



# Hazardous Materials Survey Report

## Mission Flood Pumping Station

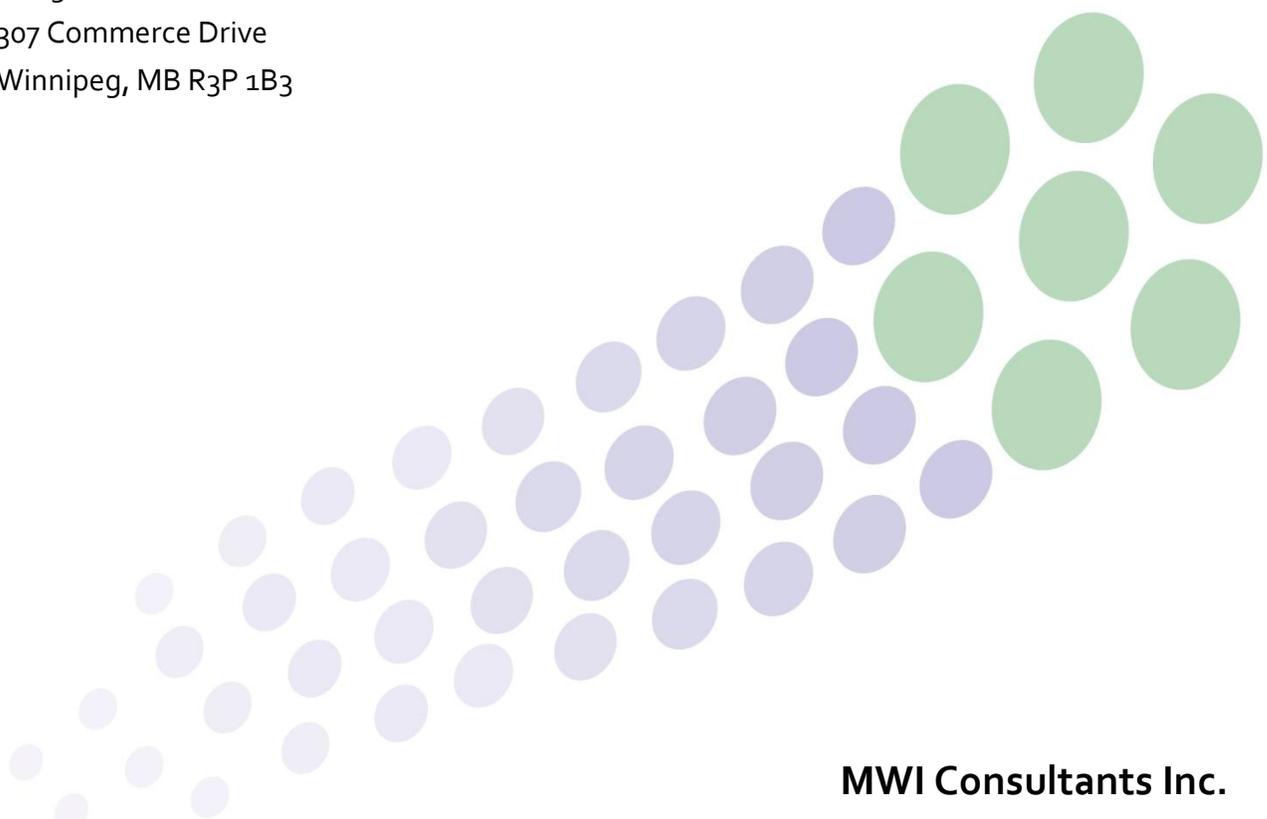
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Prepared for:

Neegan Burnside

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## Hazardous Materials Survey Report

**LOCATION:** Mission Flood Pumping Station  
91 Archibald St  
Winnipeg, Manitoba

**INSPECTION DATE:** May 9, 2019

### **1.0 SUMMARY**

An evaluation of the Mission Flood Pumping Station located at 91 Archibald St in Winnipeg, MB, was completed by MWI Consultants. The evaluation was completed ahead of planned work activities within the building, and was requested by Neegan Burnside Ltd..

