paint and asbestos sample was assigned a sample name based on its location (i.e. Outdoor Theatre = OT).

Thirty six (36) samples were submitted for analysis of ACMs and nineteen (19) paint chip samples were submitted for lead analysis and eight (8) samples were submitted for leachate analysis.

²United States Environmental Protection Agency (USEPA). 1993. Method for the Determination of Asbestos in Bulk Building Materials. Available online: <https://nepis.epa.gov/Exe/tiff2png.cgi/9100TKSO.PNG?-r+75+-g+7+D%3A%5CZYFILES%5CINDEX%20DATA%5C91THRU94%5CTIFF%5C00002434%5C9100TKSO.TIF>.

³ United States Environmental Protection Agency (USEPA). 1998. Method 6020A Inductively Coupled Plasma - Mass Spectrometry. Available online: <https://www.epa.gov/sites/production/files/2015-07/documents/epa-6020a.pdf>.

4.0 REGULATORY FRAMEWORK

The federal and provincial governments in Canada have prepared and/or adopted numerous acts (and amendments), regulations (and amendments), guidelines, policies, and procedures related to the protection of the environment and the investigation of sites containing hazardous building materials.

4.1 Asbestos-Containing Materials (ACMs)

The New Brunswick *Code of Practice for Working with Materials Containing Asbestos in New Brunswick* (92-106) is referred to when handling and disposing of ACMs. Under these regulations, materials containing greater than 1% asbestos by dry weight are considered to be asbestos containing and should be managed in accordance with the applicable regulations. Asbestos that is tightly bound and not easily crumbled by hand does not require special disposal; however, if friable (crumbly), it must follow the New Brunswick Department of Environment and Local Government (NBDELG) disposal guidelines (2014)⁴.

4.2 Lead in Paint

Analytical results for lead in paint were compared to the current *Federal Hazardous Products Act* (HPA) criteria of 90 milligrams per kilogram (mg/kg). Under the HPA, the lead content limit was reduced from 5,000 mg/kg to 600 mg/kg in 2005 for surface coating materials used in or around the home or other premises where children may become exposed. In 2010, the lead content limit was further reduced from 600 mg/kg to 90 mg/kg.

In order to determine disposal options, the NBDELG has determined that objects/materials containing lead paint that is not leachable and less than 1,000 mg/kg, may be disposed of at a construction and demolition debris disposal site (C&D site). However, this only applies to objects/materials containing lead paint that is tightly bound to the object it is covering. If the paint is flaking, chipping or peeling and in excess of 1,000 mg/kg it cannot be disposed of at a C&D site.

Objects/materials with lead paint in excess of 1,000 mg/kg are subject to leachability testing. Analytical results for lead leachate are compared to the NBDELG limit of 5000 micrograms per litre (µg/L). Any paints that exceed the lead leachate guideline and require disposal are considered to be leachable toxic waste and must be disposed of at an approved hazardous waste disposal site and not a landfill disposal site.

⁴ New Brunswick Department of Environment and Local Government (NBDELG). 2014. Guidelines for Disposal of Friable Asbestos. Available online: <http://www2.gnb.ca/content/dam/gnb/Departments/env/pdf/LandWaste-TerreDechets/FriableAsbestos.pdf>.

5.0 RESULTS

Findings of the hazardous materials assessment are based on visual inspection, sampling of suspect painted surfaces and materials, and laboratory analyses. The analytical results for the asbestos and lead paint results are summarized in Tables 1 and 2 respectively. Laboratory certificates of analysis are provided in Attachment B.

Table 1 Summary of Asbestos Sampling

Building	Sample Identification	Location	Description	Results
Outdoor Theatre				
Exterior	OT-ACM-1	Main theatre, podium	Yellow laminate covering	Not detected
Interior	OT-ACM-3	Main theatre, roof	Shingle (including under layer)	Not detected
Interior	OT-ACM-4	Main theatre, ceiling	Joint compound	Not detected
Exterior	OT-ACM-5	Main theatre, steps	Composition matt covering	Not detected
Interior	OT-ACM-6	Main theatre, projector screen	White transite type board	Not detected
Exterior	OT-ACM-7	Reel building, steps	Composition matt covering	Not detected
Exterior	OT-ACM-8	Reel building, roof	Shingle	1.1% Chrysotile asbestos
Exterior	OT-ACM-9	Reel building, roof	Shingle under layer/backing	Not detected
Kelly's Building				
Exterior	KB-ACM-1	Exterior walls	Caulking	1.5% Chrysotile asbestos
Exterior	KB-ACM-2	Roof	Shingle	Not detected
Interior	KB-ACM-3a	Canteen area	Grout	Not detected
Interior	KB-ACM-3b	Canteen area	Floor tile	Not detected
Interior	KB-ACM-4	Mechanical room	Piping insulation	Not detected
Interior	KB-ACM-6	Canteen area	Orange laminate countertop covering	Not detected
Interior	KB-ACM-8a	Mechanical room	Hot water tank insulation	Not detected
Interior	KB-ACM-8b	Mechanical room	Hot water tank canvas covering	Not detected
Interior	KB-ACM-9a	Mechanical room	Piping insulation	Not detected
Interior	KB-ACM-9b	Mechanical room	Piping insulation canvas covering	Not detected
Interior	KB-ACM-11	Washrooms	Concrete wall	Not detected
Ryan's Building				
Exterior	RB-ACM-1	Roof	Shingle	Not detected
Exterior	RB-ACM-2	Roof	Shingle under layer/backing	Not detected