The objective of the evaluation was to establish the location, condition and type of asbestos-containing materials (ACMs) and to identify the location of lead-based paints (LBPs) that are present within the building.

Asbestos was found to be present in the black mastic or fiber putty in place on a rooftop hatch; no other ACM were present. Inaccessible areas and process-related equipment were not specifically evaluated.

Lead-containing paints were found to be present throughout the building, both on the exterior of the building and on water pipes within the structure. Several types of paint were found to have a lead content greater than 0.5% by weight. The exterior paint and silver paints present on process pipe were found to be lead-based paints. Any similar paints should be considered as a lead-based paint.

This report summarizes the results of the inspection and evaluation of the conditions within the building, as well as the results of the bulk sampling of suspected asbestos-containing materials (ACMs) and lead-based paints (LBPs).

## 2.0 DEFINITIONS

**Asbestos:** Asbestos is a naturally occurring silicate mineral with long, thin fibrous crystals. The mineral was widely used in a large number of applications, particularly as a flame retardant or insulating material.

Asbestos is considered a designated material under the Controlled Products Regulations and is a known carcinogen. Chronic exposure to asbestos can lead to asbestosis and mesothelioma (a type of lung cancer), amongst others.

Asbestos has also been found in many products around the home or office, including clapboard, roofing shingles, attic insulation (vermiculite), exterior siding, pipe and boiler covering, cement, caulking, roof patching material, furnace cement, driveway coatings, wallboard, textured and latex paints, acoustical ceiling tiles, wall plaster, vinyl floor tiles, appliance wiring, hair dryers, irons and ironing board pads.

Although asbestos has caused serious health problems for workers and continues to be a risk within building maintenance, renovation, construction and demolition trades, it does not pose a significant risk for the general occupants of a building. Airborne asbestos fibers are a significant health risk.

In general, the use of asbestos has been discontinued due to the adverse health effects from inhalation of asbestos fibers.

**Asbestos-Containing Material:** Commonly abbreviated as ACM.

In the Province of Manitoba, a material must be considered as an ACM as follows:

A friable material with 0.1% asbestos or greater.

A non-friable material with 1.0% asbestos or greater.

Vermiculite insulation that contains asbestos

Once asbestos is detected using polarized light microscopy, standard methodologies rely on a visual estimation method that cannot reliably quantify content less than 1% and so any positive result will be interpreted as meeting the definition of an asbestos-containing materials unless rigorous testing and extensive sampling is completed.

**Asbestos Dust:** Particles of asbestos or settled particles of asbestos which may become airborne in the workplace.

**Friable Material:** A material that when dry can be crumbled, crushed or powdered by hand pressure. Examples would include pipe wrap insulation, sprayed-on fireproofing, plaster, ceiling tiles and vermiculite.

**Non-Friable Material:** A material that when dry will not easily be crumbled by hand pressure. Examples of non-friable materials include vinyl asbestos floor tiles or sheets, drywall joint compound and gaskets. Non-friable materials may still generate airborne fibers if mishandled.

**Designated Substance:** A chemical substance that meets the criteria as a carcinogen, mutagen, respiratory sensitizer, reproductive toxin, fetotoxin or teratogen under the Controlled Products Regulations. Examples of some

commonly encountered designated substances include asbestos, lead, mercury, silica, arsenic, benzene and isocyanates.

**Occupational Exposure Limit (OEL):** According to Part 36, section 36.5(1) (b) of the Manitoba Workplace Safety and Health Regulation 217/2006, the occupational exposure limit of a designated material must be as close to zero as is reasonably practicable, but shall not exceed the Threshold Limit Value (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH).

In Manitoba, the Workplace Safety and Health Regulation adopts the current ACGIH TLVs as the allowable OEL for those chemical and biological substances where a TLV exists.

The Manitoba Workplace Safety and Health Division recognizes the level as close to zero as is reasonably practicable for all forms of asbestos as 0.1 fibers per cubic centimeter of air (f/cc or f/cm<sup>3</sup>), which matches the TLV established by ACGIH.

Following asbestos abatement activities, airborne asbestos fiber concentrations must be reduced to a maximum concentration of 0.01 f/cc of air for all forms of asbestos before the negative pressure enclosure is removed and workers and others are allowed to reoccupy an area where asbestos has been removed.

**Threshold Limit Value-Time-Weighted Average (TLV-TWA):** The TWA concentration for a conventional 8-hour workday and a 40-hour workweek, to which it is believed that nearly all workers may be repeatedly exposed, day after day, for a working lifetime without adverse effect. The TLVs established by ACGIH do not take into account individual sensitivities, pre-existing conditions or other health factors, such as cigarette smoking.

### **3.0 BUILDING AND SURVEY METHODOLOGY**

#### **3.1. [Background and History](#)**

The building surveyed is a City of Winnipeg flood pumping station located at 91 Archibald St, in Winnipeg, MB.

The survey included all accessible areas of the building, including the exterior and the interior. The below-grade portions of the structure were evaluated.

Surveyors are not aware of any previous asbestos inventory or sampling completed at this property.

#### **3.2. [Scope of Work](#)**

Based on initial observations made prior to the onset of fieldwork for this survey, it was determined that the survey would focus on the following:

- Asbestos-Containing Material (ACM)
- Lead-Based Paint (LBP)

The scope of work included the following:

- An inspection for and a collection of representative samples of suspect ACM for laboratory analysis.
- An inspection for and a collection of representative samples of paints/coating applied to building surfaces for laboratory analysis for lead content.
- Preparation of a report which identifies the type and location of all observed hazardous materials and recommendations for removal prior to the start of any planned building renovation.

### 3.3. [Hazardous Materials Survey Methodology](#)

An essential element in a hazardous materials survey is the knowledge and experience of the surveyor. The surveyor must be familiar with building materials, products and equipment that may contain hazardous substances such as asbestos, lead, PCBs, mercury and ODS.

The use of hazardous substances in building materials, products and equipment was common until the late 1970s and the use of some products and equipment containing these types of hazardous materials is likely. Building constructed prior to 1990 may contain some suspect ACMs, and materials must be evaluated prior to renovation or demolition activities.

The most common building-related designated substances include asbestos, lead, formaldehyde and mercury. Additional designated substances which may be present in buildings or associated with certain work processes include acrylonitrile, arsenic, benzene, isocyanates, formaldehyde, ethylene oxide, vinyl chloride, microcrystalline silica, beryllium, hexavalent chromium compounds and coke oven emissions.

### 3.4. [Asbestos Methodologies](#)

The survey for asbestos was completed based on guidelines in ASTM E2356 *Standard Practice for Comprehensive Building Surveys (ASTM, 2014)*. This standard describes procedures for evaluating buildings and facilities for the presence of asbestos-containing materials.

### 3.5. [Lead - Hazards and Exposures](#)

Lead is toxic. Lead is a suspected human carcinogen, mutagen and teratogen and has been shown to cause cancer in laboratory animals. Lead is a designated substance. Lead interferes with many body processes and is poisonous to most organs and tissues, including the bones, intestines, kidneys, nervous system, and reproductive organs. Lead can accumulate in the body making long-term or repetitive/constant exposures over time much more dangerous. All contractors or workers should be aware of the potential hazards.

Potential sources of exposure to lead from buildings and building materials include lead-based paints (LBPs) that was used during building construction or renovation in 1970s or earlier, as well as lead-based water pipes and lead-solder joints/fittings for copper lines. Paints made prior to 1950 may contain significant amounts of lead, with some lead-based paints containing 30% to 50% lead by weight. Additional sources can include wall insulation around x-rays or other equipment, as an additive in brass and other alloys, from batteries, cable and wire casing, cast iron pipes, gaskets and connections,

Acute lead poisoning (high exposure over a short period of time) can cause headaches, fatigue, anemia, constipation, abdominal pain and damage to the nervous system. Chronic lead poisoning (exposure over a longer period of time) can cause fatigue, joint pain, and weakness.

Lead poisoning can damage the fetus in pregnant female workers, and impair fertility in male workers.