Building	Sample Identification	Location	Description	Results
Interior	RB-ACM-4	Washroom	Tile grout	Not detected
Interior	RB-ACM-5	Rental shop area	Vinyl flooring	Not detected
Interior	RB-ACM-7	Washroom	Orange laminate covering, bathroom walls	Not detected
Interior	RB-ACM-9	Mechanical room	Joint compound	3% Chrysotile asbestos
Administration/VRC Building				
Exterior	AD/VRC-ACM-1	Rock wall	Mortar	Not detected
Exterior	AD/VRC-ACM-2a	Wood Pillar	Insulation	Not detected
Exterior	AD/VRC-ACM-2b	Wood Pillar	Tar paper	Not detected
Exterior	AD/VRC-ACM-3	Windows	Caulking	Not detected
Interior	AD/VRC-ACM-4	2 nd floor, interior wall of admin building	Joint compound	Not detected
Interior	AD/VRC-ACM-5	2 nd floor, interior wall of admin building	Joint compound	Not detected
Interior	AD/VRC-ACM-6	Kitchen	Joint compound	Not detected
Interior	AD/VRC-ACM-7	1 st floor, interior walls (office area)	Joint compound	Not detected
Interior	AD/VRC-ACM-8	Projection room in VRC	Joint compound	Not detected
Interior	AD/VRC-ACM-9	Kitchen	Vinyl floor tile	Not detected
Interior	AD/VRC-ACM-10	VRC projector room	Vinyl floor tile	Not detected

Notes:

BOLD results indicate asbestos present

As indicated in Table 1, of the 36 samples submitted, 3 samples had chrysotile asbestos detected. Asbestos was detected in the roof shingles (1.1%) of the Reel Building, the exterior caulking (1.1%) of Kelly's Building, and the gypsum board joint compound (3%) in the Mechanical Room of Ryan's Building. All gypsum board with associated joint compound located in Ryan's Building must be assumed to contain asbestos. Photos of these samples are provided in Attachment A.

As indicated in Table 2 (below), the analytical results indicate that of the nineteen (19) samples submitted, eleven (11) samples had lead in paint concentrations greater than Federal HPA criteria (90 mg/kg), and eight (8) samples with concentrations of lead in excess of the New Brunswick disposal guideline (1,000 mg/kg). Worker hygiene precautions must be employed and proper personal protective equipment (PPE) must be worn when working with lead based coatings (>90 mg/kg). The eight (8) samples with concentrations in excess of the disposal guideline of 1000 mg/kg were submitted to Maxxam for leachate analysis. Leachate results are all less than the allowable waste disposal concentration of 5,000 µg/L. Photos of the the eight (8) samples in excess of the NBDELG Disposal Guideline (2014) are provided in Attachment A.

Table 2 Summary of Paint Sampling Results

Sample ID	Sample Location	Substrate	Condition	Colour	Paint/Paint + Substrate	Lead Concentration in Paint (mg/kg)	Lead Leachate Concentration in Paint (µg/L)
Outdoor Theatre							
OT-Paint-1	Exterior stage area	Wood	Poor (Flaking on ceiling)	Black	Paint	110	NA
OT-Paint-4	Podium	Wood	Good	Yellow	Paint + Substrate	31,000	1,600
OT-Paint-6	Exterior trim	Wood	Fair	White	Paint + Substrate	<90	NA
OT-Paint-7	Indoor Walls of Reel Building	Wood	Good	White	Paint + Substrate	1,200	360
OT-Paint-10	Console/counter of Reel Building	Wood	Good	Brown	Paint + Substrate	21,000	760
Kelly's Building							
KB-Paint-1	Interior walls mechanical room	Gyproc	Fair	Off-white	Paint	<90	NA
KB-Paint-2	Interior canteen area/counter	Wood	Good	Orange	Paint + Substrate	<90	NA
KB-Paint-3	Interior bathroom walls	Concrete/cinder blocks	Good	White with teal underneath	Paint + Substrate	<90	NA
Ryan's Building							
RB-Paint-1	Exterior, front of rental booth	Wood	Good	Green	Paint + Substrate	58,000	1,500
RB-Paint-2	Exterior, mechanical room door	Wood	Fair	Salmon	Paint	3,300	1,200
RB-Paint-3	Exterior window trim	Wood	Poor	White	Paint	2,200	560
RB-Paint-5	Interior, counter of bike repair room	Wood	Good	Cream	Paint + Substrate	1,100	140
RB-Paint-6	Interior floor, bike room	Wood	Good	Grey	Paint + Substrate	410	NA
RB-Paint-7	Interior walls	Wood	Good	White	Paint + Substrate	870	NA
RB-Paint-8	Interior wall, mechanical room	Gyproc	Good	White	Paint + Substrate	<90	NA

Sample ID	Sample Location	Substrate	Condition	Colour	Paint/Paint + Substrate	Lead Concentration in Paint (mg/kg)	Lead Leachate Concentration in Paint (µg/L)
Administration/VRC Building							
AD/VRC-Paint-1	2 nd floor, interior wall of admin building	Gyproc	Good	Green	Paint + Substrate	<90	NA
AD/VRC-Paint-2	1 st floor, interior walls (office area)	Gyproc	Good	Beige	Paint + Substrate	<90	NA
AD/VRC-Paint-3	Interior wall, projection room	Gyproc	Good	Black	Paint + Substrate	<90	NA
AD/VRC-Paint-4	Interior wall, theatre at VRC	Gyproc	Good	Light green	Paint + Substrate	1,800	470
Lead Concentrations in Paint							
1. Federal Hazardous Products Act (HPA) criteria						90 ^a /1000 ^b	N/A
2. NBDELG Disposal of Lead Paint and Lead Painted Materials Guideline (2011) ⁵							
Leachable Lead Concentrations in Paint							
NBDELG Disposal of Lead Paint and Lead Painted Materials Guideline (2011)						N/A	5,000

Notes:

BOLD results exceeds provincial disposal criteria

N/A = Not Applicable, not analysed

⁵ New Brunswick Department of Environment and Local Government (NBDELG). 2011. Disposal of Lead Paint & Lead Painted Materials Guideline. Available online: <http://www2.gnb.ca/content/dam/gnb/Departments/env/pdf/LandWaste-TerreDechets/LeadPaint.pdf>.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the investigation, and as shown in Table 1, three samples collected contained asbestos. It is our understanding that these structures are planned for renovation activities; therefore, it is recommended that the known ACMs be removed according to Regulation 92-106 (*Code of Practice for Working with Materials Containing Asbestos in New Brunswick*). The Westmorland-Albert Regional Solid Waste Corporation (RSWC) located in Berry Mills, New Brunswick accepts friable and non-friable asbestos. It is recommended that the removal of ACMs be conducted by a certified contractor trained in the removal and disposal methods. Prior to disposal, the material is required to be bagged in nine (9) millimetre (mm) thick bags and labelled accordingly. The RSWC required 24 hour notice and the approximate disposal cost is \$70/cubic metre (m³).