Workers are exposed to lead when they inhale lead-containing dust or ingest lead residue from their hands (e.g., when eating, chewing gum, or smoking). Lead can migrate across the project (i.e. to lunchrooms) if workers are not meticulous with good hygiene procedures.

### 3.6. Lead - Regulatory Review

According to Part 36, section 36.5(1) (b) of the Manitoba Workplace Safety and Health Regulation 217/2006, the occupational exposure limit of a designated material must be as close to zero as is reasonably practicable, but shall not exceed the Threshold Limit Value (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH). In Manitoba, the Workplace Safety and Health Regulations have adopted the current ACGIH TLVs as the allowable OEL for those chemical and biological substances where a TLV exists.

The current TLV for lead (elemental and inorganic compounds, as lead) is 0.05 mg/m<sup>3</sup>. For workers with chronic exposure to lead-containing dust or lead-based materials, biological testing to determine lead-blood content would be warranted. For lead, the Biological Exposure Index (BEI) is 30 µg/100 mL and lower levels are specified for women of child-bearing potential. This would be intended for industrial workers with higher-level chronic exposures.

The removal and clean-up of the lead-based paint shall be performed according to procedures that address requirements in the Manitoba Workplace Safety & Health Division *Guideline for Working with Lead*<sup>1</sup> and/or as modified in these procedures. Any lead removal or abatement activities must be performed by qualified contractors with training in the applicable activities, as well as familiarity with the applicable legislation issued by the Manitoba Department of Labour Workplace Safety & Health Division.

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<sup>1</sup> *A Guideline for Working with Lead*. Manitoba Workplace Safety & Health Division. August 2002.

Under the federal *Surface Coating Materials Regulations* (SOR/2016-193), coatings on consumer products cannot contain more than 90 mg/kg lead (or 0.009% w/w). This applies to some materials including children's toys or products used by children; products containing more than this level require specific labelling. These regulations do not address existing painted surfaces or workplace requirements for handling lead-based paints. In the absence of clear Canadian-based legislation and guidelines, guidelines and definitions available in the US Code of Federal Regulations (CFR) are used in this assessment as an evaluation guideline. The US Department of Housing and Urban Development has legislation providing definitions for lead-based paints, as it relates to lead-based paint poisoning prevention in certain residential structures.

According to definitions provided in 24 CFR Part 35.110, lead-based paint (LBP) is defined as any paint or coating with lead content equal to or greater than 1 mg/cm<sup>2</sup> or 5000 ppm or 5,000 mg/kg or 0.5% w/w. Canada's Hazardous Products Act (1976) cites the same 0.5 % w/w limit for indoor lead-based paints.

Work to remove painted surfaces where the painted or coated surface contains less than 0.5% w/w is not expected to generate airborne lead concentrations in excess of the TLV established for lead, provided hand tools only are used to remove paint. For removal of lead-containing paints above 0.009% w/w but below 0.5% w/w where power tools or blasting techniques are to be used, a risk assessment should be undertaken to determine safe work procedures.

## 4.0 SURVEY RESULTS

### 4.1. [General](#)

All accessible areas of the building, including below-ground levels, were evaluated. The interior and the exterior of the building were surveyed.

### 4.2. [Asbestos-Containing Materials](#)

There were few suspect ACM associated with the subject property. Some duct wrap material was sampled, and the roof for the building was sampled.

The black mastic or fiber putty in place on the large square roof hatch was found to contain 8% chrysotile asbestos.

Analysis was completed according to U.S. EPA Method 600/R-93/116, which uses polarized light microscopy (PLM) to identify the type of asbestos in bulk samples. The methodology can be used to estimate percent content for asbestos in the material analyzed. All samples were analyzed by Quantem Laboratories, who are AIHA-accredited.

The laboratory results are summarized in Appendix 1.

Photographs identifying sample locations are included as Appendix 2.

Full laboratory results are included as Appendix 3.

4.3. Lead-Based Paints (LBPs)

Samples of paint were taken from throughout the building structure. A summary of lab results is included in Table 1. The lead test results are included as Appendix 4.

Table1 - Lead Testing Results - Paint Samples

ID	TYPE	Location	Description	Result (% w/w)	Lead-Containing Paint >0.009% w/w	Lead-Based Paints >0.5% w/w
1	A	Exterior	Exterior White - East	0.96%	Yes	Yes
2		Exterior	Exterior White - South	2.54%		
3		Exterior	Exterior White - West	0.80%		
4		Exterior	Exterior White - North	2.39%		
5	B	Exterior	Exterior Brown Trim - East	0.08%	Yes	No
6		Exterior	Exterior Brown Trim - West	0.09%	Yes	No
7	C	Exterior	Exterior Brown on Roof Hatch	0.34%	Yes	No
8	D	Exterior	Silver Paint on Process Pipe, Small Vertical Pipe (Unit 2)	0.27%	Yes	No
9	E	Interior	Silver Paint on Process Pipe, Large round pipe (Unit 1)	1.64%	Yes	Yes
10	F	Interior	Silver Paint on Process Pipe, Large Round Pipe (Unit 3)	6.92%	Yes	Yes
11	G	Main Floor	Brown Paint - Door Frame	<0.005%	No	No

With the exception of the brown paint sampled from the entrance door, all paints contain some amount of lead, with results above the 0.009% threshold.

The white exterior paint on the main portion of the building was found to be lead-based paint, containing up to 2.54% lead by weight (Type A). It is possible that multiple different layers were sampled and that an individual paint layer will have a higher lead content.

The exterior brown trim paint on the wood trim at the roof (Type B) and the brown paint on the roof hatch (Type C) were found to contain some lead, but results were below the threshold of 0.5%.

The grey/silver paints sampled from the base of the structure on the process pipes were found to be lead-based paints (Type D, E, F). Results were variable between sample locations, and different types of paints may be present, but the silver/grey paints in place should be presumed to be lead-based paints.

## 5.0 RECOMMENDATIONS

### 5.1. Abatement Recommendations

- 5.1.1. All abatement or removal of the asbestos-containing materials identified in this report must be handled according to the Guide for Asbestos Management (June 2017) published by Safe Work Manitoba.
- 5.1.2. The guideline and the Manitoba Workplace Safety and Health Act and Regulations contain specific provisions requiring owners, employers and contractors to take specific actions when there is a potential risk of airborne asbestos fibers.
- 5.1.3. The abatement or removal of the any presumed or confirmed ACM as identified in this report must be done in a manner that does not create a risk to the safety or health of any person (MR217/2006, Sec. 37.8).
- 5.1.4. Notification must be provided to WSH at least 5 days prior to the start of work to remove (or otherwise disturb) ACM where either Type 2 or Type 3 procedures are required. This notice applies to the demolition of any structure that contains ACM that may release fibers into the atmosphere. Any removal of friable materials would require notification to WSH.
- 5.1.5. Notice must be provided by completing an online form, which can be accessed at: [www.manitoba.ca/labour/safety/asbestos](http://www.manitoba.ca/labour/safety/asbestos)
- 5.1.6. The removal of the asbestos containing mastics from the roof top hatch should generally be completed following Type 1 procedures as outlined in the guidelines.

### 5.2. Lead Content and Risk

- 5.2.1. The paints present in the building are low level lead paints. Based on the levels present, lead-containing dust is not a significant hazard in relation to established OELs.
- 5.2.2. Beyond worker awareness and standard good housekeeping practices, there are no additional precautions required regarding containment.
- 5.2.3. Paint that has come off should be cleaned up and held separately from other debris, for disposal as lead-containing waste.
- 5.2.4. Where paint is removed, any paint removed should be collected and disposed of as lead-containing waste.
- 5.2.5. The lead-based paints should be removed from the building before proceeding with full building demolition, if that becomes necessary.
- 5.2.6. As with all work practices, employers must ensure that the workers are knowledgeable of the hazards associated with lead and properly trained in the removal of materials where there is a potential for lead exposure.
- 5.2.7. Appropriate precautions for working with lead should be in place.