Materials with a total lead concentration exceeding 1,000 mg/kg were subject to further lead leachate testing. All leachate results were below the NBDELG leachate guideline. It is acceptable to dispose of all of these materials at an approved landfill facility, provided permission is obtained from the facility.

It is recommended that in the event of renovation activities, surfaces containing lead based paint should be conducted by workers who have lead awareness training and these workers must use PPE.

7.0 ASSESSMENT LIMITATIONS

This hazardous materials assessment reflects the observations, findings, and analysis of materials sampled at the time of the site visit. The observations are based on the specific areas inspected located in accessible areas of the buildings and was limited to potential ACMs and suspect lead paint materials only. Analytical results were used to quantify the sampled paints at the specific sample locations. Paints found to be visually similar to those analyzed, where possible were referenced to specific analyzed samples collected elsewhere. Repetitive testing of similar paints was not performed. The findings within this report do not reflect potential hazardous material in areas that were inaccessible at the time of the site visit, such as remote spaces, wall cavities and ceilings spaces. It is noted that all areas of the site building were accessible at the time of the site visit.

8.0 CLOSURE

This report was prepared for the exclusive use of Ekistics Plan & Design and Parks Canada. The findings of this report are based solely on the conditions of the site buildings encountered at the time of the site visit. The findings of this assessment are based on the interpretation of data from a limited number of areas investigated and analytical results pertaining to specific samples.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. Should additional parties require reliance on this report, written authorization from Amec Foster Wheeler is required. With respect to third parties,

Amec Foster Wheeler has no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs. This assessment has been carried out using commercially reasonable best efforts consistent with the level and skill ordinarily exercised by members of the profession currently practicing under similar conditions.

Except when otherwise specified, Amec Foster Wheeler disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to Amec Foster Wheeler after the time during which Amec Foster Wheeler conducted the hazardous building materials assessment.

Amec Foster Wheeler has assumed that the information provided is factual and accurate. Amec Foster Wheeler accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

Amec Foster Wheeler makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

This letter report is also subject to the further Limitations, Attachment C.

We trust that the information presented in this report meets your current requirements. Should you have any questions, or concerns, please do not hesitate to contact the undersigned.