### 5.3. [Housekeeping Procedures](#)

- 5.3.1. While working with lead, it can get on your clothes, your hands and your hair leading to potential ingestion by bringing hands to your mouth.
- 5.3.2. Dry sweeping and the use of compressed air are prohibited for removing dust and debris containing lead. Work areas and equipment covered by dust will be cleaned at the end of every shift using a HEPA-filtered vacuum and wet cleanup will also be used to remove dust.
- 5.3.3. Waste material from HEPA vacuums will be placed directly into a container for proper disposal with a licensed hazardous waste facility.
- 5.3.4. A water sprayer should be used to minimize dust generation.
- 5.3.5. Upon completion of lead removal, the pail (or container) will be removed to a licensed disposal facility.
- 5.3.6. During lead removal procedures, supervisors are responsible for ensuring that work areas are free from dust at the end of each shift.
- 5.3.7. Daily inspect all dust control equipment and tools to make sure they are in good working order.
- 5.3.8. Use and maintain all tools and equipment as specified by the manufacturer.

### 5.4. [General Recommendations](#)

This report should be retained by the owner/employer for the building. The report may provide useful information for contractors or others seeking information related to asbestos surveys.

A survey has been completed and asbestos-containing materials have been identified.

This report should be available onsite during any type of work and workers must be aware of the presence of ACM. This report needs to be available onsite during asbestos abatement or removal work, and must be reviewed by the abatement contractors prior to the start of work. If any additional suspect materials not discussed within this survey report are uncovered during abatement or demolition, additional sampling may be warranted.

The owner/employer is urged to use qualified and competent contractors for all renovation and maintenance work within the building.

Asbestos-Containing Materials (ACMs) have been identified and all renovation activities must be carried out in such a way as to prevent any asbestos from being released into the atmosphere (MR217/2006, Sec. 37.8). All ACM identified in this report must be removed prior to full demolition of the building (MR217/2006, Sec. 33.4).

## 6.0 GENERAL SURVEY LIMITATIONS

Asbestos-containing materials may be present in inaccessible areas of the building or may be integral to the structure of the building itself. These types of materials include caulking, fire rated doors, gaskets in use on equipment, wiring or electrical components, packing associated with cast iron fittings, mastics as well as some roofing materials.

As per ASTM E2356, a baseline survey is intended to provide a general sense of the overall location, type, quantity and condition of any asbestos-containing materials present. It is thorough in that most accessible functional spaces are inspected and bulk samples taken of suspect materials observed. The intent of the survey is to provide information needed to prepare an asbestos control plan, where ACM are either confirmed through testing or presumed based on the type of material.

A baseline survey is unobtrusive in that samples are not taken when doing so would result in objectionable damage to surfaces or where institutional barriers preclude access, and destructive testing is avoided.

A pre-renovation assessment is limited in scope to the areas and materials where renovations are planned. More destructive testing is performed however not all areas of the building are evaluated. With a pre-demolition survey, all areas of the building must be evaluated and there are no restrictions on the amount or degree of destructive testing that is warranted.

Generally and unless specifically requested, sampling for a baseline survey would not be completed if sampling was hazardous to the surveyor (electrical systems), if sampling the materials would cause consequential damage to the property (window glazing), if it would affect the integrity of the system (roofing membranes), or if materials cannot be accessed without significant demolition. The potential for asbestos to be present in brake pads or similar occupant-owned inventory maintained onsite would be outside the scope of this survey. Every effort was made to complete a thorough inventory of all reasonably accessible areas, including crawlspaces, ceiling spaces, attics and similar areas where contractors would routinely access.

Based on the standard limitations inherent in any survey, MWI Consultants Inc cannot provide any assurance that all asbestos-containing materials have been identified. This survey has been undertaken and completed in a professional manner in accordance with generally accepted practices, including ASTM E2356.