Yours truly,

**Amec Foster Wheeler Environment & Infrastructure,
A Division of Amec Foster Wheeler Americas Limited**



Lynn Pilgrim, P.Ge

Project Manager

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LP/bc/kk

Attachments

Appendix A

Site Photographs



Attachment A



Photo 1:
Outdoor Theatre,
Main Theatre
Building

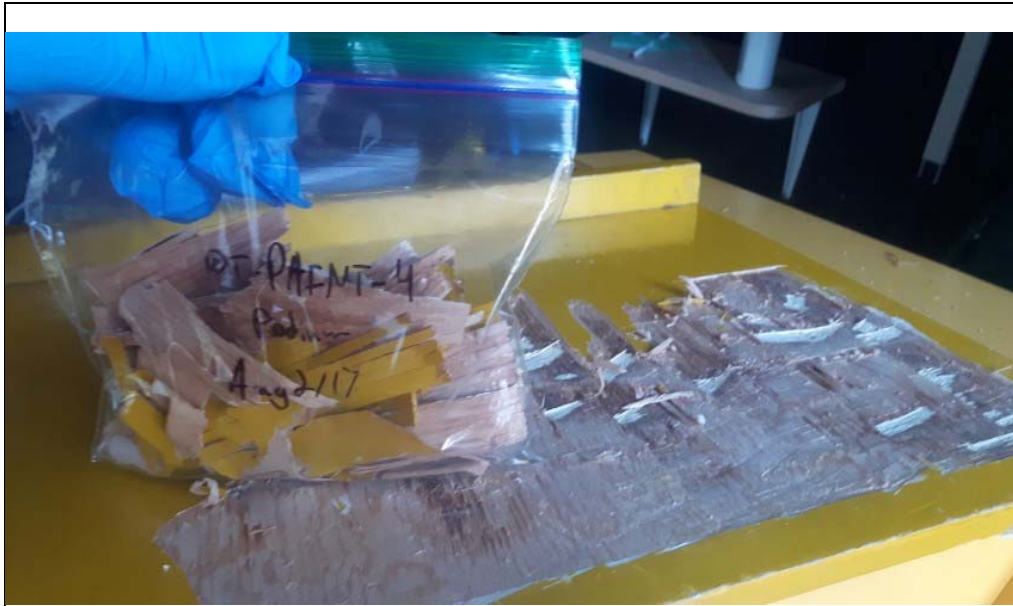


Photo 2:
OT-Paint-4,
Podium in Main
Theatre Building

Attachment A



Photo 3:
Outdoor Theatre,
Reel Building

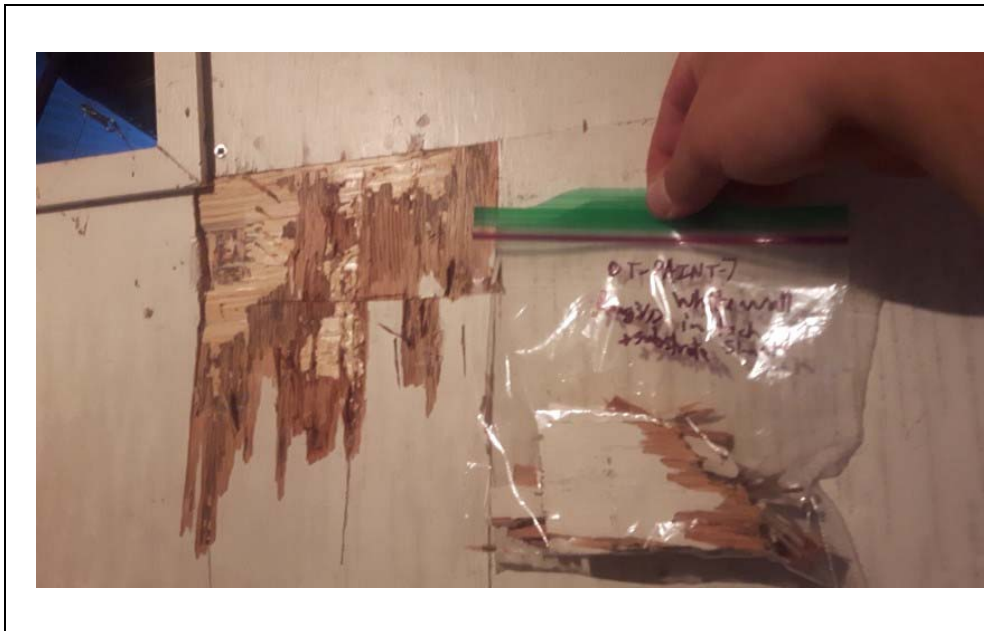


Photo 4:
OT-Paint-7, Indoor
Walls of Reel
Building

Attachment A

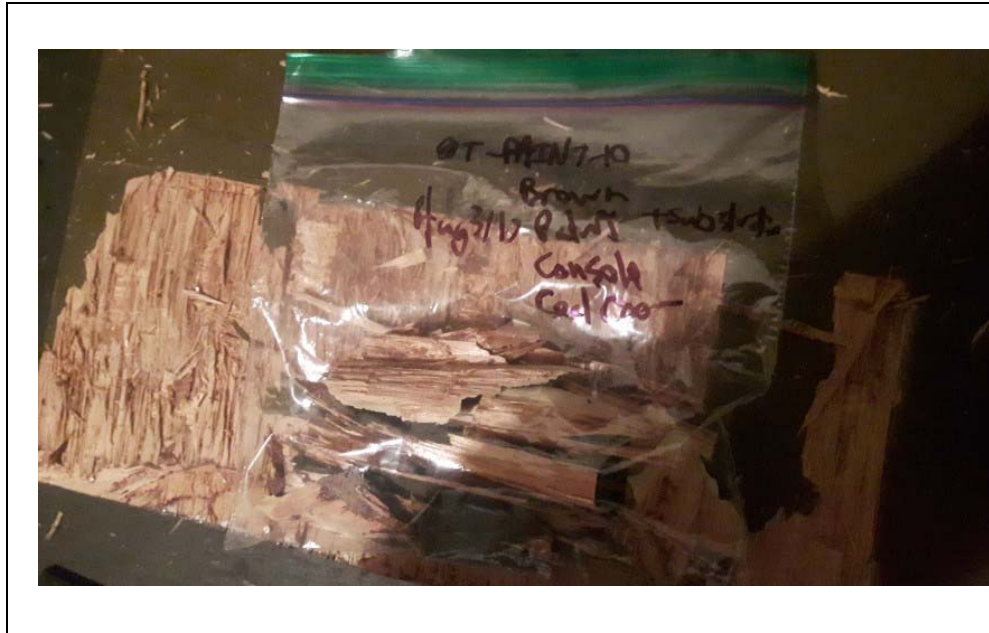


Photo 5:
OT-Paint-10,
Console/counter in
Reel Building

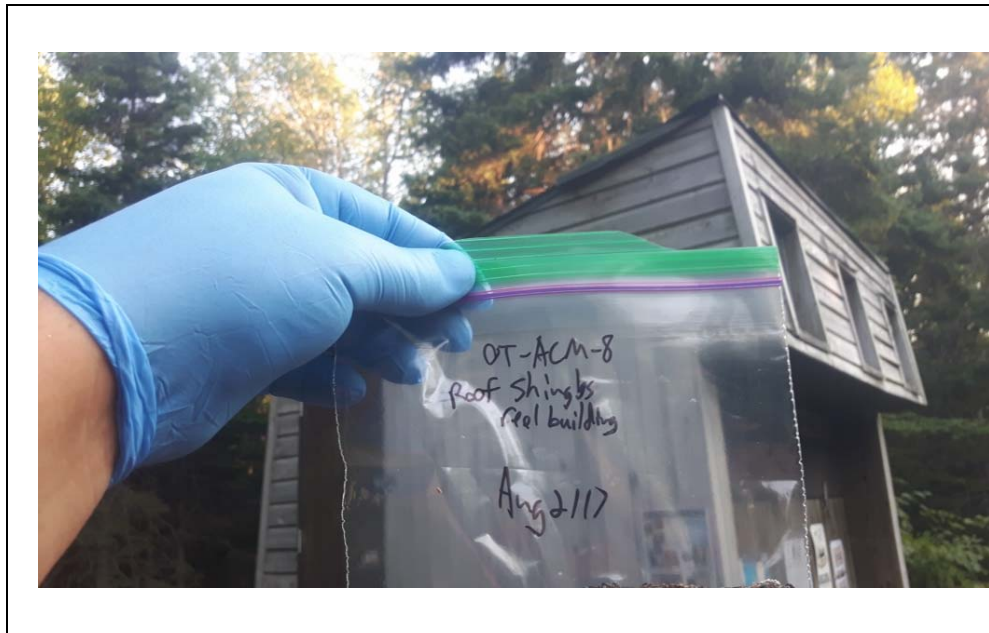
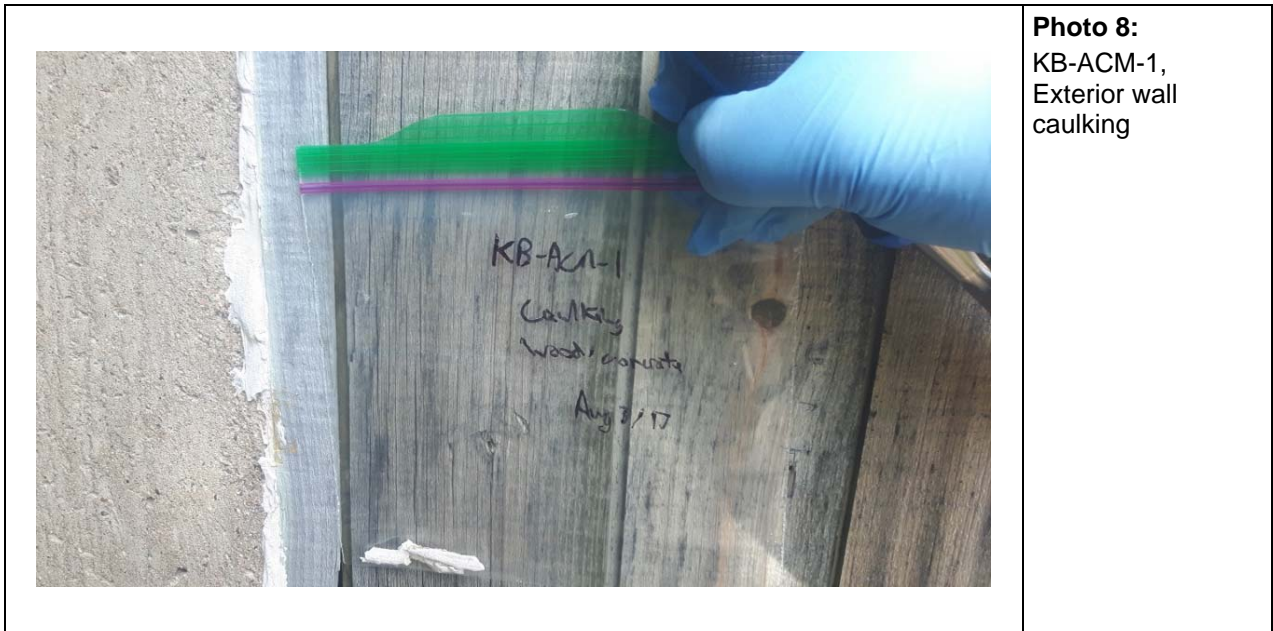


Photo 6:
OT-ACM-8, Reel
Building Roof
Shingles

Attachment A



Attachment A



Photo 9:
Ryan's Building



Photo 10:
RB-Paint-1, Front
of rental booth

Attachment A



Photo 11:
RB-Paint-2,
Exterior
Mechanical Room
door



Photo 12:
RB-Paint-3,
Exterior window
trim

Attachment A



Photo 13:
RB-Paint-5, Interior
counter of Bike
Repair Room

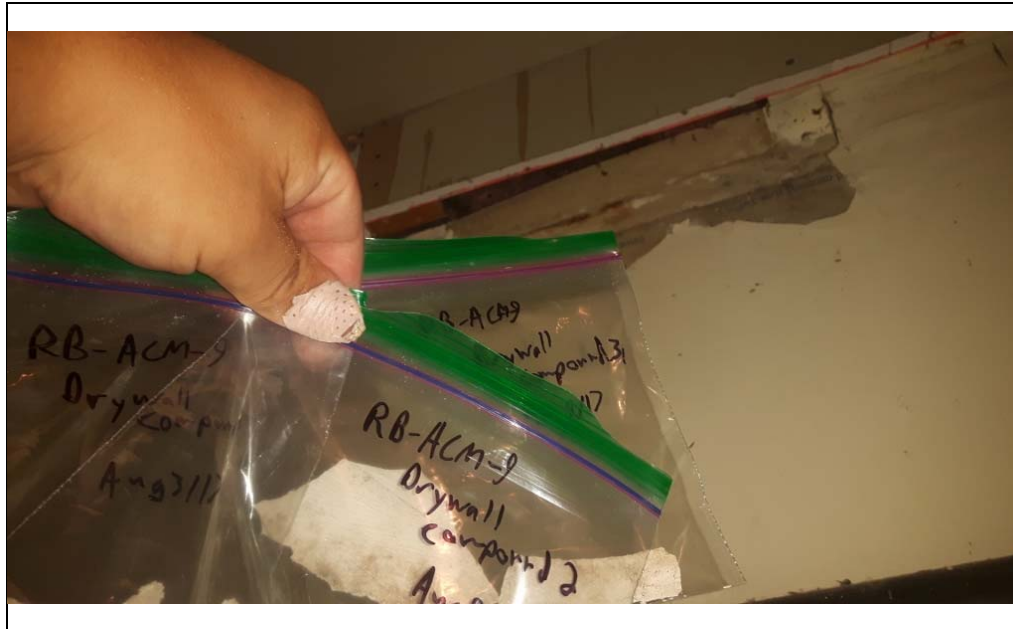


Photo 14:
RB-ACM-9, joint
compound in
Mechanical Room

Attachment A



Photo 15:
Administration /
VRC Building



Photo 16:
AD/VRC-Paint 4,
Interior Wall of
Theatre in
Admin/VRC
Building

Appendix B

Laboratory Certificates of Analysis



**EMSL Canada Inc.**

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EMSL Canada Or 551709050

CustomerID: 55AMFN42

CustomerPO: TE174006

ProjectID:

Attn: **Lynn Pilgrim**
AMEC
495-1 Prospect St
Fredericton, NB E3B 9M4

Phone: (506) 460-5800
 Fax:
 Received: 08/15/17 10:53 AM
 Collected: 8/3/2017

Project: **TE174006****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
OT- Paint - 1	551709050-0001	8/2/2017	8/17/2017	110 ppm
Site: Outside & Under Stage on both Bldgs.				
OT- Paint - 4	551709050-0002	8/2/2017	8/17/2017	31000 ppm
Site: Inside on Podium Cover				
OT- Paint - 6	551709050-0003	8/2/2017	8/17/2017	<90 ppm
Site: Backdoor Frame & Outside Trimmings				
OT- Paint - 7	551709050-0004	8/3/2017	8/17/2017	1200 ppm
Site: Indoor Walls on Red Shack				
OT- Paint - 10	551709050-0005	8/3/2017	8/17/2017	21000 ppm
Site: On Console inside Red Shack				
AD/VRC-Paint 1	551709050-0006	8/3/2017	8/17/2017	<90 ppm
Site: 2nd Floor - Admin Bldg- Interpreters Corner				
AD/VRC-Paint 2	551709050-0007	8/3/2017	8/17/2017	<90 ppm
Site: Indoors - throughout Interior Walls				
AD/VRC-Paint 3	551709050-0008	8/3/2017	8/17/2017	<90 ppm
Site: Projection Room Indoors				
AD/VRC-Paint 4	551709050-0009	8/3/2017	8/17/2017	1800 ppm
Site: Walls inside Theatre at VRC				
KB-Paint-1	551709050-0010	8/3/2017	8/17/2017	<90 ppm
Site: Mechanical Room & Found Interiors through Building				
KB-Paint-2	551709050-0011	8/3/2017	8/17/2017	<90 ppm
Site: Indoor - Orange Shelf at Canteen Window				
KB-Paint-3	551709050-0012	8/3/2017	8/17/2017	<90 ppm
Site: White + Underlayer Teal - Public Washroom Walls				
RB-Paint-1	551709050-0013	8/3/2017	8/17/2017	58000 ppm
Site: Green Paint - Outdoors - Front Rental Booth				
RB-Paint-2	551709050-0014	8/3/2017	8/17/2017	3300 ppm
Site: Outside Mechanical Room Door				
RB-Paint-3	551709050-0015	8/3/2017	8/17/2017	2200 ppm
Site: Outside Window Frames & Trimming				

Rowena Fanto, Lead Supervisor
 or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 08/22/2017 08:45:16



EMSL Canada Inc.

2756 Slough Street, Mississauga, ON L4T 1G3

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<http://www.EMSL.com>

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EMSL Canada Or	551709050
CustomerID:	55AMFN42
CustomerPO:	TE174006
ProjectID:	

Attn: Lynn Pilgrim AMEC 495-1 Prospect St Fredericton, NB E3B 9M4	Phone: (506) 460-5800 Fax: Received: 08/15/17 10:53 AM Collected: 8/3/2017
Project: TE174006	

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
RB-Paint-5 Site: Paint on Counter in Bike Repair Room	551709050-0016	8/3/2017	8/17/2017	1100 ppm
RB-Paint-6 Site: Paint on Floor inside Bike Storage Area	551709050-0017	8/3/2017	8/17/2017	410 ppm
RB-Paint-7 Site: Indoor Walls Paint	551709050-0018	8/3/2017	8/17/2017	870 ppm
RB-Paint-8 Site: From Drywall inside Mechanical Room	551709050-0019	8/3/2017	8/17/2017	<90 ppm

Rowena Fanto, Lead Supervisor
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 08/22/2017 08:45:16



EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: 289-997-4602 / (289) 997-4607
<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order 551709094
Customer ID: 55AMFN42
Customer PO: TE174006
Project ID:

Attn: Lynn Pilgrim
AMEC
495-1 Prospect St
Fredericton, NB E3B 9M4
Phone: (506) 460-5800
Fax:
Collected: 8/ 2/2017
Received: 8/15/2017
Analyzed: 8/22/2017
Proj: TE174006

Test Report: Asbestos Analysis of Bulk Materials for New Brunswick Regulation 92-106 via EPA600/R-93/116 Method

Client Sample ID: OT-ACM-1 **Lab Sample ID:** 551709094-0001

Sample Description: Yellow Laminate on Podium

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Yellow	0.0%	100%	None Detected	

Client Sample ID: OT-ACM-3 **Lab Sample ID:** 551709094-0002

Sample Description: Main Theatre Roof Shingle

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Black	0.0%	100%	None Detected	

Client Sample ID: OT-ACM-4 **Lab Sample ID:** 551709094-0003

Sample Description: Compound under Theatre Ceiling Paint

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	White	0%	100%	None Detected	

Client Sample ID: OT-ACM-5 **Lab Sample ID:** 551709094-0004

Sample Description: Composition - Mat - Theatre Steps

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Black	0.0%	100%	None Detected	

Client Sample ID: OT-ACM-6 **Lab Sample ID:** 551709094-0005

Sample Description: Projector Screen Surface

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	White	2.0%	98.0%	None Detected	

Client Sample ID: OT-ACM-7 **Lab Sample ID:** 551709094-0006

Sample Description: Stair Shingles - Red Shack

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Black/Yellow	0.0%	100%	None Detected	

Client Sample ID: OT-ACM-8 **Lab Sample ID:** 551709094-0007

Sample Description: Roofing Shingles Red Shack

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Black	0.0%	98.9%	1.1% Chrysotile	



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EMSL Canada Order 551709094
Customer ID: 55AMFN42
Customer PO: TE174006
Project ID:

Test Report: Asbestos Analysis of Bulk Materials for New Brunswick Regulation 92-106 via EPA600/R-93/116 Method

Client Sample ID: OT-ACM-9 **Lab Sample ID:** 551709094-0008
Sample Description: Roof Backing Red Shack

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Black	0.0%	100%	None Detected	

Client Sample ID: RB-ACM-1 **Lab Sample ID:** 551709094-0009
Sample Description: Roof Shingles

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Black	0.0%	100%	None Detected	

Client Sample ID: RB-ACM-2 **Lab Sample ID:** 551709094-0010
Sample Description: Roof Shingles Backing

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Black	0.0%	100%	None Detected	

Client Sample ID: RB-ACM-4 **Lab Sample ID:** 551709094-0011
Sample Description: Tile Grout - Public Washrooms

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	Gray	0%	100%	None Detected	

Client Sample ID: RB-ACM-5 **Lab Sample ID:** 551709094-0012
Sample Description: Flooring in Rental Shop - Employee Area

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Tan	0.0%	100%	None Detected	

Client Sample ID: RB-ACM-7 **Lab Sample ID:** 551709094-0013
Sample Description: Orange Laminate - Bathroom Stalls

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Orange	0.0%	100%	None Detected	

Client Sample ID: RB-ACM-9 **Lab Sample ID:** 551709094-0014
Sample Description: Drywall Joint Compound - Mechanical Room

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	Beige	0%	97%	3% Chrysotile	

Client Sample ID: KB-ACM-1 **Lab Sample ID:** 551709094-0015
Sample Description: Caulking Joint Exterior Wood/Concrete