## Appendix 1 – Bulk Asbestos Sampling and ACM Inventory

Lab Number	ID	Area/ Floor	Description / Location	Date Sampled	Asbestos Content	Amount	ACM Condition
309053	01	Main Floor	Duct Wrap Tape on Seams	May 9/19	None	N/A	N/A
309053	02	Exterior - Roof	Roofing Membrane	May 9/19	None	N/A	N/A
309053	03	Exterior - Roof	Roofing Shingle	May 9/19	None	N/A	N/A
309053	04	Exterior - Roof	Black Mastic on Roof Hatch/Opening	May 9/19	8% Chrysotile	Present at seams on metal roof cover/hatch	Good. Non-friable organically bound material.

## Appendix 2– Photographs

**Photo 1**

Front, exterior view of subject property.



**Photo 2**

Rear, exterior view of subject property.



**Photo 3**

The white exterior paint present on the east side of the building was found to contain 0.9% lead w/w. Location of Lead Sample 1.

Same or similar paint is elsewhere in the building.



**Photo 4**

The white exterior paint present on the south side of the building was found to contain 2.5% lead w/w. Approximate location of Lead Sample 2.

Same or similar paint is elsewhere in the building.



**Photo 5**

The white exterior paint present on the west side of the building was found to contain 0.8% lead w/w. Location of Lead Sample 3.

Same or similar paint is elsewhere in the building.



**Photo 6**

The white exterior paint present on the north side of the building was found to contain 2.4% lead w/w. Location of Lead Sample 4.

Same or similar paint is elsewhere in the building.



**Photo 7**

The brown exterior paint present on the wood trim at the roof line on all sides of the building was sampled. The sample collected from the west side of the building was found to contain 0.08% lead w/w. Approximate location of Lead Sample 6. Similar result was obtained for a sample collected from the east side.

Same or similar paint is elsewhere in the building.



**Photo 8**

The brown exterior paint present on the metal roof access hatch was found to contain 0.3% lead w/w. Approximate location of Lead Sample 7.

Same or similar paint is elsewhere in the building.



**Photo 9**

The silver paint present on utility piping at the base of the interior structure was found to contain 1.6% lead w/w. Sample collected from smaller vertical pipe associated with unit 2 (labelled).

Approximate location of Lead Sample 8.

Same or similar paint is elsewhere in the building.



**Photo 10**

The silver paint present on utility piping at the base of the interior structure was found to contain 1.6% lead w/w.

Sample collected from large pipe labelled as unit 1.

Approximate location of Lead Sample 9.

Same or similar paint is elsewhere in the building.



**Photo 11**

The silver paint present on utility piping at the base of the interior structure was found to contain 6.9% lead w/w.

Sample collected from large pipe labelled as unit 3.

Approximate location of Lead Sample 10.

Same or similar paint is elsewhere in the building.



**Photo 12**

The black fiber putty/mastic in place on the square roof hatch was found to contain 8% chrysotile asbestos.

Location of Asbestos Sample 4.



**Appendix 3- Bulk Sampling Laboratory Results (Asbestos)**



2033 HERITAGE PARK DR, OKLAHOMA CITY, OK 73120 | 1.800.822.1650

**Polarized Light Microscopy Asbestos Analysis Report**

QuanTEM Lab No. 309053	Client: MWI Consultants, Inc.
Account Number: B663	377 De La Seigneurie Blvd.
Date Received: 05/13/2019	Winnipeg, MB R3X2C7
Received By: Eunice Trent	Canada
Date Analyzed: 05/14/2019	Project: 91 Archibald
Analyzed By: Cassie Sanborn	Project Location: 91 Archibald
Methodology: EPA/600/R-93/116	Project Number: N/A

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	DuctTape	Homogeneous	Brown Duct Tape	Asbestos Not Present	Cellulose 60	Paint Binder
002	Roof1	Homogeneous	Black Roofing Membrane	Asbestos Not Present	Synthetic 20	Tar
003	Roof2	Homogeneous	Black Shingle	Asbestos Not Present	Synthetic 20	Tar Sand
004	Mastic	Homogeneous	Black Mastic	Asbestos Present Chrysotile 8	NA	Tar

*Cassie Sanborn*

Cassie Sanborn, Analyst

5/14/2019

Date of Report

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Quantem is a NVLAP accredited PLM laboratory (Lab Code: 101959-0). This report relates only to the specific items tested. NVLAP accreditation applies only to analysis performed utilizing EPA/600/M4-82-020 and EPA/600/R-93/116 methods. This report may not be used to claim product endorsement by NVLAP or any agency of the US Government. This report may not be reproduced except in full, without the written approval of the laboratory.