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	White	0.0%	98.5%	1.5% Chrysotile	



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EMSL Canada Order 551709094
Customer ID: 55AMFN42
Customer PO: TE174006
Project ID:

Test Report: Asbestos Analysis of Bulk Materials for New Brunswick Regulation 92-106 via EPA600/R-93/116 Method

Client Sample ID: KB-ACM-2 **Lab Sample ID:** 551709094-0016
Sample Description: Roof Shingle

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Black	0.0%	100%	None Detected	

Client Sample ID: KB-ACM-4 **Lab Sample ID:** 551709094-0017
Sample Description: Piping Insulation- Mechanical Room

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	Gray	5%	95%	None Detected	

Client Sample ID: KB-ACM-6 **Lab Sample ID:** 551709094-0018
Sample Description: Orange Laminate - Water System in Room / Canteen

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Orange	0.0%	100%	None Detected	

Client Sample ID: KB-ACM-8-Insulation **Lab Sample ID:** 551709094-0019
Sample Description: Hot Water Tank Insulation - Mechanical Room

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	Brown	40%	60%	None Detected	

Client Sample ID: KB-ACM-8-Canvas **Lab Sample ID:** 551709094-0019A
Sample Description: Hot Water Tank Insulation - Mechanical Room

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	White	80%	20%	None Detected	

Client Sample ID: KB-ACM-9-Insulation **Lab Sample ID:** 551709094-0020
Sample Description: Piping Insulation - Mechanical Room

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	Yellow	90%	10%	None Detected	

Client Sample ID: KB-ACM-9-Canvas **Lab Sample ID:** 551709094-0020A
Sample Description: Piping Insulation - Mechanical Room

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	White	80%	20%	None Detected	

Client Sample ID: KB-ACM-11 **Lab Sample ID:** 551709094-0021
Sample Description: Material under Paint in Washrooms

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Gray	0.0%	100%	None Detected	



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EMSL Canada Order 551709094
Customer ID: 55AMFN42
Customer PO: TE174006
Project ID:

Test Report: Asbestos Analysis of Bulk Materials for New Brunswick Regulation 92-106 via EPA600/R-93/116 Method

Client Sample ID: KB-ACM-3-Floor Tile **Lab Sample ID:** 551709094-0022
Sample Description: Floor Tile with Grout

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	Red	0%	100%	None Detected	

Client Sample ID: KB-ACM-3-Grout **Lab Sample ID:** 551709094-0022A
Sample Description: Floor Tile with Grout

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	Gray	0%	100%	None Detected	

Client Sample ID: AD/VRC-ACM-1 **Lab Sample ID:** 551709094-0023
Sample Description: Exterior Brick Mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Gray	0.0%	100%	None Detected	

Client Sample ID: AD/VRC-ACM-2-Insulation **Lab Sample ID:** 551709094-0024
Sample Description: Insulation base of wood pillars outside admin

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	Brown	90%	10%	None Detected	

Client Sample ID: AD/VRC-ACM-2-Tar Paper **Lab Sample ID:** 551709094-0024A
Sample Description: Insulation base of wood pillars outside admin

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	Brown/Black	20%	80%	None Detected	

Client Sample ID: AD/VRC-ACM-3 **Lab Sample ID:** 551709094-0025
Sample Description: Exterior Windows/Flashing Caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Black	0.0%	100%	None Detected	

Client Sample ID: AD/VRC-ACM-4 **Lab Sample ID:** 551709094-0026
Sample Description: Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	Beige	0%	100%	None Detected	

Client Sample ID: AD/VRC-ACM-5 **Lab Sample ID:** 551709094-0027
Sample Description: Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	Beige	0%	100%	None Detected	



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EMSL Canada Order 551709094
Customer ID: 55AMFN42
Customer PO: TE174006
Project ID:

Test Report: Asbestos Analysis of Bulk Materials for New Brunswick Regulation 92-106 via EPA600/R-93/116 Method

Client Sample ID: AD/VRC-ACM-6 **Lab Sample ID:** 551709094-0028
Sample Description: Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	Beige	0%	100%	None Detected	

Client Sample ID: AD/VRC-ACM-7 **Lab Sample ID:** 551709094-0029
Sample Description: Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	Beige	0%	100%	None Detected	

Client Sample ID: AD/VRC-ACM-8 **Lab Sample ID:** 551709094-0030
Sample Description: Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/22/2017	Gray	0%	100%	None Detected	

Client Sample ID: AD/VRC-ACM-9 **Lab Sample ID:** 551709094-0031
Sample Description: Vinyl Tile in Kitchen

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Tan	0.0%	100%	None Detected	

Client Sample ID: AD/VRC-ACM-10 **Lab Sample ID:** 551709094-0032
Sample Description: Vinyl Tile in VRC Projection Room

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	8/22/2017	Tan	0.0%	100%	None Detected	

Analyst(s):

- Ioana Taina PLM (14)
- John Biesiadecki PLM (3)
- Natalie D'Amico PLM Grav. Reduction (19)

Reviewed and approved by:

Matthew Davis
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP of any agency of the U.S. Government.

Samples analyzed by EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0

Initial report from: 08/22/2017 12:34:40

Your C.O.C. #: n/a

Attention:Lynn Pilgrim

AMEC Foster Wheeler Environment & Infrastructure
Fredericton - Standing Offer
495 Prospect Street, Suite 1
Fredericton, NB
E3B 9M4

Report Date: 2017/09/07

Report #: R4689673

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B716228

Received: 2017/08/28, 10:52

Sample Matrix: SOLID
Samples Received: 8

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Metals Leach TCLP/CGSB extraction	8	2017/09/01	2017/09/01	ATL SOP 00058	EPA 6020A R1 m
TCLP Inorganic extraction - pH	8	N/A	2017/08/31	ATL SOP 00035	EPA 1311 m
TCLP Inorganic extraction - Weight	8	N/A	2017/08/31	ATL SOP 00035	EPA 1311 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.

Your C.O.C. #: n/a

Attention:Lynn Pilgrim

AMEC Foster Wheeler Environment & Infrastructure
Fredericton - Standing Offer
495 Prospect Street, Suite 1
Fredericton, NB
E3B 9M4

Report Date: 2017/09/07
Report #: R4689673
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7I6228
Received: 2017/08/28, 10:52

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Heather Macumber, Project Manager

Email: HMacumber@maxxam.ca

Phone# (902)420-0203 Ext:226

=====
This report has been generated and distributed using a secure automated process.

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RESULTS OF ANALYSES OF SOLID

Maxxam ID		FAF534	FAF535	FAF536	FAF537	FAF538	FAF539	FAF540	
Sampling Date		2017/08/03	2017/08/03	2017/08/03	2017/08/03	2017/08/02	2017/08/03	2017/08/03	
COC Number		n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	UNITS	RB-DANT-1	RB-PAINT-2	RB-PAINT-3	AO-VRL-PAINT-4	OT-PAINT-4	RB-PAINT-5	OT-PAINT-7	QC Batch
Inorganics									
Sample Weight (as received)	g	24	6.0	7.4	26	25	27	25	5142310
Initial pH	N/A	5.0	4.9	4.9	4.9	4.9	4.9	4.9	5142311
Final pH	N/A	5.0	5.0	5.0	5.7	5.2	5.1	5.3	5142311
QC Batch = Quality Control Batch									

Maxxam ID		FAF541	
Sampling Date		2017/08/03	
COC Number		n/a	
	UNITS	OT-PAINT-10	QC Batch
Inorganics			
Sample Weight (as received)	g	25	5142310
Initial pH	N/A	4.9	5142311
Final pH	N/A	5.0	5142311
QC Batch = Quality Control Batch			

ELEMENTS BY ICP/MS (SOLID)

Maxxam ID		FAF534	FAF535	FAF536	FAF537	FAF538	FAF539	FAF540		
Sampling Date		2017/08/03	2017/08/03	2017/08/03	2017/08/03	2017/08/02	2017/08/03	2017/08/03		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	RB-DANT-1	RB-PAINT-2	RB-PAINT-3	AO-VRL-PAINT-4	OT-PAINT-4	RB-PAINT-5	OT-PAINT-7	RDL	QC Batch

Metals										
Leachable Lead (Pb)	ug/L	1500	1200	560	470	1600	140	360	5.0	5146402

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Maxxam ID		FAF541		
Sampling Date		2017/08/03		
COC Number		n/a		
	UNITS	OT-PAINT-10	RDL	QC Batch

Metals				
Leachable Lead (Pb)	ug/L	760	5.0	5146402

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

GENERAL COMMENTS

Sample FAF534 [RB-DANT-1] : Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample FAF535 [RB-PAINT-2] : Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample FAF536 [RB-PAINT-3] : Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample FAF537 [AO-VRL-PAINT-4] : Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample FAF538 [OT-PAINT-4] : Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample FAF539 [RB-PAINT-5] : Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample FAF540 [OT-PAINT-7] : Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample FAF541 [OT-PAINT-10] : Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5142310	CCR	Method Blank	Sample Weight (as received)	2017/08/31	NA		g	
5146402	MLB	Matrix Spike [FAF536-01]	Leachable Lead (Pb)	2017/09/01		98	%	75 - 125
5146402	MLB	Spiked Blank	Leachable Lead (Pb)	2017/09/01		94	%	N/A
5146402	MLB	Method Blank	Leachable Lead (Pb)	2017/09/01	<5.0		ug/L	

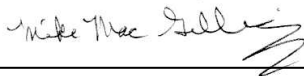
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

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

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Mike MacGillivray, Scientific Specialist (Inorganics)

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.

Appendix C

Limitations



LIMITATIONS

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:
 - (a) The Standard Terms and Conditions which form a part of our Professional Services Contract;
 - (b) The Scope of Services;
 - (c) Time and Budgetary limitations as described in our Contract; and
 - (d) The Limitations stated herein.
2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of our Contract, or the conclusions presented.
3. The conclusions presented in this report were based, in part, on visual observations of the Site and attendant structures. Our conclusions cannot and are not extended to include those portions of the Site or structures, which are not reasonably available, in Amec Foster Wheeler's opinion, for direct observation.
4. The environmental conditions at the Site were assessed, within the limitations set out above, having due regard for applicable environmental regulations as of the date of the inspection. A review of compliance by past owners or occupants of the Site with any applicable local, provincial or federal by-laws, orders-in-council, legislative enactments and regulations was not performed.
5. The Site history research included obtaining information from third parties and employees or agents of the owner. No attempt has been made to verify the accuracy of any information provided, unless specifically noted in our report.
6. Where testing was performed, it was carried out in accordance with the terms of our contract providing for testing. Other substances, or different quantities of substances testing for, may be present on Site and may be revealed by different or other testing not provided for in our contract.
7. Because of the limitations referred to above, different environmental conditions from those stated in our report may exist. Should such different conditions be encountered, Amec Foster Wheeler must be notified in order that it may determine if modifications to the conclusions in the report are necessary.
8. The utilization of Amec Foster Wheeler's services during the implementation of any remedial measures will allow Amec Foster Wheeler to observe compliance with the conclusions and recommendations contained in the report. Amec Foster Wheeler's involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.
9. This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or the part, or any reliance thereon or decisions made based on any information or conclusions in the report is the sole responsibility of such third party. Amec Foster Wheeler accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set out therein.
10. This report is not to be given over to any third party for any purpose whatsoever without the written permission of Amec Foster Wheeler.
11. Provided that the report is still reliable, and less than 12 months old, Amec Foster Wheeler will issue a third-party reliance letter to parties that the client identifies in writing, upon payment of the then current fee for such letters. All third parties relying on Amec Foster Wheeler's report, by such reliance agree to be bound by our proposal and Amec Foster Wheeler's standard reliance letter. Amec Foster Wheeler's standard reliance letter indicates that in no event shall Amec Foster Wheeler be liable for any damages, howsoever arising, relating to third-party reliance on Amec Foster Wheeler's report. No reliance by any party is permitted without such agreement.