## Appendix 4- Lead Sampling Laboratory Results



2033 HERITAGE PARK DR, OKLAHOMA CITY, OK 73120 | 1.800.822.1650

### Environmental Chemistry Analysis Report

<b>Quantem Set ID:</b>	309051	<b>Client:</b>	MWI Consultants, Inc.
<b>Date Received:</b>	05/13/19		377 De La Seigneurie Blvd.
<b>Received By:</b>	Christiana Younge		Winnipeg, MB R3X2C7
<b>Date Sampled:</b>			Canada
<b>Time Sampled:</b>		<b>Acct. No.:</b>	B663
<b>Analyst:</b>	CR	<b>Project:</b>	91 Archibald
<b>Date of Report:</b>	05/15/19	<b>Location:</b>	91 Archibald
		<b>Project No.:</b>	N/A

AIHA ID: 101352

Quantem ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	Exterior1	Paint	Lead	0.961	0.005	%	05/15/19 14:42	P EPA 7000B (1)
002	Exterior2	Paint	Lead	2.54	0.005	%	05/15/19 14:42	P EPA 7000B (1)
003	Exterior3	Paint	Lead	0.798	0.005	%	05/15/19 14:42	P EPA 7000B (1)
004	Exterior4	Paint	Lead	2.39	0.005	%	05/15/19 14:42	P EPA 7000B (1)
005	Exterior5	Paint	Lead	0.0818	0.005	%	05/15/19 14:42	P EPA 7000B (1)
006	Exterior6	Paint	Lead	0.0896	0.005	%	05/15/19 14:42	P EPA 7000B (1)
007	Exterior7	Paint	Lead	0.344	0.005	%	05/15/19 14:42	P EPA 7000B (1)
008	Pipe1	Paint	Lead	0.266	0.005	%	05/15/19 14:42	P EPA 7000B (1)
009	Pipe2	Paint	Lead	1.64	0.005	%	05/15/19 14:42	P EPA 7000B (1)
010	Pipe3	Paint	Lead	6.92	0.005	%	05/15/19 14:42	P EPA 7000B (1)
011	Door	Paint	Lead	<0.00500	0.005	%	05/15/19 14:42	P EPA 7000B (1)

Note: Sample results have not been corrected for blank values.

This report applies only to the standards or procedures indicated and to the specific samples tested. It is not indicative of the qualities of apparently identical or similar products or procedures, nor does it represent an ongoing assurance program unless so noted. These reports are for the exclusive use of the client and are not to be reproduced without specific written permission. Quantem is not responsible for user-supplied data used in calculations.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified

EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified



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## Environmental Chemistry Analysis Report

<b>Quantem Set ID:</b>	309051	<b>Client:</b>	MWI Consultants, Inc.
<b>Date Received:</b>	05/13/19		377 De La Seigneurie Blvd.
<b>Received By:</b>	Christiana Younge		Winnipeg, MB R3X2C7
<b>Date Sampled:</b>			Canada
<b>Time Sampled:</b>		<b>Acct. No.:</b>	B663
<b>Analyst:</b>	CR	<b>Project:</b>	91 Archibald
<b>Date of Report:</b>	05/15/19	<b>Location:</b>	91 Archibald
		<b>Project No.:</b>	N/A

AIHA ID: 101352

Quantem ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
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Authorized Signature:  \_\_\_\_\_  
 Cherry Rossen, Technical Manager

Note: Sample results have not been corrected for blank values.

This report applies only to the standards or procedures indicated and to the specific samples tested. It is not indicative of the qualities of apparently identical or similar products or procedures, nor does it represent an ongoing assurance program unless so noted. These reports are for the exclusive use of the client and are not to be reproduced without specific written permission. Quantem is not responsible for user-supplied data used in calculations.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified

EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified